INDEX OF AIRCRAFT

Abrams Aerial Survey Corp., 606 Shirwassee St., Lansing Mich. 35
Talbert Abrams, President.

Aeronautical Corporation of America, Lunken Airport, Cincinnati Ohio 34
Walter J. Friedlander, Pres., Carl I. Friedlander, V. Pres., J. A. Weagle, Chief Engr.

Air Transport Mfg. Co. Ltd., 614-616 West Colorado Blvd., Glendale, Cal. 35, 47
E. L. Hollywood, Pres., A. K. Peterson, Chief Engr.

Akron Aircraft Company, Akron, Ohio 34
J. H. Bunting, General Manager.

Barkley-Grow Aircraft Corp., 13210 French Rd., Detroit, Mich ... 46
H. B. Grow, Pres., D. C. Maier, Chief Engr.

Beech Aircraft Corp., East Central Ave., Wichita, Kans 42, 46
Walter H. Beech, Pres., T. A. Wells, Chief Engr.

Bell Aircraft Corp., Buffalo, N. Y 50
Lawrence Bell, Pres., Ray V. Whitman, V. Pres.

Bellanca Aircraft Corp., New Castle, Del 43, 47, 50
G. M. Bellanca, Pres., A. F. Haiduck, Chief Engr.

Boeing Aircraft Co., Georgetown Station, Seattle, Wash 46, 50
C. L. Egtvedt, Pres., R. J. Minshall, Asst. Gen. Mgr.

Brewster Aeronautical Corp., Long Island City, N. Y 50
James Work, Pres., Temple Joyce, V. Pres.

Lawrence W. Brown Aircraft Co., 5844 Inskeep Ave., Los Angeles, Cal. 35
Lawrence W. Brown, Pres., Otto E. Strahlmann, Chief Engr.

Burnelli Aircraft, Ltd., Keyport, N. J 46
Vincent Burnelli, Pres.

Cessna Aircraft Co., Cessna Airport, Wichita, Kans 42
Dwane L. Wallace, Pres., Tom Salter, Chief Engr.

Consolidated Aircraft Corp., San Diego, Calif 51
R. H. Fleet, Pres., I. M. Laddon, Chief Engineer.

Curtiss-Wright Corp., Curtis Aero Division, Buffalo, N. Y. 50
Burdette S. Wright, Vice Pres. & Gen. Mgr.

Curtiss-Wright Corp., St. Louis Airplane Div., Lambert Field, Robertson, Mo. 35, 48, 50
C. W. France, Gen. Mgr.

Dart Manufacturing Corp., Port Columbus, Columbus, Ohio 35
Knight K. Culver, Jr., Pres., Charles Bates, Sales Mgr.

Douglas Aircraft Co., Inc., 3000 Ocean Park Blvd., Santa Monica, Cal. 47, 48, 50
Donald W. Douglas, Pres., A. E. Raymond, Chief Engr.

Fairchild Aircraft Corp., Hagerstown, Md 42, 43
Sherman M. Fairchild, Pres., A. J. Thiebolt, Chief Engr.

Fleetwings, Inc., Bristol, Pa 43
Carl de Ganahl, Pres., Wilson L. Sutton, Chief Engr.

Grumman Aircraft Engineering Corp., Bethpage, L. I., N. Y. .. 48, 50
L. R. Grumman, Pres., W. T. Schwendler, Chief Engr.

Gwinn Aircar Co., 777 Hertel Ave., Buffalo, N. Y 43
Jos. Gwinn, Pres., Joseph M. Gwinn, Jr., Pres. & Chief Engr.

Hall Aluminum Aircraft Co., Bristol, Pa 50
A. M. Hall, Pres., C. F. Pape, V. Pres. & Treas.

Howard Aircraft Corp., 5301 W. 65th St., Chicago, Ill 43
Ben. O. Howard, Pres., B. D. DeWeese, V. Pres. & Gen. Mgr. Walter T. Brownell, Chief Engr.

Jones Aircraft Corp., P. O. Box 114, Schenectady, N. Y 44
Ben Jones, Pres., Aitkin L. Matthews, Vice Pres.

Kellett Autogiro Corp., Island Road & Laycock Ave., Philadelphia, Pa. 36
W. Wallace Kellett, Pres., R. H. Prewitt, Exec. Engr.

Luscombe Airplane Corp., Mercer Airport, West Trenton, N. J . 36, 37
Don A. Luscombe, Pres., Charles E. Hastings, Jr., Vice Pres.

Lockheed Aircraft Corp., Burbank, Calif 48, 49
Robert E. Gross, Pres., Hall L. Hibbard, Vice Pres. & Chief Engr.

Martin, Glenn L., Co., Baltimore, Md 48, 50
Glenn L. Martin, Pres., B. C. Boulton, Chief Engr.

Miller Aircraft Corp., Springfield Airport, Springfield, Mass 36
H. W. Miller.

Monocoupe, Corp., Lambert Field, Robertson, Mo 37, 44
Clare W. Bunch, Pres., James V. Reynolds, Vice Pres.

North American Aviation Inc., Inglewood, Calif. 50, 52
J. H. Kindleberger, Pres., J. L. Atwood, Chief Engr.

Ong Aircraft Corp., Wichita, Kan 44
William Ong.

Pasped Aircraft Corp., 221-A W. Broadway, Glendale, Cal 38
F. J. Pedersen.

Phillips Aviation Co., 412 West Sixth Street, Los Angeles, Calif. 36, 37
James A. Phillips, Jr., Pres. & Gen. Mgr.

Piper Aircraft Corp., 820 Bald Eagle St., Lock Haven, Pa 38
Theodore V. Weld, Pres., W. C. Jamouneau, Vice Pres. & Chief Engr.

Porterfield Aircraft Corp., 1720 Wabash Ave., Kansas City, Mo. 38, 39
E. E. Porterfield, Jr., Pres., M. S. Porterfield, Vice Pres.

Rearwin Airplanes, Fairfax Airport, Kansas City, Kan 39
R. A. Rearwin, Partner, Dale Hamilton, Chief Engr.

Orrin E. Ross, 78 Park Avenue, Amityville, N. Y 38

Ryan Aeronautical Co., Lindbergh Field, San Diego, Cal .. 39, 44, 52
T. Claude Ryan, Pres., Millard C. Boyd.

Security Aircraft Corp., 2735 E. Spring St., Long Beach, Cal .. 40
W. B. Kinner, Pres., Max B. Harlow, Chief Engr.

Seversky Aircraft Corp., Farmingdale, L. I., N. Y 52
J. L. McClane, Gen. Mgr., C. Hart Miller, Eng. Asst. to the Pres.

Sikorsky, Div. United Aircraft Corp., Bridgeport, Conn 49, 52
R. W. Clark, Gen. Mgr., Igor I. Sikorsky, Engr. Director, M. E. Gluhareff, Chief Engr.

Spartan Aircraft Co., Box 2649, Tulsa, Okla 44, 52
W. G. Skelly, Pres., E. O. Weining, Chief Engr.

Stearman Aircraft Co., Wichita, Kan 52
J. E. Schaefer, Pres. & Gen. Mgr., Harold W. Zipp, Ass't. Sec. & Chief Engr.

Stearman-Hammond, South San Francisco, Cal 40
Lloyd Stearman, Pres., M. C. Haddon, Chief Engr.

Stinson Aircraft Div. Aviation Mfg. Corp., Wayne, Mich 45
W. A. Mara, Pres.

Taylor-Young Airplane Co., Alliance, Ohio 40
C. G. Taylor, Pres., Raymond Carlson, Chief Engr.

Vought Division, United Aircraft Corp., East Hartford, Conn 52
R. W. Clark, Gen. Mgr., R. B. Beisel, Chief Engr.

Vultee Division, Aviation Manufacturing Corp., Downey, Calif .. 52
R. W. Millar, Vice Pres. & Gen. Mgr.

Waco Aircraft Co., Troy, Ohio 45, 52
C. J. Bruckner, Pres., A. F. Arcier, Chief Engr., Hugh Perry, Sales Manager.

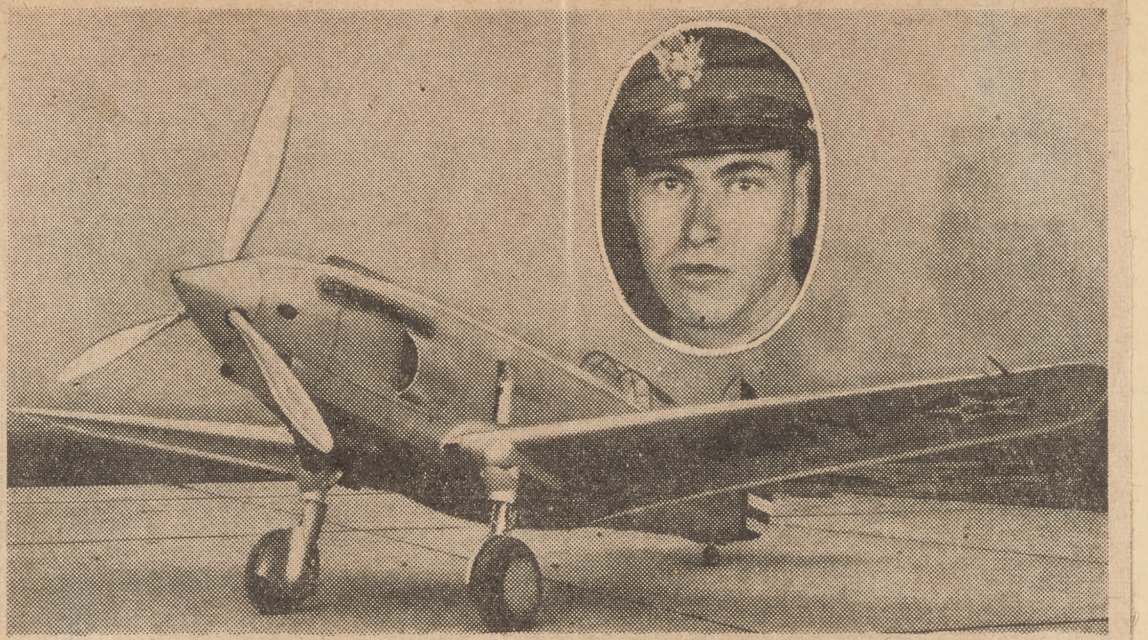
Waterman Arrowplane Corp., 1560 Fifth St., Santa Monica, Cal. 40
Waldo D. Waterman, Pres., Max B. Harlow, Vice Pres. & Chief Engr.

Welch Aircraft Industries, Inc., 1720 Mishawaka Ave., South Bend, Ind. 41
Orin Welch, Pres. & Chief Engr.

Oct. 29 -'38

THE WASHINGTON POST: SA

6-Mile-a-Minute Flight by New Army Plane Hailed as Answer to Foreign Air Challenge



Lieut. Benjamin S. Kelsey (inset) flew a P-37-type plane shown here from Dayton, Ohio, to Buffalo—360 miles in 61 minutes—for an unofficial Army plane speed record

Navy's 'Fortress' Here Makes Dash From Coast President Will See It

America's answer to the challenge for air supremacy was revealed yesterday when the Army disclosed details of the flight of a pursuit plane which traveled 360 miles in 61 minutes.

Military authorities were particularly gratified by the fact that the 6-mile-a-minute flight, which took place Wednesday, was made in a pursuit plane carrying full military equipment, because bombers recently have been developing speeds outstripping the small fighting craft intended to intercept bombardment planes.

Foreign speed claims also will be answered by the new fighter. The German Messerchmitt is believed to have traveled at 380 miles per hour, but reports received here state that it was stripped for racing. Britain's Spitfire exceeded 400 miles per hour, but was aided by a 75-mile-an-hour tail wind, officials declared.

As the Army was checking on the new record, the Navy's $1,000,000 Flying Dreadnaught arrived at Anacostia Naval Air Station yesterday after a 13-hour and 55 minute dash from San Diego, Calif.

Neither flight was made as a stunt, officials stressing the fact they were routine performances.

Lieut. Benjamin Kelsey made his 360-mile trip from Dayton, Ohio, to Buffalo, N. Y., to inspect another new Army plane while the Navy flying boat, commanded by Lieut. Comdr. Andrew Crinkley, came here on one day's notice for inspection by President Roosevelt.

The plane flown by Lieut. Kelsey already has passed the experimental stage and a squadron of 13 of them have been ordered for the Air Corps, officials said.

Although pleased by the success of the plane, known as the P-37, the Army intends to announce completion in a few days of another and even faster model, designated the P-40. An experimental craft, details of its design will not be made public for some time.

An all-metal, single-seater monoplane powered by a liquid-cooled Allison motor, the P-37 is a considerable departure from the earlier P-36, of which 210 have been ordered by the Army.

Most notable change is the use of a liquid-cooled engine rather than an air-cooled power plant. Army officials describe the older engine as "a big job which is like pushing a barn door through the atmosphere" and point to the superior streamlining and maneuverability which can be attained by use of the liquid-cooled type of motor.

To incorporate recent improvements, however, it has been necessary to turn out the new fleet with little regard for the possibility of mass production. Standardization and mass production are being carefully studied as part of the Administration's re-examination of defense needs.

President Roosevelt, who has frequently hinted that an increase in the Nation's air power may be necessary, will drive to Bolling Field and the Naval Air Station today to inspect first-line Army and Navy planes.

Oct '38

Russian Plane Plants Praised By Van Dusen

America is at least five years ahead of any other nation in the development of air maneuvers in conjunction with fleet exercises, C. A. Van Dusen, vice president of Consolidated Aircraft Corp., said yesterday.

Recently returned from Europe, Van Dusen said he was greatly impressed by the size of military aircraft production programs. He visited England, France, Russia, Germany and several smaller nations.

BUILD CONSAIR MODELS

"While I didn't get to see all of the plants in Russia, due to government restrictions and to lack of time," he said, "I saw a very efficient plant in Moscow and also the plant at Taganrog, where work is starting on the Consolidated Model 28 flying boat.

"A large force at the Moscow plant is turning out an efficient-looking twin-engine bombardment plane, which, from my observations, is considerably more difficult to build than many other designs I am familiar with. They have good production methods and a very large production, and the planes are comparable in size to the United States army YB-10 bombers."

FACTORIES HUGE

The Moscow plant, Van Dusen said, is three times as large as Consolidated's plant here, and the Taganrog plant is twice as large. He reported that he was shown every consideration by the Russian officials. The new subway in Moscow, he said, is better than any he has seen, and while the people lack some of the conveniences and luxuries found here, they "seem to be well fed, comfortably clothed and reasonably well housed."

In Germany, Van Dusen was escorted officially to various aircraft factories, and attended a luncheon at the German air force club with Gen. Ernst Udet, World war ace.

Navy's New Bomber Flies Here From West Coast in 13 Hours

WASHINGTON D.C. Oct. 28-38.

The Navy's new $1,000,000 experimental long-range bomber landed at the Naval Air Station, in Anacostia, at 2:05 a.m. today, completing a non-stop flight from San Diego, Calif., in an elapsed time of 13 hours and 55 minutes.

Carrying a crew of seven, the huge craft actually made the approximately 2,300-mile flight in about 13 hours. The ship arrived here about 1 a.m., but, because of a number of unlighted buoys in the Anacostia River, the commander circled the area for about three-quarters of an hour to make sure of his bearings, naval officials said.

Meanwhile, a 6-mile-a-minute war plane was viewed as the Army's immediate answer to European rivalry for speed supremacy in the air following a 360-mile flight in 61 minutes from Dayton, Ohio, to Buffalo, N. Y., yesterday by Lt. Benjamin S. Kelsey. This flight lifted the wraps from a pursuit ship about which the Air Corps previously had little to say.

The Navy's huge airboat had slipped off secretly at San Diego at 12:10 p.m. (Eastern standard time) yesterday. At the controls of the 25-ton craft was Lt. Comdr. Andrew Crinkley, pioneer naval aviator, who has been conducting final acceptance tests since the ship was turned over to the Navy Trial Board by Consolidated Aircraft Corp.

With a crew of 15, the craft is said to be capable of flying 4,000 miles without refueling. It was the first big flying boat to make a transcontinental flight without landing gear equipment.

The ship is equipped with four 14-cylinder Pratt-Whitney motors, each of which has a Navy Department rating of 900 horsepower. Its wing span is 115 feet and it measures 23 feet 3 inches in height.

Naval officials would not disclose any details of the craft's armament, speed or altitude.

The Army's new pursuit plane, the Curtis P-37, already had passed the experimental stage before yesterday's 360-mile flight. An initial squadron of 13 ordered last December soon will be delivered, officials said.

Without halting to gloat over the P-37, the Army intends to announce in a few days another and presumably even faster plane. Designated the P-40, it is an experimental job, and most details will not be disclosed for the present.

Both Germany and Great Britain have combat planes for which they have boasted even greater speed than that attained by the P-37. But the Air Corps has a ready answer.

Lt. Kelsey's flight and earlier trials, which were kept secret, were made with full military equipment. Germany claimed some 380 miles an hour for its Messerschmitt, but reports here are that it was stripped for racing. Although Britain's Spitfire exceeded 400 miles an hour, it was aided by a 75-mile tailwind, American officials contended.

Officials took particular satisfaction in the performance of the American plane because high-powered bombers, both here and abroad, have been threatening to outspeed pursuit ships, whose primary function is to intercept the bombers.

After months of testing a single experimental model, the Army gave a $531,305 order to the Curtiss plant at Buffalo for the first P-37 squadron.

In order to incorporate improvements, it has been necessary to turn out the new fleet with little regard for the possibility of mass production. That possibility is involved in the administration's restudy of defense needs.

The new pursuit plane is an all-metal, low-winged monoplane, with single engine and single seat. It is similar to the Curtiss P-36 pursuit, 210 of which are being delivered to the Army. Officials credit the new plane with a high rate of climb and great maneuverability.

The Army also has ordered a squadron of fighting planes of another type, the Bell "Airacuda," which has two motors, propellers in the rear, six guns, including two aircraft cannon, and a crew of five.

Its speed has not been announced, but the War Department said it was believed sufficient to overhaul and vanquish any modern bomber now in production.

Consolidated Could Carry 100

Aviation 2/1938

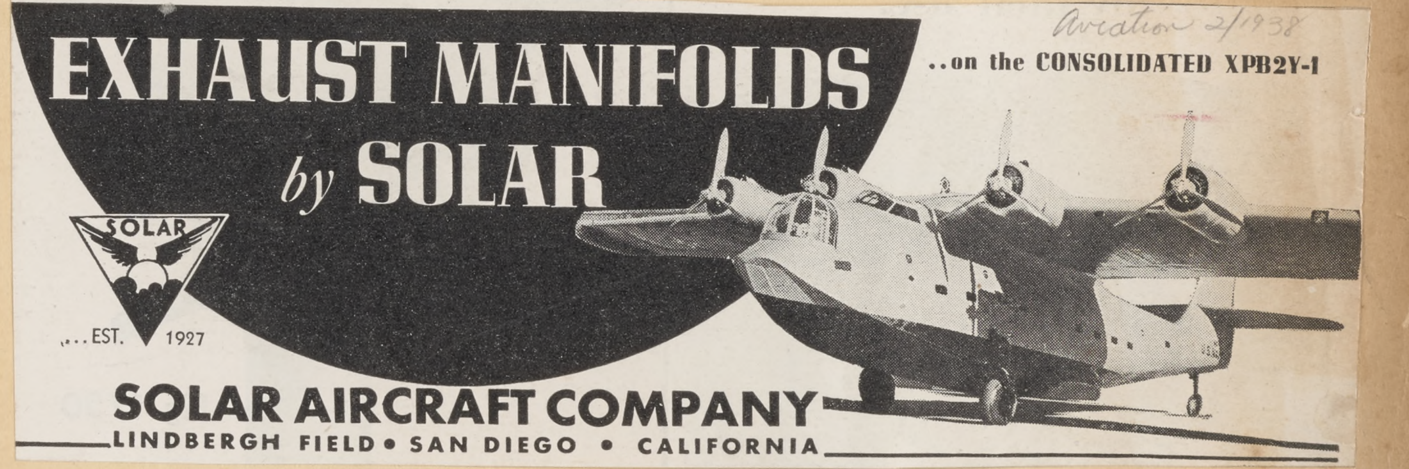
FURTHER FIGURES on the new Consolidated commercial trans-oceanic flying boat (announced exclusively in the January issue of AVIATION) show that this craft can be supplied with interior arrangements to accommodate 100 passengers and baggage on eastbound trans-Atlantic flights, and 75 passengers and baggage on westbound flights. These payload increases entail a corresponding decrease in the ship's super-luxury recreational facilities, as illustrated in our January issue, but no change in stateroom size or luxury, and the same performance is maintained.

- **That "routine transfer of equipment"** label the Navy puts on its mass flights from San Diego to Honolulu (or to the Canal Zone) used to sound a little phony to us, for after all they have been astounding aeronautical feats. In the European League they would have won their crews whole chests full of medals. But last month the Navy casually sent another eighteen patrol bombers across to Hawaii; and announced it would send a dozen more in July or August; enough more in November to make the year's total 42. We give up. That's not a routine. That's a habit.

- **What a fleet of patrol bombers** the Navy is going to have pretty soon! Month ago a $4,500,000 contract for 33 more twin-engined Consolidateds brought the number of that type on-hand or on-order up to 255. Now comes a $5,299,538 contract to Glenn L. Martin for 21 patrol bombers of a new twin-engined gull-winged design that is expected to beat everything in its class.

Aviation 2/1938

Aviation 2/1938



EXHAUST MANIFOLDS by SOLAR

..on the CONSOLIDATED XPB2Y-1

SOLAR

...EST. 1927

SOLAR AIRCRAFT COMPANY

LINDBERGH FIELD • SAN DIEGO • CALIFORNIA

CONSOLIDATED AIRCRAFT CORP., San Diego, Cal. Aviation 2/1938

R. H. Fleet, Pres.; C. A. Van Dusen. Works Mgr.; W. M. Shanahan. Treas.: R. A. Stanberry, Secy.; I. M. Laddon. Chief Engr.; C. T. Leigh, Materials Supv.: E. S. N Gott.

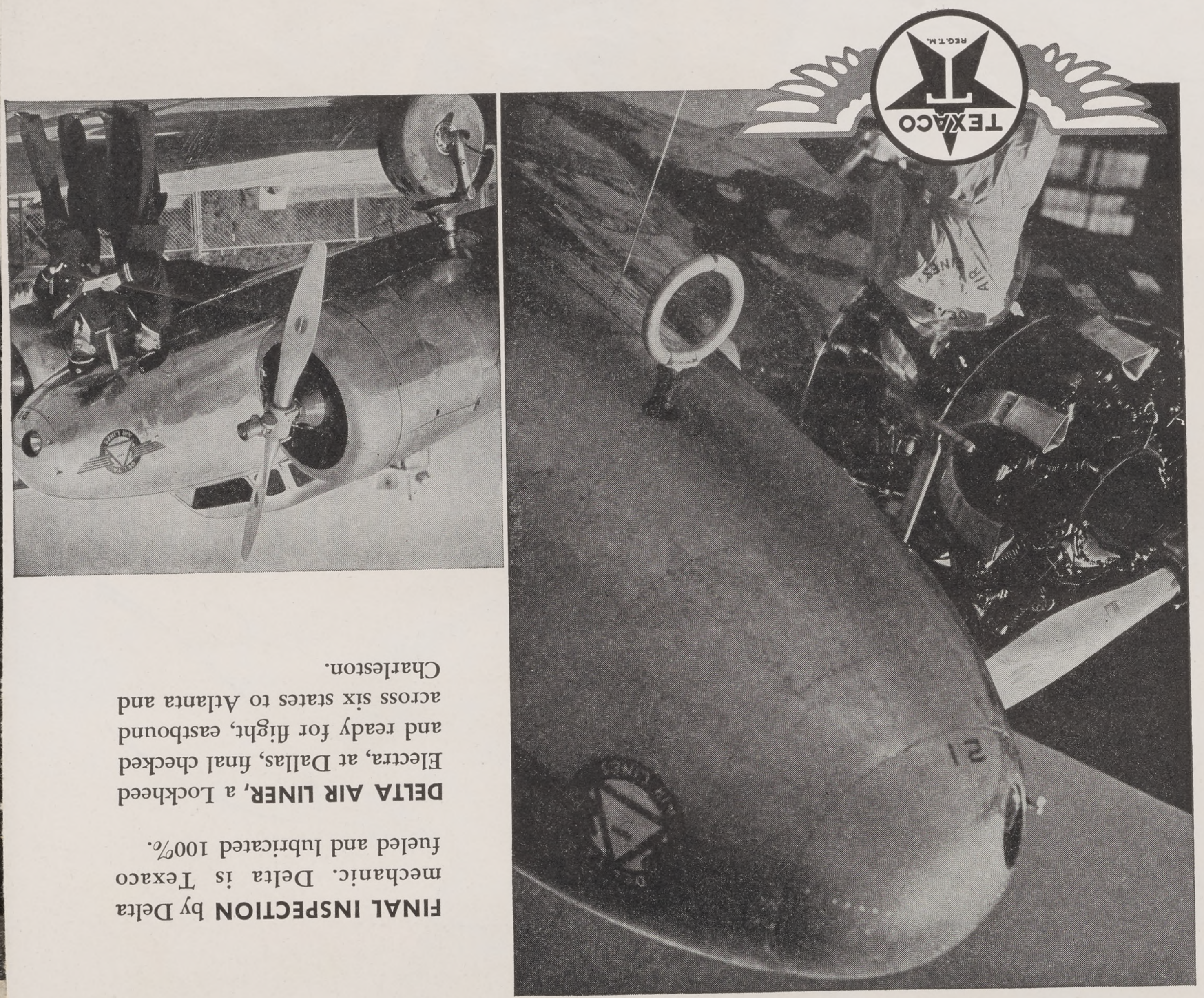
HANCOCK

DELTA AIR LINES

L-E-N

FINAL INSPECTION by Delta mechanic. Delta is Texaco fueled and lubricated 100%.

DELTA AIR LINER, a Lockheed Electra, at Dallas, final checked and ready for flight, eastbound across six states to Atlanta and Charleston.



NEW TEXACO

PLEXIGLAS

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

BEECH AIRCRAFT CORPORATION

BELL AIRCRAFT COMPANY

BELLANCA AIRCRAFT CORPORATION

BOEING AIRCRAFT COMPANY

BREWSTER AERONAUTICAL CORPORATION

CESSNA AIRCRAFT COMPANY

CONSOLIDATED AIRCRAFT CORPORATION

CULVER AIRCRAFT CORPORATION

CURTISS=WRIGHT CORPORATION

DOUGLAS AIRCRAFT COMPANY, INC.

FAIRCHILD AIRCRAFT CORPORATION

FLEETWINGS, INC.

GRUMMAN AIRCRAFT ENGINEERING CORPORATION

HOWARD AIRCRAFT CORPORATION

KELLETT AUTOGIRO CORPORATION

LOCKHEED AIRCRAFT CORPORATION

LUSCOMBE AIRPLANE CORPORATION

THE GLENN L. MARTIN COMPANY

NORTH AMERICAN AVIATION, INC.

PITCAIRN AUTOGIRO COMPANY

RYAN AERONAUTICAL COMPANY

SEVERSKY AIRCRAFT CORPORATION

SPARTAN AIRCRAFT COMPANY

STEARMAN AIRCRAFT COMPANY

STINSON AIRCRAFT DIVISION

VOUGHT=SIKORSKY AIRCRAFT

VULTEE AIRCRAFT DIVISION

THE WACO AIRCRAFT COMPANY

★ ★ ★ ★ ★ ★ ★ ★ ★ ★

IN THE VAN OF PROGRESS

In any history of Air Progress, tribute must be paid to these aircraft manufacturers. Their leadership in engineering design, their wisdom in the choice of materials, and their skill in construction have set new standards of speed, safety, and efficiency.

It is significant that every one of these firms uses PLEXIGLAS*—often exclusively—wherever sections of colorless transparency, light weight, and resistance to weathering are required. And, in every instance, PLEXIGLAS has met their exacting specifications.

The Röhm & Haas Company of Philadelphia, manufacturers of PLEXIGLAS, is proud of its association with these firms and proud of the part this acrylic resin has played in the advance of aviation.

*Reg. U. S. Pat. Off.

Röhm & Haas Company, Incorporated
222 West Washington Square • **PHILADELPHIA, PA.**

Oct. 29 - '38

THE WASHINGTON POST: SA

6-Mile-a-Minute Flight by New Army Plane Hailed as Answer to Foreign Air Challenge

Lieut. Benjamin S. Kelsey (inset) flew a P-37-type plane shown here from Dayton, Ohio, to Buffalo—360 miles in 61 minutes—for an unofficial Army plane speed record

Navy's 'Fortress' Here Makes Dash From Coast President Will See It

America's answer to the challenge for air supremacy was revealed yesterday when the Army disclosed details of the flight of a pursuit plane which traveled 360 miles in 61 minutes.

Military authorities were particularly gratified by the fact that the 6-mile-a-minute flight, which took place Wednesday, was made in a pursuit plane carrying full military equipment, because bombers recently have been developing speeds outstripping the small fighting craft intended to intercept bombardment planes.

Foreign speed claims also will be answered by the new fighter. The German Messerchmitt is believed to have traveled at 380 miles per hour, but reports received here state that it was stripped for racing. Britain's Spitfire exceeded 400 miles per hour, but was aided by a 75-mile-an-hour tail wind, officials declared.

As the Army was checking on the new record, the Navy's $1,000,000 Flying Dreadnaught arrived at Anacostia Naval Air Station yesterday after a 13-hour and 55 minute dash from San Diego, Calif.

Neither flight was made as a stunt, officials stressing the fact they were routine performances.

Lieut. Benjamin Kelsey made his 360-mile trip from Dayton, Ohio, to Buffalo, N. Y., to inspect another new Army plane while the Navy flying boat, commanded by Lieut. Comdr. Andrew Crinkley, came here on one day's notice for inspection by President Roosevelt.

The plane flown by Lieut. Kelsey already has passed the experimental stage and a squadron of 13 of them have been ordered for the Air Corps, officials said.

Although pleased by the success of the plane, known as the P-37, the Army intends to announce completion in a few days of another and even faster model, designated the P-40. An experimental craft, details of its design will not be made public for some time.

An all-metal, single-seater monoplane powered by a liquid-cooled Allison motor, the P-37 is a considerable departure from the earlier P-36, of which 210 have been ordered by the Army.

Most notable change is the use of a liquid-cooled engine rather than an air-cooled power plant. Army officials describe the older engine as "a big job which is like pushing a barn door through the atmosphere" and point to the superior streamlining and maneuverability which can be attained by use of the liquid-cooled type of motor.

To incorporate recent improvements, however, it has been necessary to turn out the new fleet with little regard for the possibility of mass production. Standardization and mass production are being carefully studied as part of the Administration's re-examination of defense needs.

President Roosevelt, who has frequently hinted that an increase in the Nation's air power may be necessary, will drive to Bolling Field and the Naval Air Station today to inspect first-line Army and Navy planes.

Oct '38

Russian Plane Plants Praised By Van Dusen

America is at least five years ahead of any other nation in the development of air maneuvers in conjunction with fleet exercises, C. A. Van Dusen, vice president of Consolidated Aircraft Corp., said yesterday.

Recently returned from Europe, Van Dusen said he was greatly impressed by the size of military aircraft production programs. He visited England, France, Russia, Germany and several smaller nations.

BUILD CONSAIR MODELS

"While I didn't get to see all of the plants in Russia, due to government restrictions and to lack of time," he said, "I saw a very efficient plant in Moscow and also the plant at Taganrog, where work is starting on the Consolidated Model 28 flying boat.

"A large force at the Moscow plant is turning out an efficient-looking twin-engine bombardment plane, which, from my observations, is considerably more difficult to build than many other designs I am familiar with. They have good production methods and a very large production, and the planes are comparable in size to the United States army YB-10 bombers."

FACTORIES HUGE

The Moscow plant, Van Dusen said, is three times as large as Consolidated's plant here, and the Taganrog plant is twice as large. He reported that he was shown every consideration by the Russian officials. The new subway in Moscow, he said, is better than any he has seen, and while the people lack some of the conveniences and luxuries found here, they "seem to be well fed, comfortably clothed and reasonably well housed."

In Germany, Van Dusen was escorted officially to various aircraft factories, and attended a luncheon at the German air force club with Gen. Ernst Udet, World war ace.

Navy's New Bomber Flies Here From West Coast in 13 Hours

Washington D.C. Oct. 28 - 38.

The Navy's new $1,000,000 experimental long-range bomber landed at the Naval Air Station, in Anacostia, at 2:05 a.m. today, completing a non-stop flight from San Diego, Calif., in an elapsed time of 13 hours and 55 minutes.

Carrying a crew of seven, the huge craft actually made the approximately 2,300-mile flight in about 13 hours. The ship arrived here about 1 a.m., but, because of a number of unlighted buoys in the Anacostia River, the commander circled the area for about three-quarters of an hour to make sure of his bearings, naval officials said.

Meanwhile, a 6-mile-a-minute war plane was viewed as the Army's immediate answer to European rivalry for speed supremacy in the air following a 360-mile flight in 61 minutes from Dayton, Ohio, to Buffalo, N. Y., yesterday by Lt. Benjamin S. Kelsey. This flight lifted the wraps from a pursuit ship about which the Air Corps previously had little to say.

The Navy's huge airboat had slipped off secretly at San Diego at 12:10 p.m. (Eastern standard time) yesterday. At the controls of the 25-ton craft was Lt. Comdr. Andrew Crinkley, pioneer naval aviator, who has been conducting final acceptance tests since the ship was turned over to the Navy Trial Board by Consolidated Aircraft Corp.

With a crew of 15, the craft is said to be capable of flying 4,000 miles without refueling. It was the first big flying boat to make a transcontinental flight without landing gear equipment.

The ship is equipped with four 14-cylinder Pratt-Whitney motors, each of which has a Navy Department rating of 900 horsepower. Its wing span is 115 feet and it measures 23 feet 3 inches in height.

Naval officials would not disclose any details of the craft's armament, speed or altitude.

The Army's new pursuit plane, the Curtis P-37, already had passed the experimental stage before yesterday's 360-mile flight. An initial squadron of 13 ordered last December soon will be delivered, officials said.

Without halting to gloat over the P-37, the Army intends to announce in a few days another and presumably even faster plane. Designated the P-40, it is an experimental job, and most details will not be disclosed for the present.

Both Germany and Great Britain have combat planes for which they have boasted even greater speed than that attained by the P-37. But the Air Corps has a ready answer.

Lt. Kelsey's flight and earlier trials, which were kept secret, were made with full military equipment. Germany claimed some 380 miles an hour for its Messerschmitt, but reports here are that it was stripped for racing. Although Britain's Spitfire exceeded 400 miles an hour, it was aided by a 75-mile tailwind, American officials contended.

Officials took particular satisfaction in the performance of the American plane because high-powered bombers, both here and abroad, have been threatening to outspeed pursuit ships, whose primary function is to intercept the bombers.

After months of testing a single experimental model, the Army gave a $531,305 order to the Curtiss plant at Buffalo for the first P-37 squadron.

In order to incorporate improvements, it has been necessary to turn out the new fleet with little regard for the possibility of mass production. That possibility is involved in the administration's restudy of defense needs.

The new pursuit plane is an all-metal, low-winged monoplane, with single engine and single seat. It is similar to the Curtiss P-36 pursuit, 210 of which are being delivered to the Army. Officials credit the new plane with a high rate of climb and great maneuverability.

The Army also has ordered a squadron of fighting planes of another type, the Bell "Airacuda," which has two motors, propellers in the rear, six guns, including two aircraft cannon, and a crew of five.

Its speed has not been announced, but the War Department said it was believed sufficient to overhaul and vanquish any modern bomber now in production.

Consolidated Could Carry 100

Aviation 2/1938

FURTHER FIGURES on the new Consolidated commercial trans-oceanic flying boat (announced exclusively in the January issue of AVIATION) show that this craft can be supplied with interior arrangements to accommodate 100 passengers and baggage on eastbound trans-Atlantic flights, and 75 passengers and baggage on westbound flights. These payload increases entail a corresponding decrease in the ship's super-luxury recreational facilities, as illustrated in our January issue, but no change in stateroom size or luxury, and the same performance is maintained.

● **That "routine transfer of equipment"** label the Navy puts on its mass flights from San Diego to Honolulu (or to the Canal Zone) used to sound a little phony to us, for after all they have been astounding aeronautical feats. In the European League they would have won their crews whole chests full of medals. But last month the Navy casually sent another eighteen patrol bombers across to Hawaii; and announced it would send a dozen more in July or August; enough more in November to make the year's total 42. We give up. That's not a routine. That's a habit.

● **What a fleet of patrol bombers** the Navy is going to have pretty soon! Month ago a $4,500,000 contract for 33 more twin-engined Consolidateds brought the number of that type on-hand or on-order up to 255. Now comes a $5,299,538 contract to Glenn L. Martin for 21 patrol bombers of a new twin-engined gull-winged design that is expected to beat everything in its class.

Aviation 2/1938

Aviation 2/1938

EXHAUST MANIFOLDS by SOLAR

..on the CONSOLIDATED XPB2Y-1

SOLAR

....EST. 1927

SOLAR AIRCRAFT COMPANY

LINDBERGH FIELD • SAN DIEGO • CALIFORNIA

CONSOLIDATED AIRCRAFT CORP., San Diego, Cal. Aviation 2/1938

R. H. Fleet, Pres.; C. A. Van Dusen. Works Mgr.; W. M. Shanahan. Treas.: R. A. Stanberry, Secy.; I. M. Laddon. Chief Engr.; C. T. Leigh, Materials Supv.: E. S. Gott.

HANCOCK

CUB *Congratulates* CAA

CUB TRAINER
A popular model at all thirteen colleges giving civilian flying training under the CAA program

"*Hats Off*" to CAA, Instructors and Students on the Success of the Civilian Air Training Program!

Free Flying Course

The authorized Cub Dealer from whom you buy your new Piper Cub will arrange for you to receive a course of dual flight instruction in your own new plane by a government licensed instructor. Ask your Cub dealer about this free flying course and for a free flight demonstration. There are Cub representatives at all leading airports.

Free Catalog

Send today for Cub catalog, details of the free flying course and name of your Cub Dealer. Piper Aircraft Corporation, 89 A Street, Lock Haven, Pa., U. S. A. . . . Cub Aircraft Co., Ltd., Copenhagen, Denmark.

Visit Us at the New York and San Francisco Fairs and at the Cub Factory

The progress of the civilian air program made in the thirteen colleges selected for test purposes is indeed noteworthy. The figures published in the current issues of the aviation magazines are most encouraging. And we are more than happy that the Piper Aircraft Corporation, in building the Cub Trainers which comprise more than 70% of all the planes used at these colleges, has had the privilege of contributing to the success of this commendable program to date.

GET YOUR OWN CUB

and enjoy the superior advantages of this easiest-to-fly and easiest-to-buy airplane. In a Piper Cub you get the leader in economy, safety and value. The fact that nearly 1,000 Cubs have been purchased so far this year—*more than all the other makes of civilian planes combined*—should be a definite guide for you when you buy *your* new airplane.

ONLY $366 DOWN

gives you a new $1098 Piper Cub 40 h.p. Trainer on the easy pay-as-you-fly plan. Other models include 50 h.p. Trainers from $1298, 50 h.p. Sports from $1348, 60 and 65 h.p. Coupes from $1910, and Seaplanes from $1793. All prices F.A.F. Lock Haven, Pa., and subject to increase without notice. Fly the economical, safe way—the Cub way!

COUNT THE CUBS THE WORLD'S FASTEST SELLING AIRPLANE

Published monthly, price 35c a copy. Subscription rates—United States, Canada, Mexico and Central American Countries, $2.00 a year. All other countries, $5.00 a year or 20 shillings. Entered as second-class matter, September 3, 1936, at the Post Office, Albany, N. Y., under the Act of March 3, 1879. Volume 38, Number 8.

Eclipse Equipment

HELPS BLAZE ANOTHER AIR-TRAIL

NC18997
AMERICAN EXPORT AIRLINES
AE AIRLINES

AMERICAN EXPORT'S NEW SURVEY AIRLINER

ECLIPSE

Eclipse-Equipped!

American Export Airlines' new Consolidated Survey Flying Boat carries: Eclipse AC and DC Generators, Starters, Auxiliary Power Supply Unit, Booster Coils, Control Boxes, Flowmeters, Float Retracting Motors, Valves and Oil Separators.

With a background of a hundred brilliant non-stop flights to Hawaii, the Consolidated PBY-4 tackles an inspiring new task—30-hour scheduled flights to France. American Export Airlines, specifying Eclipse Equipment for the great 2400 horsepower flying boat, has followed a tradition solidly based upon the satisfying performance of Eclipse accessory units on the planes of every airline in America, and most airlines abroad.

ECLIPSE AVIATION
DIVISION OF BENDIX AVIATION CORPORATION
BENDIX, NEW JERSEY

Oct. 29 - '38

THE WASHINGTON POST: SA

6-Mile-a-Minute Flight by New Army Plane Hailed as Answer to Foreign Air Challenge

Lieut. Benjamin S. Kelsey (inset) flew a P-37-type plane shown here from Dayton, Ohio, to Buffalo—360 miles in 61 minutes—for an unofficial Army plane speed record

Navy's 'Fortress' Here Makes Dash From Coast President Will See It

America's answer to the challenge for air supremacy was revealed yesterday when the Army disclosed details of the flight of a pursuit plane which traveled 360 miles in 61 minutes.

Military authorities were particularly gratified by the fact that the 6-mile-a-minute flight, which took place Wednesday, was made in a pursuit plane carrying full military equipment, because bombers recently have been developing speeds outstripping the small fighting craft intended to intercept bombardment planes.

Foreign speed claims also will be answered by the new fighter. The German Messerchmitt is believed to have traveled at 380 miles per hour, but reports received here state that it was stripped for racing. Britain's Spitfire exceeded 400 miles per hour, but was aided by a 75-mile-an-hour tail wind, officials declared.

As the Army was checking on the new record, the Navy's $1,000,000 Flying Dreadnaught arrived at Anacostia Naval Air Station yesterday after a 13-hour and 55 minute dash from San Diego, Calif.

Neither flight was made as a stunt, officials stressing the fact they were routine performances.

Lieut. Benjamin Kelsey made his 360-mile trip from Dayton, Ohio, to Buffalo, N. Y., to inspect another new Army plane while the Navy flying boat, commanded by Lieut. Comdr. Andrew Crinkley, came here on one day's notice for inspection by President Roosevelt.

The plane flown by Lieut. Kelsey already has passed the experimental stage and a squadron of 13 of them have been ordered for the Air Corps, officials said.

Although pleased by the success of the plane, known as the P-37, the Army intends to announce completion in a few days of another and even faster model, designated the P-40. An experimental craft, details of its design will not be made public for some time.

An all-metal, single-seater monoplane powered by a liquid-cooled Allison motor, the P-37 is a considerable departure from the earlier P-36, of which 210 have been ordered by the Army.

Most notable change is the use of a liquid-cooled engine rather than an air-cooled power plant. Army officials describe the older engine as "a big job which is like pushing a barn door through the atmosphere" and point to the superior streamlining and maneuverability which can be attained by use of the liquid-cooled type of motor.

To incorporate recent improvements, however, it has been necessary to turn out the new fleet with little regard for the possibility of mass production. Standardization and mass production are being carefully studied as part of the Administration's re-examination of defense needs.

President Roosevelt, who has frequently hinted that an increase in the Nation's air power may be necessary, will drive to Bolling Field and the Naval Air Station today to inspect first-line Army and Navy planes.

Oct '38

Russian Plane Plants Praised By Van Dusen

America is at least five years ahead of any other nation in the development of air maneuvers in conjunction with fleet exercises, C. A. Van Dusen, vice president of Consolidated Aircraft Corp., said yesterday.

Recently returned from Europe, Van Dusen said he was greatly impressed by the size of military aircraft production programs. He visited England, France, Russia, Germany and several smaller nations.

BUILD CONSAIR MODELS

"While I didn't get to see all of the plants in Russia, due to government restrictions and to lack of time," he said, "I saw a very efficient plant in Moscow and also the plant at Taganrog, where work is starting on the Consolidated Model 28 flying boat.

"A large force at the Moscow plant is turning out an efficient-looking twin-engine bombardment plane, which, from my observations, is considerably more difficult to build than many other designs I am familiar with. They have good production methods and a very large production, and the planes are comparable in size to the United States army YB-10 bombers."

FACTORIES HUGE

The Moscow plant, Van Dusen said, is three times as large as Consolidated's plant here, and the Taganrog plant is twice as large. He reported that he was shown every consideration by the Russian officials. The new subway in Moscow, he said, is better than any he has seen, and while the people lack some of the conveniences and luxuries found here, they "seem to be well fed, comfortably clothed and reasonably well housed."

In Germany, Van Dusen was escorted officially to various aircraft factories, and attended a luncheon at the German air force club with Gen. Ernst Udet, World war ace.

Navy's New Bomber Flies Here From West Coast in 13 Hours

Washington D.C. Oct. 28-38.

The Navy's new $1,000,000 experimental long-range bomber landed at the Naval Air Station, in Anacostia, at 2:05 a.m. today, completing a non-stop flight from San Diego, Calif., in an elapsed time of 13 hours and 55 minutes.

Carrying a crew of seven, the huge craft actually made the approximately 2,300-mile flight in about 13 hours. The ship arrived here about 1 a.m., but, because of a number of unlighted buoys in the Anacostia River, the commander circled the area for about three-quarters of an hour to make sure of his bearings, naval officials said.

Meanwhile, a 6-mile-a-minute war plane was viewed as the Army's immediate answer to European rivalry for speed supremacy in the air following a 360-mile flight in 61 minutes from Dayton, Ohio, to Buffalo, N. Y., yesterday by Lt. Benjamin S. Kelsey. This flight lifted the wraps from a pursuit ship about which the Air Corps previously had little to say.

The Navy's huge airboat had slipped off secretly at San Diego at 12:10 p.m. (Eastern standard time) yesterday. At the controls of the 25-ton craft was Lt. Comdr. Andrew Crinkley, pioneer naval aviator, who has been conducting final acceptance tests since the ship was turned over to the Navy Trial Board by Consolidated Aircraft Corp.

With a crew of 15, the craft is said to be capable of flying 4,000 miles without refueling. It was the first big flying boat to make a transcontinental flight without landing gear equipment.

The ship is equipped with four 14-cylinder Pratt-Whitney motors, each of which has a Navy Department rating of 900 horsepower. Its wing span is 115 feet and it measures 23 feet 3 inches in height.

Naval officials would not disclose any details of the craft's armament, speed or altitude.

The Army's new pursuit plane, the Curtis P-37, already had passed the experimental stage before yesterday's 360-mile flight. An initial squadron of 13 ordered last December soon will be delivered, officials said.

Without halting to gloat over the P-37, the Army intends to announce in a few days another and presumably even faster plane. Designated the P-40, it is an experimental job, and most details will not be disclosed for the present.

Both Germany and Great Britain have combat planes for which they have boasted even greater speed than that attained by the P-37. But the Air Corps has a ready answer.

Lt. Kelsey's flight and earlier trials, which were kept secret, were made with full military equipment. Germany claimed some 380 miles an hour for its Messerschmitt, but reports here are that it was stripped for racing. Although Britain's Spitfire exceeded 400 miles an hour, it was aided by a 75-mile tailwind, American officials contended.

Officials took particular satisfaction in the performance of the American plane because high-powered bombers, both here and abroad, have been threatening to outspeed pursuit ships, whose primary function is to intercept the bombers.

After months of testing a single experimental model, the Army gave a $531,305 order to the Curtiss plant at Buffalo for the first P-37 squadron.

In order to incorporate improvements, it has been necessary to turn out the new fleet with little regard for the possibility of mass production. That possibility is involved in the administration's restudy of defense needs.

The new pursuit plane is an all-metal, low-winged monoplane, with single engine and single seat. It is similar to the Curtiss P-36 pursuit, 210 of which are being delivered to the Army. Officials credit the new plane with a high rate of climb and great maneuverability.

The Army also has ordered a squadron of fighting planes of another type, the Bell "Airacuda," which has two motors, propellers in the rear, six guns, including two aircraft cannon, and a crew of five.

Its speed has not been announced, but the War Department said it was believed sufficient to overhaul and vanquish any modern bomber now in production.

Consolidated Could Carry 100

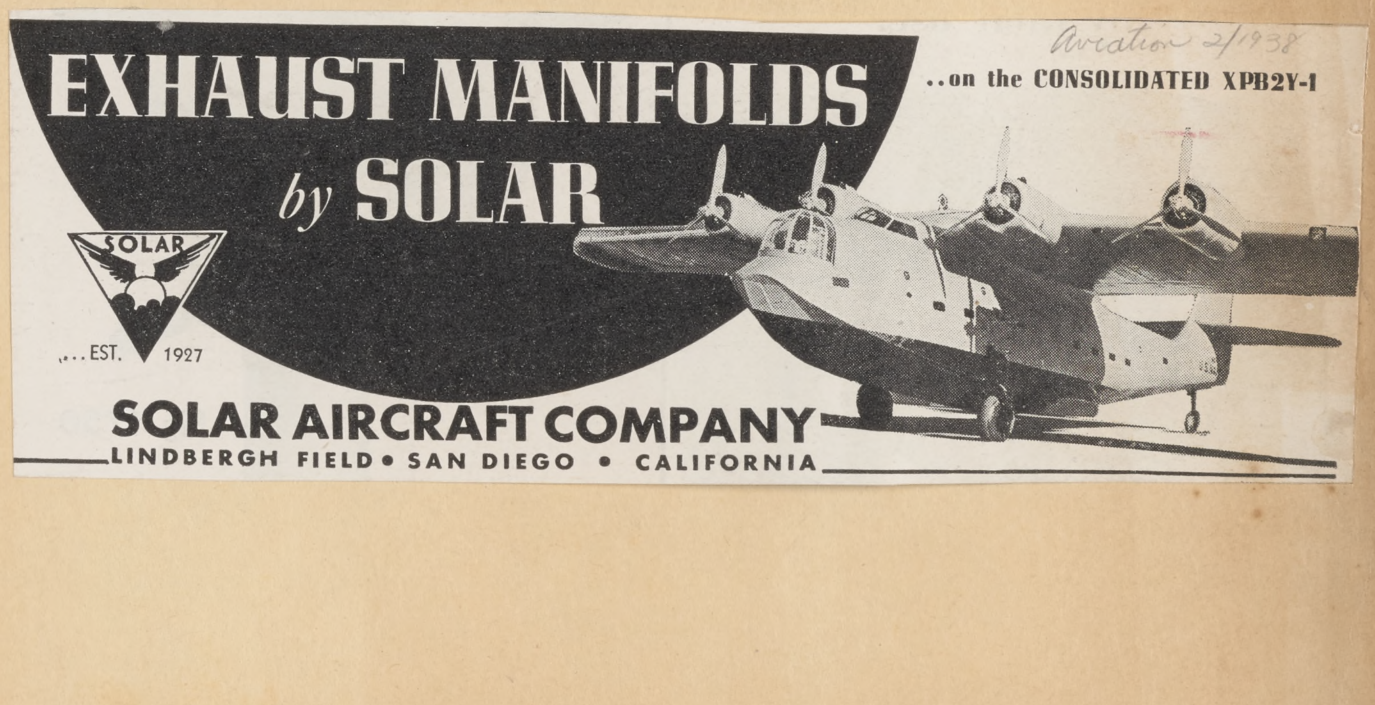
Aviation 2/1938

FURTHER FIGURES on the new Consolidated commercial trans-oceanic flying boat (announced exclusively in the January issue of AVIATION) show that this craft can be supplied with interior arrangements to accommodate 100 passengers and baggage on eastbound trans-Atlantic flights, and 75 passengers and baggage on westbound flights. These payload increases entail a corresponding decrease in the ship's super-luxury recreational facilities, as illustrated in our January issue, but no change in stateroom size or luxury, and the same performance is maintained.

● **That "routine transfer of equipment"** label the Navy puts on its mass flights from San Diego to Honolulu (or to the Canal Zone) used to sound a little phony to us, for after all they have been astounding aeronautical feats. In the European League they would have won their crews whole chests full of medals. But last month the Navy casually sent another eighteen patrol bombers across to Hawaii; and announced it would send a dozen more in July or August; enough more in November to make the year's total 42. We give up. That's not a routine. That's a habit.

● **What a fleet of patrol bombers** the Navy is going to have pretty soon! Month ago a $4,500,000 contract for 33 more twin-engined Consolidateds brought the number of that type on-hand or on-order up to 255. Now comes a $5,299,538 contract to Glenn L. Martin for 21 patrol bombers of a new twin-engined gull-winged design that is expected to beat everything in its class.

Aviation 2/1938



Aviation 2/1938

EXHAUST MANIFOLDS by SOLAR

..on the CONSOLIDATED XPB2Y-1

SOLAR

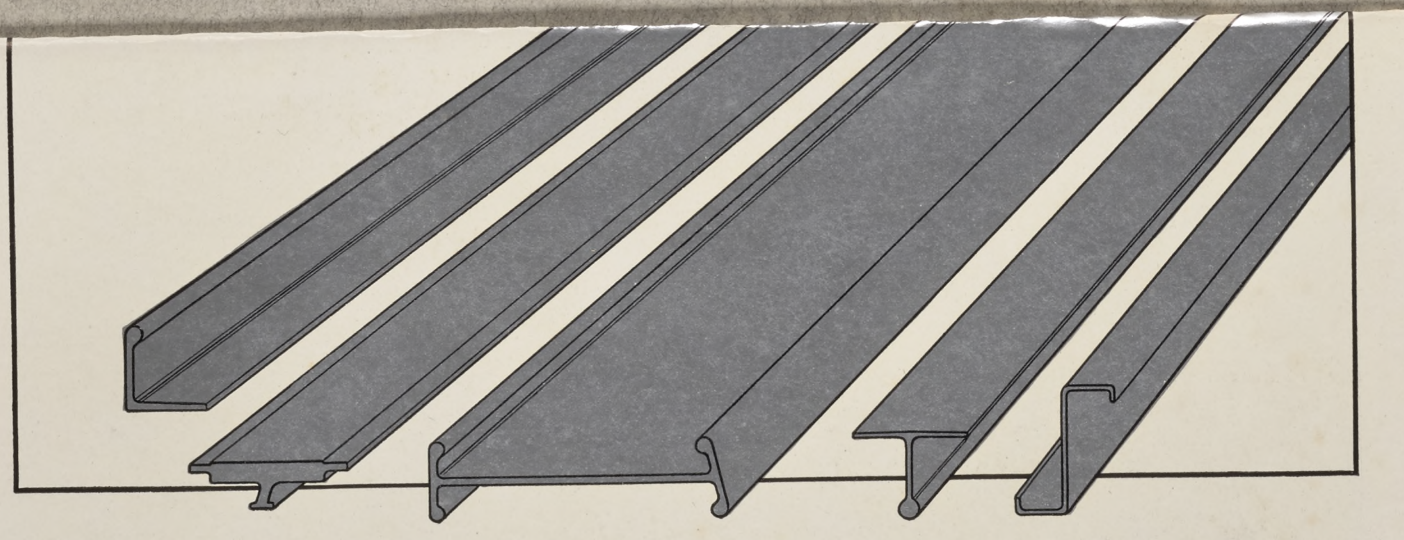
...EST. 1927

SOLAR AIRCRAFT COMPANY
LINDBERGH FIELD • SAN DIEGO • CALIFORNIA

CONSOLIDATED AIRCRAFT CORP., San Diego, Cal. Aviation 2/1938

R. H. Fleet, Pres.; C. A. Van Dusen. Works Mgr.; W. M. Shanahan. Treas.: R. A. Stanberry, Secy.; I. M. Laddon. Chief Engr.; C. T. Leigh, Materials Supv.: E. S. Gott.

HANCOCK

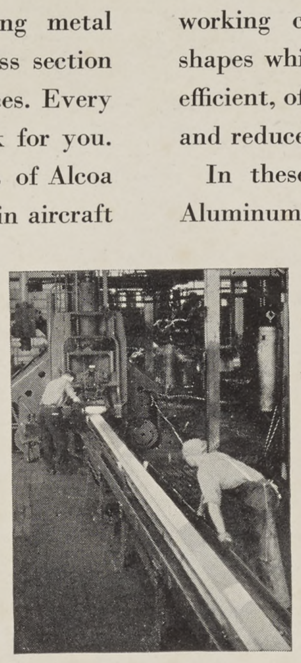


THIS IS *Aluminum* READY

TO GIVE ITS LAST OUNCE OF STRENGTH FOR YOU

These are extrusions made by forcing metal through a die, to give exactly the cross section needed. There are no unnecessary ounces. Every ounce is used so its strength can work for you.

So it is only natural that extrusions of Alcoa Aluminum Alloys are used extensively in aircraft structures. They give the most strength for the weight. They can be made to interlock, too, and thus simplify the requirements of assembly. You have seen them applied for parts ranging from wing spars to the decorative moulding inside the cabin.



Development of the technique of making extrusions of Alcoa Aluminum Alloys for aircraft has been forwarded by the experience of working closely with aircraft engineers. The shapes which are now being produced are highly efficient, often result in significant weight savings, and reduce costs.

In these respects extruded shapes of Alcoa Aluminum Alloys are characteristic of the production of Alcoa Aluminum for aircraft use. Close cooperation with aircraft builders has made it possible to provide not only the natural advantages of Aluminum, but also the "last ounces" of usefulness which come from gearing production methods to the requirements of the user. ALUMINUM COMPANY OF AMERICA, 2182 Gulf Building, Pittsburgh, Pennsylvania.

ALCOA ALUMINUM

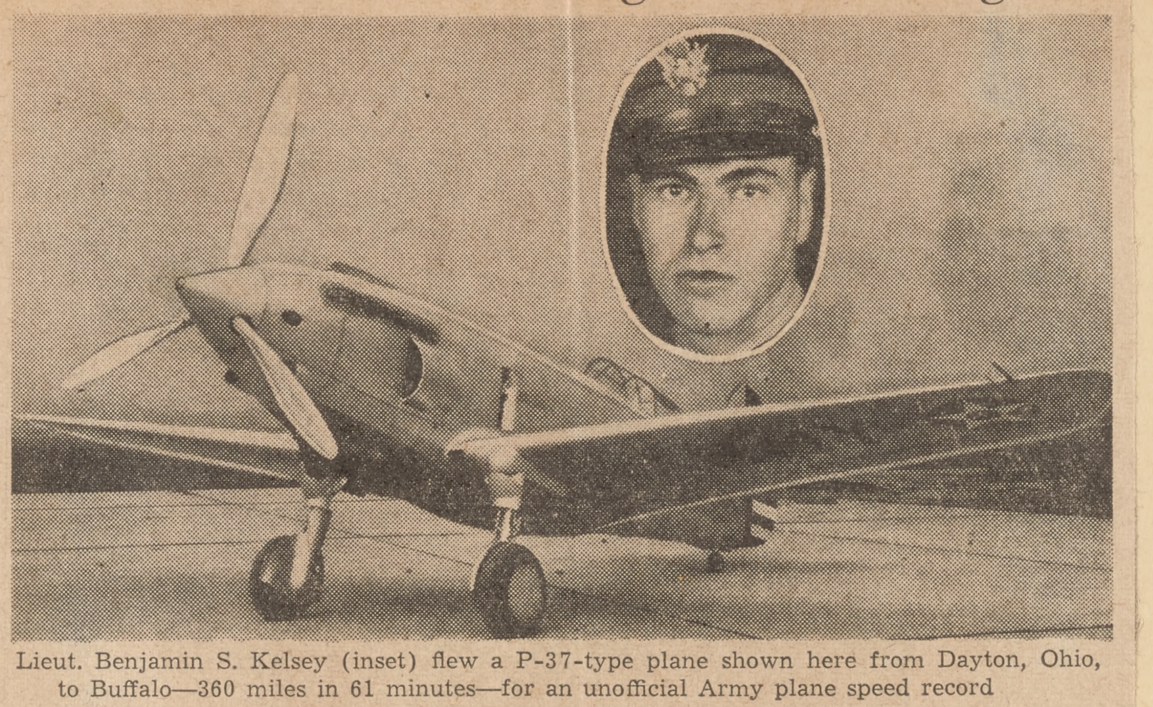
ALCOA · ALUMINUM

AVIATION
September, 1939

Oct. 29-'38

THE WASHINGTON POST: SA

6-Mile-a-Minute Flight by New Army Plane Hailed as Answer to Foreign Air Challenge



Lieut. Benjamin S. Kelsey (inset) flew a P-37-type plane shown here from Dayton, Ohio, to Buffalo—360 miles in 61 minutes—for an unofficial Army plane speed record

Navy's 'Fortress' Here Makes Dash From Coast President Will See It

America's answer to the challenge for air supremacy was revealed yesterday when the Army disclosed details of the flight of a pursuit plane which traveled 360 miles in 61 minutes.

Military authorities were particularly gratified by the fact that the 6-mile-a-minute flight, which took place Wednesday, was made in a pursuit plane carrying full military equipment, because bombers recently have been developing speeds outstripping the small fighting craft intended to intercept bombardment planes.

Foreign speed claims also will be answered by the new fighter. The German Messerchmitt is believed to have traveled at 380 miles per hour, but reports received here state that it was stripped for racing. Britain's Spitfire exceeded 400 miles per hour, but was aided by a 75-mile-an-hour tail wind, officials declared.

As the Army was checking on the new record, the Navy's $1,000,000 Flying Dreadnaught arrived at Anacostia Naval Air Station yesterday after a 13-hour and 55 minute dash from San Diego, Calif.

Neither flight was made as a stunt, officials stressing the fact they were routine performances.

Lieut. Benjamin Kelsey made his 360-mile trip from Dayton, Ohio, to Buffalo, N. Y., to inspect another new Army plane while the Navy flying boat, commanded by Lieut. Comdr. Andrew Crinkley, came here on one day's notice for inspection by President Roosevelt.

The plane flown by Lieut. Kelsey already has passed the experimental stage and a squadron of 13 of them have been ordered for the Air Corps, officials said.

Although pleased by the success of the plane, known as the P-37, the Army intends to announce completion in a few days of another and even faster model, designated the P-40. An experimental craft, details of its design will not be made public for some time.

An all-metal, single-seater monoplane powered by a liquid-cooled Allison motor, the P-37 is a considerable departure from the earlier P-36, of which 210 have been ordered by the Army.

Most notable change is the use of a liquid-cooled engine rather than an air-cooled power plant. Army officials describe the older engine as "a big job which is like pushing a barn door through the atmosphere" and point to the superior streamlining and maneuverability which can be attained by use of the liquid-cooled type of motor.

To incorporate recent improvements, however, it has been necessary to turn out the new fleet with little regard for the possibility of mass production. Standardization and mass production are being carefully studied as part of the Administration's re-examination of defense needs.

President Roosevelt, who has frequently hinted that an increase in the Nation's air power may be necessary, will drive to Bolling Field and the Naval Air Station today to inspect first-line Army and Navy planes.

Oct '38

Russian Plane Plants Praised By Van Dusen

America is at least five years ahead of any other nation in the development of air maneuvers in conjunction with fleet exercises, C. A. Van Dusen, vice president of Consolidated Aircraft Corp., said yesterday.

Recently returned from Europe, Van Dusen said he was greatly impressed by the size of military aircraft production programs. He visited England, France, Russia, Germany and several smaller nations.

BUILD CONSAIR MODELS

"While I didn't get to see all of the plants in Russia, due to government restrictions and to lack of time," he said, "I saw a very efficient plant in Moscow and also the plant at Taganrog, where work is starting on the Consolidated Model 28 flying boat.

"A large force at the Moscow plant is turning out an efficient-looking twin-engine bombardment plane, which, from my observations, is considerably more difficult to build than many other designs I am familiar with. They have good production methods and a very large production, and the planes are comparable in size to the United States army YB-10 bombers."

FACTORIES HUGE

The Moscow plant, Van Dusen said, is three times as large as Consolidated's plant here, and the Taganrog plant is twice as large. He reported that he was shown every consideration by the Russian officials. The new subway in Moscow, he said, is better than any he has seen, and while the people lack some of the conveniences and luxuries found here, they "seem to be well fed, comfortably clothed and reasonably well housed."

In Germany, Van Dusen was escorted officially to various aircraft factories, and attended a luncheon at the German air force club with Gen. Ernst Udet, World war ace.

Navy's New Bomber Flies Here From West Coast in 13 Hours

WASHINGTON D.C. Oct. 28-38.

The Navy's new $1,000,000 experimental long-range bomber landed at the Naval Air Station, in Anacostia, at 2:05 a.m. today, completing a non-stop flight from San Diego, Calif., in an elapsed time of 13 hours and 55 minutes.

Carrying a crew of seven, the huge craft actually made the approximately 2,300-mile flight in about 13 hours. The ship arrived here about 1 a.m., but, because of a number of unlighted buoys in the Anacostia River, the commander circled the area for about three-quarters of an hour to make sure of his bearings, naval officials said.

Meanwhile, a 6-mile-a-minute war plane was viewed as the Army's immediate answer to European rivalry for speed supremacy in the air following a 360-mile flight in 61 minutes from Dayton, Ohio, to Buffalo, N. Y., yesterday by Lt. Benjamin S. Kelsey. This flight lifted the wraps from a pursuit ship about which the Air Corps previously had little to say.

The Navy's huge airboat had slipped off secretly at San Diego at 12:10 p.m. (Eastern standard time) yesterday. At the controls of the 25-ton craft was Lt. Comdr. Andrew Crinkley, pioneer naval aviator, who has been conducting final acceptance tests since the ship was turned over to the Navy Trial Board by Consolidated Aircraft Corp.

With a crew of 15, the craft is said to be capable of flying 4,000 miles without refueling. It was the first big flying boat to make a transcontinental flight without landing gear equipment.

The ship is equipped with four 14-cylinder Pratt-Whitney motors, each of which has a Navy Department rating of 900 horsepower. Its wing span is 115 feet and it measures 23 feet 3 inches in height.

Naval officials would not disclose any details of the craft's armament, speed or altitude.

The Army's new pursuit plane, the Curtis P-37, already had passed the experimental stage before yesterday's 360-mile flight. An initial squadron of 13 ordered last December soon will be delivered, officials said.

Without halting to gloat over the P-37, the Army intends to announce in a few days another and presumably even faster plane. Designated the P-40, it is an experimental job, and most details will not be disclosed for the present.

Both Germany and Great Britain have combat planes for which they have boasted even greater speed than that attained by the P-37. But the Air Corps has a ready answer.

Lt. Kelsey's flight and earlier trials, which were kept secret, were made with full military equipment. Germany claimed some 380 miles an hour for its Messerschmitt, but reports here are that it was stripped for racing. Although Britain's Spitfire exceeded 400 miles an hour, it was aided by a 75-mile tailwind, American officials contended.

Officials took particular satisfaction in the performance of the American plane because high-powered bombers, both here and abroad, have been threatening to outspeed pursuit ships, whose primary function is to intercept the bombers.

After months of testing a single experimental model, the Army gave a $531,305 order to the Curtiss plant at Buffalo for the first P-37 squadron.

In order to incorporate improvements, it has been necessary to turn out the new fleet with little regard for the possibility of mass production. That possibility is involved in the administration's restudy of defense needs.

The new pursuit plane is an all-metal, low-winged monoplane, with single engine and single seat. It is similar to the Curtiss P-36 pursuit, 210 of which are being delivered to the Army. Officials credit the new plane with a high rate of climb and great maneuverability.

The Army also has ordered a squadron of fighting planes of another type, the Bell "Airacuda," which has two motors, propellers in the rear, six guns, including two aircraft cannon, and a crew of five.

Its speed has not been announced, but the War Department said it was believed sufficient to overhaul and vanquish any modern bomber now in production.

Consolidated Could Carry 100

Aviation 2/1938

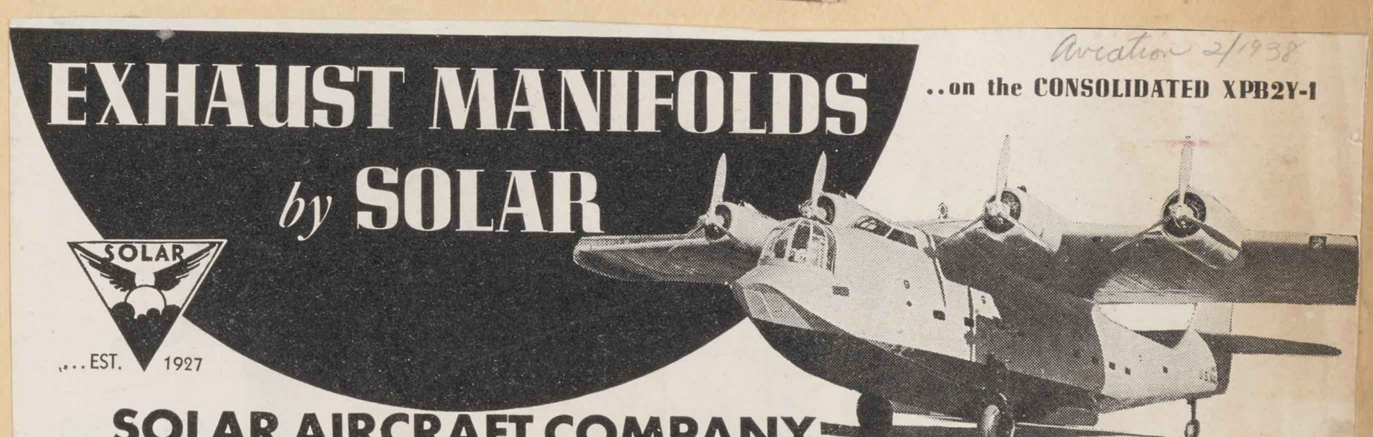
FURTHER FIGURES on the new Consolidated commercial trans-oceanic flying boat (announced exclusively in the January issue of AVIATION) show that this craft can be supplied with interior arrangements to accommodate 100 passengers and baggage on eastbound trans-Atlantic flights, and 75 passengers and baggage on westbound flights. These payload increases entail a corresponding decrease in the ship's super-luxury recreational facilities, as illustrated in our January issue, but no change in stateroom size or luxury, and the same performance is maintained.

- **That "routine transfer of equipment"** label the Navy puts on its mass flights from San Diego to Honolulu (or to the Canal Zone) used to sound a little phony to us, for after all they have been astounding aeronautical feats. In the European League they would have won their crews whole chests full of medals. But last month the Navy casually sent another eighteen patrol bombers across to Hawaii; and announced it would send a dozen more in July or August; enough more in November to make the year's total 42. We give up. That's not a routine. That's a habit.

- **What a fleet of patrol bombers** the Navy is going to have pretty soon! Month ago a $4,500,000 contract for 33 more twin-engined Consolidateds brought the number of that type on-hand or on-order up to 255. Now comes a $5,299,538 contract to Glenn L. Martin for 21 patrol bombers of a new twin-engined gull-winged design that is expected to beat everything in its class.

Aviation 2/1938

Aviation 2/1938



EXHAUST MANIFOLDS by SOLAR

..on the CONSOLIDATED XPB2Y-1

SOLAR AIRCRAFT COMPANY
LINDBERGH FIELD • SAN DIEGO • CALIFORNIA

CONSOLIDATED AIRCRAFT CORP., San Diego, Cal. Aviation 2/1938

R. H. Fleet, Pres.; C. A. Van Dusen. Works Mgr.; W. M. Shanahan. Treas.: R. A. Stanberry, Secy.; I. M. Laddon. Chief Engr.; C. T. Leigh, Materials Supv.: E. S. Gott.

1/10/39 S.D. UNION

66 San Diego Sky Cruisers Hop Today for West Indies

Amphibians, Patrol Bombers In Air Armada

San Diego skies will throb this morning with the roar of America's air might as two great flights of sky cruisers—66 ships in all—will take off, one bound for Guantanamo, Cuba, and the other for Aruba, West Indies.

The double-barreled show will start before sunrise because the Guantanamo flight, which began yesterday, was forced back by stormy weather over the mountains.

Starting at 5:30 a.m. the 18 amphibians comprising Utility Squadron VJ-1, Comdr. Allen I. Price commanding, will prepare to take the air. It was estimated they all would be aloft and headed eastward within 45 minutes after the first ship hops.

START AT 8:30 A.M.

At 8 the first of 48 mighty patrol bombers of Fleet Patrol Wing 1, Capt. Marc A. Mitscher commanding, will move down the runway and taxi to its starting position. The first of the giant airboats is expected by Capt. Mitscher to leap into the air at 8:30. In all, the departure of the 48 great sky cruisers is estimated to require two hours.

As the big ships leave the water they will rendezvous two miles high over the Coronado islands and when all have taken off the flight will start southward to Coco Solo, Canal Zone. Surface guard ships to be stationed along the route include the aircraft carrier Saratoga, cruiser Milwaukee, destroyer Cummings and the aircraft tenders Wright and Gannett.

From San Diego the utility squadron will fly the regular "ferry" route to Florida, thence to Guantanamo for use in a utility capacity with the fleet during its Caribbean exercises. Several stops on the way east are planned. The Sikorsky unit of 10 amphibians is scheduled for stops at El Paso, San Antonio, Pensacola and Miami. The Grumman unit, eight ships, is listed for stops at Tucson, El Paso, Midland, San Antonio, New Orleans, Pensacola, Tampa and Miami. On the way to Guantanamo from Miami the Grummans are to pause at Camaguey, Cuba.

REACH PENSACOLA TODAY

Tentative schedules call for arrival of the utility squadron at Pensacola tomorrow, Miami Thursday and Guantanamo Friday. The ships are expected to return here ~~in April.~~

Route of the 48 ships of Patrol Wing 1 will be along the Mexican coast to the Gulf of Fonseca, thence eastward over the Nicaraguan jungles to Chiriqui lagoon in the Caribbean and then to the eastern entrance of the Panama canal.

At Coco Solo the wing will be joined by 50 more sky cruisers from Patrol Wing 3, Capt. Frederick C. Sherman commanding, and the reinforced armada is scheduled tentatively to take off for Aruba, West Indies, Jan. 19.

The patrol bombers are expected to take part in flights from the equator to the Virgin islands during the fleet operations and after the fleet review at New York April 26 are to return to San Diego, with the exception of one squadron, VP-12, which has been assigned to Hampton Roads. This squadron is to be replaced by Squadron 16, whose officers and men are now here awaiting delivery of new planes from Consolidated aircraft.

S.D. ~~UNION~~ TRIBUNE 1/10/39

Fast Pace Set On 3087-Mile Flight

Nearing the group rendezvous area over the carrier Saratoga at the tip of Lower California, 800 miles below Pt. Loma, 48 navy patrol bombers set a fast pace on their 3087-mile flight from San Diego to the Canal Zone today.

Will Unite Over Saratoga

The planes, which took off from the bay between 8:20 and 11:12 a.m., are to assemble in a giant formation over the Saratoga at 5 p.m., naval aviation authorities reported.

Meanwhile, a second group of 18 planes, all amphibians, which departed from North Island at 6:30 a.m. for Guantanamo, Cuba, via Pensacola and Miami, Fla., was flying over Texas this afternoon. Ten of the 18 Sikorsky amphibians refueled at El Paso and began leaving at 1:30 p.m. (MST) for Abilene, The Associated Press reported. Flight Comdr. Allen I. Price said they would spend the night in Abilene, instead of continuing to San Antonio, as planned. Eight Grumman amphibians will spend tonight in Midland, Tex., said Price.

The 48 planes en route from here to Coco Solo, C. Z., flew in four groups of 12 planes each along the Lower California coast. The first squadron, VP-9, was 450 miles south of Pt. Loma at 1 p.m., four hours and 15 minutes after it left San Diego. Trailing it were squadrons VP-7, VP-12 and VP-11, in the order named, with squadron VP-11, which left here at 11:12 a.m., 120 miles in the rear.

S. D. Planes to Hop From Texas Today

S.D. UNION 1/13/39

Eighteen amphibian planes which left here Tuesday for Cuba were widely separated in Texas last night, The Associated Press reported.

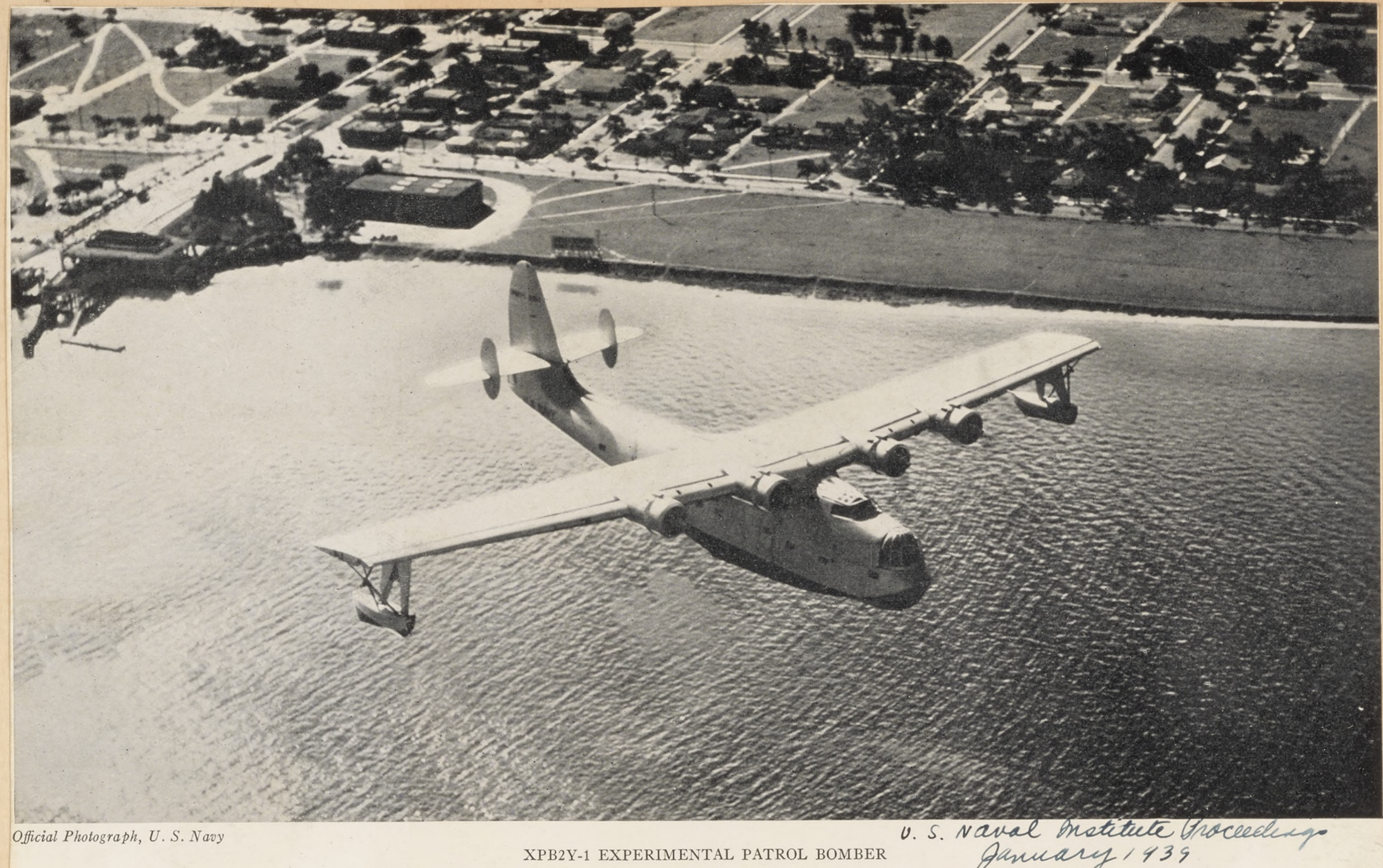
Eight Grumman planes, Lt. Albert Dupuy commanding, reached Dallas after a flight from Midland, Tex. and are expected to continue eastward today.

Nine Sikorsky amphibians spent the day in Abilene, Tex., because of bad weather. The 10th Sikorsky with Lt. F. L. Ashworth and a crew of seven joined the others at Abilene after repairing motor trouble which delayed it at El Paso.

The 48 patrol bombers, which left here Tuesday after the amphibians, are at Coco Solo naval base, Panama Canal zone.

Special Consair Dividend

Consolidated Aircraft Corp, has declared a special dividend of $1 on the common stock, payable Dec. 19. On Dec. 27, 1937, a 50c declaration was made on this class. American Aviation 12/1/38



Official Photograph, U. S. Navy

XPB2Y-1 EXPERIMENTAL PATROL BOMBER

U. S. Naval Institute Proceedings January 1939

First 4-engine plane of the PBY series. Built by the Consolidated Aircraft Corporation. Now undergoing tests by the U. S. Navy.

---

48 NAVY BOMBERS SAFE AT PANAMA; 18 OTHER SHIPS GROUNDED IN TEXAS

S.D. UNION 1/12/39

San Diego-based navy bombers yesterday safely completed the greatest mass non-stop flight in U. S. naval history—a 3000-mile trip to the Panama Canal Zone in one day.

Eighteen other navy planes en route from San Diego to Cuba were grounded in central Texas by bad weather.

THREE PLANES REFUEL

Three of the 48 planes descended en route for refueling alongside the aircraft tender Wright in the Gulf of Fonseca, off the coast of Honduras.

Officers belittled the feat, saying it was "routine and uneventful, and that the refueling simply was a "precautionary measure."

Leading the fleet in the mass formation flight, planes of VP-9 squadron began settling gracefully at Coco Solo air base at 10:07 a.m. yesterday. The squadron took off from San Diego bay at 8:47 the previous morning. Last of the 48 planes, including the three which stopped for refueling, had landed in the Canal Zone at 12:10 p.m.

Flight officers reported weather conditions were excellent, but poor radio reception made difficult direct contact between North Island and the Canal. Efforts were being made to establish a relay through the U. S. S. Milwaukee, stationed off Manzanillo, Mex. Isolated squalls and headwinds slowed speeds on the last leg of the trip. The Consolidated-built planes weathered the flight without mishap.

AVERAGE SPEED 121 M. P. H.

Average speed for the lead squadron was said to have been 121 land miles an hour. Squadrons VP-7, 12 and 11, tail-enders on the flight, maintained an estimated average speed of 140 miles an hour to close the gap between them and the leaders. The flight was commanded by Capt. Marc Mitscher, Patrol Wing 1 commander.

From Coco Solo the squadron will join the fleet for the Caribbean war games. Wing 1 will remain in the Canal Zone for two weeks for a check-up, The Associated Press reported from Cristobal. Three squadrons of Patrol Wing 3, based at Coco Solo, will take off next month for a secret destination, also to engage in fleet maneuvers.

Nineteen merchant vessels, southbound, were rushed through the Panama canal yesterday, and eight merchantmen and eight units of the U. S. Base force fleet passed through, northbound, in last-minute clearance to prepare for Saturday, when the United States fleet will pass northbound through the locks, proceeding to the Atlantic for war games.

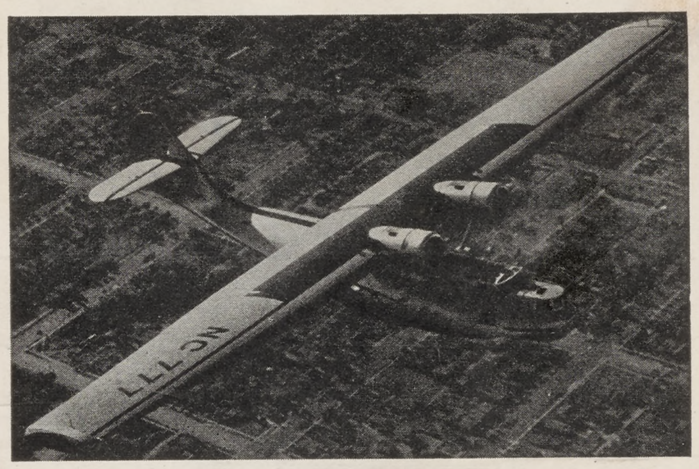
The 18 planes of VJ-1 squadron, en route from San Diego to Florida and Cuba to participate in the Caribbean maneuvers, were held in Texas by the weather, the Associated Press reported from Abilene.

Eight Grumman amphibians awaited improved take-off conditions at Midland, Tex., and nine Sikorsky planes were at Abilene. One Sikorsky was forced down at El Paso for repairs.

Flight - 3/30/39

Top left is the Consolidated model 28, generally similar to the PBY series of the American Navy.

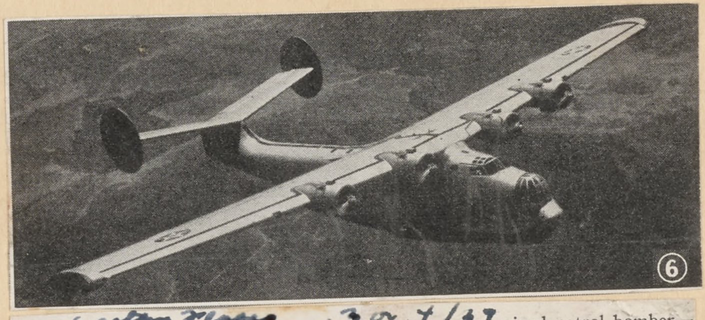
Model 28 (2 Wasps, 1800 h.p.)



Consolidated Model 28

Western Flying 3 or 4/39

TYPE: Cabin, flying boat, monoplane.
DIMENSIONS: Length overall, 67 ft. 1 in. Span, 104 ft.
WEIGHTS: Gross weight loaded, 27,000 lbs.
POWER PLANT: Two Pratt & Whitney Twin-Row Wasp engines, R1830-SCG., rated 900 h.p.
PERFORMANCE: Maximum cruising distance over 4000 miles.
CONSTRUCTION: Wings, aluminum alloy, stressed skin type construction with fabric-covered ailerons and trailing edges. Hull: All-metal aluminum alloy monocoque type. Empennage, fabric-covered elevators and rudder, stressed skin stabilizer and fin.



Western Flying 3 or 4/39

6. The XPB2Y-1, a Consolidated product, is a four-engined patrol bomber—the biggest and one of the most secret of the Navy's aerial weapons.

4/5/39 The Aeroplane

A Long-range Boat

BRITISH NEWSPAPERS have recorded that a new big twin-motor flying-boat is being built in secret by the Consolidated Aircraft Corporation at San Diego, California, U.S.A. The stories mention a maximum range of 12,000 miles and that the machine should be ready in about two months. We first heard of this boat nearly a year ago. At that time we could say nothing about it. And even now we should not care to say how much we believe in it.

Apparently it is to have two of the new 2,500 h.p. Pratt and Whitney 18-cylinder radial motors. The all-up weight is to be about 50,000 lb. (22,600 kg.). The empty weight is about 20,000 lb. (9,070 kg.). Thus the disposable load is about one-and-a-half times the empty weight of the flying-boat; an extraordinarily good figure if it works out so.

The range is said to be 5,000 miles (8,050 km.) with 8,000 lb. (3,620 kg.) of bombs; 2,500 miles (4,020 km.) with 11,000 lb. (5,000 kg.) of bombs; and 9,000 miles (14,460 km.) with no bombs.

The present World's Distance Record set up by the British Vickers Wellesleys is 7,157 miles (11,520 km.), but could easily be raised by 1,500 miles by the same machines.

The new Consolidated boat is reputed to be designed for a maximum speed of 360 m.p.h. and to cruise normally and economically at somewhere about 280 m.p.h.

The Consolidated Corporation has some scheme for an assisted take-off for this flying-boat whereby the maximum range could be increased to 12,000 miles (19,300 km.). If this really does prove to be possible the Consolidated flying-boat will be able to fly non-stop to any point in the World from any other given position in one hop.

S. D. PLANES AT CANAL ZONE

S.D. SUN 1/11/39

Largest Mass Hop In History Completed

Completing the largest mass hop in U. S. aviation history, all but three of 48 planes which took off here yesterday for the Canal Zone, landed at Coco Solo today.

First of the airboats in the lead squadron, commanded by Lieut. Comdr. B. L. Braun, landed at 10:07 a. m. (P. S. T.), after 25 hours, 43 minutes in the air. Comdr. Braun's squadron began taking off from San Diego at 8:25 a. m. yesterday.

Averaging better than 116 miles per hour, the giant ships were aided by weather, marred only occasionally by tropical rain squalls.

Half an hour after arrival of the first squadron of nine, a second squadron of 11 landed, led by Flight Comdr. Marc A. Mitscher. The other two squadrons followed, except for three planes from Squadron VP-7, which landed in the Gulf of Fonseca off Nicaragua. Otherwise the flight was without incident. The squadrons making up the flight were VP-9, VP-7, VP-12 and VP-11, flying in that order.

Throughout the night radio contact was maintained at two-hour intervals with the North Island base, although reception at times was poor because of static conditions.

The best time of a San Diego-Coco Solo non-stop flight was made by 14 Consolidated bombers Dec. 8, 1937—22 hours, 20 minutes.

Meanwhile, unfavorable weather today in Texas delayed the flight of 18 amphibian planes en route from San Diego to Guantanamo Bay, Cuba, for Fleet Problem 20.

Officials at Biggs Army Field said a "cold front" was expected to prevent the take-off of the planes that spent last night in El Paso, Midland and Abilene.

One of the 10 Sikorsky planes developed motor trouble and returned to El Paso yesterday. Lieut. F. L. Ashworth, pilot, said his plane had been repaired but would not leave until the weather was more favorable. The other nine Sikorskys spent the night in Abilene while the eight slower Grummans stayed in Midland, Tex.

From Coco Solo, the patrol bombers will fly with 40 bombers of Patrol Wing Three in reconnaissance missions over the West Indies to the Virgin Islands on the east and the equator on the south. They will operate for a short time out of Aruba, small Dutch island north of Venezuela, during the war games.

The 66 airboats and amphibians will conduct exercises on the Atlantic coast after the Fleet Problem, and will return to San Diego next summer.

SAN PEDRO SHIPS AT CANAL ZONE

BALBOA, C. Z. — Twenty-two units of the U. S. Fleet Base Force at San Pedro, Cal., reached here today to swell the number of vessels attached to the Pacific Fleet en route to the Atlantic ocean for the forthcoming annual maneuvers of America's combined sea forces.

The ships were commanded by Rear Adm. W. C. Watts, who arrived aboard his flagship, the USS Argonne.

Aero Club President

EARL PRUDDEN

S.D. TRIBUNE 1/4/38

S. D. LEADS LIST IN NATIONAL AVIATION UNIT

Earl Prudden, Ryan Aeronautical Co. vice president, will be installed president of the Aero club, San Diego chapter of the National Aeronautic association, at a meeting in Hotel San Diego next Monday night. Other officers are William Van Dusen, president of the board of air control, vice president; Douglas T. Kelly, Airtech president, second vice president; R. S. Madison, fiscal secretary of Consolidated Aircraft Corp., treasurer, and J. H. Waterbury, Consolidated Aircraft Corp. official, secretary.

The club promotes aviation activity in San Diego and disseminates aviation information. The club, composing 170 members, is the largest national aeronautic association chapter.

Friday, January 6, 1939

S.D. SUN

FIRM AWARDS SERVICE PINS

Service pins for 10 and five years' continuous employment have been awarded to 51 Consolidated Aircraft Corp. employes by Maj. Reuben H. Fleet, it was announced today

They are:

Ten years: S. C. McGuiness, Kurt Klein, Garner C. Green, H. I. Mandolf, J. L. Kelley, M. E. Taylor, W. B. Wheatley, H. V. Atkinson, Irma K. Robbins, Agnes C. Howard, A. J. Dolan, R. B. Dilling, T. P. Butterfield, R. A. Bussey, R. C. Hager, F. W. Bornemann, A. H. Sprenger, R. J. Hartmayer, C. V. Duddinski.

Five years: R. K. Whitney, Leta P. Davis, Robert Lamont, E. H. Watts, J. L. Theuws, H. E. Weihmiller, Otto C. Voss, E. P. Ehlert, David R. Kern, W. C. Bowlen, W. H. Hassler, F. A. Rosso, H. A. Fink, Charles C. Farnsworth, Leslie L. Wade, R. R. Biddle, A. Stieringer, B. M. Sheehan, H. D. Naseef, M. E. Aldrich, C. M. Szymczak, M. C. Hottleman, N. J. Hayman, K. F. Edelmaier, Leo Budzynski, E. F. Merlau, F. J. O'Connor, J. L. Weaver, Frank Cary, W. J. Gramse A. F. Rohloff, and Harry E. Walters.

---

66 S. D. NAVY PLANES WILL START LONG HOPS TO WAR GAMES MONDAY

S.D. UNION Jan. 5, 1939

Two sensational flights, one of 48 twin-motored bombers comprising Fleet Patrol Wing 1 under command of Capt. Marc A. Mitscher, from San Diego to Aruba, West Indies, via Panama, and the other of 18 amphibians from San Diego to Miami, Fla., thence to Guantanamo, are scheduled for next Monday.

The 18 Sikorsky and Grumman amphibians, comprising the utility wing and commanded by Comdr. Allen I. Price, are to attempt the first mass flight of this type ship from Pacific to Atlantic.

The flight track will be from San Diego to Phoenix, El Paso, and thence direct to Miami, where the planes will refuel before taking off for Cuba.

The flight track of the 48 bombers will be along the Mexican and Central American west coasts to the Gulf of Fonseca, over the Nicaraguan jungles to Chiriqui lagoon, thence on a southward course to Coco Solo, the naval air base at the eastern entrance to the Panama canal.

On Jan. 19, the 48 local-based bombers, augmented by 50 more from Coco Solo under command of Capt. Frederick C. Sherman, will take off from Panama for the 1100-mile flight to Aruba, near St. Thomas.

The 116 patrol and utility planes will operate out of Guantanamo and Aruba in Fleet Problem 20, making reconnaissance flights over an area extending from the equator to well north of the Lesser Antilles.

"San Diego Business" Vol. 8, No. 1, January 1939

Aircraft Industry Aircraft manufacturing continues to be the greatest industry in San Diego, and prospects for 1939 are that the present volume of business and employment by the three aircraft factories at Lindbergh Field will materially increase.

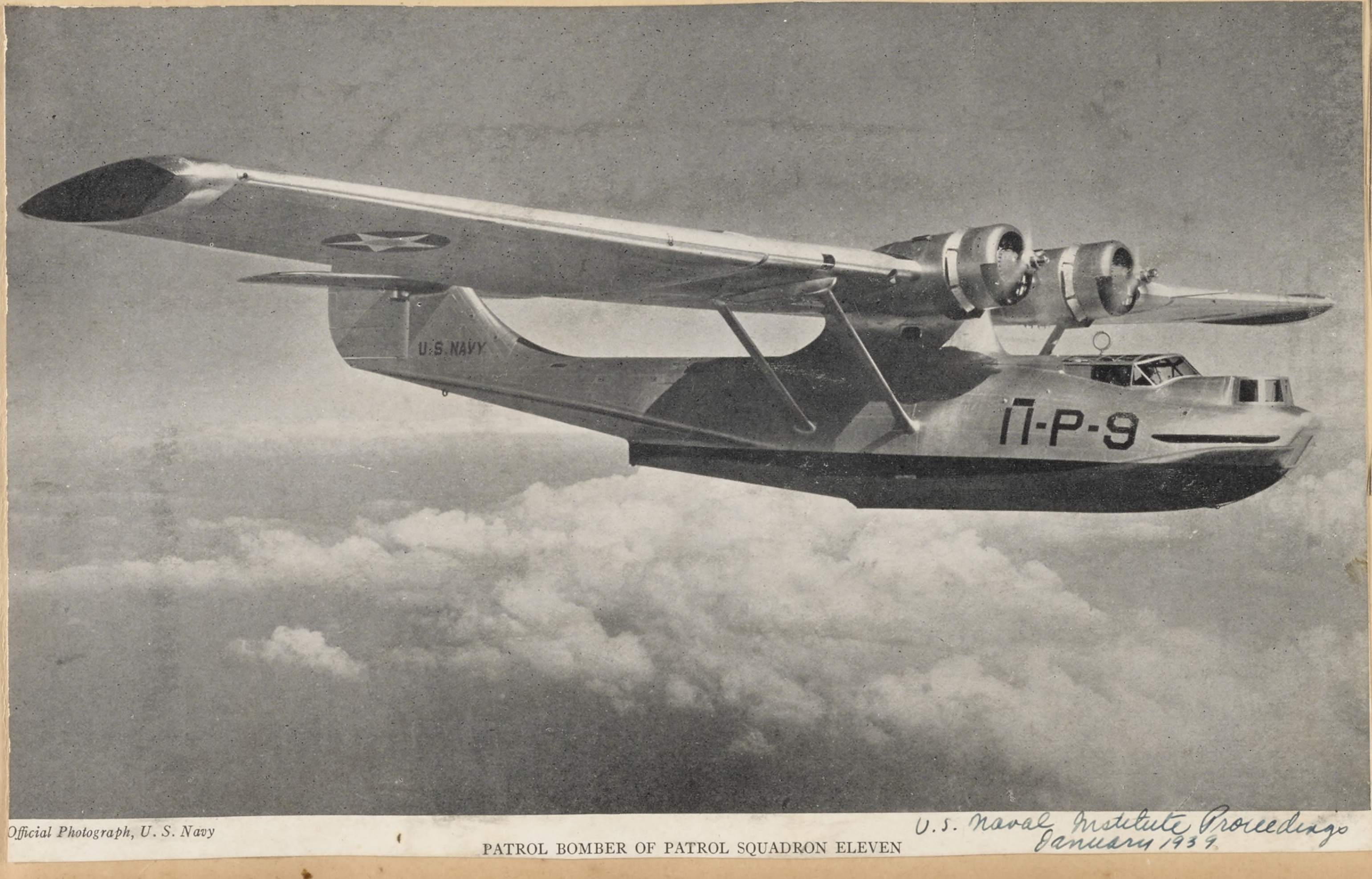
Consolidated Aircraft Corporation, as of January 1, has orders on its books in excess of $3,400,000, and on its payroll 1350 men. The 1938 payroll was approximately $4,000,000. This company now is installing four huge drop hammers, one weighing 68,400 pounds and the others from 11,000 to 22,000 pounds each. These drop hammers, together with other equipment, are being installed by Consolidated in anticipation of additional business during 1939. The Navy has accepted the first Consolidated 4-engined flying boat, and contemplates letting a contract for a quantity of this type of boat in the spring.

The Ryan Aeronautical Corporation reports a backlog of unfilled orders in excess of $375,000, with certain contracts for additional business expected early in January. During 1938 this company has sold $600,000 worth of airplanes and parts and has paid out $270,000, or 45 percent of the gross sales, in wages to local workmen. Ryan now is employing over 200 men and plans to construct additional factory space immediately. A contract has recently been let for additions to the Ryan Administration building. The Ryan company, in addition to producing two types of metal planes, is manufacturing exhaust collector rings for the Army and for Lockheed Aircraft and Douglas Aircraft.

This company recently received an order for 432 cabin seats for installation in Army transports; and has recently completed a contract for 641 seats to be installed in Navy bombers.

Solar Aircraft Company reports 146 men employed and sales during 1938 in excess of $611,000. Total wages paid in 1938 were $316,000, more than 51 percent of gross sales. The company has a considerable backlog of orders on its books, with additional orders anticipated early in 1939. Solar has an international reputation for the manufacture of exhaust manifolds and other aircraft accessories.

Consolidated, Ryan and Solar during 1938, paid a total of $4,586,000 in wages in San Diego. As practically the entire output of these three factories was sold outside of San Diego, the wages paid represent new money placed in circulation in business channels in San Diego. Aircraft factory wages amount to approximately 45 percent of the total gross sales of these plants.



Official Photograph, U. S. Navy

PATROL BOMBER OF PATROL SQUADRON ELEVEN

U.S. Naval Institute Proceedings January 1939.

SKIES CLEAR FOR 18 S. D. PLANES TO START GUANTANAMO HOP TODAY

S.D. UNION — 1/9/39

With favorable weather prevailing over the San Diego-Miami and San Diego-Coco Solo routes, naval aviation authorities yesterday announced the flight of 66 long-range bombers and utility planes, comprising Fleet Patrol Wing 1 and VJ-1 squadron, will leave today and tomorrow as scheduled.

Taking off at 6 a. m. today for Guantanamo, Cuba, 18 amphibian planes commanded by Comdr. Allen I. Price, will split into two groups.

Comdr. Price said the Sikorsky unit of 10 planes will stop at El Paso, San Antonio, Pensacola and Miami before making the overwater hop to Cuba.

The Grumman unit of eight planes will refuel at Tucson, El Paso, Midland and San Antonio, Tex., New Orleans, Pensacola, Tampa and Miami and again at Pan-American Airways base at Camaguey, Cuba, before making the last leg of the flight to Guantanamo.

Comdr. Price was notified by naval meteorological officers that the planes of VJ-1 squadron would have a ceiling of 3000 feet under broken clouds for the take-off. Between El Paso and San Antonio scattered showers are predicted but not of sufficient intensity to warrant emergency landings.

Commanded by Capt. Marc A. Mitscher, squadrons VP-7, VP-9, VP-11 and VP-12 of Fleet Patrol Wing 1, comprising 48 twin-motored long-range bombers manned by 336 officers, flying cadets and enlisted men, will begin leaving the seaplane launching ramp at Naval Air station at 8 a. m. tomorrow. They are expected to go aloft at minute intervals after a run down the two-mile take-off course which will be patrolled by navy launches. The planes are bound for the West Indies via Panama. The first leg of the flight, 2800 miles from San Diego to Coco Solo, is expected to be completed within 25 hours.

Meteorological reports from station ships—the carrier Saratoga at Cape San Lucas, cruiser Milwaukee at Manzanillo, destroyer Cummings at Salina Cruz, aircraft tender Wright at Gulf of Fonseca and the aircraft tender Gannet at Chiriqui lagoon—indicate normal flying conditions over the entire route.

"We will begin launching the first planes promptly at 8 a. m. Tuesday," Capt. Mitscher said last night.

The 3600-mile flight of the 18 bombers from San Diego to Aruba, West Indies, will be the greatest and longest mass flight in history for planes of this type.

---

18 S. D. PLANES FORCED BACK

S.D. SUN 1/9/39

Weather Too Bad; Take Off Tomorrow

Torrential rain and a thick overcast condition in the Laguna Mountain area forced 18 Navy amphibians which took off from North Island on a transcontinental flight at 7:30 a. m. today to return one hour later.

Meanwhile, Navy officials announced the planes will take off at dawn tomorrow, weather permitting.

With Guantanamo Bay, Cuba, as their ultimate goal, the combination land and sea planes will make several stops across southern United States.

STOP AT TUCSON

The slower group of Grumanns, with only a 600-mile cruising range, commanded by Lieut. A. E. Dupuy, is expected to remain at Tucson, Ariz., or El Paso tomorrow night, while the Sikorskies, commanded by Lieut.-Comdr. Henry T. Stanley, are due to land either in El Paso or San Antonio.

Both sections will attempt to reach Pensacola, Fla., Wednesday, although the Grumanns, with refuelling stops planned Wednesday at El Paso or San Antonio, may not arrive until Thursday. After a one-day stopover, the craft will fly to Miami, and then to Guantanamo Bay, operating base for the Fleet during the war games in the Caribbean and South Atlantic. The utility planes will perform patrol and convoy duty and are due to maneuver along the east coast after the Fleet Problem, with several of them scheduled to visit the New York World's Fair.

48 BOMBERS READY

Meanwhile, final preparations for the greatest non-stop mass flight in Navy history—48 patrol bombers from San Diego to the Canal Zone, were completed today, with the takeoff time set at 8 a. m. tomorrow.

Eighty-seven enlisted men and 16 officers comprise the flight crews of the utility craft, while 336 officers and men will operate the 13-ton Consolidated airboats to Coco Solo. Tomorrow's hop, which will be guarded by five surface craft along the Mexican and Central American coasts, will be led by Capt. Marc A. Mitscher, commander of Patrol Wing One.

At the Canal Zone, the bombers will be joined by three squadrons of 40 PBY planes in reconnaisance missions over the West Indies.

S.D. UNION 1/10/39

S. D. Aero Club Hears U. S. Training Plan

Details of the government's plan for a coordinated setup for aviation training were given San Diego Aero club members last night by Col. Joseph Marriott, Pacific coast supervisor of the new civil aeronautics authority.

The club installed Earl Prudden as president; William Van Dusen, first vice president; Douglas Kelley, second vice president; R. S. Madison, treasurer, and James H. Waterbury, secretary. Maj. R. H. Fleet, life member, was installing officer.

Warren Cary, governor of the California division, National Aeronautic association, gave a short talk and was named to represent the local club at the N.A.A. convention in St. Louis late this month

---

S.D. SUN 1/6/39

SAN DIEGO AERO CLUB TO INSTALL OFFICERS

Recently elected officers of the Aero Club, San Diego chapter of the National Aeronautical Association, will be installed by Col. Joseph Marriott, southern California commander of the Air Corps Reserve, at a dinner meeting in Hotel San Diego.

New executives to be installed are Earl Prudden, president; William Van Dusen, first vice-president; Douglas T. Kelley, second vice-president; R. S. Madison, treasurer and J. H. Waterbury, secretary.

Consair Planes Take Lead In Navy Performance

S.D. SUN 1/9/39

With the Navy's 48-plane mass flight due to eclipse all other aviation undertakings of this kind ever attempted in the United States, the previous achievements of the Consolidated PBY-type patrol bombers, which will make the hop, passed in review today.

In 1936, the San Diego factory began deliveries on the first of its four contracts for 209 airboats—plus spares—and the first PBY mass flight occurred Jan. 28, 1937, when 12 craft astounded the aviation world by the ease with which they conquered the Pacific, flying to Pearl Harbor in 21 hours, 43 minutes.

AERIAL BRIDGE

In quick succession during the past two years, scores of the airboats made a 2500-mile aerial bridge of the Pacific between San Diego and Hawaii, or spanned the 3000 miles to the Canal Zone. These hops included:

April 3, 1937—12 planes to Pearl Harbor, in 21 hours, 21 minutes.

June 21, 1937—12 planes to Canal Zone, in 27 hours, 58 minutes.

December 8, 1937—14 planes to Canal Zone, in 22 hours, 20 minutes—the record to Coco Solo.

Jan. 19, 1938—18 planes to Pearl Harbor, in 20 hours, 30 minutes.

Aug. 31, 1938—14 planes to Canal Zone, in 26 hours, 40 minutes.

RECORD FLIGHT

Sept. 7, 1938—17 planes to Pearl Harbor in 17 hours, 17 minutes—the record to Hawaii.

This does not include the mass flight of 36 bombers to Seattle in the summer of 1937 and 47 last June; nor the subsequent operations over the Gulf of Alaska.

A PBY airboat made a round-trip crossing of the continent last April and July, with Lieut. (jg) James M. Peters piloting the craft to Newport, R. I., via Pensacola.

ARCHBOLD TRIPS

Most notable civilian use of this type of plane included the three transcontinental flights by Richard Archbold—twice to Miami and once to New York, and Sir Hubert Wilkins' search for the missing Russian polar fliers in the Far North, where he flew 19,000 miles during the futile hunt.

Perhaps the outstanding achievement of a commercial adaptation of the PBY's was the 7500-mile flight by Richard Archbold to Dutch New Guinea last June, in the course of which he piloted seaplane from Wake Island to the Netherlands Island for the first time in history. For the past half year, the plane, known as "Guba," has been operating in the East Indies, in a two-mile high lake where the scientists' camp was established, and has made jaunts to Australia for supplies.

American Aviation 12/1/38

Consolidated Aircraft Corp.

On Sept. 30, 1938, current assets of Consolidated Aircraft Corp. exceeded current liabilities by about $3,300,000 and cash balance then was $3,100,000. Deliveries in the 10 months ended Oct. 31 totaled $10,300,000. Deliveries of planes and spare parts for the year will be about $12,000,000, approximately the same as in 1937. About 70% of the 1938 deliveries have been patrol bombers for the Navy. Backlog on Oct. 31 was $4,600,000 as compared with $6,600,000 on June 30.

NAVY AIR ARMADAS BEGIN GREATEST LONG MASS HOPS

S.D. UNION — 1/11/39

Churning up a foaming white wake one of the 48 patrol bombers speeded for a take-off in the bay yesterday morning.

* * *

1/10/39 S. D. UNION

66 San Diego Sky Cruisers Hop Today for West Indies

Amphibians, Patrol Bombers In Air Armada

San Diego skies will throb this morning with the roar of America's air might as two great flights of sky cruisers—66 ships in all—will take off, one bound for Guantanamo, Cuba, and the other for Aruba, West Indies.

The double-barreled show will start before sunrise because the Guantanamo flight, which began yesterday, was forced back by stormy weather over the mountains.

Starting at 5:30 a.m. the 18 amphibians comprising Utility Squadron VJ-1, Comdr. Allen I. Price commanding, will prepare to take the air. It was estimated they all would be aloft and headed eastward within 45 minutes after the first ship hops.

START AT 8:30 A.M.

At 8 the first of 48 mighty patrol bombers of Fleet Patrol Wing 1, Capt. Marc A. Mitscher commanding, will move down the runway and taxi to its starting position. The first of the giant airboats is expected by Capt. Mitscher to leap into the air at 8:30. In all, the departure of the 48 great sky cruisers is estimated to require two hours.

As the big ships leave the water they will rendezvous two miles high over the Coronado islands and when all have taken off the flight will start southward to Coco Solo, Canal Zone. Surface guard ships to be stationed along the route include the aircraft carrier Saratoga, cruiser Milwaukee, destroyer Cummings and the aircraft tenders Wright and Gannett.

From San Diego the utility squadron will fly the regular "ferry" route to Florida, thence to Guantanamo for use in a utility capacity with the fleet during its Caribbean exercises. Several stops on the way east are planned. The Sikorsky unit of 10 amphibians is scheduled for stops at El Paso, San Antonio, Pensacola and Miami. The Grumman unit, eight ships, is listed for stops at Tucson, El Paso, Midland, San Antonio, New Orleans, Pensacola, Tampa and Miami. On the way to Guantanamo from Miami the Grummans are to pause at Camaguey, Cuba.

REACH PENSACOLA TODAY

Tentative schedules call for arrival of the utility squadron at Pensacola tomorrow, Miami Thursday and Guantanamo Friday. The ships are expected to return here ~~in April.~~

Route of the 48 ships of Patrol Wing 1 will be along the Mexican coast to the Gulf of Fonseca, thence eastward over the Nicaraguan jungles to Chiriqui lagoon in the Caribbean and then to the eastern entrance of the Panama canal.

At Coco Solo the wing will be joined by 50 more sky cruisers from Patrol Wing 3, Capt. Frederick C. Sherman commanding, and the reinforced armada is scheduled tentatively to take off for Aruba, West Indies, Jan. 19.

The patrol bombers are expected to take part in flights from the equator to the Virgin islands during the fleet operations and after the fleet review at New York April 26 are to return to San Diego, with the exception of one squadron, VP-12, which has been assigned to Hampton Roads. This squadron is to be replaced by Squadron 16, whose officers and men are now here awaiting delivery of new planes from Consolidated aircraft.

Special Consair Dividend

Consolidated Aircraft Corp, has declared a special dividend of $1 on the common stock, payable Dec. 19. On Dec. 27, 1937, a 50c declaration was made on this class. American Aviation 12/1/38

S.D. ~~Union~~ TRIBUNE 1/10/39

Fast Pace Set On 3087-Mile Flight

Nearing the group rendezvous area over the carrier Saratoga at the tip of Lower California, 800 miles below Pt. Loma, 48 navy patrol bombers set a fast pace on their 3087-mile flight from San Diego to the Canal Zone today.

Will Unite Over Saratoga

The planes, which took off from the bay between 8:20 and 11:12 a.m., are to assemble in a giant formation over the Saratoga at 5 p.m., naval aviation authorities reported.

Meanwhile, a second group of 18 planes, all amphibians, which departed from North Island at 6:30 a.m. for Guantanamo, Cuba, via Pensacola and Miami, Fla., was flying over Texas this afternoon. Ten of the 18 Sikorsky amphibians refueled at El Paso and began leaving at 1:30 p.m. (MST) for Abilene, The Associated Press reported. Flight Comdr. Allen I. Price said they would spend the night in Abilene, instead of continuing to San Antonio, as planned. Eight Grumman amphibians will spend tonight in Midland, Tex., said Price.

The 48 planes en route from here to Coco Solo, C. Z., flew in four groups of 12 planes each along the Lower California coast. The first squadron, VP-9, was 450 miles south of Pt. Loma at 1 p.m., four hours and 15 minutes after it left San Diego. Trailing it were squadrons VP-7, VP-12 and VP-11, in the order named, with squadron VP-11, which left here at 11:12 a.m., 120 miles in the rear.

S. D. Planes to Hop From Texas Today

S.D. UNION 1/13/39

Eighteen amphibian planes which left here Tuesday for Cuba were widely separated in Texas last night, The Associated Press reported.

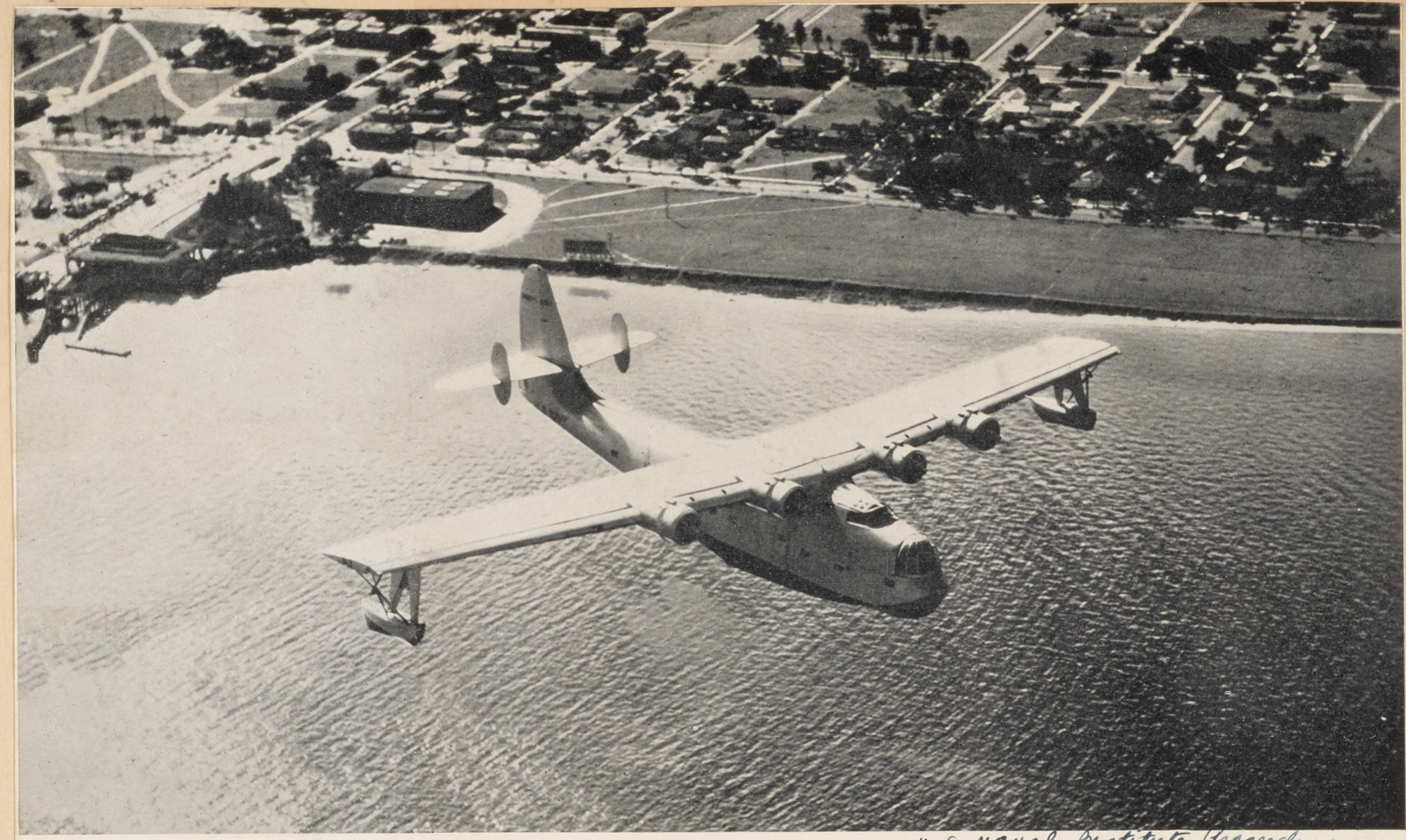
Eight Grumman planes, Lt. Albert Dupuy commanding, reached Dallas after a flight from Midland, Tex. and are expected to continue eastward today.

Nine Sikorsky amphibians spent the day in Abilene, Tex., because of bad weather. The 10th Sikorsky with Lt. F. L. Ashworth and a crew of seven joined the others at Abilene after repairing motor trouble which delayed it at El Paso.

The 48 patrol bombers, which left here Tuesday after the amphibians, are at Coco Solo naval base, Panama Canal zone.

Flight — 3/30/39

Top left is the Consolidated model 28, generally similar to the PBY series of the American Navy.



Official Photograph, U. S. Navy

XPB2Y-1 EXPERIMENTAL PATROL BOMBER

First 4-engine plane of the PBY series. Built by the Consolidated Aircraft Corporation. Now undergoing tests by the U. S. Navy.

U. S. Naval Institute Proceedings January 1939

---

48 NAVY BOMBERS SAFE AT PANAMA; 18 OTHER SHIPS GROUNDED IN TEXAS

S.D. UNION 1/12/39

San Diego-based navy bombers yesterday safely completed the greatest mass non-stop flight in U. S. naval history—a 3000-mile trip to the Panama Canal Zone in one day.

Eighteen other navy planes en route from San Diego to Cuba were grounded in central Texas by bad weather.

THREE PLANES REFUEL

Three of the 48 planes descended en route for refueling alongside the aircraft tender Wright in the Gulf of Fonseca, off the coast of Honduras.

Officers belittled the feat, saying it was routine and uneventful, and that the refueling simply was a "precautionary measure."

Leading the fleet in the mass formation flight, planes of VP-9 squadron began settling gracefully at Coco Solo air base at 10:07 a.m. yesterday. The squadron took off from San Diego bay at 8:47 the previous morning. Last of the 48 planes, including the three which stopped for refueling, had landed in the Canal Zone at 12:10 p.m.

Flight officers reported weather conditions were excellent, but poor radio reception made difficult direct contact between North Island and the Canal. Efforts were being made to establish a relay through the U. S. S. Milwaukee, stationed off Manzanillo, Mex. Isolated squalls and headwinds slowed speeds on the last leg of the trip. The Consolidated-built planes weathered the flight without mishap.

AVERAGE SPEED 121 M. P. H.

Average speed for the lead squadron was said to have been 121 land miles an hour. Squadrons VP-7, 12 and 11, tail-enders on the flight, maintained an estimated average speed of 140 miles an hour to close the gap between them and the leaders. The flight was commanded by Capt. Marc Mitscher, Patrol Wing 1 commander.

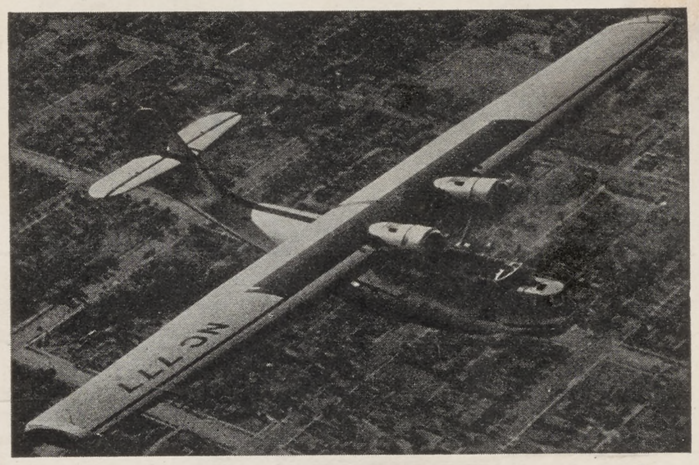
From Coco Solo the squadron will join the fleet for the Caribbean war games. Wing 1 will remain in the Canal Zone for two weeks for a check-up, The Associated Press reported from Cristobal. Three squadrons of Patrol Wing 3, based at Coco Solo, will take off next month for a secret destination, also to engage in fleet maneuvers.

Nineteen merchant vessels, southbound, were rushed through the Panama canal yesterday, and eight merchantmen and eight units of the U. S. Base force fleet passed through, northbound, in last-minute clearance to prepare for Saturday, when the United States fleet will pass northbound through the locks, proceeding to the Atlantic for war games.

The 18 planes of VJ-1 squadron, en route from San Diego to Florida and Cuba to participate in the Caribbean maneuvers, were held in Texas by the weather, the Associated Press reported from Abilene.

Eight Grumman amphibians awaited improved take-off conditions at Midland, Tex., and nine Sikorsky planes were at Abilene. One Sikorsky was forced down at El Paso for repairs.

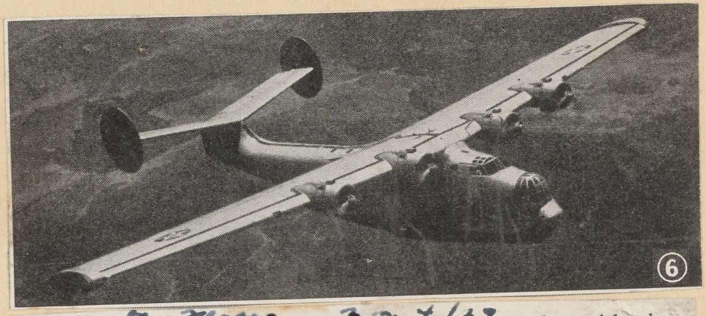
Model 28 (2 Wasps, 1800 h.p.)



Consolidated Model 28

Western Flying 3/or 4/39

TYPE: Cabin, flying boat, monoplane.
DIMENSIONS: Length overall, 67 ft. 1 in. Span, 104 ft.
WEIGHTS: Gross weight loaded, 27,000 lbs.
POWER PLANT: Two Pratt & Whitney Twin-Row Wasp engines, R1830-SCG., rated 900 h.p.
PERFORMANCE: Maximum cruising distance over 4000 miles.
CONSTRUCTION: Wings, aluminum alloy, stressed skin type construction with fabric-covered ailerons and trailing edges. Hull: All-metal aluminum alloy monocoque type. Empennage, fabric-covered elevators and rudder, stressed skin stabilizer and fin.



Western Flying 3 or 4/39

6. The XPB2Y-1, a Consolidated product, is a four-engined patrol bomber—the biggest and one of the most secret of the Navy's aerial weapons.

4/5/39 The Aeroplane

A Long-range Boat

BRITISH NEWSPAPERS have recorded that a new big twin-motor flying-boat is being built in secret by the Consolidated Aircraft Corporation at San Diego, California, U.S.A. The stories mention a maximum range of 12,000 miles and that the machine should be ready in about two months. We first heard of this boat nearly a year ago. At that time we could say nothing about it. And even now we should not care to say how much we believe in it.

Apparently it is to have two of the new 2,500 h.p. Pratt and Whitney 18-cylinder radial motors. The all-up weight is to be about 50,000 lb. (22,600 kg.). The empty weight is about 20,000 lb. (9,070 kg.). Thus the disposable load is about one-and-a-half times the empty weight of the flying-boat; an extraordinarily good figure if it works out so.

The range is said to be 5,000 miles (8,050 km.) with 8,000 lb. (3,620 kg.) of bombs; 2,500 miles (4,020 km.) with 11,000 lb. (5,000 kg.) of bombs; and 9,000 miles (14,460 km.) with no bombs.

The present World's Distance Record set up by the British Vickers Wellesleys is 7,157 miles (11,520 km.), but could easily be raised by 1,500 miles by the same machines.

The new Consolidated boat is reputed to be designed for a maximum speed of 360 m.p.h. and to cruise normally and economically at somewhere about 280 m.p.h.

The Consolidated Corporation has some scheme for an assisted take-off for this flying-boat whereby the maximum range could be increased to 12,000 miles (19,300 km.). If this really does prove to be possible the Consolidated flying-boat will be able to fly non-stop to any point in the World from any other given position in one hop.

S. D. PLANES AT CANAL ZONE

S.D. SUN 1/11/39

Largest Mass Hop In History Completed

Completing the largest mass hop in U. S. aviation history, all but three of 48 planes which took off here yesterday for the Canal Zone, landed at Coco Solo today.

First of the airboats in the lead squadron, commanded by Lieut. Comdr. B. L. Braun, landed at 10:07 a. m. (P. S. T.), after 25 hours, 43 minutes in the air. Comdr. Braun's squadron began taking off from San Diego at 8:25 a. m. yesterday.

Averaging better than 116 miles per hour, the giant ships were aided by weather, marred only occasionally by tropical rain squalls.

Half an hour after arrival of the first squadron of nine, a second squadron of 11 landed, led by Flight Comdr. Marc A. Mitscher. The other two squadrons followed, except for three planes from Squadron VP-7, which landed in the Gulf of Fonseca off Nicaragua. Otherwise the flight was without incident. The squadrons making up the flight were VP-9, VP-7, VP-12 and VP-11, flying in that order.

Throughout the night radio contact was maintained at two-hour intervals with the North Island base, although reception at times was poor because of static conditions.

The best time of a San Diego-Coco Solo non-stop flight was made by 14 Consolidated bombers Dec. 8, 1937—22 hours, 20 minutes.

Meanwhile, unfavorable weather today in Texas delayed the flight of 18 amphibian planes en route from San Diego to Guantanamo Bay, Cuba, for Fleet Problem 20.

Officials at Biggs Army Field said a "cold front" was expected to prevent the take-off of the planes that spent last night in El Paso, Midland and Abilene.

One of the 10 Sikorsky planes developed motor trouble and returned to El Paso yesterday. Lieut. F. L. Ashworth, pilot, said his plane had been repaired but would not leave until the weather was more favorable. The other nine Sikorskys spent the night in Abilene while the eight slower Grummans stayed in Midland, Tex.

From Coco Solo, the patrol bombers will fly with 40 bombers of Patrol Wing Three in reconnaissance missions over the West Indies to the Virgin Islands on the east and the equator on the south. They will operate for a short time out of Aruba, small Dutch island north of Venezuela, during the war games.

The 66 airboats and amphibians will conduct exercises on the Atlantic coast after the Fleet Problem, and will return to San Diego next summer.

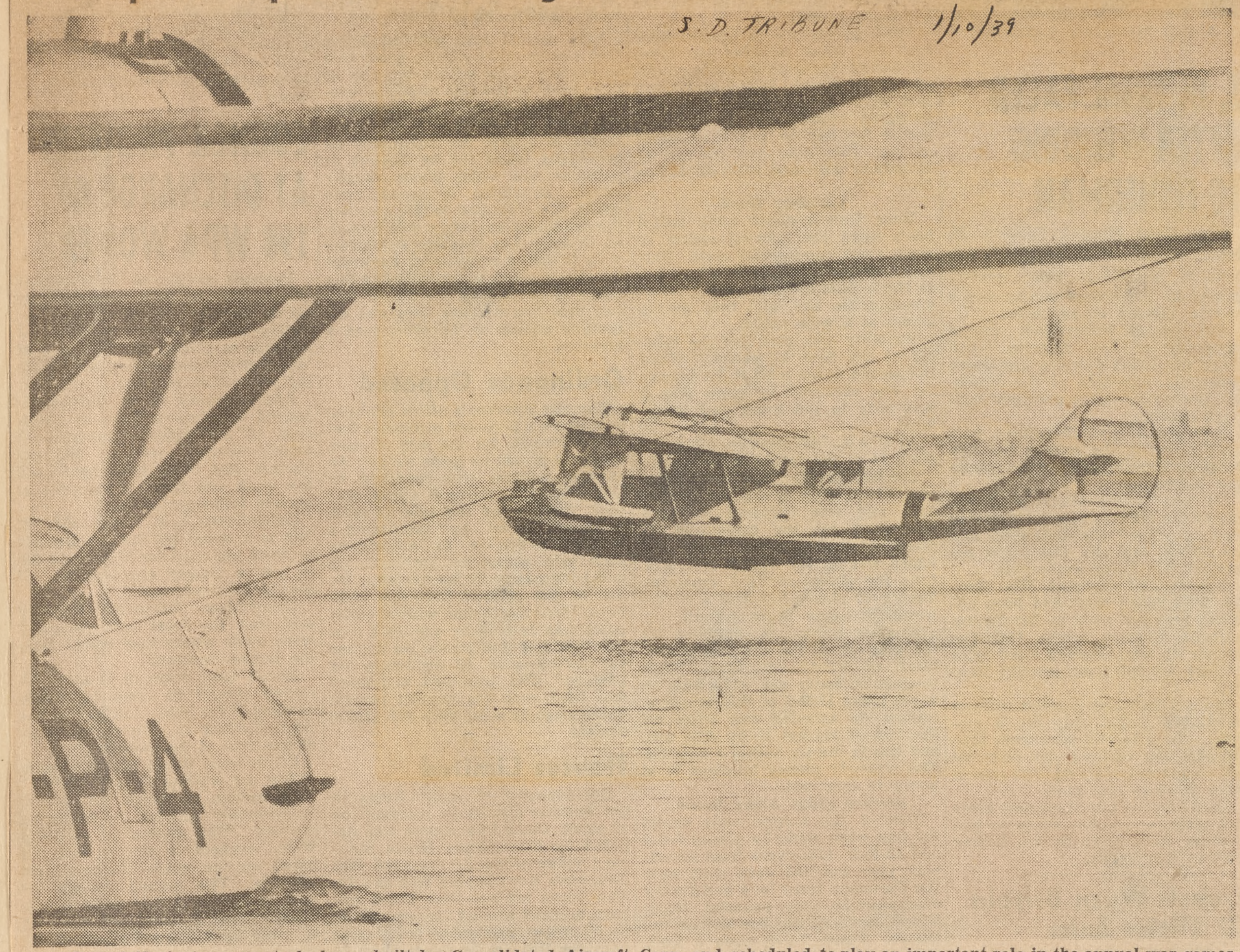
SAN PEDRO SHIPS AT CANAL ZONE

BALBOA, C. Z.—Twenty-two units of the U. S. Fleet Base Force at San Pedro, Cal., reached here today to swell the number of vessels attached to the Pacific Fleet en route to the Atlantic ocean for the forthcoming annual maneuvers of America's combined sea forces.

The ships were commanded by Rear Adm. W. C. Watts, who arrived aboard his flagship, the USS Argonne.

66 Warplanes Hop From S. D. for Gigantic Naval Maneuvers in Caribbean

S.D. TRIBUNE 1/10/39



One of 48 giant navy patrol planes, built by Consolidated Aircraft Corp. and scheduled to play an important role in the annual war games in the Caribbean next month, is shown here as it took off from San Diego bay this morning, bound for the Canal Zone. The nose of another plane, which has just entered the water from the North Island ramp, is shown at the lower left.

S.D. TRIBUNE 1/12/39

Hop Resumed By S. D. Navy Amphibians

Delayed a day in Texas by bad weather, eight navy Grumman amphibian planes took off from Midland, Tex., today headed east on a flight from San Diego to Guantanamo, Cuba, The Associated Press reported.

Nine other planes, all Sikorsky amphibians carrying 75 men headed by Comdr. A. I. Price, also en route from San Diego to Cuba, remained grounded at Abilene, Tex., because of unfavorable flight conditions between there and Shreveport, La.

A 10th Sikorsky is reported delayed at El Paso by engine trouble.

A flight of 48 navy patrol bombers built here by Consolidated Aircraft Corp., ended at the Canal Zone yesterday, 25 hours after the planes took off from San Diego bay.

TAKE-OFF DELAYED BY CALM SEAS, LACK OF WIND

In a spectacular demonstration of the navy's long-range flight strength, 66 planes roared away from here today, bound for Caribbean waters to participate in Fleet Problem 20.

First to leave were 18 Sikorsky and Grumman amphibian planes, bound for Guantanamo, Cuba, via Pensacola and Miami, Fla. In the air by 6:30 a.m., they were followed at 8:20 a.m. by the first of 48 giant patrol bombers, bound for Aruba, West Indies, via the Canal Zone.

Although hampered by a lack of wind and an almost glassy surface on the bay, the heavy bombers took to the air with a minimum of difficulty. Forty-four took to the air after take-off runs of from one-half mile to two miles each, and the remaining four were successful on their second attempt.

The last plane to leave, 11-P-1, was reported off the bay at 11:12 a.m.

Due at Goal Tomorrow

Under command of Capt. Marc A. Mitscher, the patrol bombers, comprising Patrol Wing 1, are expected to land at Coco Solo, C. Z.,

(Continued on Next Page, Col. 3)

early tomorrow, taking from 20 to 25 hours for the 3087-mile flight. There, joined by 50 more planes of the same type, they will take off for Aruba, strategically located off the northern coast of South America.

The 12 planes of VP-9 squadron were the first in the air. Moving one by one down the bay from north beach, North Island, they sped in a southeasterly direction, climbing into the air before reaching the ferry lane after runs of from one-half mile to two miles. Once aloft, they continued toward the southeast over Coronado strand to a rendezvous believed to be over the Coronado Islands.

VP-7 squadron's 12 planes were next off. They reversed the take-off procedure, taxiing slowly southeast from North Island and then, just before reaching the ferry lane, swinging around and racing back across the bay in a northwesterly course. They rose into the air off Broadway pier, and well out in the bay.

VISIBILITY GOOD

More than a dozen navy patrol boats lined the take-off course to warn away commercial craft. Star and Crescent shore boats which ply to North Island were the only craft crossing the bay, and they swung across at a wide angle.

Visibility was good for the take-off of the first 12 planes. When the second dozen tried in, Pt. Loma's tip was obscured by haze, and it was hazy to the south and southwest.

At 9 a.m., 40 minutes after the start, 14 of the bombers were aloft.

The first plane of the third squadron, VP-12, took to the air at 10:01 a.m., and was followed in rapid succession by the remaining 11 planes of the squadron, the last of which was off the bay at 10:28 a.m. Like the planes of VP-7 squadron, the VP-12 planes followed a northwesterly course in taking off.

Weather conditions improved for the take-off of the final 12 planes, those of VP-11 squadron. With roughened water and a pick-up in wind, plane 11-P-2 of this squadron started its take-off run from off the foot of Market St., at 10:45 a.m. and was in the air within 3 minutes. The other 11 planes followed it at 2-minute intervals.

Surface Ships Along Route

Two of the longest runs across the bay were made by planes 7-P-6 and 12-P-2. Observers from Broadway pier watched each start near the Coronado ferry lane and finally disappear as they rounded North Island, heading for the harbor entrance. Plane 7-P-6 made a long, unsuccessful take-off run before returning to the starting point to trail the other planes of its squadron.

From San Diego the patrol planes follow the west coast of Mexico and Central America to Nicaragua, where they fly overland to continue on to Coco Solo. Several navy vessels, including the U.S.S. Saratoga, Milwaukee, Cummings, Weight and Gannet, are stationed along the flight route.

The amphibian planes, under command of Comdr. A. I. Price, began their take-off at North Island at 6 a.m., and after swinging out over Spanish bight and circling the bay they formed groups of three and droned high over the city. Black storm clouds over Jacumba, which forced themto return yesterday within two hours after their departure, were gone today, and greatly-improved flight weather conditions were reported along the route over the southern states.

TO STOP FOR FUEL

Several stops for fuel will be made by these Florida-bound planes. Ten Sikorsky planes in the group are scheduled to pause at El Paso, San Antonio and Pensacola. The other eight, Grumman amphibians, are to make shorter hops, stopping at Tucson, El Paso, Midland, San Antonio, New Orleans, Pensacola and Tampa. After leaving Miami, they will stop at Camaguey, Cuba, before landing at Guantanamo.

S.D. SUN 1/12/39

Bombers Fold Wings At Panama After Mass Hop

Forty-eight San Diego-based Navy bombers, which wrote a new chapter in naval history with their flight from here to Coco Solo, Canal Zone, in less than 26 hours, today were being prepared for participation in the Caribbean war games.

Eighteen other planes making a flight to Cuba were grounded by inclement weather in central Texas, the United Press reported.

The bombers will remain at Coco Solo for two weeks for a complete checkup before joining the war games.

In Texas, eight Grumman amphibians awaited improved take-off conditions at Midland, and nine Sikorsky planes were at Abilene. One Sikorsky was forced down at El Paso for repairs. When weather permits, the planes will resume their journey.

Nineteen merchant vessels, southbound, passed through the Panama Canal yesterday and eight merchantment and eight units of the U. S. base force fleet went through northbound, to clear the canal for Saturday when the U. S. Fleet will move through the locks northbound, proceeding to the Atlantic.

JOE and MARTHA DABARZYNSKI

. . . watch with mingled feelings as the plane in which their father, a machinist's mate first class, takes off on the long non-stop flight to Panama.

S.D. UNION 1/11/39

Planes Halfway On Panama Hop

All 64 Craft Safe On 2 Long Flights

Flying in scattered formations, 48 giant patrol bombers en route non-stop to Panama in the greatest mass-distance flight yet attempted by the "long arm" of the navy, were reported 1500 miles south of here, or almost halfway to their goal at 10 last night.

After almost 12 hours of flying, officers in command of the flight reported it was "without incident" and that the planes were picking up speed under "excellent" weather conditions, according to reports received at Naval Air station radio headquarters.

* * *

Flying in six sections over widely separated routes to Cuba and the West Indies, 48 offshore patrol bombers comprising Fleet Patrol Wing 1, and 18 amphibians of squadron VJ-1 took off from Naval Air station starting at 6:30 a. m. yesterday.

ALL SAFE IN TEXAS

In two sections of 10 Sikorsky and 8 Grumman planes under command of Comdr. Allan I. Price, the amphibians took to the air a few minutes after dawn. They are 24 hours behind schedule, since they were forced to return Monday when flying conditions over the mountains became too hazardous for planes in squadron formation.

Last night the 18 amphibians were safe in three Texas cities, The Associated Press reported. Nine of the Sikorsky craft landed at Abilene about 5 p.m. to spend the night. The 10th was forced down by motor trouble and remained in El Paso. The eight Grumman planes spent the night in Midland. Originally all were to ground for the night in San Antonio, but the flight commander reported fog and low ceiling forced a change to the northern route.

GUANTANAMO DESTINATION

The destination of VJ-1 squadron is Guantanamo, Cuba. Stops are being made en route to Miami, where the squadron wil assemble for the overwater jump to Guantanamo via Camaguey, Cuba.

With almost perfect weather conditions prevailing along the 2800-mile airway from San Diego to Coco Solo, Capt. Marc Mitscher, commander of Fleet Patrol Wing 1, ordered the four squadrons—7, 9, 11 and 12—to proceed southward as rapidly as they formed into squadrons.

Lt. R. M. Gibbons of Plane 12, Squadron 9, was the first to launch his ship into the bay from the air station seaplane ramp.

TAKE-OFF DIFFICULT

With the bay as smooth as glass and unaided by even a slight breeze, the first three planes of Squadron 9 had to taxi at full throttle for nearly four miles before their two 1050-horsepower engines succeeded in getting the 15-ton craft into the air. Planes of this squadron started taking off near La Playa, skirted the north shore of the air station and barged down past the ferry fairway before hulls were free of the swirling water.

Fearful that some of the planes might blow out cylinders on the take-off, Capt. Mitscher ordered the three remaining squadrons to reverse the take-off course. This worked better. Virtually all remaining planes were aloft after runs of from 1½ to 2 miles.

Capt. Mitscher said reports from station ships along the Coco Solo airway indicated that bright skies and little wind would greet the planes from San Diego to the Gulf of Fonseca. Partly cloudy weather prevailed last night over the Nicaraguan jungle route from the Gulf of Fonseca to Chiriqui lagoon. In the Caribbean the sea was choppy, but the sky was clear.

GREATEST LONG MASS HOP

Three hours elapsed before the first and last planes of the patrol wing went aloft. The squadrons took off in the following order: Squadron 9, Squadron 7, Squadron 12 and Squadron 11. Capt. Mischer's flagplane was plane 1 of VP-11, with Lt. Comdr. R. D. Lyon, squadron commander, at the controls.

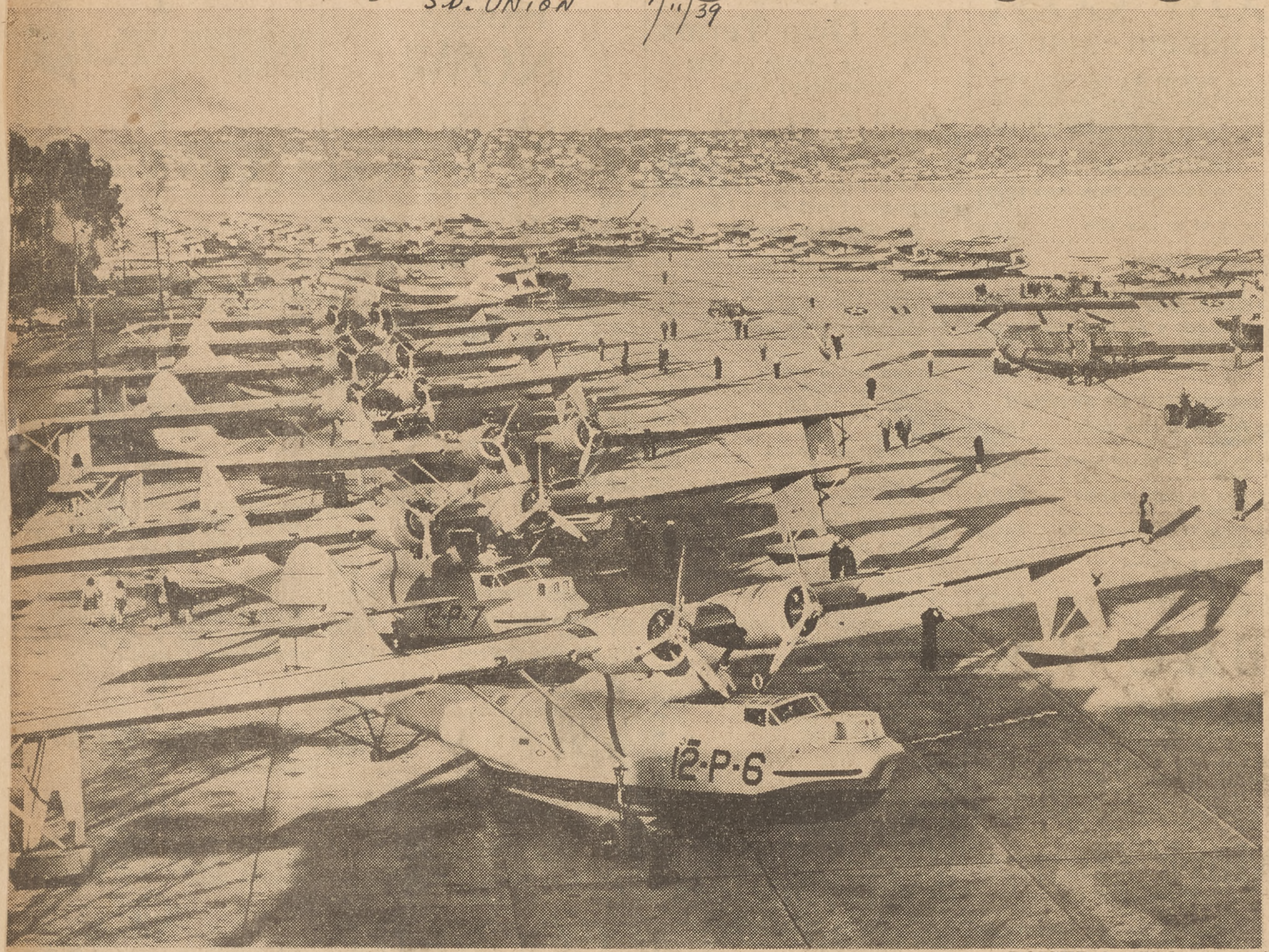
The two flights were the greatest massing of planes for long-distance flights in American naval history.

Capt. Arthur L. Bristol characterized the flights as "routine transfer of planes participating in certain phases of Fleet Problem 20." He said the planes were operating after they left San Diego, under wartime conditions.

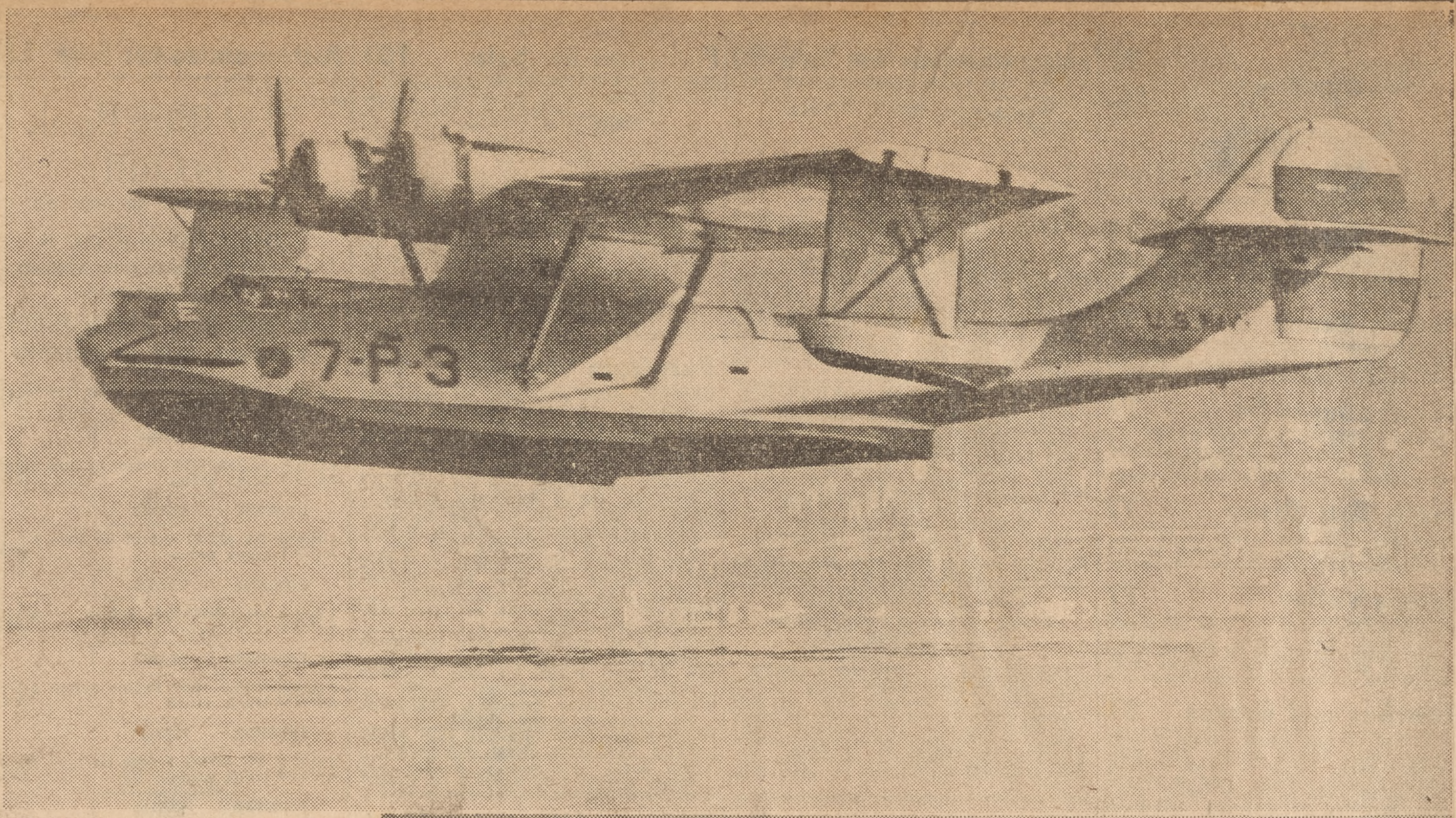
Squadron VJ-1 is due to return to North Island early in April. Fleet Patrol Wing 1 is to start on the return flight from the West Indies early in May.

Cameras Flash as S. D. Sky Armada Roars Away on Long Training Flights

S.D. UNION 1/11/39



POISED for flight, San Diego's air armada made an impressive picture yesterday a few minutes before they took off on a non-stop flight to Panama. Only a part of the 48 patrol bombers are shown.

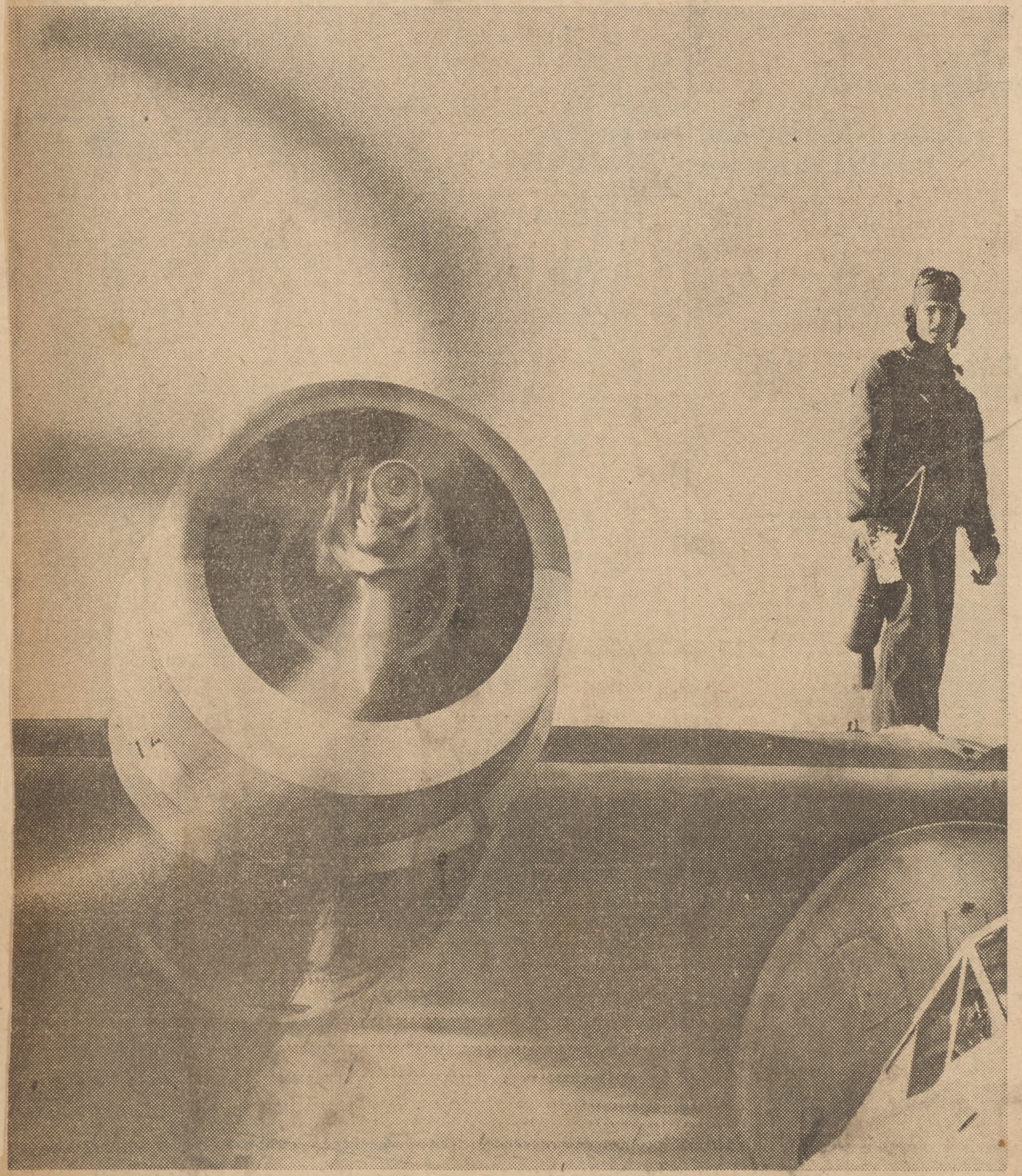


RISING gracefully from the waters of the bay, one by one, the giant bombers sailed away on the greatest mass flight in the navy's history. This photo was snapped as one of the huge planes shook the last drops of water from its pontoons.

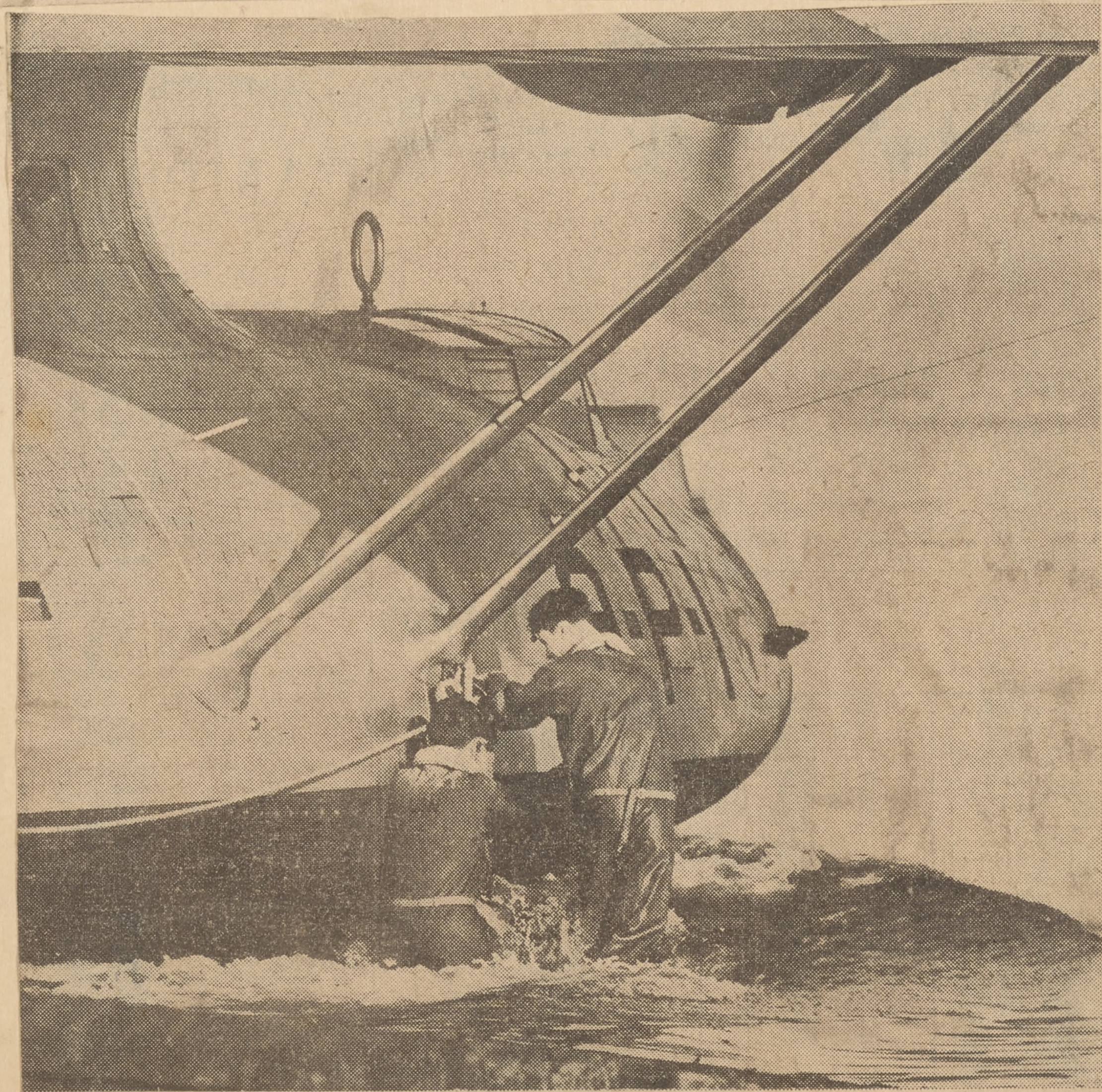
* * *

MACHINE-LIKE precision marked the take-off of the big planes. As one roared down the take-off course to take flight, another waited in the background and a third (left) was slid down the ways →

and into the water. All planes went into the air "without incident," officers reported, while thousands watched from vantage points on North Island and along the shore.



UNIQUE in photography is this telephoto lens shot by Harry T. Bishop, head of The Union photo department. Note how the propellor arms appear bent and the reflected light (white line) under the propellor hub looks like miniature lightning.



RIDING down into the water with the big planes as they were launched, sailors retrieved the wheeled carriages on which the craft rest while on land. Each set of wheels was then taken back to the hangar to await the return of the ships.

What Offers?

CONSOLIDATED PBY-4 two motor long range flying-boats and amphibians, one of the most successful of American designs, are available for export. 2/22/39

According to the London Representatives, Aviation Corporates Ltd., 50, Pall Mall, London, S.W.1, the Consolidated Aircraft Corporation, San Diego, California, have placed all the drawings, designs, jigs, tools and dies at the disposal of the British Government. Alternatively they have offered the present factory-output of these boats.

The Consolidated have shown in the service of the U.S. Navy that they have a good performance. Commercial versions are to be operated over the North Atlantic this Summer by American Export Air Lines.

At a full load of 27,080 lb., a disposable load of 13,540 lb. and 2,240 lb. of payload the PBY-4 can cruise for 4,000 miles at between 150 and 160 m.p.h. For a shorter range of 1,000 miles the payload can be increased to 10,000 lb.

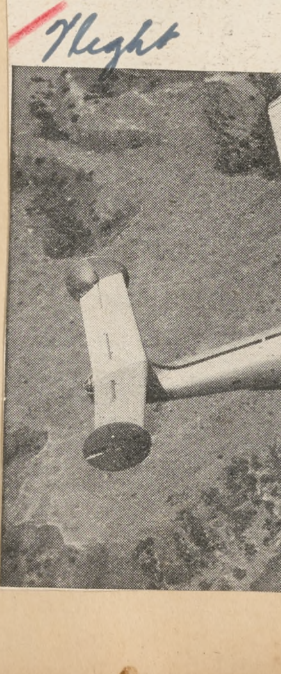
The PBY-4 can be had as an amphibian with a tricycle undercarriage. The payload is reduced but still remains fair.

But we cannot see why good English money should go abroad either to human exports or foreign aeroplanes which want refuge abroad because there is no room for them at home while we have 2,000,000 unemployed and want our own money, and can make things better ourselves.

The Aeroplane

Below is another interesting American prototype, the Consolidated XPB2Y-1 with four Pratt and Whitney Twin Wasps.

Flight 3/30/39



The San Diego Sun

Fair tonight and Wednesday; local frost in the morning; gentle northerly wind. Complete report on Page 4.

HED 1881 SAN DIEGO, CALIFORNIA, TUESDAY, JANUARY 10, 1939

66 AIRBOATS SPREAD WINGS

S. D. Aerial Armada Off To War Games

BULLETIN

Patrol Squadron 9, first to leave San Diego for the Canal Zone this morning, radioed the North Island base at 1 p. m. that it was over Magdalena Bay, 450 miles south, in clear weather. Patrol Squadron 11, last of the four groups comprising 48 planes, was 120 miles behind the leaders.

By HAROLD KEEN
Navy Editor

Sixty-six San Diego Navy planes were flying to a war-game rendezvous in the Caribbean-South Atlantic area after a spectacular takeoff here today.

With eastern skies barely lighted by the first traces of dawn, 18 amphibians, of Utility Wing One, commanded by Comdr. Allan I. Price, soared from North Island, headed across the southern airline route to Guantanamo Bay, Cuba, via Tucson, El Paso, San Antonio, Pensacola and Miami.

The 10 Sikorsky twin-engined craft and eight Grumanns are expected in Pensacola tomorrow night. After a one-day stop-over, they will continue to the Cuban operating base for the warships' Fleet Problem 20.

EIGHT STOP AT TUCSON

The eight Grumann planes landed at Tucson at 11 a. m. for refueling, while the 10 Sikorskys went directly to El Paso, and were to proceed to Abilene instead of San Antonio tonight.

Clear weather along the entire route was anticipated by the fliers, who were turned back yesterday when they ran into a severe storm over mountains in Laguna, east of here.

HISTORY-MAKING FLIGHT

In a flight which has no parallel in U. S. aviation annals, 48 Consolidated patrol bombers of squadrons VP-7, VP-9, VP-11 and VP-12, with 336 officers and men, took to the air from San Diego Harbor beginning at 8:25 a. m.

Squadron VP-9, commanded by Lieut. Comdr. B. L. Braun was the first to take off. In spite of the fact that the 13-ton bombers carried capacity gasoline loads which forced them to ride deep in the water, there were no mishaps. The planes, after being launched from long island ramps, taxied toward Point Loma, turned about and sped southeast down the harbor along the two-mile runway.

Pilots of the remaining three squadrons took off in the opposite

Turn to Page 2, Col. 6.

(See Typewritten portion)

direction to keep from being blinded by the rising sun. The wind was slight and the water almost glassy, rendering the takeoffs difficult and causing several planes to make false starts or to plow through spindrift as far as the harbor entrance channel before they could rise.

By 11:10 a.m., two hours, 45 minutes after the first bomber took to the air, the last plane, flagship of Capt. Marc. A. Mitscher, leader of the flight, left the water.

In contrast with the throng of wives and sweethearts who crowded the North Island shore on previous and much less important mass-flights, only a scattering of civilians bade farewell to the aviators.

Guarding the planes, in case they are forced down by engine trouble or require refueling, are the aircraft carrier, Saratoga, at Cape San Lucas; the light cruiser Milwaukee, at Manzanillo; the destroyer Cummings, at Salina Cruz; the aircraft tender Wright at Gulf of Fonesca, and the seaplane tender Gannet, at Chiriqui Lagoon, on the east coast of Panama.

The bombers will join 40 similar airboats stationed at the Canal Zone and will be reinforced by older-type patrol bombers from Norfolk, Va., in sweeping a vast area of the Caribbean and South Atlantic. Their duties will consist primarily of seeking the hypothetical enemy fleet steaming toward the western hemisphere with intentions of capturing a base in the West Indies or on the coast of South America from which to operate in an attack on the mainland of the United States.

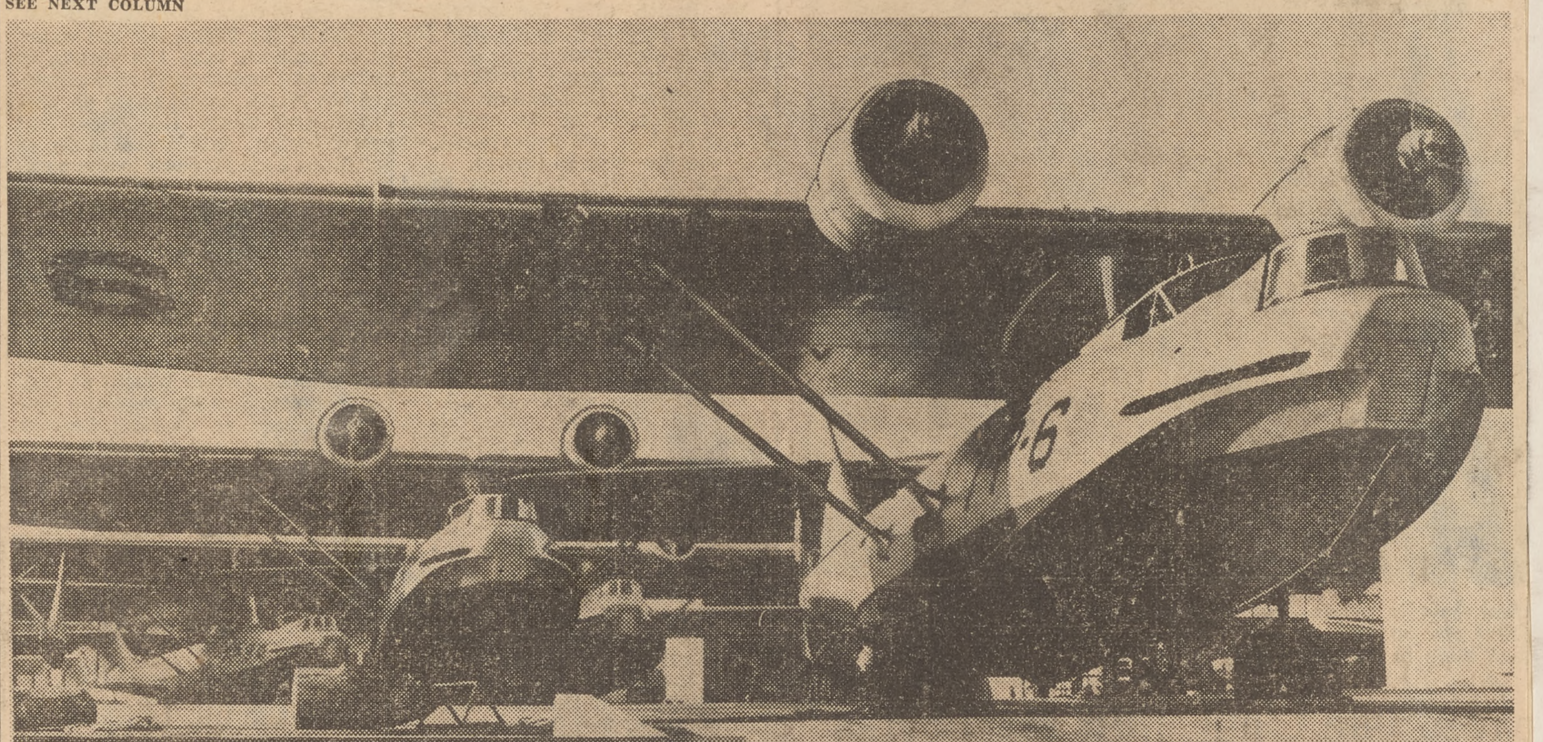
Already at the Canal Zone is the flagship of the Aircraft Scouting Force, the light cruiser Memphis, aboard which is Rear Adm. Charles A. Blakely and his staff.

The reconnaissance missions will start in earnest soon after arrival of Patrol Wing 1 in Coco Solo. While the main body of the Fleet operates from Guantanamo Bay, the patrol squadrons will spread out, fan-like, to cover a zone extending as far east as the Virgin Islands and south to the equator. The southernmost base for the craft will be the small Dutch island of Aruba, 12 degrees above the equator and just off the coast of Venezuela.

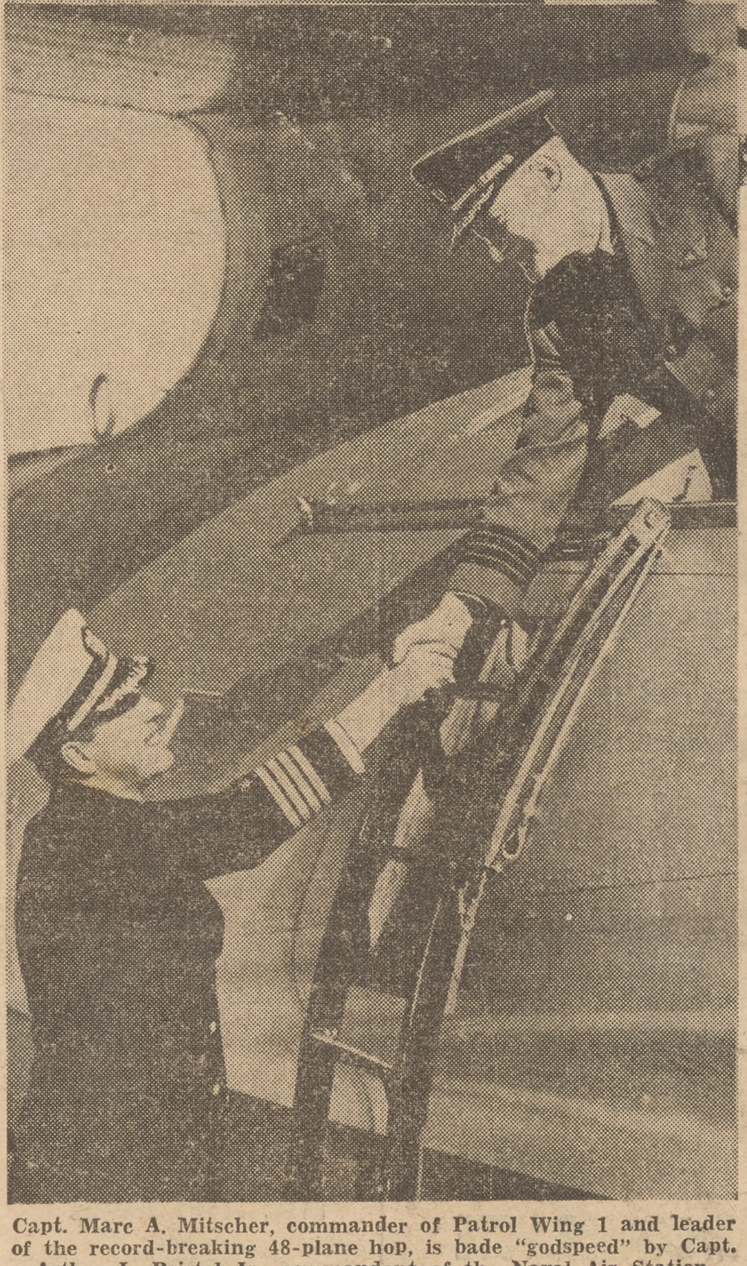
Other stations taken by the bombers will be at San Juan, Puerto Rico; Haiti and St. Thomas, in the Virgin Islands.

. Contact! And May You Have Many Happy Landings!

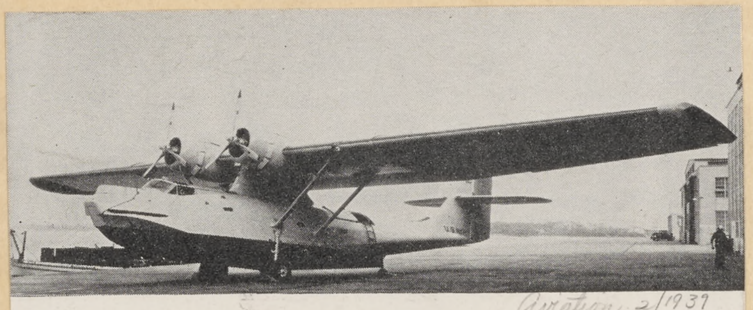
SEE NEXT COLUMN



A worm's-eye view of a group of Consolidated patrol bombers of Squadron VP-7, poised at their North Island ramp just before they were launched for takeoffs on a n[illegible]-s[illegible] flight to the Canal Zone.



Capt. Marc A. Mitscher, commander of Patrol Wing 1 and leader of the record-breaking 48-plane hop, is bade "godspeed" by Capt. Arthur L. Bristol Jr., commandant of the Naval Air Station.



Consolidated PBY

Aviation 2/1939

FlyingFlagshipForAdmiral

The four-engined Consolidated PB2Y bomber, flying flagship for Rear Admiral Arthur B. Cook, aircraft scouting force commander, is now in active service with the Pacific Fleet and has made a number of outstanding flights, including a San Diego-Seattle flight, and a flight from Seattle to Alaska.

Aviation 10/39

Consolidateds Do It Again

Aviation 2/1939

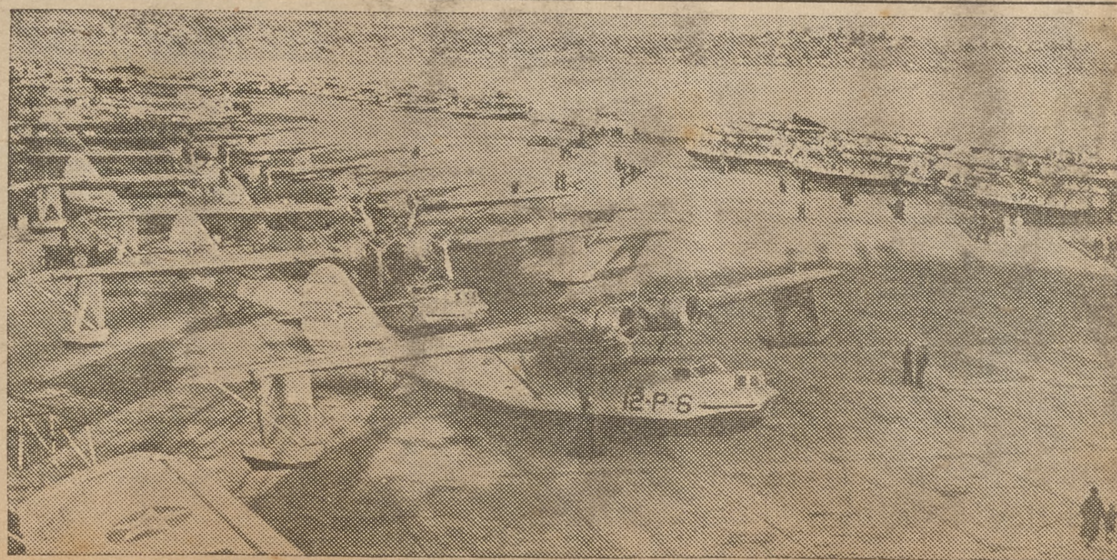
THE LONG, BRILLIANT SERVICE RECORD of the Navy's twin-engined Consolidated patrol-bombers grew brilliantly longer last month as 48 of these big boats made their way to the current "war zone" in the Caribbean.

Led by Capt. Marc A. Mitscher, the formidable four dozen, comprising PB Squadrons 7, 9, 11 and 12 from Fleet Patrol Wing No. 1 lifted off the bay at San Diego just before noon on January 10, then headed southward in what local reporters described as a 120 mile parade. Some twenty-five hours later 45 of the planes were riding quietly at Coco Solo, Canal Zone, 2,500 non-stop miles from their take-off. A few hours after that, three planes of Squadron 7 which had stopped at the Gulf of Fonseca, presumably for refueling, rejoined their fellows.

The same day the Consolidated's left San Diego for the Canal Zone, nine Sikorsky Amphibians and eight Grummans headed eastward across our southern border to join fleet forces at Guantanamo, Cuba. All in all, there seems little wrong with the mobility of our naval air arm.

January 18, 1939 NATIONAL AIR NEWS

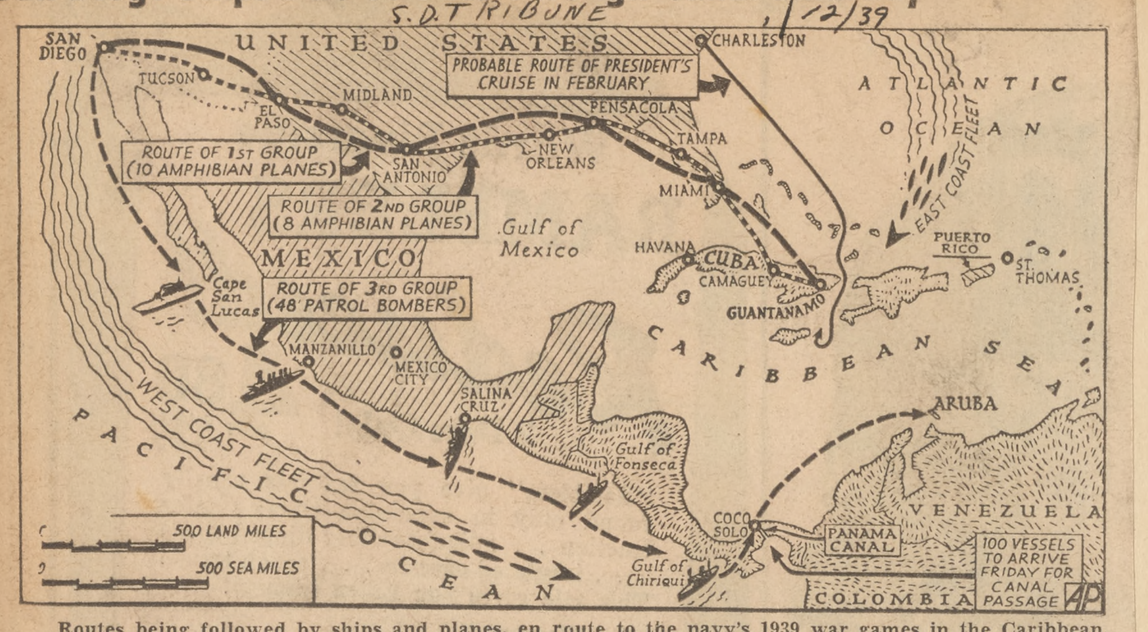
Planes Which Made Hop to Panama



This formidable assembly of Naval fighting planes is shown at San Diego, Cal., being made ready their flight to Coco Solo, C. Z. Forty-eight planes completed the flight to Panama.

San Diego Ships Due To Pass Through Canal Saturday

S.D. TRIBUNE 1/12/39



Routes being followed by ships and planes, en route to the navy's 1939 war games in the Caribbean, with the route for President Roosevelt's proposed cruise to witness part of Fleet Problem 20, are shown on the above map.

AMPHIBIANS OFF FROM TEXAS CITIES ON WAY EAST TODAY

With the main force of the United States fleet, which left San Diego last week, expected to arrive at the Canal Zone tomorrow, en route to the Caribbean sea, where Fleet Problem 20 will be held, 48 giant patrol bombers were at Coco Solo today after a flight of approximately 25 hours from San Diego. The planes landed in Canal Zone waters yesterday after an uneventful flight along the Mexican and Central American coasts.

Another group of San Diego planes, 18 amphibians, were expected to continue east from Texas points today. The planes, grounded by unfavorable weather conditions, are at Midland, Abilene and El Paso, The Associated Press reports.

President Roosevelt is reported planning a cruise from Charleston, S. C., next month to witness part of the exercises of Fleet Problem 20. He is expected to make the trip on the U.S.S. Houston, cruiser.

The last of the 48 patrol bombers settled down at Coco Solo at 12:10 p.m. yesterday. All but three made the flight nonstop, the three landing to refuel alongside the aircraft tender Wright off the Honduras coast. As the planes neared the Canal Zone, difficulties were encountered here in radio reception from the squadrons. The fleet is expected to transit the Panama canal Saturday.

BIDS TO OPEN ON AIRBOATS

Consolidated Seeks Big Contract

S.D. SUN 1/17/39

With alterations on Consolidated's four-motored million-dollar experimental patrol bomber being completed by the factory, bids on a contract to manufacture several of the 25-ton airboats will be opened in the bureau of aeronautics tomorrow, it was reported here today.

Two concerns—Consolidated and Sikorsky Aircraft Corp.—will compete for the contract to build a maximum of 15 craft. Cost per plane will be far less than the $1,000,000 required to engineer and construct the prototype.

Although the Consolidated XPB2Y-1, which was launched 13 months ago, has yet to be officially accepted by the Navy, it has gained favorable recognition in influential military circles in Washington as result of its round-trip transcontinental flight last October and November, with Lieut.-Comdr. Andrew Crinkley as pilot.

---

18 S. D. PLANES LEAVE MIAMI FOR CUBA

With Guantanamo Bay, Cuba, as their goal, 18 San Diego-based Sikorsky and Grumman amphibian planes commanded by Comdr. Allan I. Price, took off from the Miami municipal airport today, the United Press reported. The craft left here last Tuesday, making several stops on the journey across country.

Out of this Cuban base for the Fleet during the 1939 war games to start soon, the planes will operate in patrol and convoy missions until March, when they will begin tactical exercises along the east coast prior to their returning to San Diego.

Meanwhile, at the Canal Zone, 48 San Diego patrol bombers which made a record-breaking 3000-mile flight from San Diego last week, were being prepared for difficult long-range scouting missions over the West Indies to gain information on the movements of an "enemy" fleet seeking to gain a foothold in the western hemisphere.

S.D. SUN 1/16/39

S.D. UNION 1/18/39

Bids on Navy Bombers To Be Opened Friday

Bids on the navy's new 30-ton, four-motored, long-range bombers on which Consolidated Aircraft Corp,. Lindbergh field, and Sikorsky Co. have submitted proposals, will be opened today at Washington. The bureau of aeronautics is reported to be planning construction of a squadron.

Comdr. R. G. Mayer, inspector of aircraft at Consolidated, flew to Seattle yesterday to visit the Boeing plant.

NAVY OPENS BIDS TODAY ON 30 BOMBING PLANES

Bids on new 30-ton, four-motored, long range bombers, on which Consolidated Aircraft Corp. has submitted proposals, were opened today by the Navy Department in Washington.

Consolidated's experimental entry, completed here last year, recently made a successful overland flight to the east coast.

Bids also will be opened soon on three 11th Naval District projects, Comdr. J. T. Mathers (CEC), public works officer, announced. Bids will be opened Jan. 31 on a project to repair the oil pumping plant at the fuel depot.

S.D. SUN
1/18/39

Editorial / Bay Comm – Express

STRANGE WORLD

Kangaroos climb trees, rats are three feet long. It is not Baron Munchausen speaking but a serious scientist, Richard Archbold, leader of the expedition of the American Museum of Natural History into the jungles of Dutch New Guinea. This little scientific item comes from a place called Hollandia, in the heart of a wilderness rarely entered by white men, a land of strange birds and animals and plants and aborigines who have developed an amazingly advanced system of agriculture.

The three-foot rat found by Mr. Archbold and his associates is a powerful animal, a mammal formidable enough to hold his own in dangerous combat. On the other hand, the kangaroos are friendly, tame creatures and they do their tree-climbing by a technique in imitation of the New Guinea natives.

The Archbold outfit has made many valuable contributions to assist scientists in knowledge of the world about us. The remarkable finds it has made, the discovery of many new species, are repayment for the hardships and discomforts encountered by these intrepid men who are impelled by the urge to know. We have enjoyed reading every word of the Archbold report; it is a confirmation of what Shakespeare said in Hamlet: "There are more things in heaven and earth, Horatio, than are dreamt of in your philosophy."

Consolidated Low Bidder

S.D. UNION 1/19/39

Consolidated Aircraft Corp. is low bidder on a squadron of giant four-motored long-range bombing planes for the navy, Maj. R. H. Fleet, company head, said last night. Bids were opened by the navy department at Washington yesterday.

"We have received word that our bid was low on all items," said Maj. Fleet. "However, the navy probably will not announce an award for a month."

Consolidated and the Sikorsky Co. competed for the building of the new sky warships.

Bid totals will have to come from the navy department, Maj. Fleet said, as the cost will depend on the number of ships ordered up to the 15 maximum.

Report Consair Low On Bomber Bids

S.D. TRIBUNE 1/19/39

Consolidated Aircraft Corp., bidding against the Sikorsky Co. on a project to construct a squadron of giant four-motored long-range bombing planes for the navy, was low bidder, according to report by Maj. R. H. Fleet, president. Bids were opened yesterday at Washington, D. C. Fleet said the navy department will announce bid totals, probably within a month, and that the cost will depend upon the number of planes ordered up to the 15 maximum.

S.D. UNION 1/24/39

Bombers Reach Caribbean Base

The 48 patrol bombing planes of Patrol Wing 1, which left here Jan. 10, arrived yesterday at their Caribbean base for participation in the war games, The Associated Press reported from San Juan, Puerto Rico. They flew non-stop from the Canal Zone.

Commanded by Capt. Marc Mitscher, the big Consolidated seaplanes, except three which en route stopped alongside the U.S.S. Wright, station ship, made the 2800-mile flight from here to Coco Solo, C. Z., non-stop, in 25 hours, 43 minutes.

The planes are to begin the return flight here early in May, after completing maneuvers of Fleet Problem 20.

S.D. SUN 1/19/39

San Diego Engineers Form Institute

San Diego has a new organization of engineers today. It is the American Institute of Engineers, formed at a dinner meeting in Army and Navy Y. M. C. A. last night. With 28 members in the club, its officers, elected last night, are (front, left to right) W. L. BRYANT, vice chairman; F. E. EVENSON, chairman, and C. J. NEVITT, secretary-treasurer. In back (left to right) are Directors R. P. THOMPSON, E. E. EILER, H. A. CAMPBELL and D. W. PROEBSTEL.

S. D. Bombers Fly In Navy Air Film

S.D. UNION 1/25/39

San Diego's bombing planes have "gone Hollywood" and will make their screen debut in "Wings of the Navy," Warner Bros.' impressive aviation drama which will be shown in world premiere at the New Spreckels Feb. 3.

In the film, a large group of bombers thunders into the air from the surface of San Diego bay and in one dramatic sequence, 44 of the air ships are seen as they arrived in massed flight after completing summer maneuvers in southern Alaska.

Each of the bombers is valued at $260,000, completely equipped with the navy's secret devices that make them potent instruments of war defense. "Wings of the Navy" was filmed with the cooperation of navy officials. The stars are George Brent, Olivia De Haviland, John Payne and Frank McHugh.

The premiere promises to be of unusual glamour, with a large party of screen stars and studio executives to witness the first showing.

S.D. TRIBUNE 1/25/39

S. D. Bombers Shown In 'Wings of Navy'

Sixty San Diego-made navy bombers will make their screen bow when Warner Bros,' aviation drama, "Wings of the Navy," wil be shown in world premiere at the New Spreckels theatre Feb. 3. The premier promises to be of unusual glamour, with a large party of screen stars and studio executives to witness the first showing here.

In the film, a large group of bombers thunder into the air from the surface of San Diego bay. In one dramatic sequence, 44 of the air ships are seen as they arived in massed flight after completing summer maneuvers in southern Alaska. Each of the bombers is valued at $260,000, completely equipped with the navy's secret devices that render them potent instruments of defense.

The film, made in cooperation of navy officials, stars George Brent, Olivia De Havilland, John Payne and Frank McHugh.

MAJ. FLEET OFF TO CAPITAL

Bomber Contracts To Be Discussed

S.D. SUN 1/27/39

Aviation

Frankly desirous of obtaining specific information on steps being taken by the Navy Department toward awarding a contract for production of four-motored patrol bombers, the three highest ranking Consolidated Aircraft Corp. executives left San Diego by plane for Washington this week, it was revealed today.

Maj. Reuben H. Fleet, president; C. A. Van Dusen, vice president; and I. M. Laddon, chief engineer, of the local concern are conferring with Navy aviation officials in the nation's capital. They were accompanied by David G. Fleet, son of Maj. Fleet and his assistant at the factory.

SABOTAGE DISCUSSION

Departure of the officials shortly after Harry Bridges, west coast director of the CIO, charged that sabotage existed in the plant, also raised conjectures as to whether this subject will be discussed during their Washington stay.

Consolidated bid "much lower," according to factory sources, than its only competitor, Sikorsky Aircraft Co. of East Hartford, Conn., on all items in estimates to build as many as 15 bombers based on its experimental prototype, the 25-ton XPB2Y-1, which cost more than $1,000,000 to engineer and construct.

OPTION INCLUDED

An option to build 15 more than the maximum was included in the advertisement for the bids.

Exact figures of the Consolidated and Sikorsky bids are being kept confidential for the time being by the Navy Department. It is known, however, that the larger the order, the less each plane will cost the government.

Maj. Fleet recently announced that any contract would not be forthcoming for at least one month after the opening of bids Jan. 18, and that four more months would be required to order and obtain delivery of necessary materials.

LE XVI^E SALON DE L'AERONAUTIQUE

Le Figaro - Vendredi 9 Décembre 1938

APRES UN SUCCES SANS PRECEDENT L'EXPOSITION FERMERA SES PORTES DIMANCHE SOIR

Le Salon de l'Aéronautique touchant à sa fin voit son succès s'amplifier. Une foule considérable a visité hier l'Exposition, s'intéressant vivement aux divers modèles exposés par les stands français et étrangers.

C'est le stand du ministère de l'Air, avec la maquette grandeur nature de l'hydravion transatlantique S.E. 200, qui a connu la plus grande affluence. Parmi les avions français les plus remarqués, il convient de citer l'Hanriot N.C. 510 de travail, le Potez 63, bombardier rapide, le Caudron-Renault « Cyclone », le « Centre 2.234 », avion de transport rapide d'un rayon d'action de 8.000 kilomètres.

◆

Aux côtés du grand public, les visiteurs de marque continuent à s'intéresser aux productions de l'industrie française de l'aéronautique. Après la visite de sir Kingsley Wood, ministre britannique de l'Air, de nombreuses missions étrangères ont examiné le matériel exposé au Grand Palais. On a noté les missions suivantes : Yougoslavie, Tchécoslovaquie, Lithuanie, Suède, Danemark, Turquie, Italie, Pologne, Roumanie, Belgique, Suisse, Japon, Bulgarie.

Rappelons pour terminer que l'Exposition est ouverte jusqu'à dimanche 11 décembre inclus, chaque jour de 9 heures à 19 h. 30, à un prix que les organisateurs ont tenu à maintenir très abordable (6 francs par entrée).

◆

Parmi les marques de moteur, il convient de signaler tout particulièrement la production Salmson, qui présente une gamme complète de moteurs dont la puissance varie de 40 CV à 1.000 CV.

Voici la liste des moteurs produits par cette grande marque :

Le 9 ADR 60 CV, qui équipe les avions légers ;

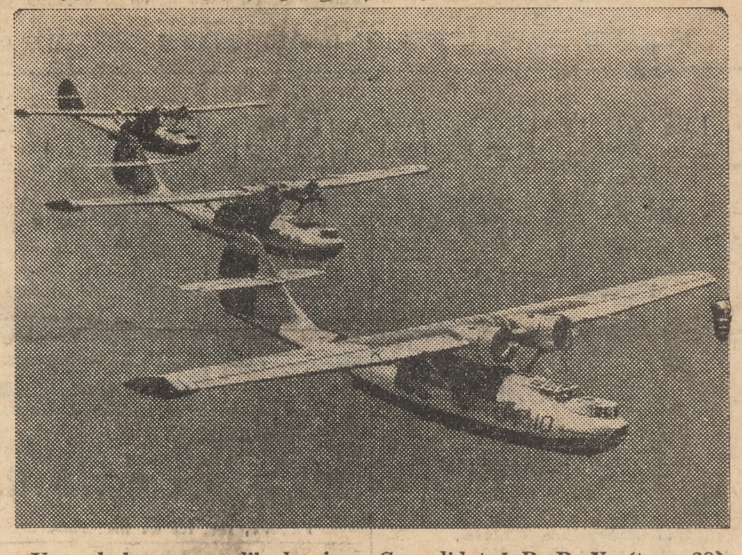
Le 5 AP-01 85 CV, nouveau-né pour le tourisme ;

Le 9 NG 175-195 CV. Ce moteur est dérivé du 9 NC 135 CV, dont les performances sur différents appareils et notamment sur le Salmson « Phrygane » sont connues de tous ;

Le 9 ABa 280-320 CV, dérivé du 9 AB 230 CV, équipe les Morane-Saulnier d'entraînement militaire;

Le 9 AG-01 390-435 CV, qui est monté sur Morane-Saulnier 405.

Tous ces moteurs sont en étoile, mais Salmson présente également deux types de moteurs en ligne, à cylindres inversés refroidis par l'air .



Un vol de groupe d'hydravions Consolidated P. B. Y. (type 28) commandés en série par la marine américaine.

L'hydravion Consolidated P. B. Y. patrouilleur et bombardier unique au monde

Les chiffres ont une éloquence dont il faut savoir tirer parti. C'est ce que font les Américains, c'est ce qu'a fait Fokker, représentant pour l'Europe de la Consolidated Aircraft Corporation, de San-Diego (Californie), qui montre au 16^e Salon de l'Aéronautique, par des chiffres, la place prise par l'hydravion Consolidated P.B.Y. (type 28).

On voit ainsi que le nombre des hydravions P. B. Y. livrés ou en cours de livraison s'élève, avec les rechanges, à 250 unités. C'est la plus importante commande d'hydravions à coque d'un seul et même type jamais passée à un constructeur et totalisant :

1.420.212.000 francs,

la plus forte somme jamais consacrée par le gouvernement des Etats-Unis à l'achat d'un type déterminé.

De belles performances

De telles références montrent l'intérêt que porte le gouvernement des Etats-Unis à cet hydravion Consolidated P. B. Y. (type 28), patrouilleur, bombardier et de transport.

Cet appareil est un monoplan semi-cantilever, entièrement métallique bimoteur, équipé soit de moteurs Wright Cyclone, soit de Pratt et Whitney « Twin Wasp ».

La marine des Etats-Unis a vu immédiatement dans cet hydravion l'appareil indispensable, pour la patrouille et le bombardement, et passa à Consolidated une forte commande sur laquelle 200 appareils ont été livrés. Chacun des hydravions s'est rendu par la voie des airs, sans escale, de San-Diego à Pearl Harbour, Coco Solo, Zone du Canal de Panama, accomplissant ainsi des distances de 4.100 à 5.000 kilomètres d'un seul vol.

Rayon d'action : 6.400 km. Autonomie de vol : 35 heures

L'hydravion Consolidated P.B.Y. est considéré actuellement comme le patrouilleur et le bombardier le plus remarquable au monde. Un tel résultat a pu être atteint après de nombreuses années de développement et de recherches. Le P. B. Y. peut être comparé aux hydravions quadrimoteurs du service transocéanique, par la charge utile qu'il peut transporter et par sa vitesse de croisière élevée. Les aménagements spéciaux dont bénéficie le P. B. Y., comme les ballonnets escamotables et les réservoirs d'essence dans l'aile, permettent enfin à cet hydravion d'emporter de très fortes charges. Son rayon d'action est de 6.400 kilomètres pour une autonomie de vol de 35 heures et, dès sa mise en service, le P. B. Y. a établi un nouveau record international de distance avec 5.540 kilomètres, cependant que quotidiennement les P. B. Y. établissent de nouveaux records.

Des vols de groupes impressionnants

Les vols de groupes fameux accomplis par les hydravions P. B. Y. sont encore présents à la mémoire. En maintes circonstances, en effet, des groupes de 12, 14, 17 ou 18 appareils comportant des équipages allant de 80 à 127 hommes, ont réalisé la liaison de San Diego- à Pearl Harbor, ou Coco Solo, soit 4.108 kilomètres et 4.967 kilomètres, sans le moindre incident. Le dernier vol des 17 hydravions P. B. Y. de San-Diego à Pearl Harbor en septembre, soit 4.108 kilomètres, s'effectua en 17 heures 17.

«La sentinelle du Pacifique»

L'hydravion P. B. Y. est considéré comme l'engin le plus redoutable de la marine américaine. Il a été baptisé « La Sentinelle du Pacifique ». L'armement défensif du P. B. Y. se compose de quatre mitrailleuses, une dans le nez du fuselage, une de chaque côté du pont, juste à l'arrière de l'aile, et une tirant en arrière, dans le fond de la coque, juste en avant de la queue. La mitrailleuse avant, montée dans une tourelle enfermée, couvre un champ comprenant l'hémisphère avant ; l'hémisphère supérieur est couvert par les deux mitrailleuses du pont, dont les champs de tir recouvrent en partie celui de la mitrailleuse avant.

L'armement offensif se compose de bombes ou de torpilles accrochées aux ailes. En cas d'équipement par des bombes ou des torpilles, la quantité d'essence transportée est réduite en proportion du poids des engins emportés. En réduisant les quantités de carburant, on peut donc transporter pour ainsi dire n'importe quelle combinaison et quel poids de bombes.

Selon la puissance des moteurs qui équipent le P. B. Y. on enregistre des vitesses qui varient entre 298 et 306 kilomètres à l'heure et 324 et 331 kilomètres à l'heure. Selon la charge d'essence et le poids des bombes transportées, le P.B.Y. peut parcourir de 4.500 à 6.000 kilomètres. Ses qualités de maniabilité et de vol sont remarquables. Les facilités du décollage — même avec un seul moteur — sont uniques au monde et permettent d'affirmer que de telles performances n'ont jamais été réalisées par aucun autre hydravion.

André Reichel.

Foreign Aviation Experts Visit Consolidated Plant—For Ideas

S.D. SUN 1/27/39

Are foreign aircraft representatives now touring the United States hoodwinking American manufacturers?

This question was raised here today when it was learned that a large number of European military aviators and civilian technical experts have been conducted through Consolidated Aircraft Corp. and other Southern California plants, with the implied intention of possible future orders resulting from their visits.

Actually, however, the outlook for foreign contracts has been little, if any, better, following their tours of the factory than before, it was pointed out at Consolidated today.

MISSIONS ON TOUR

Aviation missions from Great Britain, Netherlands, France, Australia and Sweden have visited in the past few months or are scheduled to visit Consolidated in the near future, it was revealed.

Although their tours are necessarily restricted because of confidential work being performed in certain parts of the San Diego factory, these officers and representatives of civilian flying companies are shown enough to get a fairly complete idea of production methods.

BACK WITH IDEAS

Then they go home with brief cases full of ideas to step up and modernize their own factory systems to turn out planes with American efficiency.

In certain cases, such as that of the recent British mission to the United States, an actual order was placed—for 400 planes to be built by North American and Lockheed. Now a French mission has arrived to buy 600 aircraft, an announcement in Washington said yesterday.

However, the majority of foreign tours—at least through Consolidated—have been unproductive of contracts, though highly productive of ideas to the guests from abroad.

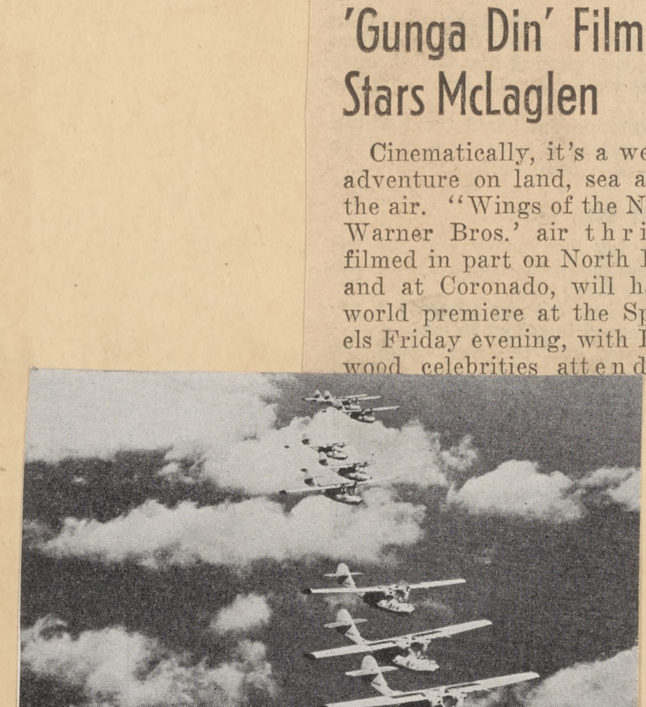
"Guba" Records

A recapitulation of the around-the-world flight of the Consolidated "Guba" flown by Richard Archbold, shows that the following records were established:

1. The first airplane to fly around the world at its greatest diameter.
2. The longest over-ocean non-stop flight by a flying boat, Dakar to St. Thomas, Virgin Islands, 3300 miles.
3. The first flying boat to fly around the world.
4. The first airplane to cross the Indian Ocean from Australia to Africa.
5. The first flying boat to fly across Africa.
6. The first flying boat to fly across Australia.

During the time Archbold operated the Guba in New Guinea, more than 500 hours were flown under extremely primitive operating and service conditions, transporting hundreds of thousands of pounds of supplies and hundreds of people to various points in the interior.

Aviation 10/39



ROUTINE TRANSFER: Forty-eight big Consolidated patrol-bombers of Fleet Patrol Wing No. 1 last month left San Diego en route for the Caribbean war games. First stop was Coco Solo in the Canal Zone, 2,500 miles from the point of take-off. (Story on page 94)

Aviation 2/39

NORTH ISLAND LOCALE FOR AVIATION FILM

Flying boats at North Island in a sequence of "Wings of the Navy," to have its world premiere at the New Spreckels Friday. San Diego may be seen in the background. Olivia DeHavilland and George Brent (inset) play romantic roles.

S.D. UNION 1/30/39

'WINGS OF NAVY' PREMIERE SET FOR SPRECKELS FRIDAY

The eyes of filmdom will be focused on San Diego Friday when Warner Bros. presents the world premiere of their air drama, "Wings of the Navy," at the New Spreckels.

The permiere will be an event of civic importance since many sequences of the film will carry the glories of North Island and its impressive air defense forces throughout the world.

A contingent of stars, executives and directors will attend in person, to be greeted by a party of city officials. High-ranking naval officials will be guests opening night.

"Wings of the Navy" is a dramatic romance, set in a roaring background of navy planes and the men who fly them. Geor Olivia DeHavilland, John ank McHugh head a lar

The curernt p nts Jackie Cooper in a a, "Newsboys' Home," a De Luxe," a romantic c

---

This Week at San Diego Theaters

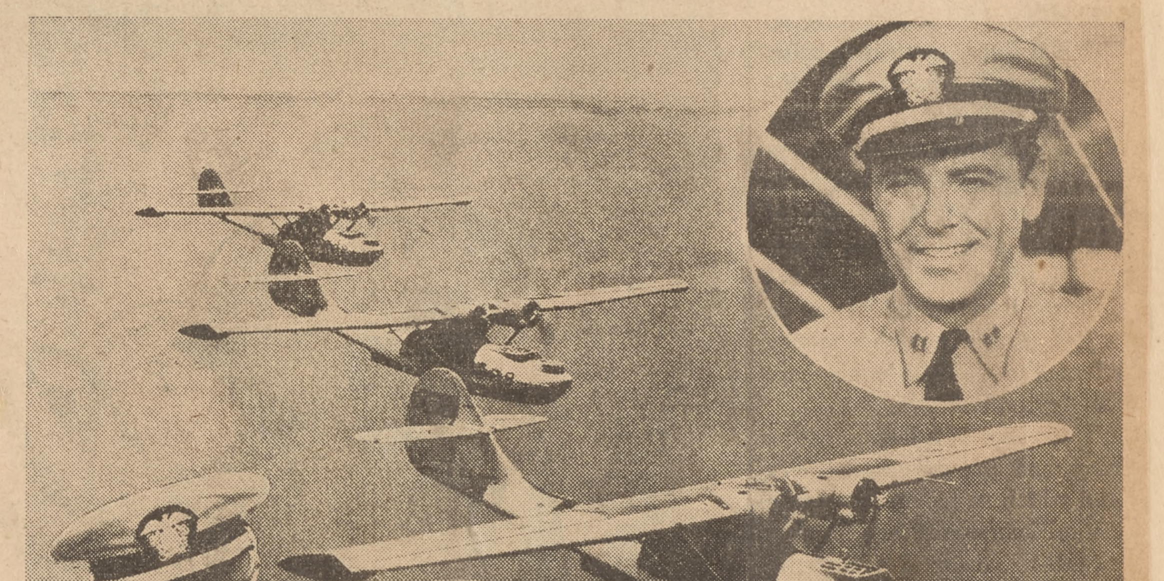
S.D. UNION 1/29/39

'Wings of Navy' Premiere Coming; 'Tail Spin' Here

'Gunga Din' Film Stars McLaglen

Cinematically, it's a week of adventure on land, sea and in the air. "Wings of the Navy," Warner Bros.' air thriller filmed in part on North Island and at Coronado, will have a world premiere at the Spreckels Friday evening, with Hollywood celebrities attending.

SCREEN THRILLER GLORIFIES U. S. SEA-GOING FLIERS . .



Warner Bros. will present a world premiere of their impressive new aviation drama, "Wings of the Navy," at the New Spreckels Friday. George Brent (top), John Payne and Olivia De Havilland (below) play leading roles in the film, which was produced partly at Pensacola and partly at North Island.

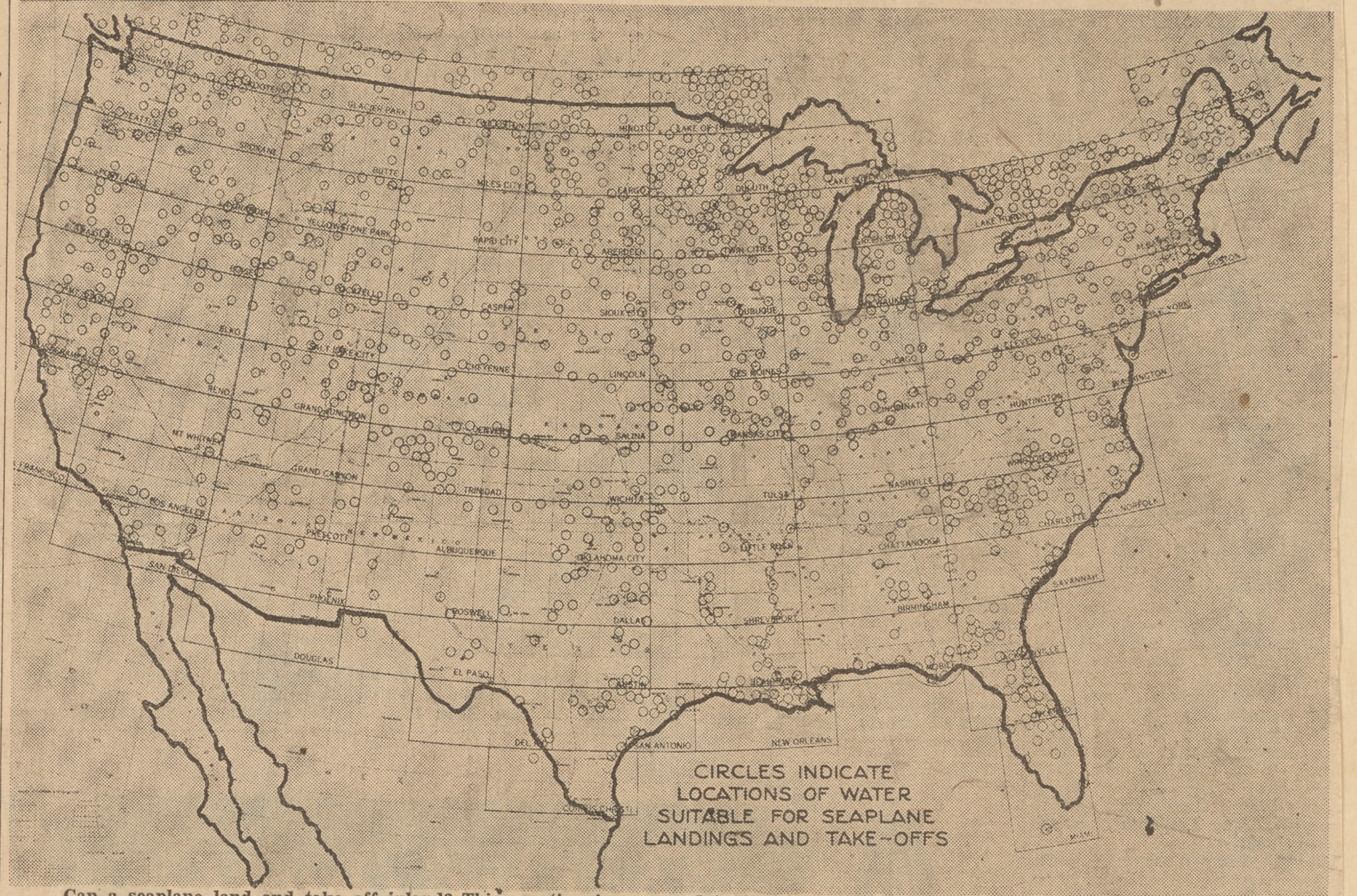
Nature Casts Smiling Eyes on Seaplanes

~~S.D. UNION~~ S.D. TRIBUNE · 1/18/39

NATION LITERALLY DOTTED WITH INLAND PORTS FOR SEAPLANE TRAFFIC

Map Blotched With Solid Black If Every Suitable Landing Area Indicated With Tiny Circle

Bottoms Designed To Take Shocks



Can a seaplane land and take off inland? This question is answered in the accompanying map, where the circles represent areas suitable for seaplane landings and takeoffs.

"Nature still prefers flying boats," writes T. M. Hemphill in the January issue of Consolidator, monthly publication of the Consolidated Aircraft Corp.

"Some time ago the author write 'Nature Prefers Flying Boats,' pointing out the fact that nature has generously dotted the country with lakes, rivers and reservoirs suitable for landing flying boats," stated Hemphill. "In the accompanying map each circle shown indicates a body of water suitable for taking off or landing a large flying boat.

"All the suitable bodies of water are not shown. In some places they are so numerous that the map would appear solid black if an attempt were made to indicate them all. Only the largest are shown in such cases.

"These are nature's seaport landing fields."

Hemphill's article, in part, contiues as follows:

If our airlines had developed around flying boats instead of land planes other problems which have arisen would not have done so. For example, our coastwise airlines fly over the ocean, at least over part of their routes. While this practice is safe enough because f the reserve of power carried, there is always the possibility, however remote, of having to land at the nearest convenient spot which would be the water's edge. Unfortunately this inviting spot is usually rough enough to make short work of any land plane.

Safer Method

It might be supposed at first that seaplanes operating over land are in similar straits. However, this is not the case. In an extreme emergency, land planes will land on their belly with the wheels retracted because, by experience, this has proven to be the safer method. Flying boats are well suited to this type of landing since their hull bottom is designed to withstand landing shocks. In fact, seaplanes are more suited to emergency landing on land than landplanes are because the part that is designed for landing (the hull bottom) takes the shock. The wings, tail, propellers and other parts which must be designed to clear the water, will also clear the ground and small protuberances in an emergency landing on land. Consequently, these parts will not catch and cause the ship to careen around into some unfavorable or destructive attitude. This is not the case with a landplane with its landing gear retracted, when the clearances become less for the emergency landing.

There have already been several instances of flying boats making forced landings on land and in no such case, to the author's knowledge, has there been a serious injury. A Consolidated Commodore operated by Pan American Airways was forced to land in a clearing in Cuba. No one was injured. The story goes that one of the passengers riding in a Commodore at a later date accosted the pilot and related his part in the event. The pilot remarked that it was quite a coincidence for, said he, "I was the pilot of that ship," "and," after a pause "This is the ship."

Not Unduly Hazardous

A navy patrol boat was recently landed on a beach in San Diego with no one injured. And even more recently, an amphibian landed at the Glendale airport with wheels up, "without a scratch." The intentional daily landings and take-offs of the Cub seaplane on the grass airport at the Cleveland Air races also bears witness to the fact that the procedure is not unduly hazardous.

The realization that flying boats overland is not hazardous cannot help but become more widespread when Uncle Sam's newest and fastest Dreadnaught of the Air, the Consolidated XPB2Y-1 is on short notice ordered to proceed across the United States from San Diego to Anacostia. The return flight, also made overland, was flown over an entirely different route showing that the naval navigators were fully aware of the numerous landing places available. Another factor of considerable importance is that the landings at the termination of both flights were made at night without any elaborate preparation such as is necessary for the usual landplane landing.

Commercial operation of land transports has meant that a great deal of money, time and effort has been spent in their development. Consequently the development of landplanes has preceded that of flying boats by a considerable margin. Only recently have flying boats begun to have the clean strutless appearance that landplanes have shown for the past eight years. Flying boats have more or less copied the developments that were demonstrated on landplanes. Although this is still being done, the gap between the developments is rapidly closing. Whether or not flying boats will attain the practical speed of landplanes is still a moot question, however, it is becoming evident that flying boats are likely to far outstrip landplanes in load carrying capacity which is equally as important as speed. The superior load carrying capacity of flying boats is due to the fact that large take-off areas which are necessary for highly loaded aircraft, are already available. We do not have to wait for the development of suitable airports before we can increase the load carryinn efficiency of flying boats.

This situation has not just occurred. The opportunity to operate flying boats commercially without a great deal of airport preparation has existed all along. The point is that this opportunity still exists. There are many points which could be served by flying boats which can never afford to support an adequate flying field. Air transportation is still in its infancy and even though it has been growing by leaps and bounds, the next ten years will probably see undreamed-of expansion.

Nature has already provided the ground facilities for expansion of flying boat airways and whoever takes advantage of them is likely to profit thereby. Nature still prefers flying boats.

LIEUT.-COMDR. MAYER . . He can boast 6000 lighter-than-air hours.

S.D.SUN ~~1/29/39~~ 1/29/39

By HAROLD KEEN

He helped the Boeing Aircraft company—in a modest way, of course—develop from the hobby of a rich lumberman's son into one of the largest airplane plants in the nation.

He supervised the engineering on the first American-built rigid airship, the Shenandoah, made every one of its flights, and survived the disaster which demolished it.

He served on the doomed Akron and Macon and at the time of the latter's loss, he had compiled 6000 flight hours in lighter-than-air craft, more than any other Navy officer.

And, today, as naval inspector at Consolidated Aircraft Corp., Lieut.-Comdr. Roland Mayer has been notified that he will be promoted to the rank of commander, one of the few non-Naval Academy alumni to reach this high grade.

A graduate of the University of Washington in mechanical and marine engineering in 1916, Comdr. Mayer went to work as a draftsman for William Boeing in the shack he had built alongside his father's lumber mill in Georgetown, a suburb of Seattle.

For six months he toiled on the design of ships in the first Boeing service contract, Navy training planes which were destined for use at Pensacola in the training of aviators later to pilot fighting and scouting craft over France.

Came this nation's entry into the World War, and he transferred to the Navy Bureau of Construction and Repair as a civilian aeronautical draftsman. Just before the Armistice, he received a temporary commission as junior grade lieutenant in the Construction Corps, gaining a permanent appointment as senior lieutenant in 1922.

When the Shenandoah was authorized in 1919, Comdr. Mayer was shifted to duty in charge of engineering at the Naval Aircraft Factory in Philadelphia, where the airship was built piecemeal.

It took four years to manufacture the Shenandoah, four years of pioneering along several fronts.

Assigned duty as its first lieutenant, he was aboard on the ship's second anniversary, when it broke in two during a line squall above Ava, Ohio.

At the time of the catastrophe, he was inspecting the craft forward. While the after end and the control car split, shooting 13 crew members to earth through the broad gaps in the structure, Lieut.-Comdr. Mayer and his mates struggled for one and one-half hours "free-ballooning" the intact bow to earth as slowly as possible by controlling the valving of helium.

CONSOLIDATED DELIVERS SHIPS

Contract For Navy Craft Now Nearly Fulfilled

S.D.SUN 1/29/39

Aviation

Consolidated Aircraft Corp. has delivered all but nine of its PBY type planes to Navy patrol squadrons in its four contracts to build 209 planes and spares, it was reported at the plant.

Because of special equipment to be placed on these airboats, they may not all be delivered until as late as May, Lieut.-Comdr. Roland Mayer, inspector of naval aircraft at the local factory, said.

Fifteen of the latest PBY-4 ships will be ferried to Pearl Harbor in a mass flight in June by Patrol Squadron One, normally based at Pearl Harbor, and now in training at North Island.

The Martin Aircraft Co. of Baltimore, Md., is manufacturing 22 large twin-engined seaplanes of the patrol bomber type.

A new squadron, VP-22, will receive some of these craft, according to present allotments.

To Fly In S. D.

S.D.SUN 1/29/39

He'll fly the bombers his dad manufactures. Having just completed his training course at Pensacola, Aviation Cadet C. A. Van Dusen, son of the vice president of Consolidated Aircraft Corp., has been assigned active duty with a San Diego-based patrol squadron.

S.D. UNION 2/1/39

Plane Makers Elect Gott

Edgar N. Gott, Consolidated Aircraft Corp. vice president, was elected one of three vice presidents of the Manufacturers Aircraft association. The Associated Press reported yesterday from New York. The association administers the cross-licensing patent agreement for the domestic plane manufacturing industry. Frank H. Russell, New York, was re-elected president; John A. Sanborn, New York, general manager; Joseph T. Hartson, Baltimore, secretary, and James P. Murray, Seattle, treasurer.

Edgar Gott

Serving with Gott as vice presidents will be E. E. Wilson, East Hartford, Conn., and John M. Rogers, Santa Monica.

Gott is in Washington with Maj. R. H. Fleet, president, and other Consolidated officials.

Propellors May Become Brakes

S.D.SUN 2/12/39

Consolidateh Aircraft Corp. officials yesterday noted with interest projected experiments to test the power of airpane propellors as brakes for the big transoceanic flying boats of the future.

Airboat designers at a plant near Washington have asked an experimental firm to test this seemingly paradoxical idea, Science Service reported.

REVERSIBLE PITCH

Propellors with reversible pitch blades can do the trick, and will be manufactured for the test.

Such propellors, with the blades twisted opposite to their usual position, would reverse the direction of the airstream they create. Instead of slipping it back past the wing, it would blow it forward, slowing the plane. The scheme, of course, is intended for planes on the water. Loss of airspeed in the air may mean a fatal plunge.

HELP IN TURNING

The whirling brakes woulh help in maneuvering big flying boats with four or more engines by enabling a pilot to use one or two of his motors producing their reverse effect, while running the others as usual. Thus, he would be able to turn quickly—like an oarsman pulling his oars in opposite directions. In addition, all four motors could be used as brakes to come to a quick stop—something which now is difficult.

---

in the case of the Rheinelbe Union bonds, of the principal value of the securities deposited for acceptance.

LA Times 2/1/39

Aircraft Makers Re-elect Bradley

NEW YORK, Jan. 31. (AP)—Samuel S. Bradley today was re-elected chairman of the board of the Manufacturers' Aircraft Association, which administers the cross-licensing patent agreement for the domestic plane manufacturing industry. Frank H. Russell was re-elected president and John A. Sanborn general manager. All are from New York. Vice-presidents elected included E. E. Wilson, East Hartford, Ct.; Edgar N. Gott, San Diego, and John M. Rogers, Santa Monica, Cal. Other officers: Joseph T. Hartson, Baltimore, secretary, and James P. Murray, Seattle, treasurer.

CONSOLIDATED PLANE SABOTAGE CHARGED

S.D. SUN 1/23/39

Bridges Files Complaint; Naval Inspector Admits 'Possibility'

Charges today that Nazi agents are sabotaging airplanes under construction in San Diego's Consolidated Aircraft Corp. were denied by company officials, but a high ranking Navy officer admitted sabotage "could exist without our detecting it."

The accusations were made by Harry Bridges, west coast director of the Congress of Industrial Organizations. He alleged that offlicials of Consolidated and of the North American Aviation Co. of Los Angeles, aware of the asserted sabotage, but have ignored it, the United Press reported.

Mr. Bridges made his charges to President Roosevelt in a telegram from San Francisco. He asked government officials personally conduct an investigation of his accusations.

CRASHES CITED

"Approximately 12 Navy bombers manufactured by Consolidated Aircraft have, in a period of little over a year, fallen with deaths of crews," the wire stated.

C. A. Van Dusen, vice president of Consolidated, voiced a blanket denial of Mr. Bridges' charges.

"We absolutely and unqualifiedly deny any sabotage exists in this plant," he declared. "The naval intelligence office knows everything that goes on here."

Lieut.-Comdr. Roland G. Mayer, naval inspector at Consolidated, acknowledged there might be some sabotage in the plant.

"Anybody might commit sabotage and we could not detect it," he said. "It would be the duty of any citizen, knowing of sabotage, to report it to authorities under the Espionage act. But, Bridges is not a citizen. I believe this is just a publicity stunt of some sort. Our inspectors are very thorough, and I doubt the veracity of these charges."

DISCHARGED, CLAIM

Mr. Bridges charged information relative to the purported sabotage has been gathered by employes in the plants, but those making complaints were discharged by company officials. He alleged some information has been placed in the hands of the National Labor Relations Board and that Federal Bureau of Investigation agents and the Navy have been notified.

He contended it would have been impossible for the supposed sabotage to have been committed without knowledge of employers or Federal agents.

"We say that company officials and government officials have had these complaints and have not acted," Mr. Bridges commented. "I call that collusion. You will probably find that certain minor government officials have stock in these companies and it proves to their financial benefit to have these planes rushed through, regardless of their condition.

"We don't want a bunch of crackpots like the Dies committee investigating these charges," he added.

Mr. Bridges' wire to President Roosevelt read:

"Nazi agents and sympathizers working on planes of North American Aviation Co., subsidiary of General Motors Corp., Los Angeles, and Consolidated Aircraft, San Diego, are engaged in wholesale sabotage during manufacture of airplanes for the U. S. Government.

"Numerous complaints to local Army, Navy and employer officials and inspectors responsible for inspection of the planes, that unsafe planes have been inspected and passed, only resulted in persons making the complaitns being discharged or demoted."

"Approximately 12 Navy bombers manufactured by Consolidated Aircraft have, in period of little over a year, fallen with deaths of crew," the wire continued.

"Due to intimidation of union workers who have attempted to expose sabotage and the fact that alliance undoubtedly exists between company and government officials locally, we urge immediate investigation be conducted by special government representatives from Washington.

"CIO unionists in past have been blamed for much sabotage under barrage charges, while in reality company has operated under this Communist smoke screen to employ Nazi agents, Bund members, who serve a two-fold purpose in acting as labor spies and union disrupters, while deliberately sabotaging Army planes under construction.

"Abundant evidence and official records now exist to prove these drastic charges providing investigation is put in hands of proper government agency, free from any local employe pressure."

Amazing Tale Of Men Who Dared To Venture

A great parade of men of heroic stature and sublime faith passes in time-haloed glory before the engrossed reader of "Unsolved Mysteries of the Arctic" by Vilhjalmur Stefansson, president of the noted Explorer's Club and himself an Arctic adventurer of no mean accomplishment.

This is one of those rare books which once taken up are not placed down until, with a sigh of sincere regret, the reader comes to the closing phrase.

FRIGID MYSTERY

All the frigid mystery—and the glory—of the "friendly Arctic" are here, and the tragedy which has so often—and so unnecessarily, says Mr. Stefansson—been visited upon those who sought to ferret out its ice-locked secrets.

Mr. Stefansson begins his startlingly clear-cut narrative in 795 A. D., when the Irish, or at least people from the British Isles, crossed the main stream of the Atlantic to discover Iceland. He then traces polar exploration from that time down to the present, when the Soviet aviator, Sigismund Levanevsky, and his companions vanished into the Artic night on their flight from Moscow over the top of the world.

MEN WHO DARED

It is an amazing narrative of the men who dared they knew not what to discover and open to commerce the famous "North-west Passage"—a truly Homeric saga of chilled-steel men whose resolve to succeed was as coldly steadfast as the Pole, itself, and whose daring and hope flamed higher and brighter than the Aurora Borealis.

What happened to the ill-starred Franklin expedition, and how; why did 9000 Europeans disappear from an early colony; what dark secret lay behind the mysterious gunshot death of Thomas Simpson, deep in the Arctic wastes; what happened to Andre and his two companions who so blithely sailed from Spitzbergen in one of the earliest balloons, and whose half-clothed bodies were found in 1930, dead in their tent on a lonely isle?

FOR SAN DIEGANS

The reader who can shut the covers of Mr. Steffonsson's grand book before he reads the author's well-documented explanation of these events is devoid indeed of human sensibility and curiosity about the little-known!

And, for California and San Diego readers, particularly, this book contains an added fillip, for in it Mr. Stefansson pays high tribute to the Arctic exploratory efforts and scientific ability of Dr. Harald U. Sverdrup, now director of the Scripps Institution of Oceanography at La Jolla. In fact, it is Dr. Sverdrup whose explanation of the death of Andree is quoted in "Unsolved Mysteries" and which now is accepted by polar experts as the best authority as to his haunting fate.

S.D. SUN 2/12/39

VILHJALMUR STEFFANSSON . . . mystery and tragedy.

Also of note to San Diegans is Mr. Stefansson's recount of the part played by the flying boat "Guba" in the international search for the lost Levanevsky party. Built in San Diego for the prominent explorer, Richard Archbold, the "Guba" was a modified version of Navy's long-range patrol bombers, manufactured by Consolidated Aircraft Corp.

Postponing his own plans for a New Guinea exploratory trip, Mr. Archbold eagerly consented to sell the "Guba" to the Russian government for use in the search, after certain military features had been eliminated. Mr. Stefanssen pays honor to the boat, one of the most successful and satisfactory of any plane ever used for Arctic work, and to Sir Hubert Wilkins who directed her activities.

Here is a tale of high adventure —a story that if filmed would be received with incredulity by a cinematic audience. Mr. Stefansson deserves special commendation for careful documentation and insistence upon presenting views divergent to his own. No fancy-dancy writing, true, but as clear and sparkling as the Arctic night, itself. The subject may be cold, but his book is warm, human and intensely dramatic.—C. L. D.

("Unsolved Mysteries of the Arctics," Vilhjalmur Stefansson. The MacMillan Co., $3.50. Introduction by Stephen Leacock.

BRIDGES HITS S. D. SABOTAGE

S.D. TRIBUNE 1/23/39

CONSOLIDATED DENIES NAVY PLANE SABOTAGE AS CHARGED BY BRIDGES

S.D. UNION 1/24/39

Charges made yesterday by Harry Bridges, west coast Congress of Industrial Organizations director, that Nazi agents were sabotaging planes at the plants of Consolidated Aircraft here and North American Aviation in Los Angeles brought prompt denials from the two companies and from navy intelligence here.

Bridges, The Associated Press reported from San Francisco, telegraphed President Roosevelt to ask a department of justice investigation.

"Evidence to support the charges has been turned over to the national labor relations board at Los Angeles," Bridges said, charging that complaints to army, navy and employer officials and inspectors "have only resulted in persons making complaints being discharged or demoted. The C.I.O. director said his labor group is only trying to point out "who actually is" sabotaging government planes as a reply to complaints that sit-down strikers at the Douglas plant had damaged planes last year. The Douglas company is not mentioned in the telegram, however.

Bridges charged that "approximately 12 navy bombers manufactured by Consolidated Aircraft have, in the period of a little over a year, fallen with deaths of crews. Due to intimidation of union workers who have attempted to expose sabotage and the fact that an alliance undoubtedly exists between company and government officials locally, we urge immediate investigation be conducted by special government representatives from Washington."

"We have no knowledge of any sabotage in our plant," Consolidated Aircraft reported. North American Aviation made a similar statement.

Consolidated referred inquirers to "O.N.I." for further comment. This is the office of naval intelligence. Comdr. E. M. Zacharias, intelligence officer, 11th Naval district, said:

"If we had knowledge of any sabotage there'd probably be some action. We don't know of any at the plant and if there is we haven't run across it. No information has come to us about the matter to which he's referring."

Informally, Consolidated officials pointed out that they did not believe total crashes of Consolidated planes exceeded 10, instead of the 12 in a year mentioned by Bridges.

Local crashes involving Consolidated planes include a mid-air collision between two bombers Feb. 2, 1938; disappearance of a bomber and crew of 8 the night of Jan. 5, 1938; two wrecked in landing on the bay Aug. 15, 1938, and another wrecked when it struck a log while landing. It was questioned that any factory sabotage could be involved in these crashes.

Navy planes, it was pointed out, are built under supervision of a navy inspector stationed at the plant. Present inspector is Lt. Comdr. Roland G. Mayer. After construction they are tested out by the navy before acceptance.

Dr. Towne Nylander, regional labor board director at Los Angeles, said that no "statements, charges or affidavits have been made to me relative to Consolidated Aircraft," The Associated Press reported.

He said that in connection with a labor complaint against North American Aviation, a series of statements was filed. "The matter is now under investigation and no further statement can be made until the case has been closed."

Deny Sabotage Of S. D. Planes

S.D. TRIBUNE 1/24/39

Local naval intelligence and Consolidated Aircraft Corp. officials today issued denials of charges brought yesterday by Harry Bridges, west coast Congress of Industrial Organizations director, that Nazi agents were sabotaging planes at the Consolidated plant.

"If we had knowledge of any sabotage there would probably be action," said Comdr. E. M. Zacharias, 11th naval district intelligence officer. "We don't know of any at the plant and if there is we haven't run across it. No information has come to us about the matter to which Bridges is referring."

Bridges wired President Roosevelt to ask a department of justice investigation. The Associated Press reported. He said evidence to support the charges of sabotage at both the Consolidated plant and the North American Aviation Co. plant, Los Angeles, had been turned over to the national labor relations board at Los Angeles, and cited the 1938 accidents to "approximately 12 navy bombers manufactured by Consolindated" as evidence of sabotage.

Making Giant Patrol Ships

Consolidated officials declared they have "no knowledge of any sabotage in our plant." A similar statement was made by North American Aviation Co. representatives.

The number of employes now at Consolidated is approximately 1300, it was reported at the plant today. While no figures are available, a plant election last year, held under the supervision of the national labor relations board, showed an A.F.L. majority. The company, which transferred its factory from Buffalo, N. Y. to San Diego in 1935, is manufacturing giant patrol planes for the navy which are to be flown from San Diego to Hawaii this summer.

Approximately 1000 were employed at the North American Aircraft Co. plant two months ago, but there have been some lay-offs recently there, The Associated Press reported. Dr. Towne Nylander, of the national labor relations board, said the C.I.O. claims a majority at the North American plant and that an election will be ordered soon, the exact date undetermined.

Under Navy Supervision

Informally, Consolidated officials pointed out that they did not believe total crashes of Consolidated planes exceeded 10, instead of the 12 in a year mentioned by Bridges.

Local crashes involving Consolidated planes include a mid-air collision between two bombers Feb. 2, 1938; disappearance of a bomber and crew of 8 the night of Jan. 5, 1938; two wrecked in landing on the bay Aug. 15, 1938, and another wrecked when it struck a log while landing. It was questioned that any factory sabotage could be involved in these crashes.

Navy planes, it was pointed out, are built under supervision of a navy inspector stationed at the plant. Present inspector is Lt. Comdr. Roland G. Mayer. After construction they are tested by the navy before acceptance.

Nylander, regional labor board director at Los Angeles, said that no "statements, charges or affidavits have been made to me relative to Consolidated Aircraft," The Associated Press reported.

He said that in connection with a labor complaint against North American Aviation, a series of statements was filed. "The matter is now under investigation and no further statement can be made until the case has been closed."

Expose Repaid With Job Loss, Tale; Denied

Consolidated Aircraft Corp., of San Diego, is one of two southern California airplane manufacturing plants in which alleged Nazi agents and sympathizers working on planes being constructed for the government have been engaged in wholesale sabotage, Harry Bridges, west coast C.I.O. director, charged today in a telegram to President Roosevelt, The Associated Press reported from San Francisco. Named with Consolidated by Bridges is the North American Aviation Co., at Los Angeles.

Bridges said "evidence to support the charges has been turned over to the national labor relations board in Los Angeles," and urged that the investigation from now on be put in the hands of the department of justice at Washington.

He charged that complaints to army, navy and employer officials and inspectors "have only resulted in persons making complaints being discharged or demoted."

Bridges said the C.I.O. was trying to point out who actually was sabotaging government planes, as a reply to complaints that C.I.O. workers involved in a sit-down strike at the Douglas plant last year had damaged planes. The Douglas firm was not named in the telegram, however.

"Approximately 12 navy bombers manufactured by Consolidated Aircraft have, in the period of a little over a year, fallen with deaths of crews," the telegram alleged.

"Due to intimidation of union workers, who have attempted to expose sabotage, and the fact that an alliance undoubtedly exists between company and government officials locally, we urge immediate investigation be conducted by special government representatives from Washington."

"We deny completely Bridges' charges," said a Consolidated official this noon. The navy maintains inspectors at plants where navy planes are being constructed.

Heads Aircraft Manufacturers

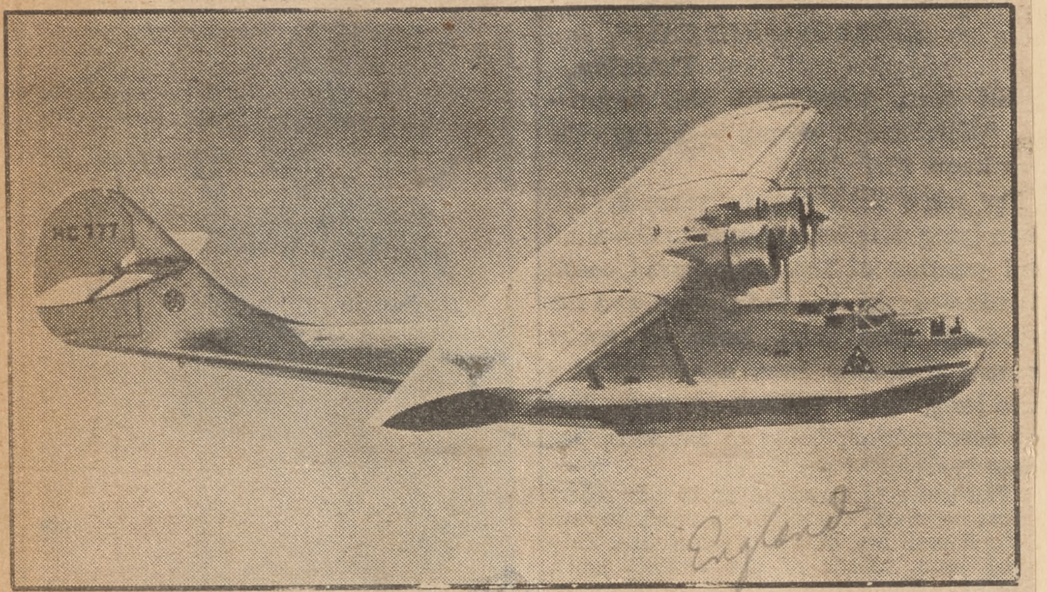
S.D. Club Life 3/1/39

Maj. Edgar N. Gott

vice president of Consolidated Aircraft Corp., and a prominent member of The San Diego Club, who recently was elected a vice president of the Manufacturers' Aircraft Association, in New York City. At present he is in Washington with Maj. R. H. Fleet, president of Consair.

Evening Standard, Thursday, February 9, 1939

U.S. OFFER TO SUPPLY MILITARY FLYING BOATS TO THE R.A.F.



England

The American modern type flying boat.

By WILLIAM COURTENAY
Evening Standard Aviation Correspondent

AN American aircraft manufacturing company who have supplied over 200 modern-type flying boats to the U.S.A. navy have made an offer to the Prime Minister to supply Great Britain with a number of these aircraft.

The firm are the Consolidated Aircraft Corporation, of San Diego, California, and the flying boat is the 15-ton twin-engined PBY-4 type.

About 230 have been delivered to the U.S.A. navy to date, and they are being turned out rapidly each month.

They have wing-tip floats which turn up during flight to form part of the wing, and in this way resistance to flight is lessened and speed is increased. The two 1200 h.p. engines give a cruising speed of 180 m.p h.

A civil version of the flying boat has been prepared for American Export Air Lines, who recently concluded an agreement with Ala Littoria, the Italian national air company, to operate experimental air services between America and Mediterranean ports.

Efforts are to be made to introduce this aircraft on the South Atlantic air route for British Airways.

They are responsible for developing the South Atlantic air route, but have not yet decided whether to attempt this with flying boats or landplanes.

The Fairey Aviation Company are building a landplane of high performance for ocean flights, and Short Bros., Rochester, are building other ocean-going landplanes of giant size, as well as large-scale four-engined flying boats, so that both can be given trials.

SAN DIEGO, CALIFORNIA, MONDAY, MARCH 6, 1939

Local Air Enthusiasts Teach Club Members To Fly

S.D. Evening Tribune

SAN DIEGO FLYING CLU

Officers of the San Diego Flying club, pictured at the club's Grande Vista airport, are, left to right: Frank Buzelli, social chairman; Henry Leboffe, secretary; Thomas P. Butterfield, president; Orville Hubbard, vice president and operations manager; Melvin Knutson, operations treasurer, and John Baker, corporation president.

AVIATION BOOSTED BY 58 MEMBERS OF FLYING CLUB

Safe—Sane—Sure.

With that as its motto, the San Diego Flying club, in its three years of existence, has gone a long way in its purpose of furthering the cause of aviation throughout San Diego county and among its own membership.

The club was started in 1936 by 10 young men who sought to devise the most economical and practical way of learning to fly. Today it boasts 58 members whose ages range from 16 to 40 years; owns three planes and has its own, three-hangar airport—the Grande Vista station—a few miles south of Chula Vista.

Each member has at least 4000 miles of flying to his credit. Thirty-seven of the group have soloed; 16 possess private licenses; one has a commercial license and an instructor's rating. Some 60 percent of the membership is employed in aircraft firms. Professional and business men, ranchers and college students comprise the remainder of the membership. Many plan to continue their flying in army or navy reserve flying corps.

Since its inception, the club has expended more than $6000 for ships and facilities. In the light of the government's attitude toward building up its aviation program, the club is looking forward to the possibility of obtaining federal aid in its objective of encouraging young men to fly. Meanwhile, all members are contributing time and money to maintain flying equipment, forward aviation in the county, and to become experienced pilots.

At present, the group is headed by Thomas P. Butterfield, president. Orville Hubbard, vice presi-

---

S.D. UNION 3/6/39

Archbold Builds Radio Station In Hollandia

Richard Archbold, associate director of the American Museum of Natural history, who left San Diego nearly a year ago in his Consolidated-built plane for a two-year scientific expedition in New Guinea, is constructing a short-wave radio station and expedition headquarters at Hollandia.

Word to this effect was received yesterday by Barney Boyd, local radio amateur, who has kept in communication with the expedition since it left San Diego.

Boyd reported several of the expedition members are at Port Moresby in Netherlands New Guinea obtaining supplies which will be transported this week by plane to the main base at Hollandia.

"Archbold reported the expedition is making splendid progress," Boyd said. "Hundreds of specimens of animal and bird life have been collected and shipped through the port of Makassar to the museum in New York."

Transatlantic Airline Company Survey Ship Lands On Dam Lake

Boulder City Journal - 3/4/39

A flying boat, which is expected to be used to blaze an air trail across the Atlantic ocean for the American Export Airlines, and thus establish America's prior rights to transatlantic air service, nestled down on Boulder lake yesterday afternoon following a test flight from San Diego, where the plane was assembled.

Under the present plans of the company, the line will be established from New York to Syria, the latter landing place being selected because of the present unrest in Spain and France. Eventually, if things quiet down in Europe, the line will extend from New York to Paris.

James M. Eaton, vice president f the American Export Airlines, Inc., and formerly an official of the Pan American Airways, is in charge of the undertaking.

At the present time the company has a steamship line across the Atlantic, and officials have expressed the theory that with weather reports received from the surface boats, these air passenger flights would be possible.

The military forerunners of this flying boat are the PBY's that have established the record long-distance massed flights from San Diego to Pearl Harbor, Hawaii (2553 miles) and from San Diego to Colo Solo in the Canal Zone (3087 miles). The latest of these outstanding flights was of 48 PBY's from San Diego to Coco Solo for participation in the current military maneuvers, and added again to the remarkable record of outstanding performance with a consistency that is hard to grasp. Over 200 of these PBY's are in the service of the United States navy.

The original commercial adaptation of the PBY, purchased by Richard Archbold for work with the American Museum of Natural History, established the unusual precedent of flying non-stop across the continent from San Diego to New York (2700 miles entirely over land). This plane was purchased by the Russian government, and piloted by Sir Hubert Wilkins over 19,000 miles of Arctic wastes in a search for the lost Russian trans-Polar fliers. Archbold's second plane has been flown from San Diego to Dutch New Guinea in three hops, a trip of 7,178 miles and is now being used for exploration research, working as backbone of the expedition's transportation system, as they are operating in impenetrable jungle. Both supplies for the base camps and supplies and equipment have been carried across the jungles to inland lakes and rivers, scenes of the exploration and research work.

Aboard the airplane were M. J. Doyle and E. Stuhrman of the American Export Airlines, Inc.; and W. B. Wheatley, J. Kline and G. R. Tibbs of Consolidated.

S.D. UNION 3/8/39

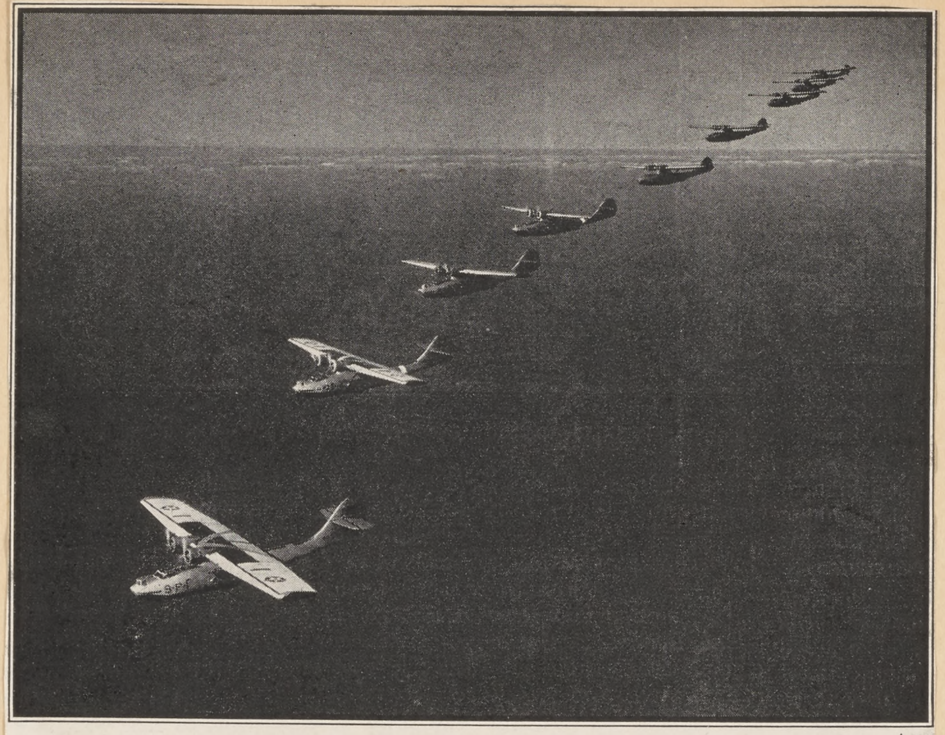
6 Bombers to Fly To Base in Seattle

Six long-range patrol bombers attached to squadron 16 of patrol wing 4 will leave here tomorrow morning on a sustained flight to Seattle.

The squadron is commanded by Lt. Comdr. Delbert L. Conley. The six planes arrived here several weeks ago for installation of deicing equipment.

Five squadrons of long-range bombers, VP-16, VP-17, VP-19, VP-20 and VP-21, are based in the Puget Sound-Alaska area. Squadron 20 is at Sitka.

Flights of the four squadrons based at Seattle to Alaska are scheduled for May and June.



Acme

Defense: Navy PBY bombers in flight formation over the Pacific

"Newsweek" Jan. 23, 1939

S.D. UNION 3/9/39

Plane Bid Results Awaited Here

Local officials of Consolidated Aircraft Corp. are awaiting with interest results of bids opened at Washington yesterday for new twin-motored navy bombers. These bids are entirely separate from the proposals opened last month by the navy department for the new four-motored long-range bombers on which Consolidated submitted the lowest figure.

Unofficial advices from Washington are that contracts are being held up temporarily due to the debate in congress on profits being made by manufacturers on aircraft built for the government.

Contracts totaling millions of dollars are expected to be awarded soon to Consolidated, Martin and Sikorsky for new navy long-range patrol bombers.

Maj. R. H. Fleet, president of Consolidated, who has been in Washington conferring with navy aviation authorities, will return here today. He has been at Palm Springs since Monday.

S. D. NAVY BOMBER FEARED LOST

S.D. SUN 3/9/39

One of the six patrol bombers which took off for Seattle this morning has been unreported for three hours, and pilots of all airboats now at North Island were ordered at 12:30 p. m. to stand by for orders to make an extensive search. The plane, believed to have six men aboard, was separated from its sister ships in thick weather off Humboldt Bay.

Six Consolidated PBY Navy bombers today were winging northward from San Diego to their home base in Seattle on a non-stop, 1200-mile flight.

The planes, of Squadron VP-16 and commanded by Lieut. Comdr. Delbert L. Conley, took off from the bay at 6:40 a. m., North Island officials reported.

They had been here several weeks receiving de-icer equipment in the Consolidated plant, to enable year-around operations in the Pacific Northwest and in Sitka, Alaska.

S.D. Sun March 7, 1939

SIX BOMBERS HOP TOMORROW

Non-Stop Flight To Seattle Scheduled

Aviation

Six Consolidated patrol bombers of Squadron VP-16 are scheduled to leave here tomorrow on a non-stop 1200-mile return flight to the Sand Point Naval Air Station at Seattle, Wash., North Island officials announced today.

The airboats were flown to San Diego several weeks ago for installation of de-icing equipment at the Consolidated plant. This work, a necessity on planes operating in the region of the Puget Sound-based Navy squadrons, has just been completed.

Squadrons VP-16,, VP-17 and P-19, consisting of 12 PBY bombers each, alternate between Seattle and Sitka, Alaska, in their year-around operations. Lieut.-Comdr. Delbert L. Conley is commander of VP-16.

S.D. UNION - 3/10/39

Five S. D. Planes Land in Seattle

One Loses Squadron In Storm, Returns

Five long-range patrol bombers of VP-16 squadron commanded by Lt. Comdr. Delbert L. Conley, reached Seattle soon before sundown last night. A sixth plane with Lt. William A. Schoech at the controls returned to North Island at 1:45 p.m. when it got lost from the squadron.

The six planes took off at 6:40 a.m. Off the central California coast they encountered a severe rain and wind storm. Plane 5, commanded by Schoech, attempted to break through and rose to an attitude of 20,000 feet in a fruitless effort to reach clear skies. Failing in this Schoech headed about and returned to San Diego. He will leave for Seattle in company with another plane early next week.

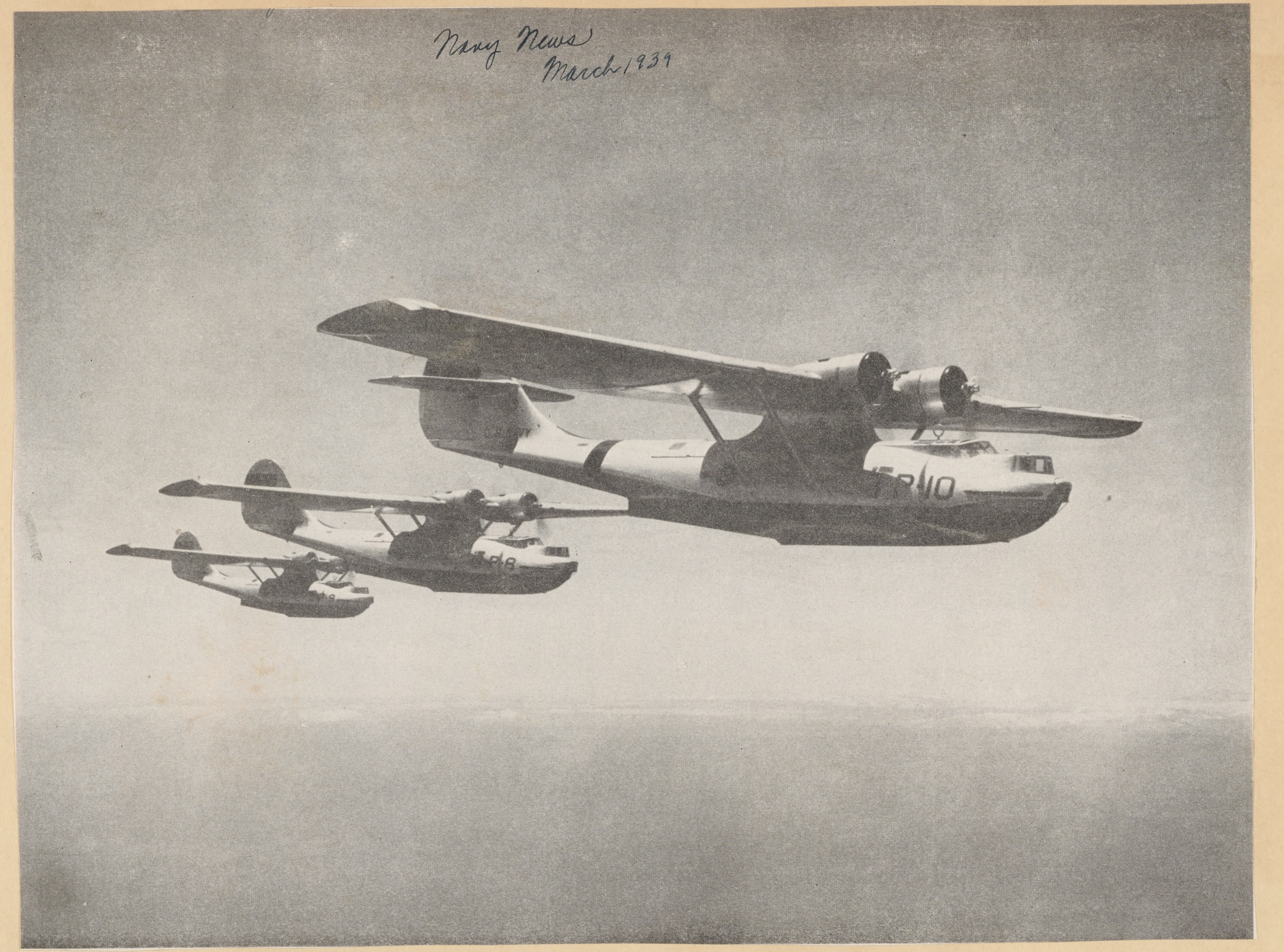
Squadron 16 is attached to patrol wing 4. The planes were flown here last month for installation of deicing equipment.

NAVY PLANE FORCED BACK BY WEATHER

S.D. SUN 3/10/39

A Consolidated P2Y Navy patrol bomber en route from its Seattle base to San Diego for overhaul was forced back to San Francisco today by bad weather off the central California coast, Naval Air Station officials reported. A second attempt to fly south may be made today.

The airboat, with less cruising range than the newer PBY planes, stopped at San Francisco overnight. Six men are in the crew.



Navy News
March 1939

S.D. SUN 3/14/39

Consolidated Airboat Ready For Transatlantic Service

A commercial replica of the Navy's PBY patrol bombers, sold to American Export Airlines for transatlantic survey flights this summer, will fly across country from San Diego to New York probably next month, Consolidated Aircraft Corp. officials announced today.

The recently completed 13-ton airboat, purchased at a cost of $200,000, has been test flown and is ready for delivery. The American Export aviation officials—M.J. Doyle, maintenance chief, and Ed Stuhrman, radio engineer—have been inspecting the plane here, and flight crew is expected here soon to make the transcontinental hop. William Wheatley, chief test pilot for Consolidated, is slated to accompany the eastern concern's personnel on the cross-country flight.

IN MOTION PICTURE

The plane was to be photographed at the Coast Guard air base ramp today for scenes in the Paramount picture, "Magnificent Fraud," a story of a South American dictatorship written by Charles A. Booth of Grossmont.

Consolidated is receiving $4000 for the rights to photograph the plane, according to officials of the movie company.

American Exports transatlantic venture is regarded as a challenge to the U. S. monopoly heretofore held by Pan-American Airways in air transportation across oceans. The company operates a fleet of steamships to Mediterranean and Black Sea ports, and expects to fly its planes across the South Atlantic with the aid of weather data wirelessed periodically from its surface craft.

4000-MILE RANGE

The flight performance demanded by the transportation company of the Consolidated airboat is a top speed of more than 200 miles per hour at 8000 feet, and a range of 4000 miles with a 200-pound payload and six-man crew.

Consolidated officials already have submitted to American Export Airlines specifications for a 100-passenger super- transport it is prepared to build whenever regular transatlantic service is ready to start.

S. D. BOMBERS PLAN TAKEOFF TOMORROW

S.D. SUN 3/16/39

Weather permitting, two Consolidated Navy bombers will take off from the bay tomorrow for their Seattle base via a stop in San Francisco.

The planes are a PBY, piloted by Lieut. William A. Schoech, who was separated from Squadron VP-16 on a flight to Seattle last week during a sleet storm north of Pt. Arguello, and an older P2Y, just overhauled, piloted by Lieut. L. W. Williams, of Squadron VP-19.

Plane Held Up By Weather

S.D. SUN 3/13/39

Poor flying weather along the coast today continued to delay the non-stop flight from San Diego to Seattle of a PBY patrol bomber piloted by Lieut. William A. Schoech and manned by a crew of seven.

The plane became separated from six sister airboats of Squadron VP-16, near Point Arguello, on a mass flight last week to Seattle. In an attempt to climb above a layer of sleet and snow, Lieut. Schoech took his plane to 22,000 feet, where the men, unequipped with oxygen tanks, became severely ill. With great difficulty, the pilot brought his craft back to San Diego.

Meanwhile, a P2Y bomber of Squadron VP-19, en route to San Diego from Seattle for overhaul, still was in San Francisco, where it had landed late last week for only an overnight stop.

Consolidated Aircraft Corp.'s latest flying boat, 28 D-4, will be used in a sequence today and tomorrow. The ship will join American Export airlines' service for Atlantic duty next month.

S.D. UNION [illegible]

S.D. SUN 3/15/39

36 San Diego Patrol Bombers Due Home Early In May

Thirty-six Consolidated patrol bombers of three Navy squadrons which have been participating in Caribbean and Atlantic maneuvers since January will fly to San Diego, probably via Nicaragua, the first week in May, North Island officials announced today.

Twelve of the original group of 48 which left San Diego on a record-breaking mass flight to the Canal Zone more than two months ago will remain in Norfolk, Va. They are units of Patrol Squadron 12, permanently transferred to the east coast.

SAFEST ROUTE

To save distance and to follow the safest route for a mass flight, the bombers are expected to fly from Florida to Nicaragua in one non-stop hop, then head north to San Diego.

Although the definite itinerary has not been released by Fleet officials, it was believed at the Naval Air Station that a cross-country flight along the Gulf of Mexico, then spanning Texas, New Mexico and Arizona, would be too risky for a large number of planes, although PBY's previously have made such jaunts successfully.

Meanwhile, the eight-man crew of a Navy bomber which last week was separated from Squadron VP-16 on a flight to Seattle, and returned to San Diego, awaited command to leave for its northern base.

COMPANY NORTH

Piloted by Lieut. William Schoech, the craft will fly north in company with an airboat piloted by Lieut. L. W. Williams of Squadron VP-19. The latter has been weatherbound for several days in San Francisco, en route to San Diego with a Consolidated bomber due for overhaul. He will take delivery on a similar ship on which repairs have just been completed here.

Consolidated Seeking Large Contracts For Army Planes

S.D. SUN 3/14/39

By HAROLD KEEN

With its Navy work dwindling and with possibilities of Navy contracts requiring capacity production in the near future uncertain, Consolidated Aircraft Corp. once again is seeking large Army contracts, it was revealed today.

Two high officials of the company, C. A. Van Dusen, vice president, and D. M. Carpenter, production manager, returned yesterday after a several weeks stay in Washington, D. C., and Dayton. O., site of the Army Air Corps' Wright Field.

Of admitted significance was the fact that the company's chief engineer, I. M. Laddon, and David G. Fleet, son and assistant to Maj. Reuben H. Fleet, president, are still at Wright Field, the Army's procurement and testing headquarters for new planes.

Consolidated officials indicated that the two are obtaining information on specifications for new planes necessary for later bidding.

Meanwhile, although bids on a contract to produce a maximum of 15 four-motored patrol bombers similar to Consolidated's million-dollar experimental plane, were opened two months ago, nothing definite has resulted. The San Diego firm was low bidder against its only competitor. Sikorsky Aircraft Co., of East Hartford, Conn.

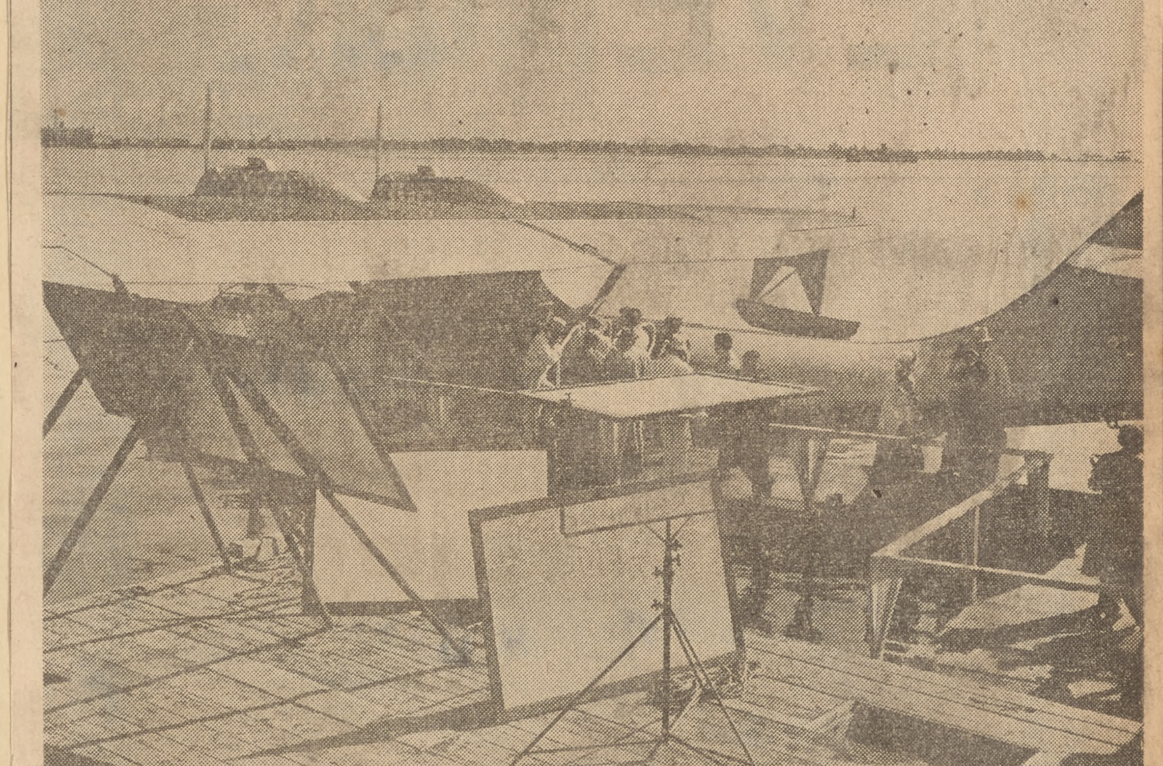
Maj. Fleet and his assistants went east soon after the bids were opened. They were frankly anxious to get quick action out of the Navy Department, but it was not forthcoming.

A four-months' delay between awarding the contract and actual start of production is expected while materials are ordered and delivered, according to Maj. Fleet. Consolidated figuratively laid all its eggs in one basket, concentrating on production of Navy airboats. They have manufactured more than 200 since moving to San Diego from Buffalo in 1935.

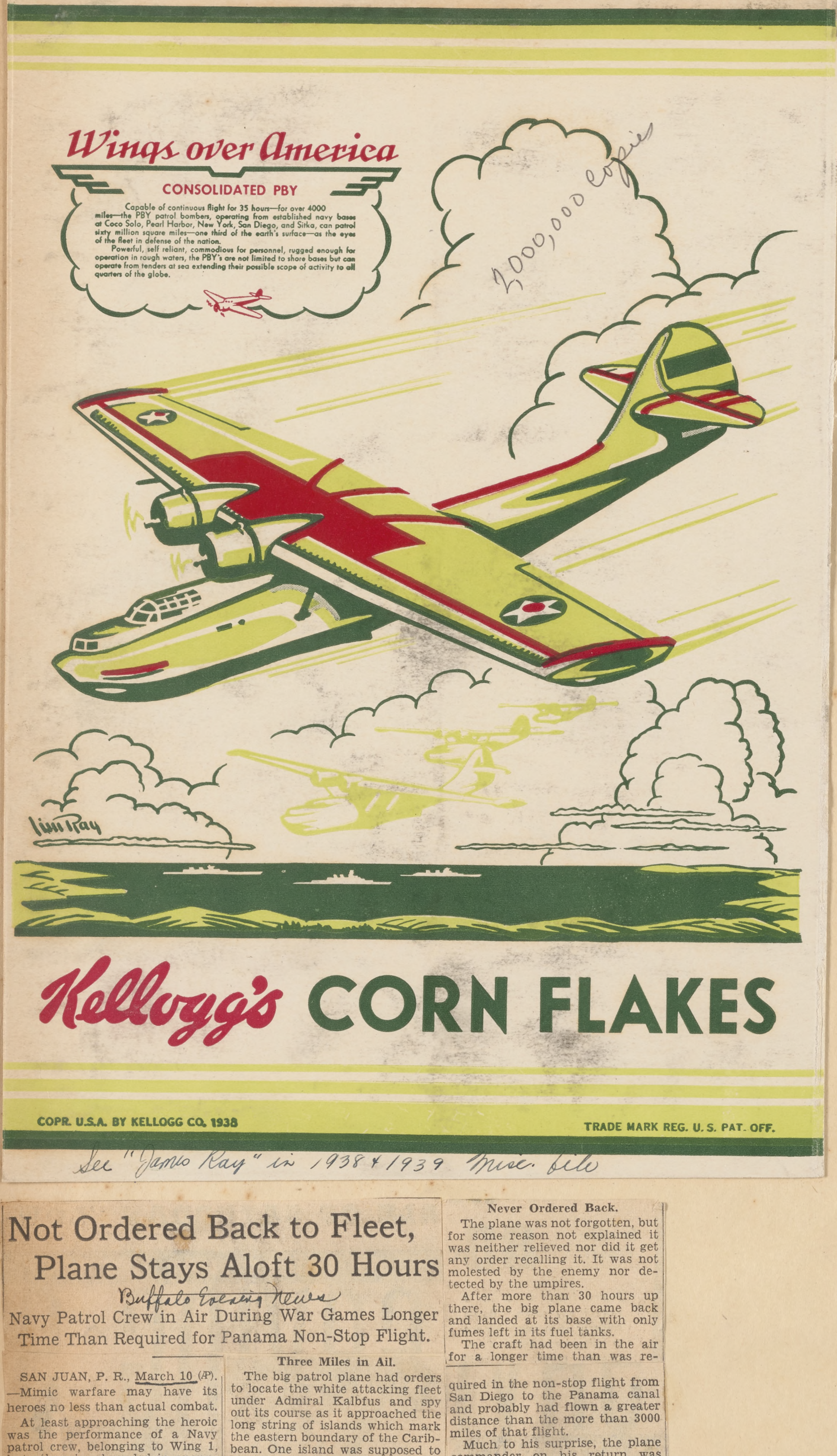
Previous to this period, however, the company turned out several models for the Army in large numbers.

EVENING TRIBUNE, San Diego, Calif., Wednesday, March 15, 1939

New Consolidated Plane Gets Part in Paramount Film



Consolidated Aircraft Corp.'s new 15-ton plane, built for the American Export Air Lines, was to be filmed at Lindbergh field today in air scenes of Paramount studio's "Magnificent Fraud." The plane, soon to go to the east coast for transatlantic survey flights for American Export, was on the ramp at the coast guard air base at the south end of the municipal airport early this morning in preparation for the movie flights, showing passengers departing and arriving. Stars in the picture are Lloyd Nolen, Patricia Morison, Mary Boland and Atkim Tamiroff. While the 15,000-pound plane is not fitted for carrying passengers on the transatlantic survey flights, it is of the type that will carry 24 passengers.



Wings over America

CONSOLIDATED PBY

Capable of continuous flight for 35 hours—for over 4000 miles—the PBY patrol bombers, operating from established navy bases at Coco Solo, Pearl Harbor, New York, San Diego, and Sitka, can patrol sixty million square miles—one third of the earth's surface—as the eyes of the fleet in defense of the nation.

Powerful, self reliant, commodious for personnel, rugged enough for operation in rough waters, the PBY's are not limited to shore bases but can operate from tenders at sea extending their possible scope of activity to all quarters of the globe.

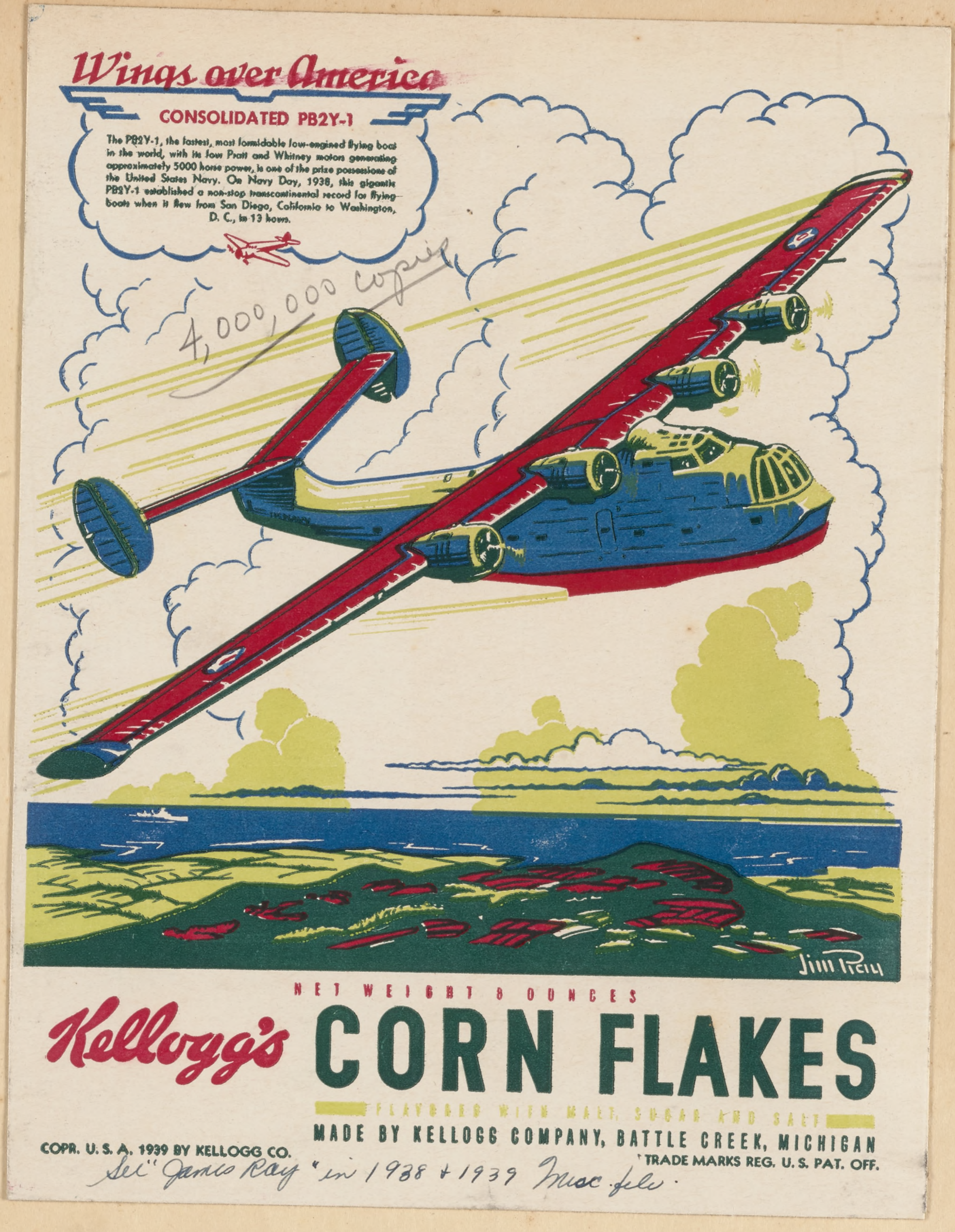
2,000,000 copies

Kellogg's CORN FLAKES

COPR. U.S.A. BY KELLOGG CO. 1938

TRADE MARK REG. U.S. PAT. OFF.

See "James Ray" in 1938 + 1939 Misc. file



Wings over America

CONSOLIDATED PB2Y-1

The PB2Y-1, the fastest, most formidable four-engined flying boat in the world, with its four Pratt and Whitney motors generating approximately 5000 horse power, is one of the prize possessions of the United States Navy. On Navy Day, 1938, this gigantic PB2Y-1 established a non-stop transcontinental record for flying boats when it flew from San Diego, California to Washington, D. C., in 13 hours.

4,000,000 copies

NET WEIGHT 8 OUNCES

Kellogg's CORN FLAKES

FLAVORED WITH MALT, SUGAR AND SALT

MADE BY KELLOGG COMPANY, BATTLE CREEK, MICHIGAN

COPR. U. S. A. 1939 BY KELLOGG CO.

TRADE MARKS REG. U. S. PAT. OFF.

See "James Ray" in 1938 + 1939 Misc. file

Not Ordered Back to Fleet, Plane Stays Aloft 30 Hours

Buffalo Evening News

Navy Patrol Crew in Air During War Games Longer Time Than Required for Panama Non-Stop Flight.

SAN JUAN, P. R., March 10 (AP).—Mimic warfare may have its heroes no less than actual combat.

At least approaching the heroic was the performance of a Navy patrol crew, belonging to Wing 1, but otherwise shrouded in anonymity, about which there is more talk than of any other single incident which has come to light since the completion of the Navy's Problem XX last week.

The opposing forces of Admiral E. C. Kalbfus and Vice Admiral Adolphus Andrews were assembled under Admiral C. C. Bloch, the fleet commander, off Culebra islands long enough at the end of the war game for the story to get around. The more than 130 ships are now temporarily scattered.

Three Miles in Ail.

The big patrol plane had orders to locate the white attacking fleet under Admiral Kalbfus and spy out its course as it approached the long string of islands which mark the eastern boundary of the Caribbean. One island was supposed to be seized for an enemy base if the attack succeeded.

The plane left its base near here and disappeared in the eastern sky. It located the enemy far out at sea from a height of 3 miles, so the story goes. It followed the wake of Admiral Kalbfus' ships hour on hour.

Darkness followed day and daylight came again. The patrol plane remained aloft.

Never Ordered Back.

The plane was not forgotten, but for some reason not explained it was neither relieved nor did it get any order recalling it. It was not molested by the enemy nor detected by the umpires.

After more than 30 hours up there, the big plane came back and landed at its base with only fumes left in its fuel tanks.

The craft had been in the air for a longer time than was required in the non-stop flight from San Diego to the Panama canal and probably had flown a greater distance than the more than 3000 miles of that flight.

Much to his surprise, the plane commander on his return was asked where he had been. His explanation was brief and simple. He quoted his orders. He had been sent on a mission and he had stuck to it at 15,000 feet in the air.

S.D. SUN 3/20/39

Army, Navy Air Forces To Join In Mock War Games

Training in coordination of the Army and Navy air arm will be the object of the first joint air exercise of this type, scheduled for April 17 to 22 in the New England area, it was learned here today.

Naval units, including both planes and surface vessels required for the mock war games, will include a large number of San Diego-based craft.

The naval forces will be divided into a defending group, commanded by Rear Adm. W. T. Tarrant, former commandant of the local 11th Naval District, and now commandant of the First Naval District, Boston; and an attacking force, commanded by Rear Adm. Alfred W. Johnson, commander of the Atlantic Squadron.

S. D. PLANES DEFENDERS

The defenders will include the light cruiser USS Memphis, flagship of Rear Adm. Charles A. Blakely, commander of Aircraft Scouting Force; the 48 San Diego patrol bombers which flew non-stop from here to the Canal Zone last January and have since participated in Fleet Problem 20; three destroyers, six submarines, and three seaplane tenders.

The attackers will comprise, among other units, the battleships New York, Rear Adm. Johnson's flagship, and the Texas.

ZONE OF ACTION

The zone of action will extend from a line drawn due east from Sandy Hook to the boundary line between Massachusetts and New Hampshire, extended seaward.

Coast Guard ships and planes available at the time in this vicinity will see action on the side of the defending force.

CRINKLEY TO FERRY PLANE FROM EAST

S.D. SUN 3/21/39

Lieut.-Comdr. Andrew Crinkley, chief pilot of the Consolidated Navy four-motored bomber, who made a last-minute decision to accompany the Pan-American Clipper No. 20 on its flight from San Diego to Baltimore, will ferry an overhauled Curtiss scout observation plane back here from Norfolk, Va., it was reported at North Island today.

S.D. UNION

Tax on Consair Arouses Ire

3/22/39

Imposition of a 3 percent sales tax by the state board of equalization against all planes manufactured by Consolidated Aircraft Corp. aroused the ire yesterday of Maj. Reuben H. Fleet, president.

"There is no other state that imposes such a tax against manufacturers building planes for the government," Fleet said. "We are not selling anything in California. Such a procedure is unfair. We will never get any business if we have to compete with out-of-state aircraft manufacturers under such a handicap."

Major Fleet denied that the Lindbergh field plant secretly has developed for the navy a new twin-engined monoplane capable of flying 12,000 miles at a speed of 350 miles an hour. Such a report was current yesterday.

f Clipping N.Y. Times Mar. 6-1939

SEA SCOUTING FEAT OF PLANE REVEALED

Patrol Craft Dogged 'Enemy' Fleet 30 Hours Far at Sea Undetected

ON JOB TILL GAS RAN OUT

Marines in Landing Exercises in Caribbean This Week as Part of Navy Manoeuvres

By **HARWOOD HULL**

Special Cable to THE NEW YORK TIMES.

SAN JUAN, P. R., March 5.—Mimic warfare may have its heroes no less than actual combat. At least approaching the heroic was the performance of a navy patrol plane and crew, belonging to Wing 1, but otherwise shrouded in anonymity, about which there is more talk than of any other single incident which has come to light since the completion of the Navy's Problem XX last week.

The opposing forces of Admiral E. C. Kalbfus and Vice Admiral Adolphus Andrews were assembled under Admiral C. C. Bloch, the fleet commander, off Culebra Island long enough at the end of the war game for the story to get around. The more than 130 ships are now temporarily scattered.

The big patrol plane had orders to locate the White attacking fleet under Admiral Kalbfus and spy out its course as it approached the long string of islands which mark the eastern boundary of the Caribbean, of which one island was supposed to be seized for an enemy base if the attack succeeded.

The plane left its base near here and disappeared in the eastern sky. It located the enemy far out at sea from a height of three miles, so the story goes. It followed the wake of Admiral Kalbfus's ships hour on hour.

Darkness followed day and daylight came again. The patrol plane remained aloft, reporting back to its base the White fleet's movement.

Unmolested and Unrelieved

The plane was not forgotten, but for some reason not explained it was neither relieved nor did it get an order recalling it. It was not molested by the enemy nor detected by the umpires.

A[illegible] more than thirty hours up there, the big plane came back and landed at its base with only fumes left in its fuel tanks.

The craft had been in the air for a longer time than was required in the non-stop flight from San Diego to the Panama Canal and probably had flown a greater distance than the more than 3,000 miles of that flight.

Much to his surprise, the plane commander on his return was asked where he had been.

His explanation was brief and simple. He quoted his orders. He had been sent on a mission and he had stuck to it at 15,000 feet in the air.

When no relief came, he had just continued dogging the enemy fleet and watching its foaming wake until only enough gas remained to fly back to his base.

There may be no official record involved in the performance, but quite possibly when all the facts are checked, this plane's tour of duty may be found to mark a new high for sustained operation in simulated warfare.

At any rate the incident is being cited as demonstrating the value of the air service in hemisphere defense, as well as the possibilities for greater range at sea of planes operating from an advance base in the Eastern Caribbean, the importance of which President Roosevelt stressed on his return from the manoeuvres.

To Meet at Guantanamo

Today the ships of the combined fleet were in scores of ports on the Caribbean and the Gulf of Mexico or en route to ports. Many cruisers went to their name ports, some for the first liberty for their crews since they left the West Coast late in December.

But the Winter's work is not finished. Most of the war vessels are due at the base at Guantanamo, Cuba, on March 15, when a critique of Fleet Problem XX is scheduled to take place aboard Admiral Bloch's flagship, the Pennsylvania.

As chief umpire as well as commander of the fleet, Admiral Bloch is continuing the secrecy surrounding Problem XX. From his temporary base off Culebra, where the greatest number of American warships ever assembled, remained for some time the past week, Admiral Bloch sent word ashore that it was still the navys' policy not to discuss for publication any phase of the problem.

The rendezvous at Culebra coming immediately after the war game, revived speculation on the prospect of future greater use for fleet operations of Viegues Sound.

For several days this area had a thorough test as a fleet anchorage. Vieques Sound extends twenty to thirty miles east and west between Puerto Rico and the Virgin Islands channel and more than ten miles between Culebra and a string of small islands on the north and Vieques Island on the south.

All the islands afford many sheltered anchorages for all types of ships, generally of easy access and with optional exits. Land batteries mounted on heights on the islands might provide adequate protection against possible enemy approach. The area has been the subject of several navy surveys since soon after the purchase of the Virgin Islands from Denmark more than twenty years ago.

With Problem XX ended, new light is shed on the reasons the army did not participate beyond having observers with the navy's key units.

Essentially is was a problem in manoeuvring opposing forces far at sea, supported by airplanes operating either from shore or from sheltered bases. The use of troops ashore or getting them ashore was outside the scope of the problem. When the quitting whistle blew the White and Black fleets were scattered over more than 1,000 square miles of water.

Actual landing exercises, such as those in which units of the army's First Division participated last year, will be under way this week at Vieques. The ships of the Atlantic squadron under Rear Admiral Alfred W. Johnson and the First Brigade of the fleet marine force participating.

Whole War Game Photographed

Much information, particularly photographic, which was gained during the development of Problem XX will be available for the smaller-scale activities now scheduled. New aerial maps have been prepared for all the areas to be utilized in the coming exercises.

In fact, photography has played a far greater part in this Winter's manoeuvres than in any previous large-scale navy operation. Practically every action recordable by the photographic lens, whether from the air or from surface ships, has been supplied in pictures to Admiral Bloch.

One technique carried to a new point in the war game has been simultaneous photography from two or more planes with cameras operating under radio control.

These pictures will supplement the maps in telling the story of the White and Black Fleets at the critique. Both maps and pictures will be seen for the first time by the navy flag and staff officers when they assemble at Guantanamo.

Six weeks after the critique, the fleet will be at New York for the World's Fair.

PBY

L'AERONAUTIQUE NAVALE

"parente pauvre"

NOUS avons appris récemment que, sur les 600 et quelques avions que la France commandait aux Etats-Unis pour renforcer son potentiel aérien, se trouveraient 20 avions destinés à l'aéronautique embarquée, et plus particulièrement aux porte-avions.

C'est bien, c'est très bien ! mais, que représentent deux escadrilles d'avions d'attaque, par rapport à ce qu'exigerait notre flotte rénovée ? Dans le même temps où cette nouvelle se faisait jour, le monde apprenait également dans quelle mesure l'Angleterre était prête à faire effort pour perfectionner le réarmement militaire aérien et naval, qu'elle a entrepris voici bientôt trois ans : pour 1939, 580 millions de Livres, au total (102 milliards de francs) dont plus d'un tiers pour l'aviation !...

Il ne s'agit pas de comparer la flotte anglaise et ce qui s'y rattache, à la flotte française et ses dépendances. Il faut cependant considérer dans quelle mesure l'harmonie des forces, telle qu'elle est comprise chez nos voisins, peut avoir d'influence sur la composition (ou le manque de composition) de nos propres forces. Les Britanniques annoncent, pour 1939, que leur programme naval comporte, comme l'an dernier, un nouveau porte-avions. En France, notre programme 1938 en prévoit deux, qui seront mis en service, vraisemblablement, vers la fin de l'année 1941. Avec ce nouveau porte-avions, l'Angleterre pourra aligner 11 bâtiments de ce type, capables de mettre en jeu des forces aériennes fortes de 500 à 600 appareils : grosso modo, *une cinquantaine d'escadrilles. La flotte britannique, quand elle aura atteint le point culminant de sa rénovation, vers 1941/1942, comportera 2 millions de tonnes de bâtiments divers. Sur ces 2 millions de tonnes, 250.000 tonnes sont représentées par des porte-avions.*

En France, pour une flotte moderne de 700 à 750.000 tonnes, nous aurons, à cette même époque, deux porte-avions qui représentent, à eux deux, à peu près 45.000 tonnes. Le programme d'expansion de l'aéronautique navale embarquée britannique vise à atteindre 1.000 avions d'ici trois ans. Ce programme ne tient probablement aucune compte des forces aériennes de coopération navale, telles que les « Flying Boats », et les multimoteurs de reconnaissance maritime à grande distance, car ces forces, en Angleterre, sont rattachées à l'armée de l'air.

On nous a annoncé qu'en France nous aurions, à la fin du printemps prochain, plus de 300.000 tonnes en chantier, sur les cales de constructions navales. Au 31 mars 1939, si l'on en croit les déclarations du Premier Ministre britannique devant son Parlement, l'Angleterre possédera 660.000 tonnes (d'ores et déjà il y a 550.000 tonnes en chantier). C'est donc sensiblement le double de ce que représentent nos constructions neuves.

Pour un pays d'esprit aussi peu naval que l'est la France, un pays qui a toujours fait de ses frontières terrestres l'objet de ses préoccupations dominantes, il est intéressant de constater quel effort formidable nous sommes en train d'accomplir pour la rénovation de notre flotte, et ceci prouve, soit dit en passant, que notre capacité de production au point de vue naval est assez remarquable.

Que n'en est-il de même en ce qui concerne notre capacité de production aéronautique, et plus particulièrement de production d'aéronautique navale ? En effet, au terme de l'effort (si tant est que ce terme existe ?) nous nous trouverons, dans la marine, possesseurs de deux porte-avions modernes et d'une trentaine de bâtiments dotés de catapultes susceptibles de mettre l'arme aérienne en œuvre. Mais alors, qu'aurons-nous réalisé comme expansion aérienne, en ce qui concerne l'exploration à grande distance, et, d'une façon plus générale, l'éclairage continu des forces navales à la mer ? Toujours pour prendre un point de comparaison, nous constatons chez nos voisins qu'il existe, à l'heure actuelle, plus d'une douzaine d'escadrilles susceptibles d'opérer en liaison avec les forces maritimes, tout en étant basées à terre.

En dehors de ces escadrilles, l'Angleterre s'intéresse, à des titres divers (civils et commerciaux), au perfectionnement des hydravions de gros tonnages, susceptibles de rendre des services, non seulement en temps de paix, sur les lignes aériennes océaniques, mais aussi en temps de guerre, comme éclaireurs à grand rayon d'action. Pendant ce temps, nous assistons aux louables progrès des Latécoère 523 (dérivés directs du Lieutenant-de-Vaisseau-Paris*), et nous déplorons la cruelle malchance des prototypes nouveaux (tels que le Breguet qui s'est perdu, en juillet 1938, à Cherbourg), sur l'achèvement desquels nous comptions pour rénover notre flotte d'éclaireurs, composée, à l'heure actuelle, de quelques unités ! Il en résulte qu'en ouvrant l'annuaire des Flottes de Combat, on trouve pour la marine française (soit : 200 bâtiments de guerre : 700.000 tonnes) une vingtaine d'escadrilles, armées de matériel ancien ; pour l'Angleterre (380 bâtiments : 1.800.000 tonnes) près de cinquante escadrilles (dont une douzaine de grande reconnaissance) équipées actuellement et destinées à être doublées dans les deux années à venir.*

Bref, l'aéronautique navale française, quant au matériel, est de moins en moins à la hauteur de la flotte à la disposition de laquelle elle se trouve. Si encore nous pouvions entrevoir, comme chez nos amis britanniques, le jour où cet équipement se renouvellera par le jeu des programmes et l'accomplissement d'une expansion prévue et raisonnée, nous saurions prendre patience. Malheureusement, si nos programmes navals ont de quoi réjouir le cœur des marins, ils demeurent muets, ou peu s'en faut, sur les accomplissements susceptibles d'apporter enfin aux aviateurs-marins le progrès sur lequel ils sont en droit de compter. Tandis que, chez nos voisins, on a su apporter des modifications aux statuts des officiers, telles que ceux qu'intéresse plus particulièrement la branche aéronautique de la marine peuvent prétendre y faire carrière ; chez nous, bien au contraire, nous avons gardé cette méthode (si l'on peut l'appeler ainsi !) qui consiste à ratifier une sorte de pis-aller entre le métier de marin proprement dit et celui d'aviateur, ce dernier n'étant considéré qu'en tant qu'occupation de circonstances. L'aéronautique navale britannique prévoit que, d'ici quelques mois, elle sera forte de 10.000 officiers, sous-officiers et hommes. Parmi ceux-ci, il en sera un grand nombre qui seront spécialisés à vie, sans aucune autre possibilité de commandement naval. Cette mesure a eu pour effet de mettre en valeur les possibilités considérables qu'offre, de nos jours, cette activité si particulière de l'aéronautique navale.

En France, au contraire, les officiers de marine aviateurs sont toujours tenus d'accomplir des stages à bord d'unités plus ou moins navigantes, sous prétexte de reprendre contact avec le métier de marin. Les lois des cadres ne précisent guère dans quelle mesure l'aéronautique navale bénéficiera des progrès que l'on réserve aux forces navales pour lesquelles elle opère... En un mot, l'aéronautique navale, dans la marine française, continue à être la « parente pauvre », bien que la France prétende, par ailleurs à conserver cet Empire de 100 millions d'êtres, pour la sécurité duquel il importe tellement de posséder une flotte dont l'efficacité soit basée sur la mobilité et conséquemment une aéronautique navale appropriée à ses desseins.

Le budget de notre défense est trois fois moindre que le budget de l'Angleterre. Celle-ci, en 1939/1940, va dépenser plus de 100 milliards de francs, tandis que nous n'en dépenserons que trente-cinq. Mais sur ces 100 milliards, la seule aéronautique embarquée peut prétendre à une part intéressante, estimée à 3 ou 4 milliards pour l'année qui vient. Sur nos 35 milliards, que peut espérer l'aéronautique navale française ?... A peine de quoi faire vivre les avions existants, car elle a l'inconvénient d'être considérée comme indépendante (elle l'est en effet pour son utilisation...) et ceci fait que les bureaux d'études du Ministère de l'air, dont dépend la réalisation des prototypes, ne lui accordent pas un intérêt bien marqué...

Nous n'avons jamais considéré que le nombre, en valeur absolue, des avions susceptibles de sillonner les airs présentât un intérêt capital. Ce qui comptera dans le prochain conflit (conflit prolongé, *comme tout semble l'indiquer dans les pronostics que permet d'établir, dès aujourd'hui, la situation économique internationale ?) ce sera l'aviation en puissance, c'est-à-dire l'aviation que chaque nation sera capable de créer et de mettre en jeu au bout du troisième ou du quatrième mois de cette conjoncture, quand les forces, dites de première ligne, auront été, par suite des circonstances, déjà éliminées du jeu. Il ne faudrait pourtant point que cette élimination s'accompagnât de l'élimination de forces beaucoup plus précieuses, parce que plus difficiles à remplacer. L'avenir dira si la véritable économie n'eût pas consisté précisément à donner à la marine de nos jours, marine de réalisation plus coûteuse que jamais, le moyen de protéger, au mieux des possibilités aériennes, ses unités flottantes. Ce n'est certainement pas les quelques « avions d'attaque » que vont nous expédier les Etats-Unis qui nous permettront de renforcer, dans une mesure sensible, la sécurité de nos forces à la mer.*

Commandant BARGE.

L'Air Mar. 1, 1939

Vue en vol d'un hydravion d'exploration Consolidated P B Y-1.

S.D. TRIBUNE 3/22/39

CONSAIR GETS BIG CONTRACT;

$4,699,057 Order for Naval Planes

By JOE KNEFFLER

Receipt of an order for $4,699,057 in new planes and parts for the navy was confirmed today by Consolidated Aircraft Corp. officials.

Details Withheld

Pursuant to instructions by the navy and war departments, details of the type and number of aircraft covered in the contract were withheld.

Consolidated, on Jan. 18, was announced by the navy department to have been low bidder against several other manufacturers on a contract to construct a squadron of planes of its four-motored type, the first of which recently completed successful tests over the bay here and was flown overland to the east coast and return. Consair authorities would not state whether the planes ordered today were included in that bid.

Work under the new contract will not begin until necesasry materials are received from the east, Consair authorities stated. This may take several months, during which time there will be no additions to the 1150 employes now working on uncompleted navy contracts.

The plant employed 3800 workers at the peak of construction under contracts for building the navy's famed "flying dreadnaughts," cited as Uncle Sam's most potent long-range aerial weapon.

These seaplanes, of the PBY series, have added illustrious chapters to naval history, participating in many non-stop mass flights to Hawaii, the Canal Zone and Alaska, as well as overland to the east coast. The ships also have taken an active and successful part in the current Caribbean war games.

Meanwhile, Consair authorities vehemently denied published reports that they are developing for the navy a super flying boat capable of flying 12,000 miles non-stop at 350 miles an hour.

Rumors of the "secret" craft have been current for some time. Consolidated officials have admitted they are building a plane, as a private, speculative venture, but have released no information on its specifications.

According to the rumors and published reports, the new air giant would utilize two 2000-horsepower gines, secretly developed for the avy by Pratt & Whitney at Hartrd, Conn.

Could Fly to China

Its 12,000-mile range would enable to fly non-stop from San Diego China and back to Midway island. s reported speed would be more an double that of the 150-mile-an-our Pacific clippers. Its nearest ompetitor in performance would be e new Boeing super-clipper, degned for the Atlantic and Pacific ervices. This ship reportedly will ruise at 170 miles an hour and will e able to fly 5000 miles non-stop r 7000 miles with extra fuel tanks.

According to one rumor, the Conolidated super-plane will be ready or its first flight within 60 days.

Maj. Reuben Fleet, Consair presient, yesterday protested a 3 perent sales tax levied by the state oard of equalization against planes anufactured by his firm.

"There is no other state that imoses such a tax against manucturers building planes for the overnment," said Fleet. "We are ot selling anything in California. uch a procedure is unfair." He id the tax is an "unfair handicap" competing with plane builders other states.

$14,000,000 NAVY CONTRACTS DUE FOR CONSOLIDATED; FIRST AWARD, TOTALING $4,699,000 RECEIVED

S. D. UNION 3/23/39

First of a series of navy contracts which by midsummer, it is reported, will exceed $14,000,000, the navy department yesterday awarded a $4,699,000 contract to Consolidated Aircraft Corp.

Under a new national defense policy adopted by the government the exact type of planes to be built was not revealed. It is known, however, that the navy plans the expenditure of more than $40,000,000 during the fiscal year 1939-40 in the construction of new type long range patrol bombers, twin-engined and four-engined, as additions to its patrol wings based on the Pacific, Atlantic and Hawaii.

Although Consolidated officials are pledged to secrecy, it is believed the contract awarded yesterday is only the forerunner of additional contracts that will keep the huge Lindbergh field plant operating at top speed for at least three years and possibly four.

3-YEAR OPERATION SEEN

Maj. R. H. Fleet, president of Consolidated, announced yesterday that no new men will be added to the present force of 1100 until material for the new planes starts arriving at the factory this fall. He said several months will be required for eastern manufacturers of raw material to effect delivery because of the tremendous construction program now being carried out in aircraft factories throughout the U.S.

PBY SHIPS DELIVERED

The contract came on the eve of Consolidated's last delivery of 209 twin-motored bombers of the PBY type to the navy. Only three of these ships are now in the shops receiving minor modifications before being sent to North Island.

Consolidated recently submitted the lowest bid for the new four-engined long range bombers which the navy is planning to add to its sky fleets. Consolidated's chief competitor for this type of plane was Igor Sikorsky.

CONSOLIDATED GIVEN $4,699,057 NAVY JOB

Order Believed For 4-Motor Craft; Number, Type Held Confidential

By **HAROLD KEEN** S. D. SUN 3/22/39
Navy Editor

Consolidated Aircraft Corp. today was awarded a $4,699,057 contract for the construction of airplanes and parts, the number or type of which was ordered kept secret by the Navy Department.

It was believed, however, that the order was for four-motored bombers similar to the airboat which last year spanned the continent non-stop twice and has been in engineering and building stages more than three years. The experimental prototype plane required an expenditure of more than $1,000,000, shared by the Navy and Consolidated.

There was also the possibility that the contract might be for advanced two-motored bombers, on which confidential bids were opened in Washington several weeks ago.

Consolidated officials were notified in a letter from Capt. John H. Towers, assistant chief of the Bureau of Aeronautics that the number and specific classifications of planes procured through confidential or restricted bids must not be revealed, inasmuch as this is information relating to a vital feature of national defense.

MORE CONFIRMATION

Announcement by Consolidated today that no new men would be employed for several months until necessary material for fabrication of the planes is received from the East bore out the assumption that the contract was for the four-motored bombers on which the Navy had sought estimates up to a maximum of 15 ships. Consolidated was the low bidder against its only competitor, Sikorsky Aircraft Corp. of East Hartford, Conn.

In a statement to The Sun Jan. 19, Maj. Reuben H. Fleet, Consolidated president, pointed out that even if a contract for the four-motored planes was obtained, it would require four to six months to obtain the specialized material for the 25-ton craft.

EQUIPMENT IN

For the past few months, Consolidated has been installing drop hammers and hydraulic presses larger than any of their type in the country. This equipment will enable the firm to fashion most of the pieces formerly shaped in sub-contracts let to other aircraft concerns and will cut down the man-hours per plane by eliminating the need for thousands of rivets.

At present there are approximately 1100 men employed in the Consolidated plant, less than one-third the peak of 3600 workers on the company's payroll in 1937. Consolidated's backlog has dipped below the $2,000,000 mark, it is believed. At one time there was $13,000,000 worth of unfinished business on the concern's books.

WORK WAS SLACK

Its last contract, for 33 two-motored Navy PBY-4 bombers, obtained more than a year ago, rounded out production on a total of 209 planes and parts that has kept the factory humming since it moved to San Diego from Buffalo in 1935. Virtually all of the planes in the last PBY-4 contract have been finished and delivered.

The four-motored experimental plane, which recently was officially accepted by the Navy, has been in the plant receiving minor changes recommended by the trial board which inspected it.

Considered the most powerful Navy bomber in the world, the XPB2Y-1, as it is known in the service, was launched Dec. 17, 1937, in San Diego harbor. It is powered with four 1050-horsepower engines, has a wingspan of 115 feet and a cruising range of more than 4000 miles. Top speed is more than 200 miles an hour and cruising speed is in excess of 150 miles.

'WONDER' PLANE REPORTS DENIED

Consolidated Aircraft Corp. officials today denied reports the firm is secretly building the world's "most formidable, fastest, longest-range oceanic aircraft" able to fly 12,000 miles non-stop.

Statements in The Los Angeles Times quoting "informed sources" announced that the plane, powered with 2000-horsepower engines, was under construction for the United States Navy and would be ready for its first flight in about 60 days.

360 M. P. H.

The reports claimed that this "miracle plane" might attain a maximum speed of 360 miles per hour and its range would enable it to fly without refuelling from San Diego to China and back to Midway Island—an almost unbelievable performance, as judged by present standards of heavier-than-air craft.

Consolidated officials were quoted in The Times as stating they were building the plane for themselves—not the Navy.

Maj. Reuben H. Fleet, president, today admitted that experiments are continuously under way with new equipment.

"But we are not developing such a plane," he said. "I only wish we had a plane capable of such performance."

NOT SO LARGE

Despite its speed and range, the plane, according to the reports which have been contributed by Consair executives, will be smaller than the new Boeing clippers, two of which have stopped overnight in San Diego enroute to trans-atlantic service out of Baltimore.

The Times claimed the airboat's wingspan was 140 feet, and the ship was 75 feet from nose to tail. Its weight would be about 35,000 pounds.

FLEET PROTESTS PLANE SALES TAX

If Consolidated Aircraft Corp. must pay a 3 per cent state sales tax on its planes, a severe handicap will be imposed on the concern in its competitive bidding for contracts against concerns not subjected to such a levy, Maj. Reuben H. Fleet, president, declared today.

"We will never get any business if we have to compete with out-of-state manufacturers under such conditions," he said.

It was reported that the State Board of Equalization had ordered such a tax imposed.

S. D. UNION 3/24/39

'Frontier Days' Dance Arranged By Aero Club

"Spirit of Frontier Days" has been chosen as the theme for the public dance tomorrow evening at 8:30 in the Pompeiian room, Hotel San Diego, by the aviation colony of city and county. Some 500 persons are expected to fill that cleverly decorated room for the affair, dressed in costume suggestive of the evening's topic. Proceeds are designed to benefit aviation promotion.

The party is given under auspices of the Aero club of San Diego, a chapter of the National Aeronautic association, working with aviation committees of the chamber of commerce and the junior chamber of commerce. Other organizations assisting are San Diego Flying club, Women's National Aeronautic association, Sheriff's Aero squadron, Air Corps Reserves and the Glider clubs.

On the reception committee with Phil Sharp, general chairman and Earl Prudden, Aero club president, and his board are the following committee heads of the various organizations and their wives: Messrs. and Mmes. Ted Starke, Jackson Hicklin, William Van Dusen, Thomas Bomar, Ed Price, T. C. Ryan, W. G. Waterbury and R. S. Fleet.

OCEAN FLIGHT CREW READY

Consolidated Airboat To Survey Route

S.D. SUN 3/28/39

Aviation

The American Export Airlines flight crew for a Consolidated airboat to be used in trans-Atlantic survey flights this summer has assembled in San Diego and soon will pilot the 13-ton plane across country to its New York base.

Arrival yesterday of First Officer T. S. Terrill completed the group of six men now at the Consolidated plant making final arrangements for the cross-country hop in April. Others in the flight personnel are Capt. P. J. Byrne, chief pilot; M. J. Doyle, second officer and flight engineer; R. V. Carlson, third officer and assistant flight engineer; William Ehmer, radio operator; and E. Stuhrman, radio engineer.

TEST FLIGHTS

Test flights have been made in the plane, a de-militarized replica of the Navy's twin-engined PBY-4 ships, during the past few weeks, and a motion picture company recently used it in the filming of scenes at the Coast Guard ramp on Lindbergh Field.

On the granting of an airworthiness certificate by the Civil Aeronautics Authority, the plane will be taken across country, probably following the same route as the two 74-passenger Pan-American clippers took on leaving San Diego recently—via Galveston and New Orleans.

Five or six round-trip survey flights across the Atlantic are planned this summer, Capt. Byrne said. The probable route will be from Boston to the Azores, then to Lisbon, Portugal; and Bordeaux and Marseilles, France. On the return trips, an air track from Ireland or the Azores to Newfoundland will be followed.

AIDED BY SHIPS

In competition with Pan-American Airways, American Export Airlines will have the advantage of cooperation from 18 steamships of the parent company, American Export Lines, plying between the east coast and Mediterranean and Black Sea ports. These ships will serve as floating weather stations, giving periodic reports to the ocean-spanning plane.

The experimental work has been financed at a cost of $450,000, with about $200,000 spent on the airboat alone.

American Export Airlines has manifested interest in Consolidated's four-motor plane for use when regular passenger and mail service is undertaken. The smaller PBY-type ship carries too small a payload to make trans-Atlantic operation profitable.

3/23/37 SAN

Jersey Stan

Wall Street Journal

NEW NAVY ORDER AIDS CONS. AIR

Contract for $4,699,000 Will Bolster Dwindling Backlog, Insure Steady Output

UNIT'S POSITION STRONG

By Louis F. Holtzman

SAN DIEGO—Award by the Navy Department to Consolidated Aircraft Corp. of a contract for planes and parts amounting to $4,699,000 should enable the company to maintain a fair rate of operations during the coming months. The company's backlog now is probably in the neighborhood of $7,000,000.

While excellent from the viewpoint of earnings, 1938 produced only a small amount of new business for the company, although it carried over into 1939 with good prospects for replenishment of its backlog. Unfilled orders on December 31, 1938, had dwindled to $2,796,881 and have since been depleted further by delivery of Navy craft, no new orders having been received this year until the present award. As against deliveries of more than $12,000,000 last year, new orders received approximated only $1,000,000.

Consolidated currently is completing its order from the Navy for the PBY model two-engine patrol bomber, and commercial business at the moment is conspicuous by its absence.

PBY Performance Satisfactory

Performance of the PBY models, which have been under delivery to the Navy for three years, has been eminently satisfactory. Several months ago 48 of these planes completed a mass flight from San Diego to Coco Solo, approximately 3,000 miles.

While details of the present Navy award are not revealed, Consolidated earlier this year was low bidder in competition with Sikorsky on a Navy call for a large four-engine flying boat similar to a type turned out previously. A minimum of six of this type was specified, with the indication that up to 15 could be ordered by the Navy.

While the major part of Consolidated's business last year was consigned to the Navy Department, observers believe that the company should be solidly in the running in connection with the rearmament program.

Company Prepared for New Orders

With one of the most modern aircraft manufacturing plants in the country, with experience and trained construction and engineering personnel, the company is in excellent shape to get into production with minimum loss of time on any new business either for the Army or the Navy Department. It is recalled that in 1936 Consolidated turned out for the Army a fast pursuit ship, which, judged even by current standards, could make an imposing showing.

Consolidated Aircraft sales last year reached a new record at $12,425,067, with a profit ratio to sales of 12.2%. This compared with $11,907,493 in 1937 when profit margin was only 4.1%.

Net profit after all charges, for 1938 was $1,535,110, equivalent, after preferred dividends, to $2.25 a share on 574,760 common shares outstanding. Net profit in 1937 was $462,959, or 68 cents on common.

During 1938, Consolidated made noteworthy progress in building up its cash position. On December 31, 1938, current assets totaled $5,225,715, of which $3,586,478 was cash, as compared with total current assets of $2,875,707 at the close of 1937. Year-end current liabilities, respectively, were reported at $1,554,491 and $464,919.

WALL STREET JOURNAL

MAR 22 1939

CONSOLIDATED AIRCRAFT GETS NAVY CONTRACT FOR 4 699 000 DLS

WASHN - THE NAVY DEPT AWARDED A CONTRACT FOR AIRPLANES AND SPARE PARTS TO THE CONSOLIDATED AIRCRAFT CORP OF SAN DIEGO CALIF FOR A TOTAL OF 4 699 057 DLS - DETAILS OF THE CONTRACT WERE NOT MADE PUBLIC BUT IT IS THOUGHT THAT THE PLANES AB THE LARGE FLYING-BOAT TYPE WHICH CONSOLIDATED HAS BUILT FOR THE NAVY BEFORE-

---

WALL STREET JOURNAL

CONSOLIDATED AIRCRAFT CORP

MAR 23 1939

SAN DIEGO- AWARD BY THE NAVY DEPARTMENT TO CONSOLIDATED AIRCRAFT CORP OF A CONTRACT FOR PLANES AND PARTS AMOUNTING TO 4 699 000 DLS SHOULD ENABLE THE COMPANY TO MAINTAIN A FAIR RATE OF OPERATIONS DURING THE COMING MONTHS WITH THE PROBABILITY THAT ITS BACKLOG IS NOW IN THE NEIGHBORHOOD OF 7 000 000 DLS

WHILE AN EXCELLENT YEAR FROM THE VIEWPOINT OF EARNINGS THE 1938 YEAR PRODUCED ONLY A SMALL AMOUNT OF NEW BUSINESS THOUGH CONSOLIDATED CARRIED OVER INTO 1939 WITH GOOD PROSPECTS FOR REPLENISHMENT OF BACKLOG- UNFILLED ORDERS ON DECEMBER 31 1938 HAD DWINDLED TO 2 796 881 DLS AND HAVE SINCE BEEN FURTHER DEPLETED BY DELIVERY OF NAVY CRAFT NO NEW ORDERS HAVING BEEN RECEIVED THIS YEAR UNTIL THE PRESENT AWARD- AS AGAINST DELIVERIES OF UPWARDS OF 12 000 000 DLS LAST YEAR NEW ORDERS RECEIVED APPROXIMATED ONLY 1 000 000 DLS

CONSOLIDATED IS JUST ABOUT FINISHING UP ON ITS ORDER FROM THE NAVY FOR THE PBY MODEL TWO ENGINE PATROL BOMBER AND COMMRCIAL BUSINESS AT THE MOMENT IS CONSPICUOUS BY ITS ABSENCE PERFORMANCE OF THE PBY MODELS WHICH HAVE BEEN UNDER DELIVERY TO THE NAVY DEPARTMENT FOR 3 YEARS HAS BEEN EMINENTLY SATISFACTORY

CONSOLIDATED EARLIER THIS YEAR WAS LOW BIDDER IN COMPETITION WITH SIKORSKY ON A NAVY CALL FOR THE LARGE FLYING BOAT FOUR ENGINE MJOB SIMILAR TO A TYPE TURNED OUT PREVIOUSLY- A MINIMUM OF SIX OF THIS TYPE WAS SPECIFIED WITH THE INDICATION THAT UP TO FIFTEEN COULD BE ORDERED BY THE NAVY-

---

S. D. FIRM TO BID ON ARMY PLANES

Consolidated Asks For Specifications

S.D. SUN 3/29/39

Aviation

Consolidated Aircraft Corp. plans to bid on contracts for Army planes in the near future, and has applied for specifications on which to base its estimates, it was revealed today by officials of the concern.

The disclosure was made on the heels of an announcement by the contracting officer of the Air Corps Material Division, Wright Field, Dayton, O., that bids on a maximum of 4150 planes, from small training ships to four-motored bombardment planes, will be opened July 5 to 8.

TALKED WITH ARMY MEN

Consolidated's intentions to depart from its program of the last few years of concentrating on Navy airboat work were made known recently when it was reported that several high-ranking officials of the firm had spent some time at Wright Field in conference with Army men.

Consolidated last week obtained a $4,700,000 contract for Navy patrol bombers, with construction to get under way in four to five months, on receipt of necessary materials from eastern factories.

BIDS ADVERTISED

The Army Air Corps, about to embark on its greatest expansion since the World War, is advertising for bids on the following planes, with maximum number mentioned:

Four-engined bombardment, 250; two-engined bombardment, 700; advanced training, 500; primary training, 1000; basis training, 1000; multiplace fighter, 100; observation, 400; twin-engined pursuits, 200.

S.D. Club Life 3-29-39

Consair Will Get Total Of $14,000,000 Navy Contracts Soon

The first of several contracts which by midsummer will exceed $14,000,000, was awarded to the Consolidated Aircraft Corp. last week by the U. S. Navy which kept rigid silence as to the type of planes ordered.

The initial order was for $4,699,000 worth of airboats, believed to be for some of the new type long-range bombers.

This will considerably stimulate industry in this section, but Maj. R. H. Fleet made it plain his company cannot expand in the twinkle of an eye, and that no new workers to the present force of 1100 will be taken on for some time.

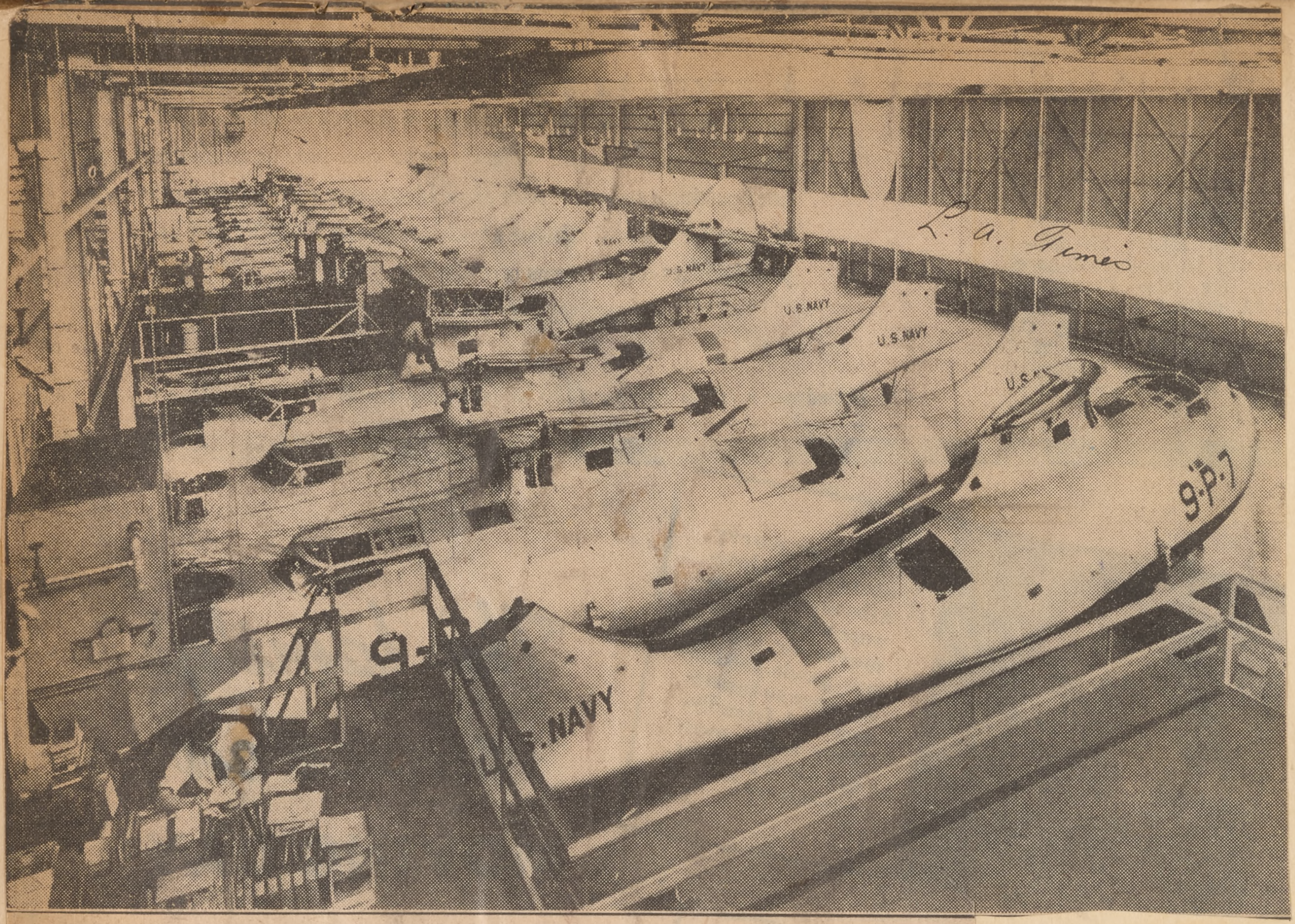
S. D. Firm May Bid On Army Planes

S.D. UNION 3/30/39

With Maj. R. H. Fleet, president, presiding, the anual meeting of Consolidated Aircraft Corp. directors was held yesterday at the Lindbergh field plant. Financiers from the east attended, according to a report.

Officials announced Consolidated is considering bidding for a part of the 4100 planes on which the army will open bids at Washington July 5. These planes will range from training ships to huge four-motored long-range bombers.

Consolidated last week received a contract of $4,699,000 for navy bombers. Production is expected to start early this summer.



L. A. Times

FLYING BOATS CONTRACT GIVEN

Consolidated Aircraft officials announce they have received $4,699,057 order from United States Navy for building of squadron of airplanes, type and specifications of which are kept secret. Above is assembly line of giant bombers at San Diego plant.

Wide World photo

AVIATION

Newsweek 3/13/39

Seaworthy Sensation: New Navy Plane Is Developed for Rough Water Landing

Though the Navy's scouting seaplanes take off by catapult from the decks of warships, they must land in the ocean. Consequently, seaworthiness is a problem that must be licked if the "eyes of the fleet" are not to remain closed during rough weather.

Last week, naval officials were so pleased with the seaworthiness of a new observation plane that they released spectacular pictures of its battles with big waves in tests some weeks ago—though they remained tight-lipped concerning its speed and other performance data. Developed in the Navy's Philadelphia aircraft factory, the ship has been accepted and designated the SON-1. Contracts for its manufacture probably will be let to successful bidders among commercial manufacturers.

The Caribbean fleet maneuvers proved the performance of another Navy plane. A big patrol ship spying on the attacking fleet, it flew over its objective at 15,000 feet for 30 hours and returned safely with nothing left in its fuel tanks but fumes.

PBY

Archbold Plans Hop Over Africa On Flight to U. S.

S.D. UNION 4/3/39

Famed Lake Victoria in British East Africa will be visited by Richard H. Archbold, associate director, American Natural History museum, on his proposed flight from Onslow, Australia, to the African coast, it was learned here yesterday.

Flying his $250,000 Consolidated-built seaplane, named the Guba, Archbold plans to return here in September after an air voyage that will take him over the Indian ocean, the African continent, the south Atlantic, and nonstop from Miami to San Diego.

Archbold will leave the American Natural History museum expeditionary base at Hollandia, Netherlands New Guinea, May 15, for Australia. He will take off from Onslow in June for Mombasa, Africa, on a trail-blazing flight for the British government.

From Mombasa the Guba will fly to the British Imperial airways' base at Kisumu on Lake Victoria. The next leg of his 20,000 - mile homeward voyage will take him to Uganda, across French equatorial Africa to Lagos, Niegra, and over the Gold coast to Dakar, Senegal.

From Dakar the Guba will wing its way over the South Atlantic to the Azores and thence to the Gulf of Mexico.

S.D. UNION 4/5/39

Consair Calls Back Tool, Pattern Crew

Donald Frye, personnel director of Consolidated Aircraft Corp., announced yesterday that a small group of tool makers and pattern makers who were laid off recently at the Lindbergh field plant have been called back to work.

"Although we have received a navy contract for new planes it will be several weeks before material begins arriving and we can proceed with production," Frye said. "For this reason, no steps will be taken to expand the company's present force at this time."

'Forgotten' Bomber Just Flew And Flew 'Til Gas Ran Out!

The strange tale of a San Diego Navy patrol bomber "overlooked" by its dispatching officers in the recent Caribbean war games was revealed here today.

The airboat was sent from its base at San Juan, Puerto Rico, to scout for the attacking White Fleet and report its movements to the defending force.

After climbing to 15,000 feet, the ship flew east and located the "enemy" far at sea, meanwhile remaining undetected at its tremendous altitude. For hour after hour reports of the fleet's position were sent back to the Patrol Wing One headquarters.

When darkness came, the crew began to get fidgety. They apparently had accomplished their mission, yet had not been recalled. They could not understand it, but in the Navy one has but to follow orders, and there were no orders to return.

So the giant bomber patiently kept on the trail of the "enemy." There may have been a limit to the memory of the officers at the base, but the gasoline supply could not last forever.

Thirty hours after taking of and with the tanks virtually dr the craft and its exhausted cre came back to San Juan—having flown more than 3000 miles.

And the crowning touch of irony came when, after returning from one of the most sensational non-stop patrol flights ever made in simulated war conditions, the plane commander was asked:

"Where have you been?"

They apparently hadn't even missed him!

The story, being circulated freely on North Island and in the Consolidated Aircraft Corp. plant here, does not reveal the identity of the fliers, although the plane is reported to be one of the ships flown non-stop from San Diego to the Canal Zone last January.

CONSAIR BOATS BUILT TO 'TAKE IT' IN HARD LANDING ON ROUGH SEA

EVENING TRIBUNE 3/24/39

The marked difference in structural requirements of land planes and seaplanes is discussed in the following article appearing in the current issue of Consolidator, monthly publication of Consolidated Aircraft Corp.:

While it is designed to take tough loadings, as everyone knows, the landplane nevertheless is designed for, and accustomed to, landing on an airport of reasonable smoothness. It is not designed for landing on, and definitely not designed for landing into, a mountainside . . . not with any degree of alacrity at least. The flying boat, while probably it will not be called upon throughout its entire life to alight upon "fields" other than those relatively smooth as those of the landcraft, nevertheless is designed to take a whambaming into mountains of water, and a rough water test is a thorough proof of its ability to take just such treatment.

No Chance To Pick Spot

In these tests the plane does not have the normal advantage of easing down onto the surface of the water by encountering it at a very slight angle. There are waves and groundswells to contend with, and these become mountains in both substance and feel, as the speed of the flying boat increases. The landings and take-offs must of course be made into the wind and nature generally arranges for the wind to cross and augment the action of the swells and waves. At the very moment of landing, a touch on the far stern of a boat on the crest of one wave may have the tendency of forcing the boat to plow its nose with the full force of its momentum into the next coming swell.

In our normal encounter with water we are apt to feel that it will yield the right of way to our inclinations with little resistance. And this it does, but as the speed with which we wish to push it aside increases, so does its tenacity for remaining "as is." The inertia of a small drop of water to the speeding vanes of a steam turbine will shatter the steel blades, so violent does this action become at very high speeds. Thus, but to a lesser extent than that of the turbine blades traveling at perhaps 400 miles per hour, the landing seaplane in the particularly severe rough water testing of its worthiness, takes what might be likened to a slide down a full flight of stairs on the seat of the trousers.

Several sound smacks of solid water on the hull are to be expected before the plane can make a take-off during one of these tests, and a similar number as it again comes to rest. The rough water test proves the flying boat fully capable of a tilt with open water at its most cantankerous, ready to take normally rough conditions with the greatest ease.

The essential difference between the land and sea craft in basic structural requirement is that the landplane has its landing loads somewhat conveniently concentrated in the three points of the landing gear, and normally receives the loads through these points only. The seaplane, however, is apt to have the full brunt of a blow in maneuvering on rough water delivered to it from almost any quarter, highly loading that particular vicinity and throwing, likely as not, a strong wrenching twist to the whole hull and structure. The seaplane just naturally has to be tough all over, the landplane in concentrated spots.

FORGOTTEN BOMBER JUST FLEW AND FLEW

S.D. SUN 4/5/39

The strange tale of a San Diego Navy patrol bomber "overlooked" by its dispatching officers in the recent Caribbean war games was revealed here today.

The airboat was sent from its base at San Juan, Puerto Rico, to scout for the attacking White Fleet and report its movements to the defending force.

After climbing to 15,000 feet, the ship flew east and located the "enemy" far at sea, meanwhile remaining undetected at its tremendous altitude. For hour after hour reports of the fleet's position were sent back to the Patrol Wing One headquarters.

When darkness came, the crew began to get fidgety. They apparently had accomplished their mission, yet had not been recalled. They could not understand it, but in the Navy one has but to follow orders, and there were no orders to return.

So the giant bomber patiently kept on the trail of the "enemy." There may have been a limit to the memory of the officers at the base, but the gasoline supply could not last forever.

Thirty hours after taking off and with the tanks virtually dry, the craft and its exhausted crew came back to San Juan—having flown more than 3000 miles.

And the crowning touch of irony came when, after returning from one of the most sensational non-stop patrol flights ever made in simulated war conditions, the plane commander was asked:

"Where have you been?"

They apparently hadn't even missed him!

The story, being circulated freely on North Island and in the Consolidated Aircraft Corp. plant here, does not reveal the identity of the fliers, although the plane is reported to be one of the ships flown non-stop from San Diego to the Canal Zone last January.

Consolidated Gets Navy Order for Nearly Five Million Dollars—Notes

U. S. Air Services April 1939

WHILE NO DETAILS were released by the Navy Department as we went to press, yet the concrete fact emerged that Consolidated Aircraft Corporation, San Diego, Calif., had been awarded on March 22 an order for airplanes and spare parts, in the sum of $4,699,057.62.

We shall look forward with pleasure to giving our readers many details pertaining to the manufacture of new airplanes on this large contract.

Consolidated Lowest of Eight Bidders On Group Production of Army Planes

S.D. TRIBUNE ~~4/18~~ 4/18/39

Consolidated Aircraft Corp., of San Diego, today was named by United States army corps engineers as lowest of eight bidders on a project for constructing attack bomber planes in the government's program to boost the army air corps planes to between 5500 and 6000 during the next two years.

The Consolidated bid was for $585,000 if a single plane were built and $48,951 per plane if 1000 planes were built, The Associated Press reported from Dayton, O.

Bids for the attack bombers ranged from $1,225,000 for a single plane, submitted by Lockheed Aircraft Co., to Consolidated's $48,951 for each on a 1000-plane order. Two firms, Bell Aircraft Co. and the Douglas Santa Monica division, turned in lower bids than Consolidated on single planes, but fell short by several thousand dollars of the Consolidated group bid.

The San Diego aircraft firm's low bid on the army planes was announced less than a month after Consolidated was awarded a $4,699,000 contract for new navy planes. The navy contract, awarded March 22, came on the eve of Consolidated's last delivery of 209 twin-motored bombers of the PBY-type to the navy. Maj. Reuben H. Fleet, Consolidated president, announced at the time that no new men would be added to the existing force of 1100 until material for the new planes starts arriving at the factory here this fall.

Pledged to Secrecy

Pledged by the government to secrecy, Consolidated officials today could make no statement on either the army or navy planes, either as to design, type or number. The navy, however, is understood to be planning to increase its twin-engined long-range patrol planes and to construct several 4-engined patrol planes. The army, in a report from San Francisco headquarters of the ninth corps area, plan new 4-engined bombers as well as twin-engined attack bombers of the monoplane type, each weighing from 8½ to 9 tons.

When the Consolidated Aircraft Corp. factory was moved to San Diego from Buffalo, N. Y., in 1935, the firm was working on an order of 50 PB-2A army pursuit ships of the two-seater, low-wing type.

The list of bids announced today from Dayton, on the basis of one plane and the price per plane if an order of 1000 were placed, is as follows:

Consolidated Aircraft Co., San Diego, $585,000 and $48,951; Curtiss-Wright Corp., Buffalo, N. Y., $878,385 and $89,940; Glenn L. Martin Co., Baltimore, $950,000 and $64,000; Bell Aircraft Co., Buffalo, $504,000 and $78,000; Lockheed Aircraft Co., Burbank, Calif., $1,225,000 and $75,540; North American Aviation Corp., Inglewood, Calif., $760,000 and $58,190; Douglas Aircraft Corp., El Segundo, Calif., $742,000 and $55,623, and Douglas Santa Monica division, Santa Monica, Calif., $207,500 and $56,000.

Consair Bids Low on Order Of 1000 Planes

S.D. UNION 4/19/39

With a bid of $585,000 for a single new-type army bomber and $48,951 a plane if the company received a contract for 1000 war planes of this type, Consolidated Aircraft Corp. submitted the lowest proposal of eight bidders, The Associated Press reported from Dayton, O., yesterday.

Bids were opened by army air corps engineers at the experimental plant at Wright field, Dayton.

Proposals for the attack bombers ranged from $1,225,000 for a single ship, submitted by Lockheed Aircraft Co., to Consolidated's $48,951 each on a 1000-plane order.

The Associated Press reported Bell Aircraft Co. and the Douglas plant at Santa Monica submitted lower bids than Consolidated on single planes but were much higher on the group proposal.

HUGE PROGRAM PLANNED

The Curtiss-Wright Corp., Buffalo, was second lowest in both categories with $878,385 for a single plane and $89,940 for each ship of 1000 or more.

The war department recently announced its plans to expend $600,000,000 in the next fiscal year in the construction of about 6000 planes of all types.

Consolidated recently received a $4,699,000 contract for a sqaudron of new, four-motored long-range bombers for the navy. Production on these ships is to be started this summer.

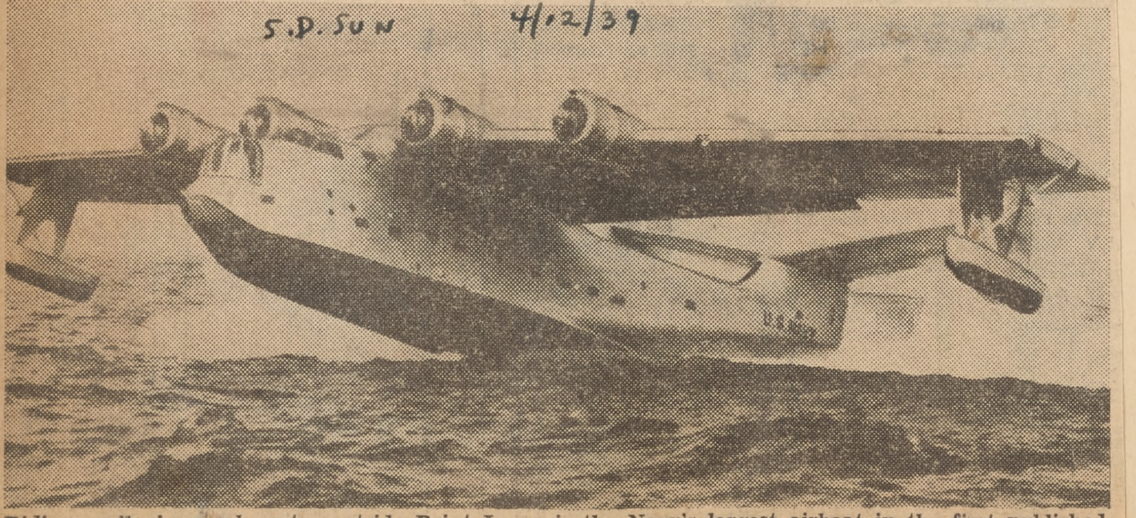
HIGH SPEED POSSIBLE

The army's bombers, in contrast to the navy's 30-tonners, will weigh nine tons but the lighter planes will be faster and will have a greater cruising range.

Consolidated officials explained that as in any manufacturing plant, it would be cheaper to produce planes in quantity than a single one, as dies and other machinery are as essential for one plane or for 1000. The greater the production the lower the unit cost, they said.

Biggest Airboat Breasts' Rough Waters

S.D. SUN 4/2/39



Riding easily in rough water outside Point Loma is the Navy's largest airboat in the first published photograph of a takeoff of this nature. Production of an unrevealed number of these 25-ton four-motored craft will be started by Consolidated Aircraft Corp. in about three months. The San Diego plant must wait for necessary materials from eastern factories before it can begin work on a recently awarded $4,700,000 order.

S.D. SUN 4/18/39

BULLETIN

Consolidated Aircraft Corporation today submitted a low bid of $585,000 for a single plane, and 1000 planes at $48,951 each, as bids were opened by the U. S. Army Air Corps, the United Press reported from Dayton, O.

18 NAVY PLANES DUE NEXT WEEK

Amphibians To Return From War Games

S.D.SUN 4/7/39

National Defense

Preceding 36 San Diego Navy bombers by more than a month, 18 utility amphibian planes of Squadron VJ-1 will return here from the Caribbean war games next week, weather permitting, North Island officials announced today.

The planes — 10 long-range Sikorskies and eight old-type Grummans, commanded by Comdr. Allan Price — are scheduled to leave Guantanamo Bay, Cuba, Monday on a transcontinental trip expected to take them two days.

GUARDED BY SHIPS

The 36 Consolidated airboats of Squadrons VP-7, VP-9, and VP-11, will leave Norfolk May 18 and will proceed to Pensacola and the Gulf of Fonseca, Nicaragua, before heading up the west coast to San Diego. They will be guarded by only two destroyers, stationed off the west coast of Mexico, according to present plans. About three days will be required for this flight.

Squadron VP-12, whose 12 planes were in the original group of 48 that flew non-stop from San Diego to the Canal Zone last January, will be permanently based in Norfolk. Succeeding this unit in San Diego will be Squadron VP-18, formerly of Pearl Harbor.

OCEAN HOP IN JUNE

Next trans-Pacific mass flight — of Hawaii's Patrol Squadron One, which has been in training at North Island for several months — will occur June 28, with approximately 14 PBY-4 ships, Consolidated's most advanced two-engined type, to make the hop.

Capt. Marc Mitscher, commander of Patrol Wing One, will lead the 36-plane flight from Norfolk, it was reported. He is due to become the next assistant chief of the Bureau of Aeronautics in Washington, D. C.

GUBA TO FLY TO AUSTRALIA

Archbold Plans Flight May 15

S.D.SUN 4/7/39

Aviation

Richard Archbold, millionaire scientist-aviator, will pilot his San Diego-built Consolidated airboat Guba from Netherlands, New Guinea to Australia, between May 15 and 20, then across the Indian Ocean to Africa, it was learned here today.

The flier, who has been leading an American Museum of Natural History expedition in the New Guinea jungles since last June, when he and a five-man crew flew the Guba from San Diego via Honolulu and Wake Island, is in constant communication with Barney F. Boyd, local amateur radio operator.

RARE SPECIMENS

The plane has been used to transport personnel, and tons of supplies and equipment from Hollandia, on the seacoast, to the scientists' base camps in the interior. Rare specimens for the museum in New York have been brought out of the jungles by the Guba, which has flown more than 100,000 miles in the past 10 months.

Mr. Archbold has decreed a vacation for members of the expedition next fall, and expects to return here in September to have the big airboat overhauled at the Consolidated plant.

SURVEY FLIGHT

After a month's stay in Sydney, conferring with aviation representatives of the Australian government, which is chartering the Guba to survey a commercial flight route to Africa, the plane will go to Onslow, on the west coast, and take off for Mombasa, Africa, via several islands in the Indian Ocean, including Cocos, Diego Garcia, and Seychelles. This will be the first flight of a seaplane across this water body, according to Consolidated officials.

From Mombasa, the Guba will be flown to San Diego in a leisurely itinerary.

S. D. FIRM PLANS ARMY AIR BIDS

Consolidated Studies Plane Specifications

S.D.SUN 4/14/39

Plane Manufacture

Consolidated Aircraft Corp., may bid on all but one of the eight types of planes on which the Army Air Corps is asking U. S. manufacturers to submit estimates, company officials disclosed today.

They emphasized, however, that no decision has been reached as to exactly which craft they will bid on, with studies of specifications still under way. The estimates will be opened at Wright Field, Dayton, O., July 5 to 8.

TRAINING PLANE

The one type on which the San Diego firm positively will not compete is the primary training plane. It was revealed that Consolidated has just sold all its primary training plane designs and construction rights to the Brewster Aeronautical Co., east coast firm now building the Navy's fastest fighting planes.

Although Consolidated has not built any such craft for five or six years, their engineering is not out-of-date even now, it was pointed out. For the Army, the company built P2's and for the Navy NY trainers.

BIDS ON BOMBERS

The Army is seeking bids on four-engined and two-engined bombers, basic and advanced trainers, multiplace fighters, observation ships, and twin-engined pursuits, as well as the primary trainers.

With a tremendous increase in Army planes authorized, the Air Corps personnel must be more than doubled within the next two years, it was pointed out today. The present strength of 19,408 men must be boosted by approximately 25,000 men, resulting in a large number of promotions among non-commissioned officers for the many responsible duties in the enlarged force.

S.D. Union 4-17-39

Australia Envoy To Make Flight With Archbold

Word that a representative of the Australian government will accompany him on the trail-blazing flight from Onslow, Australia, to Mombassa, British East Africa, was received here yesterday from Richard H. Archbold, associate director of the American Museum of National History.

Archbold, now at Hollandia, Netherlands, New Guinea, on a scientific mission for the New York museum, reported he plans to abandon his advance base at Lake Habbema May 1. He will leave Hollandia in his $250,000 San Diego-built "flying laboratory" for Sydney, Australia, May 5. Ten days later he will take off from Onslow for the flight to Mombassa.

Archbold is said to have chartered his Consolidated-built plane to Imperial Airways of Great Britain for charting a new airway between Australia and Lake Victoria in Africa. En route to Mombassa and Lake Victoria he will touch at famed Cocos islands.

From Lake Victoria Archbold will return to San Diego via Lagos, Dakar, St. Thomas in the West Indies and Miami. He plans to arrive here July 15.

LOW BID FILED BY S. D. FIRM

Consolidated Seeks Army Contract At 48 Million

4/19/39

Read Maj. Al Williams— Page 12. S.D. SUN

Consolidated Aircraft Corp. of San Diego submitted the lowest bid of $48,951,000—$48,951 per plane—for construction of 1000 attack bombers for the Army Air Corps, the United Press reported.

Bids of eight manufacturers were opened yesterday in Wright Field, Dayton, O., with estimates ranging from cost of one plane to that for 1000. Consolidated's bid for a single prototype craft was $585,000, with this sum appreciably decreased in lots of 10 additional planes up to 1000.

Only a month ago, Consolidated was awarded a $4,700,000 contract for construction of Navy patrol bombers, believed to be the four-engined type which has been test flown in San Diego for 16 months.

The attack bomber, new to the United States, is one of the fastest of fighting planes, capable of speed approaching 400 miles per hour. Types of it have been used by European nations for several years and American military experts now concede it to be one of the most important flying weapons. It is used for attack upon ground troops and carries a light load of bombs as well.

BUILT BY DOUGLAS

A large number of these ships are under construction by Douglas Aircraft Corp., Santa Monica, for the French government. Four prototype planes already have been built, by North American, Martin and Stearman, in addition to Douglas. The North American and Douglas craft were demolished in recent crashes on test flights.

The Army Air Corps will be ultimately expanded to 6000 planes in the new defense program. Consolidated, which has concentrated on Navy work for the past three years, is studying specifications for seven other types of planes, on which bids will be opened in Wright Field July 5-8.

OTHER BIDS

The single and 1000-plane bids of other firms on the attack bomber follow:

Curtiss Wright Corp., Buffalo, $878,385 and $89,940.

Glenn L. Martin Co., Baltimore, $950,000 and $64,000.

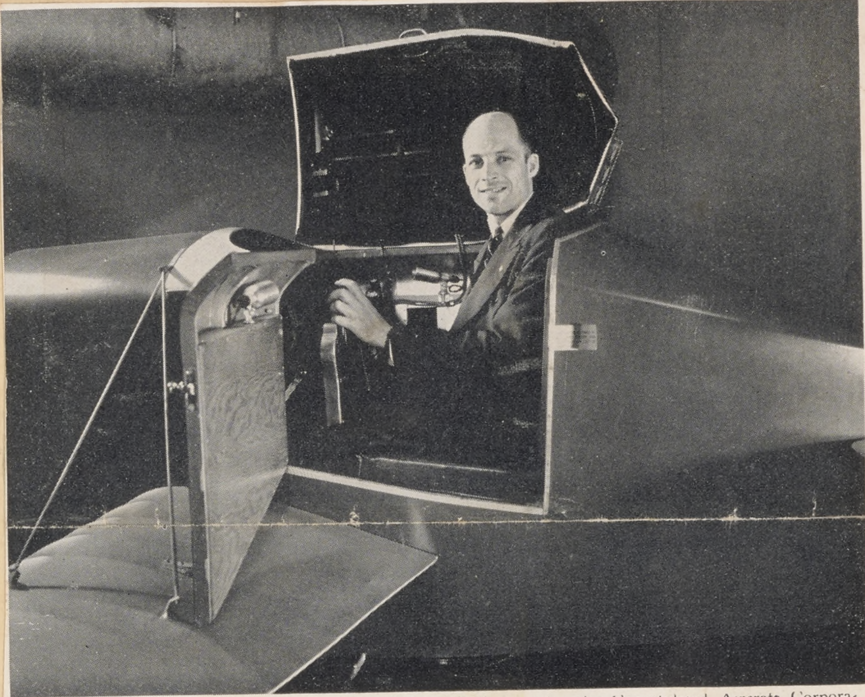
Bell Aircraft Co., Buffalo, $504,000 and $78,000.

Lockheed Aircraft Corp., Burbank, $1,225,000 and $75,540.

North American Aviation Corp., Inglewood, $760,000 and $58,190.

Douglas Aircraft Corp. El Segundo, $742,000 and $55,623.

Douglas Aircraft Corp., Santa Monica, $207,500 and $56,000.



WILLIAM B. WHEATLEY, Chief Test Pilot and Service Manager for the Consolidated Aircraft Corporation for the past ten years, pauses a moment before lowering the hood for a lesson in instrument and radio beam flying in one of Boeing School's Link trainers.

Consolidated's Chief Test Pilot Impressed With Boeing Training

Boeing School News - Number 4, 1939

William B. Wheatley, chief test pilot and service manager for the Consolidated Aircraft Corporation of San Diego, California which builds large, two-engined and four-engined flying boats for the U. S. Navy, recently completed the Instrument Rating Course at the Boeing School of Aeronautics.

"The importance of being able to fly and navigate across continents and oceans with the use of instruments and radio is now recognized, as it is seldom possible to go such great distances in one general direction without encountering at least a patch of weather where use of such equipment is absolutely necessary. Test pilots make their routine test flights usually in fair weather, but frequently such pilots participate in long demonstration or delivery flights. For example I flew as pilot with a squadron of Navy patrol bombers from San Diego to Hawaii in 1937, later the same year flew from San Diego nonstop to New York City and again to Miami, while in 1938 I flew as one of the pilots in the four-engined Consolidated Navy Patrol Bomber from San Diego to Washington, D. C., and later returned to San Diego, nonstop."

"I took advantage of a lull in test flying to come to the Boeing School of Aeronautics and take the same advanced flying work which is given to students training for airline pilot jobs, United Air Lines' pilots, and to some of Pan American Airways' flying personnel. *I believe it to be the most up-to-date and best training obtainable. I am heartily pleased with the quality and thoroughness of the training I have received at Boeing School and cannot speak too highly of it.*"

Wheatley is now thirty-six years of age. He was born in Chester, New York in 1902, exactly one year to the day prior to the Wright brothers' first flight at Kitty Hawk.

Wheatley took examinations for appointment as flying cadet with the U. S. Army and started his training in March 1925, graduating from Kelly Field the following year. The newly organized Pratt and Whitney Aircraft Company at Hartford, Connecticut had just turned out engine number seven when he arrived for work in 1926. Working there as final assembly mechanic, test-house operator, and service representative, he maintained his flying skill by taking a commission in the Connecticut National Guard Air Service. Some of his assignments with Pratt and Whitney were unique. As examples, he installed the first P. & W. engine ever to go in the nose of the famous Ford Trimotor; he was in charge of P. & W. engine service work for Boeing Air Transport (predecessor division of United Air Lines); and he was the first test pilot for Pratt and Whitney. He gave the president and vice president of that organization at that time their first ride in an airplane powered with one of their own products.

As an airmail pilot Mr. Wheatley inaugurated the Albany-Buffalo-Cleveland airmail route for Colonial Western Airways on June 1, 1928. He joined the staff of Consolidated Aircraft Corporation in 1929 when the company was located in Buffalo, New York. It was moved to San Diego in August 1935. While attending Boeing School he celebrated his tenth year with Consolidated. He believes that test flying is just as safe a job as the pilot and manufacturer make it and says that the work is not at all like the portrayal given in Hollywood motion pictures.

Some of the well known planes which Mr. Wheatley has taken up on test flights include the Fleet Trainer, Thomas Morse Army observation planes, Consolidated Fleetster (some were used in recent years by T. W. A., Ludington, and other airlines), Prestone liquid-cooled, low-winged Army PB-2A Pursuit, and all models of multi-engined Consolidated Navy patrol bombers.

Consolidated Gets Navy Order for Nearly Five Million Dollars—Notes

U.S. AIR SERVICES 4/39

WHILE NO DETAILS were released by the Navy Department as we went to press, yet the concrete fact emerged that Consolidated Aircraft Corporation, San Diego, Calif., had been awarded on March 22 an order for airplanes and spare parts, in the sum of $4,699,057.62.

We shall look forward with pleasure to giving our readers many details pertaining to the manufacture of new airplanes on this large contract.

AIR WAR GAME HERE WILL PRECEDE FAIR

N.Y. TIMES 3 April 1939

Exercise to Include 16 Navy Vessels, 100 Planes and Coast Guard Ships

OVER A 360-MILE FRONT

Manoeuvres Will Be Staged Off the New England-New York Coast in April

Sixteen or more naval vessels, 100 to 175 army and navy planes and several Coast Guard vessels will participate in a mimic war game off the New England-New York coast late in April, just before the fleet visits New York for the World's Fair, it was learned yesterday.

The war game—though known as "Joint Air Exercise No. 1"—is similar in scope and pattern to several others held in the past, but will probably test more thoroughly than any before the degree of cooperation between the military and the naval flying fleets, a controversial subject for years.

For the forthcoming problem the order limiting flights of army planes to 100 miles from shore has been lifted and it is expected that some of the army's famous Boeing "flying fortresses," as well as the navy's long-range Consolidated patrol planes, will fly far to sea.

Rear Admiral W. T. Tarrant, commandant of the First Naval District with headquarters at the Boston Navy Yard, will command the defending naval forces, which, in accordance with the old tradition of service games, will be designated as Blue. The army forces, a part of the Blue defending force, will be commanded by Major Gen. Hugh A. Drum, commanding the First Army, who will establish his headquarters at Providence State Airport, Providence, R. I.

The problem is scheduled for April 17 to 22, with the active phase of the exercise probably not starting until noon on April 20.

To Extend 400 Miles to Sea

The area of operations will extend over a 360-mile sea front from the New Hampshire-Massachusetts border to Southern New Jersey, but most of the active operations are expected to be off the New England and New York coasts, extending 400 miles or more to sea.

Under the terms of the problem the traditional enemies Black and Blue are at war. The main Blue (American) fleet which takes no actual part in the problem, is supposed to be steaming to the northward from the Caribbean area, its vessels going into various ports south of New York for refueling.

The main fleet of the Black coalition is supposed to be on the other side of the Atlantic, but a Black raiding detachment has been sent across the Atlantic toward the New England coast with three missions: To attack, and, if possible, destroy isolated ships of our main fleet steaming into ports for refueling; to raid coastal shipping, and to raid coastal points.

This Black raiding force will include two battleships—the New York and Texas—which will represent an enemy force of six heavy cruisers and eighteen destroyers. An aircraft carrier as yet unnamed is scheduled to operate with the two battleships. If the carrier does participate, seventy-five naval planes are to take off from her decks and raid Boston, New York, or other coastal points, if the Black attackers succeed in eluding the Blue defenders.

The Black attacking force will be commanded by Rear Admiral Alfred W. Johnson, commander of the Atlantic Squadron, who flies his flag from the New York.

The defending naval forces will consist of various units operating under the First and Third Naval Districts, which will consist almost entirely of Coast Guard ships and planes, commanded respectively by the district commanders—Admirals Tarrant and Clark H. Woodward—and of especially designated supporting forces. These forces will include six submarines of Squadron Two, normally stationed at New London; S-boats, three destroyers to act as plane guards, three seaplane tenders and the light cruiser Memphis, flagship of Rear Admiral C. A. Blakely, commander of the Aircraft Scouting Force, who will be in charge of the naval aerial operations and who probably will make his headquarters somewhere in the Narragansett Bay area.

Under his command as one of the most important parts of the Blue defending force will be forty-eight Consolidated long-range patrol planes of Patrol Wing One—the planes that flew non-stop from San Diego to Panama and which can fly 3,000 miles without refueling. Two or three other utility and general service planes also will be available to Admiral Blakely.

Includes "Flying Fortresses"

The army forces, under General Drum's command, will include about the same number of planes, all of them of two types—the famous Boeing "flying fortresses" that have made aviation history on their long-range flights and the Douglas B-18A bombers and reconnoissance planes. All these planes will be of the Second Wing of the army's General Headquarters Air Force. Brig. Gen. Arnold N. Krogstad, commanding the Second Wing, will establish his headquarters with those of General Drum at the Providence State Airport.

The Second Bombardment Group, with about ten of the seventeen-ton B-17 "flying fortresses," under command of the "flying fortress" veteran, Lieut. Col. Robert Olds, also will be based at Providence.

Twelve to eighteen planes, Douglas bombers and reconnoissance machines, will operate from the Boston Airport. The Fifth Bombardment Squadron from Mitchel Field with six to twelve bombers, under command of Major Ross F. Cole, will base there, as will planes of the Twenty-first Reconnoissance Squadron from Langley Field, under Major Howard A. Craig.

Except for the Fifth Bombardment Squadron, which is being shifted to Boston, the Mitchel Field planes will continue to operate from their home station on Long Island. The Ninth Bombardment Group, commanded by Lieut. Col. Carl W. Connell, and the Eighteenth Reconnoissance Squadron, commanded by Major Phillips Melville, both operating from Mitchel and both equipped with Douglas B-18A bombers and reconnoissance machines, probably will operate about thirty planes.

Immediately after the completion of the aerial war game the "enemy" ships New York and Texas will come to New York to embark reservists of the Merchant Marine Naval Reserve on April 25, four days before the bulk of the fleet of almost 100 ships is scheduled to arrive here for the opening of the World's Fair. The New York and Texas will complete this cruise on May 8 at Norfolk and will then return to the New York area.

The Memphis, flagship of Admiral Blakely, also will come here, perhaps several days ahead of the fleet, and the forty-eight Consolidated planes of Patrol Wing One may also base in the New York area for several days after the war game.

The Fact=o=Graph

By Willis Werner

S.D. SUN 4/21/39

Lighter Than Air

LIEUT. COMDR. ROLAND G. MAYER is almost like a man without a country; he is one of America's leading authorities on lighter-than-air craft, but America has only one dirigible.

◇ ◇ ◇

That's one reason San Diego may claim him—temporarily at least. He is now naval inspector at Consolidated, and he is in terrific demand as a luncheon speaker. People like to hear him tell about the crack-up of the Shenandoah. He knows about that because he was aboard at the time.

Willis Werner

◇ ◇ ◇

Not only that—he helped build her. He was on every flight she ever made, and has flown with every airship the Navy has had. And although he has seen the Shenandoah and the Akron and the Macon pass, his faith in lighter-than-air remains unshaken.

◇ ◇ ◇

Comdr. Mayer virtually grew up with aviation, thanks to a fortunate decision he made one day in 1917. He was a student at the University of Washington when a chap named William Boeing came around and asked for volunteers to work in the airplane factory he had started in one of his father's saw-mill buildings. Hardly anybody responded.

◇ ◇ ◇

Young Mayer, in fact, was all set to join the then-booming Franklin automobile works back East, but two of his classmates persuaded him to go along with them to the little airplane factory. Those men were Phil Johnson, now establishing an air-mail system in Canada, and Claire Egtbedt—today president of Boeing Aircraft.

◇ ◇ ◇

A year later, war was declared and Mr. Mayer went into the Navy and was sent to the Bureau of Aeronautics construction and repair division in Washington, advancing from there to the Philadelphia Naval Aircraft factory. And because he landed in the aircraft factory instead of an automobile works, he had the rare opportunity of becoming project engineer for the Navy's first dirigible—the Shenandoah.

◇ ◇ ◇

Although built in Philadelphia, the dirigible was assembled and flown at Lakehurst, N. J., and it was an exciting moment for Mr. Mayer when she first left her moorings.

◇ ◇ ◇

"WE HAD a little data from German, English and Italian experiments, but mostly we were starting from scratch," he recalls. "For one thing, the Shenandoah was the first to use helium gas instead of hydrogen. That's expensive and we couldn't afford to waste it by releasing it, so we had to learn new methods of handling the ship.

◇ ◇ ◇

"The low, movable mooring mast is one of the developments. At first the mast was hauled by a caterpillar, but later it was put on a track.

◇ ◇ ◇

"America was first to carry airplanes aboard an airship, or to moor an airship to a surface vessel. And America's system of condensing the exhaust from the engines into water for ballast to compensate for the fuel as it is consumed, has been copied by the German designers."

◇ ◇ ◇

Comdr. Mayer made his first trip to San Diego in the Shenandoah—she tied up to a 168-foot mast on North Island for four days—and of course he was aboard during the storm that split the ship in two. "There really wasn't much to it," he says quietly. "Our half floated like a free balloon and all we had to do was operate it as such until the wind went down and we could land it by releasing gas. We never got a scratch."

◇ ◇ ◇

The experience didn't make him a bit nervous and he went right into the Los Angeles—spent four years with her. In 1931 he came west again to help establish the base at Sunnyvale, then went to the Akron—and that fatal day when she cruised over Kearney Mesa with a seaman dangling from the landing ropes, it was Comdr. Mayer who engineered the rescue.

◇ ◇ ◇

Comdr. Mayer has even dangled in a tiny gondola 1500 feet beneath the dirigible, swinging along through the sky on the end of a steel cable no thicker than a pencil. That maneuver permits observation of enemy ships while the airship remains out of sight above the clouds. How does it feel? "You don't feel anything," avers the commander. Suppose the cable broke? "No danger," is his answer; "it's tested to 10 times its maximum load and anyway, you wear a parachute."

◇ ◇ ◇

Speaking as a man who can fly anything, Comdr. Mayer thinks the day will come when dirigibles will supplant the present giant clipper planes for trans-ocean service. He thinks they'll be the aircraft carriers of the future, too—you could, he explains, build 10 flying mother ships for the cost of one surface carrier, and thus wouldn't be putting all the eggs in one basket.

◇ ◇ ◇

Comdr. Mayer has a daughter in high school and a son at Annapolis—but whether or not the latter follows in his father's footsteps is entirely up to him. When not up in the sky, Comdr. Mayer really gets down to earth. One of his main hobbies is gardening.

NEXT: He trusts you.

S.D. SUN 4/23/39

PERFECT PLANE WING CLAIMED

Plane Speed Raised 20 Pct., Says Designer

Aviation

By United Press

LOS ANGELES—Development of "the perfect airplane wing" was claimed today by David R. Davis, veteran aeronautical designer and former partner of Donald Douglas, airplane builder.

From an aerodynamic standpoint, Mr. Davis said that the wing he developed is 100 per cent effective and will increase the speed of planes at least 20 per cent.

INVOLVED FORMULA

The new type of wing was worked out by Mr. Davis in an involved mathematical formula which, when translated geometrically, gave the proportions of "the perfect wing," he said.

The designer reported he submitted his formula to the Guggenheim Aeronautical Laboratory at California Institute of Technology where a sample wing was constructed and then tested in wind tunnels.

Mr. Davis reported that the wing solved the problem of giving a plane the maximum possible lift with the minimum possible drag.

Previously, he said, aeronautical engineers worked by rule of thumb in shaping the wings of a plane, and often a heavy drag was created, cutting down the speed of the ship and increasing its hazard.

10 YEARS OF STUDY

By means of mathematics Mr. Davis said he evolved his new wing which is based on a formula for the ideal "airfoil" or wind cross section.

He said he and an associate, Walter Brookins, a veteran airman, spent 10 years studying the rotor motion of air around a plane's wing before working out the formula for the perfect curve of a wing section.

LINDY SAN DIEGO VISIT IN DOUBT

Navy, Airplane Plant Heads Uncertain

S.D. SUN 4/21/39

Personalities

Whether Col. Charles A. Lindbergh will visit San Diego naval and commercial aircraft facilities during his quick tour of the country while on active duty in the War Department was unknown by local officials today.

Consolidated Aircraft Corp. executives assumed that if Col. Lindbergh plans to inspect all the important airplane factories in the country he probably will go through the local plant. However, they have not been notified of his intentions. Similarly, officers at the Naval Air Station, largest Navy operating base in the country, do not know whether the Lone Eagle will call there.

If Colonel Lindbergh does come to San Diego, he will be returning to familiar territory. It was here his "Spirit of St. Louis" was built, and in this vicinty that he and his wife learned many fundamentals of glider flying.

S.D. SUN 4/24/39

High School Students To Hear 60 Speakers On Vocations

San Diego High School students will hear 60 speakers on vocational subjects at 10:40 a. m. Thursday. Dean Arthur Peterson, of San Diego State College, will lead discussions on work offered at the college at a session open to the public in Russ auditorium. Officers of the State College student body will also speak.

Following are the speakers and their vocational topics:

Agriculture, room 180, Eric E. Eastman; aircraft industry, room 144, Donald Frye; airplane pilot, room 354, Lieut. H. L. Hopping; air conditioning, room 178, W. H. Hermes; architecture and drafting, room 136, Sam Hamill; art careers, room 351, Miss Ilse Hamann; banking, room 158, Ed Clapp; bookkeeping and accountancy, room 164, Harold A. Tenney; building trades, room 2, H. B. Greer; California Nautical School, room 3, Lieut. Comdr. Conrad Ridgley; chemistry, room 184, Dudley Robinson; cosmetology, room 159, Mrs. Sunny Harwell; dental hygienist, room 120, Mrs. L. C. Clarkson; dentistry, room 110, Dr. Robert D. Mercer; diesel engine, room 404, to be announced; department store occupations, room 183, Mrs. Frances Torbert; diplomatic service, room 186, Dr. Clarence C. Osborn; civil engineering, room 314, B. D. Phelps;

Electrical engineering, room 312, G. H. P. Dellman; structural engineering, room 157, Paul Beerman; fingerpinting, room 8, Lieut. John Dougherty; fire department, room 218, J. E. Parrish; fishing industry, room 7, Edward Chapman; forestry, room 135, Ira W. Roberts; household management, room 220, Mrs. E. S. LaSalle; industrial occupations, room 6, Walter Thatcher; insurance, room 172, Byron Gilchrist; journalism, room 303, W. B. France; kindergarten and nursery school, room 365, Mrs. Irving Outcalt; juvenile court work, room 116, Miss Winifred Hutchinson; landscape gardening, room 156, Milton Sessions; laboratory technician, room 170, Miss Viola Sommermeyer; law, room 308, Robert B. Burch Jr.; library work, room 304, Miss Anne Allsebrook; medicine, room 131, Dr. R. Emerson Bond; music, public school, room 140, Miss Christine Springston; navigation, room 174, Capt. Frank Benham; nursing, room 210, Miss Bessie Barnes; oil industry and service stations, room 313, W. A. Cole;

Pharmacy, room 4, P. J. Simon; photography, room 133, George Vreeland; police department, room 307, Lieut. F. V. Merritt; post office and civil service, room 176, E. A. Bowman; printing, room 417, J. E. Hutchinson; radio broadcasting, room Little Theater, Richard Cutting; radio technician, room 1, H. W. Hasenback; retail selling, room 218, Miss Anne Montgomery; San Diego State College, auditorium, Dean A. G. Peterson, Will Koller, Betty Curtis; secretarial work, room 166, Miss Ruth Ware; social service, room 222, Dr. Edna Hawley; teaching, room 364, Dean Jesse W. Ault; teaching of dancing, room 114, Miss Louise Hansen; teaching of boys' physical education, room 142, Don Clarkson; U. S. Army, room 168, Maj. J. M. Roamer; U. S. Marine Corps, room 162, Maj. A. H. Fricke; U. S. Navy, room 300, Comdr. P. C. Sowell; veterinarian, room 5, Dr. George W. Foelschow; vocation, how to choose, room 112, Ralph Troge; weather bureau and aviation, room 146, George W. Kahlstrom; x-ray technician, room 302, Dr. A. J. Present.

S.D. SUN 4/24/39

Archbold To Chart Aerial Route As Aid If War Comes

Military significance is attached to the projected survey flight of Richard Archbold's twin-engined, $250,000 airboat "Guba" across the Indian Ocean from Australia to Africa, Consolidated Aircraft Corp. officials reported.

Australian authorities see in the venture—which will be the first time a seaplane will have spanned the Indian Ocean—the blazing of an alternate air route which would help link Australia and England in time of war. Use of such a route would enable the avoidance of the vulnerable trans-Mediterranean and Singapore-to-Australia laps.

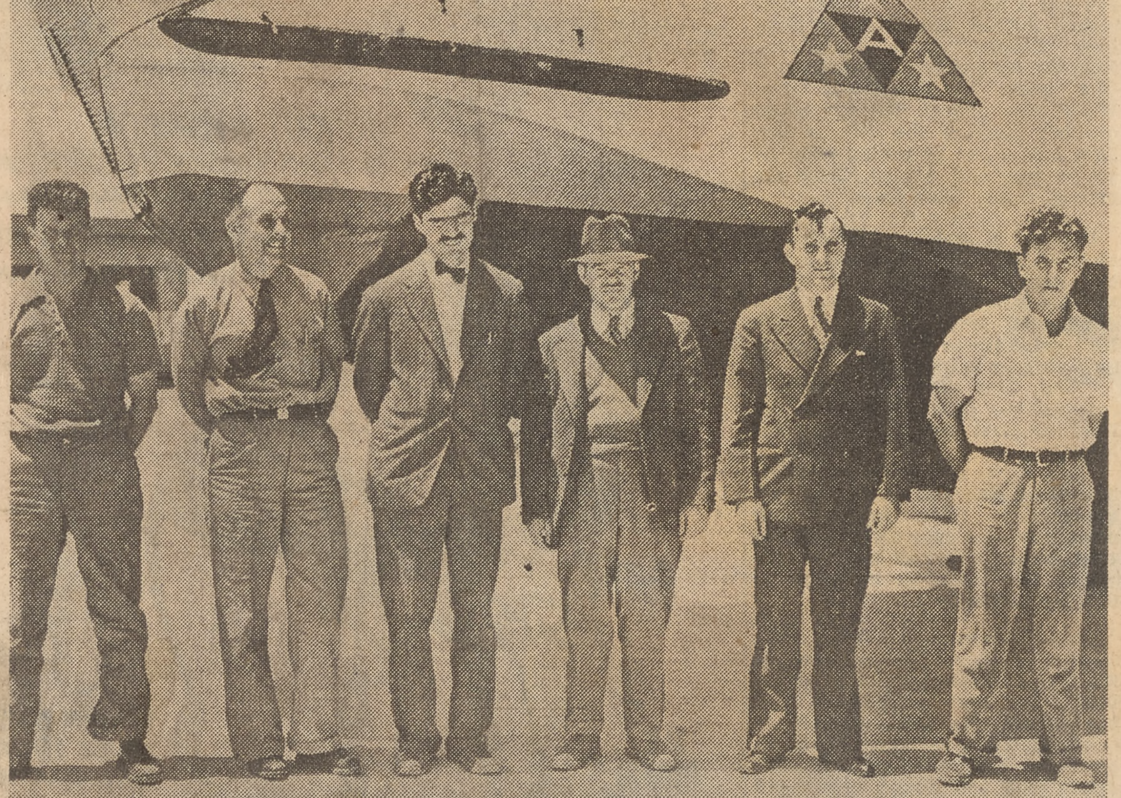
The 5500-mile flight will be started in mid-June, with two Australians—Capt. P. G. Taylor, former flying companion of the late Sir Charles Kingsford-Smith, and P. J. Percival, an Australian newspaperman — accompanying Mr. Archbold and the "Guba's" regular crew.

The plane now is in Hollandia, Netherlands New Guinea, where Mr. Archbold has been leading an American Museum of Natural History expedition since flying from San Diego last June. After completing the survey mission, for which the Australian government is paying him $15,000, Mr. Archbold will continue across Africa, on to the Virgin Islands, Miami and San Diego, arriving here in July. He does not expect to resume the New Guinea expedition until October, 1940.

S. D. Flier To Blaze Wartime Trail for Britain

'Guba' Chartered by Australian Commonwealth

S.D. TRIBUNE 4/22/39



Richard Archbold, flying scientist, and his San Diego crew members, who will cross the Indian ocean this summer on a survey flight for the Australian government in Archbold's $250,000 San Diego-built Consolidated flying boat. Left to right: Stephen Barrinka, Lewis A. Yancey, Archbold, Russell R. Rogers, Ray Booth and Gerald Brown.

WILL CROSS INDIAN OCEAN IN CONSAIR-BUILT CRAFT

By HAROLD OSBORNE

Richard Archbold's flight from Australia across the Indian ocean, planned for this summer, will be of strategic military value to the British empire, according to reports received from Australia by officials of Consolidated Aircraft Corp. here, builders of Archbold's $250,000 scientific research flying boat, the "Guba."

A survey flight, the 5454-mile route to be flown by the "Guba" will cover the British empire's proposed "reserve empire route," which in time of war would link England with Australia and avoid two sections of the existing route regarded as particularly vulnerable in wartime—the Mediterranean and the section of imperial airways between Singapore and Australia.

"Because of the existing emergency in Europe, the strategic aspect of the flight eclipses its interest as the crossing of the last ocean of the world to be conquered by the airplane," states an account in the Melbourne Herald received at the Consolidated plant.

Archbold, who made aviation history last summer when he flew the "Guba" from San Diego to New Guinea, a distance of 9178 miles, in 51 hours, 5 minutes elapsed time to carry on scientific work for the American Museum of Natural History, of which he is a research associate, will be accompanied on the flight by Capt. P. G. Taylor, colleague on several ocean flights with the late Sir Charles Kingsford-Smith and the late C. T. P. Ulm, and one of Australia's greatest aviators. Others in the flight will be J. Percival, newspaper man and official correspondent, and the following members of the Archbold party, all from San Diego: Capt. Lewis A. Yancey, navigator and Atlantic flier; Russell R. Rogers, pilot; Ray Booth, Gerald Brown and Stephen Barrinka.

Start Set for May 14

The Australian government, which chartered the "Guba" at a cost to the commonwealth of nearly $15,000, declared that the Indian ocean flight must be made between June 10 and Aug. 1. Archbold, now at Hollandia, on the north coast of New Guinea, is expected to depart from there about May 14, proceeding to Port Moresby, on the southern New Guinea coast; Sydney and Melbourne, and thence around southern and western Australia to Onslow, on the western Australian coast, where the flight across the Indian ocean will start.

Before reaching Mombasa, Kenya, Africa, from where he plans to continue on to San Diego after a flight across Africa and the Atlantic, Archbold and his companions will visit three groups of islands, spending some days at each to take soundings in lagoons and seeking both flying-boat and landplane airdromes by air and ground surveys. These are the Cocos group, 1435 miles from Onslow; Diego Garcia, in the Chagos islands group, 1717 miles from Cocos, and the Seychelles islands, 1192 miles distant. From the Seychelles to Mombasa it is 1110 miles.

"Because the longest of these stages is 500 miles shorter than the San Francisco-Hawaii air route which Pan-American Airways has been operating for three years, no doubts about the feasibility of the route are entertained," states the Melbourne Herald. "Preparations for the flight have been the best-kept secret in Australian aviation."

Famous in History

"Thumb-nail sketches of the island groups to be visited by the "Guba" are given in the Melbourne Herald as follows:

"Cocos islands are famous in Australian history as the scene of our first distinctive sea battle, the destruction of the German raider Emden by H.M.A.S. Sydney. Early in the great war the Emden had been carrying out a campaign of destruction in the Indian ocean, and because of this Australian troopships had to be heavily guarded. The Sydney, sturdy battleship among the convoys, smashed the Emden at a distance of three miles, and left the raider a broken wreck on one of the islands. Because of their isolation, the islands remained unclaimed for centuries after their discovery in 1609 by Capt. William Keeling, but in 1823 Alexander Hare, an English adventurer, settled on the southernmost island with a number of slaves, and in 1857 the islands were declared a British possession. The population of the Cocos islands is approximately 1300.

"The Chagos islands, belonging to Great Britain, lie about 1000 miles south of Ceylon. The total land area is about 76 square miles. Most of the population, about 500, mostly Negroes, lived on Diego Garcia, which is the largest of the islands, being 13 miles long and six miles wide. Diego Garcia has an excellent lagoon, typical of most of these coral atolls. It is there, presumably, that the 'Guba' will rest. The Chagos group have belonged to England since 1814.

"The last of the three island links in the new airway chain is the Seychelles group, having total area of 156 square miles and a population of nearly 30,000. Lying about 600 miles northeast of Madagascar and about 800 miles from the coast of Africa, the Seychelles consist of 10 islands, and a large number of coral banks. The largest and most central island, Mahe, is 17 miles long and about seven miles across at its widest point. It has a very good harbor, Port Victoria, and it is here that the 'Guba' will land. Most of the population is Negro, the white residents numbering only about 1000. The Seychelles have been known for at least 400 years, and have been occupied by the British since 1810."

At Home in Mid-July

From the Seychelles group, Archibald will continue on to Mombasa, on the southeastern coast of Kenya, from where, after a short stay he will start across Africa, stopping en route at Kisumu, on the shores of Lake Victoria. From Lake Victoria his route takes him to the west coast of Africa, with stops at Lagos, Nigeria, and Dakar, and thence to St. Thomas, West Indies, and Miami, Fla., from where he will continue on to San Diego. He is expected here between July 10 and 15.

Consolidated authorities point out that with the return flight route Archbold has mapped out, by the time he reaches San Diego he will have circled the globe virtually on the equator, covering more than 26,000 miles. Archbold left San Diego last June 2, covering 2553 miles from here to Honolulu in 18 hours, seven minutes; 2300 miles from Honolulu to Wake island in 16 hours, 45 minutes, and 2325 miles from Wake island to New Guinea in 16 hours, 13 minutes. He arrived at Hollandia June 9, and since then has flown more than 100,000 miles in transporting supplies and specimens in the New Guinea scientific work.

MONDAY MORNING, APRIL 24, 1939.

'Perfect Plane Wing' Seen in Mathematical Formula

Efficiency Increase Worked Out With Figures; Amphibian to Make Test Flight in Few Days

L.A. TIMES

David R. Davis, veteran of 20 years in the aeronautical industry and first partner of Donald Douglas, yesterday disclosed that he has constructed the "perfect airplane wing"—an airfoil so aerodynamically clean that it will increase an airplane's efficiency 20 per cent.

Caltech has tested his principle, which consists of a many-page mathematical formula for arriving geometrically at this "perfect wing," and pronounced it almost 100 per cent effective.

Within 10 days an amphibian flying boat, with a wing embodying the Davis theory, will be launched in the Southland and will, engineers believe, stagger the aeronautical world with its high speed, load-carrying and range qualities.

NO EXTRA COST

Yet because Davis' formula is just that—a mathematical, on-paper system of arriving at the "perfect wing"—such increased efficiency of planes won't cost a penny more, he said.

Briefly, this is what the scientist has accomplished: Using a series of curves based on the rotor motion of air around a plane's wing, he has plotted by definite mathematical formula the ideal "airfoil"—wing cross section.

This permits, Davis declared, the maximum lift with the minimum drag.

URGED FOR WARCRAFT

Today's aircraft tend to build up a stone wall of pressure against their thick wings as they fly faster. Davis claims his wing becomes more efficient as the ship roars at a greater speed. Thus fighting planes which today move at 400 m.p.h., with his wing would increase their speed to almost 500 m.p.h., Davis believes.

He is sure of this theory. One major California aircraft plant spent $40,000 testing it at Caltech's Guggenheim Laboratory and has contracted for its use on a royalty basis.

Davis says no apparatus is used to obtain his principle, only figures. It isn't magic. It is merely a formula to plot that perfect curve of the wing section that aeronautical engineers, working by rule of thumb rather than geometry, till now haven't found.

SOUGHT FORMULA 10 YEARS

For 10 years Davis sought it. Today he and Walter Brookins, also a veteran airman and first civilian pupil of the Wright brothers, declare they have it.

Too technical for the layman to grasp, Davis' airfoil, they aver, is to aviation what the invention of the round wheel was to primitive transportation. Because it gives "lift" to a plane when the wing is at a minimum "angle of attack"—tilted only slightly into the onrushing air—the "airfoil" will permit flying boats to take off on an even keel, rather than with their hulls riding half off the surface of the water.

NAVY BUYS 6 PLANES AT CONSOLIDATED

S.D. Sun 4/21/39

Seven hundred thousand dollars a plane!

This will be the cost of the Navy's most expensive flying equipment—six four-motored patrol bombers to be built by Consolidated Aircraft Corp. in a $4,699,057 contract awarded March 22.

The number of planes to be constructed under this order was learned authoritatively here today for the first time after a period of secrecy imposed both by the Navy Department and the San Diego aircraft concern.

With a $700,000 estimate on the unit cost per plane, approximately $500,000 would remain for furnishing of parts. The terse explanation of the Navy Department in awarding the contract was that it was for building of "airplanes and parts."

Orders have been placed with eastern mills to supply the required materials to enable fabrication of the planes. Work is expected to be in full swing in June or July, plant officials estimated.

More than $1,000,000 was spent by the Navy and Consolidated for the engineering and construction of the experimental prototype bomber, on whose design manufacture of the six giant airboats will be based.

Western Flying 3 or 4/39

New Texas Line

INAUGURATION of plane connections between Amarillo and Houston by Essair, Incorporated, was a highlight of developments this month in West Texas aviation circles. Sam Marshall Jr., is president of the new air line with headquarters at Amarillo.

Stops on the route will be at Lubbock, Big Spring, San Angelo, and Austin. Seven passenger Consolidated Fleetster ships are being used on the line, which will have to await action by the Civil Aeronautics Authority before being permitted to carry air mail.

West Texas bankers and oil men will find the Amarillo-Houston service offered by Essair of considerable advantage, since plane schedules were inaugurated to shuttle operators between points in the Permian Basin oil fields.

Western Flying 3 or 4/39

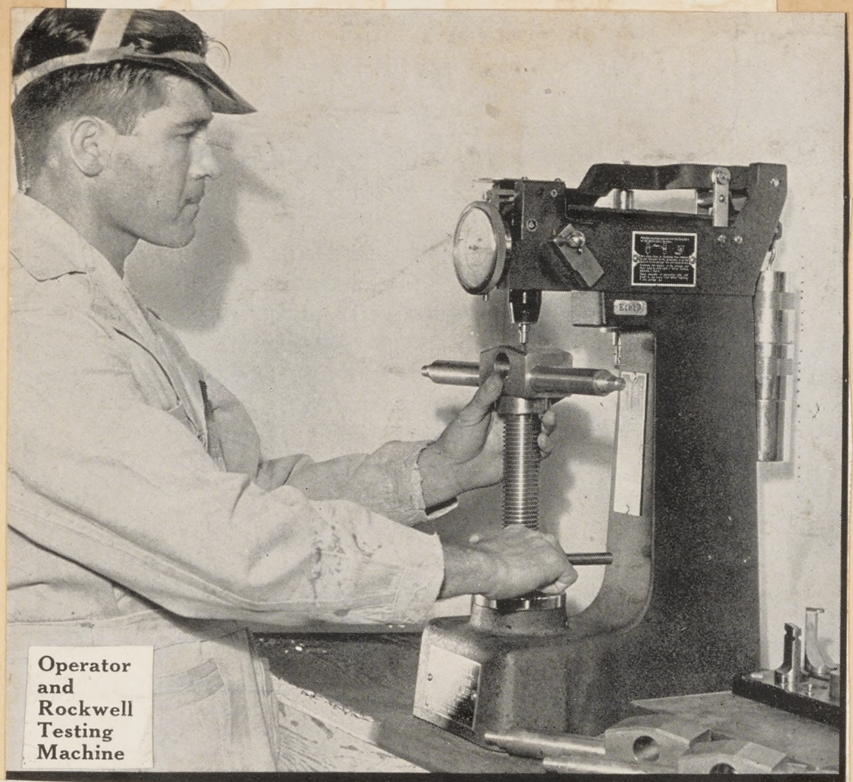
Bradley Heads M.A.A.

SAMUEL S. Bradley, was re-elected chairman of the board of the Manufacturers Aircraft Association at the annual meeting. Frank H. Russell was re-elected president and John A. Sanborn, general manager. The association administers the cross-licensing patent agreement for the airplane manufacturing industry in the United States.

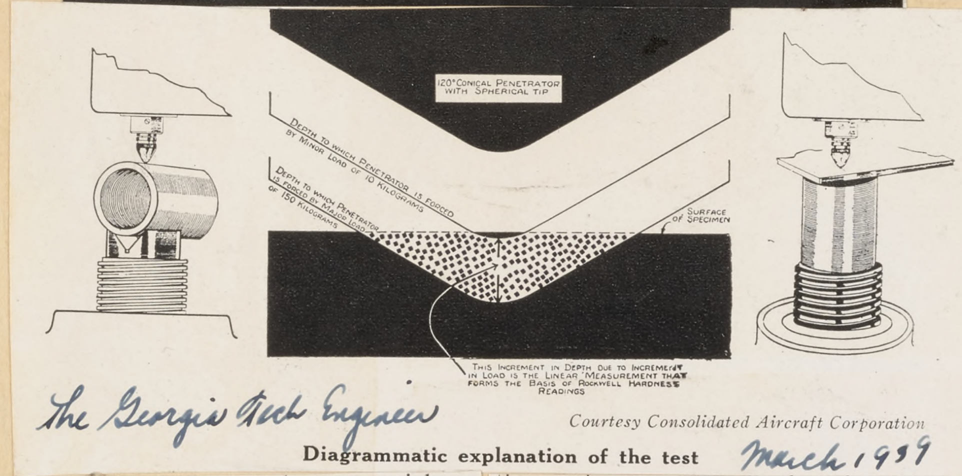
The following vice presidents were elected: Eugene E. Wilson, United Aircraft Corp., East Hartford, Conn.; Edgar N. Gott, Consolidated Aircraft Corp., San Diego, Calif.; William E. Valk, Curtiss-Wright Corp., New York; and John M. Rogers, Douglas Aircraft Company, Santa Monica, Calif. Joseph T. Hartson, The Glenn L. Martin Company, Baltimore, Md., was elected secretary, and James P. Murray, Boeing Aircraft Company, Seattle, Wash., was made treasurer.

CONSOLIDATED Aircraft Corporation has loaned Ed Gott to the Aeronautical Corporation as legislative counsel. Gott has been Consolidated's Washington representative for a long time. He expects to return to Consolidated eventually. Western Flying 3 or 4/39

How Hard Is It?



Operator and Rockwell Testing Machine


120° Conical Penetrator with Spherical Tip
Depth to which Penetrator is Forced by Minor Load of 10 Kilograms
Depth to which Penetrator is Forced by Major Load of 150 Kilograms
Surface of Specimen
This Increment in Depth due to Increment in Load is the Linear Measurement that Forms the Basis of Rockwell Hardness Readings

The Georgia Tech Engineer

Courtesy Consolidated Aircraft Corporation

Diagrammatic explanation of the test

March 1939

IN order to use modern materials to their best advantage in aircraft construction it is necessary to heat treat them and bring them to a state where their maximum strength may be utilized. This permits an appreciable saving in weight and in turn makes possible the production of dependable high performance aircraft.

To properly check and control the heat treatment, some means was necessary whereby the hardness of the conditioned metal could be accurately determined on a production basis.

The most satisfactory method of checking materials on a production basis for hardness and in turn for tensile strength, by manner of comparison, is performed by using a Rockwell Hardness Testing machine.

These highly sensitive, precision-built machines, are in use at all times and checkers are constantly examining material in process to see that they meet design requirements. The operation of these machines is quite simple.

A load of 10 kg. is first applied. This seats the penetrator in the surface of the material being checked. The dial is then set to zero and the major load is applied. The type penetrator may be a 1-16" diameter or ⅛" diameter steel ball or a 120° diamond "Brale." The major load may be 60, 100, or 150 kg. depending on the thickness of the material being checked for its hardness.

The Brale is a penetrator with a Black Diamond cemented in the tip of the cone and ground to mathematical and microscopic accuracy. The accuracy of this type penetrator is extremely important because, when the fixed testing load is applied, if this penetrator is so sloped that it indents .00008" too much or too little, the hardness number will be in error one point. The angle of the cone must be exactly 120° and the spherical tip must be ground to a radius of .008" and be truly tangent to the sides of the cone.

In the *"Rockwell"* tester, although the value given on the dial depends upon the actual depth of penetration, the real measurement that is automatically accomplished by the machine is a measurement of the vertical motion of the plunger rod which carries the penetrator as that plunger rod moves up and down in the head of the machine. This makes the depth measurement quite independent of the behavior of the surface of the material in the vicinity of the penetration. An extremely important feature in the "Rockwell" is that the dial gauge is not set to zero when the penetrator first meets the surface of the material to be tested. Instead of that there is applied a minor load before the dial gauge is set for zero. The "Rockwell" hardness number is based upon the increase of depth, due to increment of load from minor load to major load. This guarantees the accuracy of the hardness measurement.

The Rockwell Hardness Number is based on the additional depth to which a test point or ball is driven by a heavy load beyond the depth to which the same penetrator has been driven by a definite light load. Without moving the piece to be tested, the minor load is applied and quickly thereafter the major load is applied and the hardness number is automatically indicated on the dial and only from five to ten seconds is consumed for the entire operation of testing, including removal of the work preliminary to making the next test.

The Rockwell reading may be expressed with nine different letter prefixes, the letter denoting the type penetrator used and the amount of weight applied as the major load.

Scale Symbol	Penetrator	Load
A	Brale	60 kg.
B	1-16" Dia. Ball	100 kg.
C	Brale	150 kg.
D	Brale	100 kg.
E	⅛" Dia. Ball	100 kg.
F	1-16" Dia. Ball	60 kg.
G	1-16" Dia. Ball	150 kg.
H	⅛" Dia. Ball	60 kg.
K	⅛" Dia. Ball	150 kg.

---

f Scrap Book. THE WALL STREET JOURNAL, THURSDAY, APRIL 13,

Consolidated Aircraft Rearranges Plant; Will Install Considerable New Equipment

Prepares for Possible New Foreign Business, Inauguration Of U. S. Defense Program

This is the twenty-second article in a series on aviation, and the sixth to give consideration to individual companies in the aircraft manufacturing field.

BY T. C. SULLIVAN

ARTICLE XXII

Taking advantage of the tapering off of operations following the completion of a group of contracts for the construction of patrol bombers for the United States Navy, Consolidated Aircraft Corp. has rearranged its plant and will install considerable new equipment in preparation for possible new foreign business and the inauguration of the airplane expansion program for this country.

The company is now completing the last of its several orders from the Navy for PBY two-engined patrol bombers, bringing the total to 210 units delivered in less than three years and placing the company as the leading manufacturer of large flying boats for the Navy. With spare parts, the aggregate of the Navy orders for PBY's has been in excess of $20,000,000, exclusive of engines.

Backlog of unfilled orders at Consolidated now totals approximately $6,000,000, consisting principally of a $4,700,000 contract awarded late in March by the Navy for the new four-engined patrol bomber which the company developed in competition with other manufacturers. The experimental plane of this type built by Consolidated was accepted by the Navy after flying overland nonstop from San Diego, California, to Washington, D. C., and later a return trip was made over the same route. These overland flights by flying boats demonstrated the mobility of the Navy's air force in moving from one ocean to the other. The company's investment in the experimental four-engined plane was charged to cost of products sold during 1938.

[illegible] not where this

450,000 Miles Without Mishap

Several times during the past two years the Navy has made "routine" delivery of Consolidated two-engined patrol bombers by flying the planes from San Diego to Hawaii and the Panama Canal Zone. Recently, 48 of these planes completed a mass flight from San Diego to Coco Solo, a distance of approximately 3,087 miles. In flights ranging from 2,500 to 3,000 miles each, the planes have been flown, without mishap, an aggregate distance of approximately 450,000 miles.

Consolidated moved its location from Buffalo, N. Y., to San Diego in 1935, constructing an entirely new plant on the water front where bulk of the Navy's airplanes are based. The plant was enlarged in 1936 and now contains 450,000 square feet of floor area, in addition to which the company has a paved yard containing approximately 215,000 square feet which is available throughout most of the year for assembly work.

The plant rearrangement and installation of additional presses and drop-hammers which are now under way are designed to increase the productive capacity and make Consolidated one of the most modern aircraft plants in the country. The present backlog will by no means tax its facilities so that the company is about the only major unit in the industry ready to accept new business that can be delivered within a comparatively short time. As at December 31, 1938, current assets amounted to $5,225,715, including $3,586,478 of cash, $504,273 in accounts receivable, and the balance in inventories. Current liabilities were $1,554,491, or considerably less than one-half the amount of cash.

1938 Sales, Profits Set Record

Both sales and net profit established new records for Consolidated during 1938. It has been the consistent practice of the company, however, not to take up profits during any year on contracts unless they were substantially completed. At the same time, all operating costs and expenses, including depreciation and amortization of experimental expenses, incurred during the year are considered as elements of cost in determining inventories and cost of products sold.

This accounting policy has been considered necessary in view of the regulations governing Naval contracts. In the case of several related contracts, such as those held by Consolidated for 210 large patrol bombers delivered over a period of more than two years, it has tended to distort the company's actual earning ability. Results for the year 1937, for example, provided a ratio of net sales to net profit of only 3.6%, while during 1938 the ratio jumped sharply to 12.5%. Sales volume for the two years were about equal, the difference, however, was that the selling price of over 80% of the reported sales for 1937 was carried at cost pending final determination of costs upon completion of the contracts. The profits on these deliveries were taken up during 1938, thus distorting the earnings picture for both years. An average for the two years brings the ratio of net sales to net profit to 8.3% which is more in keeping with actual operations. Net sales, net profit and their ratio for Consolidated Aircraft Corp. for the past two years, are shown in the following table:

	Net sales	Net profit	Ratio
1938	$12,245,067	$1,535,110	12.5%
1937	11,907,493	462,959	3.6
Two years....	$24,152,560	$1,998,069	8.3%

Started With $25,000 Capital

Consolidated Aircraft is headed by R. H. Fleet, president and general manager, who has held that position since 1923. Major Fleet joined the Army in 1917 as an airplane pilot and later served as contracting officer for the Air Corps., business manager of McCook Field, and was in charge of inaugurating the air mail service.

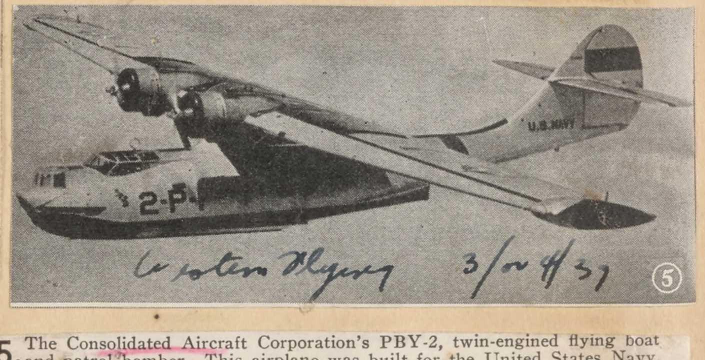
The company was formed in 1923 with an initial capital of $25,000 and has been built up to its present size almost entirely through reinvestment of earnings. The only public financing having been the sale of 22,976 shares of $3 convertible preferred stock in 1936, proceeds of which were used to provide equipment and additions to the San Diego plant, and to supply additional working capital.

During the 15 years through 1938, the company made delivery on $51,427,721 of planes and parts. About 58% of this total has been to the Navy, 23% to the Army, and 19% to commercial and export purchasers. Sales of more than $24,000,000 during the past two years represent 46% of the total business done by the company since its inception.

1. One of 210 Consolidated patrol bombers for U. S. Navy.
2. Major R. H. Fleet, president, Consolidated Aircraft Corp.
3. New four-engined patrol bomber for the Na vy.

for scrap book 4/24/39

(FOR ~~the~~ PAC. COAST EDITION - SEE CLIPPING ABOUT OCT. 10th)



Western Flying 3/or 4/39

5. The Consolidated Aircraft Corporation's PBY-2, twin-engined flying boat and patrol bomber. This airplane was built for the United States Navy.

Consair Bid Low, Accessory Firms Submit Offers

S.D. UNION 4/27/39

San Diego aircraft firms are hoping for word today that they have been awarded a large share in the war department order for 571 warplanes to cost $50,000,000.

Consolidated Aircraft Co. has bids entered on two of the five types of planes to be built and local plane accessory firms have submitted bids for parts.

The army high command placed the record-breaking order for 571 planes immediately after President Roosevelt signed the $549,000,000 war department appropriation bill yesterday, The Associated Press reported.

PARTS ORDERS EXPECTED

Local hopes for a share in the order are high since Consolidated recently submitted low bids on four-motored bombers and on pursuit ships, it was reported here. Ryan and Solar Aircraft plants expect to share in the orders for parts.

Details of the big order are expected to be announced by the war department today.

The aircraft orders were signed with a speed that surprised the capital, the Associated Press reported.

Moreover, Secy. of War Woodring, declaring that he wanted to assure the American people as to the "readiness and adequacy" of the army, disclosed moves to weed out over-aged and physically unfit among the service's 12,500 officers.

These developments occurred on the same day that Great Britain announced conscription, and two days before Chancellor Hitler's scheduled speech replying to President Roosevelt's recent request for peace guarantees.

There was no formal announcement that the events here were timed to impress Hitler, and perhaps induce him to give a favorable response.

However, it was noted that the President, in a speech today to a White House conference on children's problems, emphasized his recent plea anew by quoting from it. He pointed out that he had told Hitler and Mussolini that "the leaders of great nations have it in their power to liberate their people from the disaster that impends."

BILL SIGNING RUSHED

The war department appropriation, most of which is for the fiscal year beginning July 1, 1939, is the largest since the A.E.F. was demobilized. Usually, it is several days from the time a measure is finally voted by congress until the President signs it. But in this case the bill, which was finally approved by congress only yesterday, was rushed to enactment.

The warplane purchase, as announced by Louis Johnson, assistant secretary of war, was the initial step in a program to treble the army's air strength by increasing it to 6000 planes.

The order was split among five manufacturers, and there were additional orders for engines and equipment. In the late day rush, officials said details would be withheld until tomorrow.

Five types were ordered—four-engine bombers, single-engine pursuit planes, fast climbing "pursuit interceptors," attack bombers and a small number of photographic planes. Aviation sources understood some of the "fighter" craft, designed to bring down bombers, would be able at least to approach 400 miles an hour.

FUNDS INCLUDED

The huge single order was made possible by inclusion in the regular appropriation bill of some funds for immediate purchases.

Johnson said that much money would be saved by placing orders now without awaiting the fiscal year opening July 1.

Woodring, announcing the steps to "vitalize" army personnel, said many present officers were "far in advance of the age in which they could be expected to carry on the physical requirements of field duty" in their grade.

He announced immediate physical examinations and proposed legislation to retire officers from captain to brigadier-general who have failed to advance. Physical examinations will be given prior to June 30 to all officers of the rank of captain and above.

Proposing also that the test should apply to the national guard, Woodring said he would make such a request to state governors.

'TO ANSWER CONCERN'

"In connection with congressional action now being taken with respect to armament and equipment, the measures will aid materially in answering the concern of the people as to readiness and adequacy of its military forces," the war secretary said.

Other defense developments included:

1—President Roosevelt asked congress for $31,621,000 to start work on 12 naval air bases in Alaska, several Pacific islands, Puerto Rico and the continental United States. Expected to cost $66,800,000, the bases were authorized in a bill he approved yesterday. The navy said the work could start this summer and it would require about three years.

2—To speed deliveries of steel plates for warship construction, the navy announced that a small part of its $25,000,000 World war ordnance plant at South Charleston, W. Va., would be leased to the Carnegie-Illinois Steel Corp. The plant long has been idle.

NAVY OFFICERS RETAINED

3—The house approved legislation to retain until 1944 upward of 400 naval officers who otherwise would have to retire though adjudged "fitted."

4—The house likewise passed a measure permitting the navy to keep aviation cadets on active duty for seven instead of three years, as at present.

5—In a negative development, senate-house conferees eliminated from a $160,000,000 deficiency appropriation bill $4,000,000 to establish at Sunnyvale, Calif., a second aviation research center for the national advisory committee for aeronautics. Army, navy and civilian aviation officials urged the appropriation.

In addition to new planes, the $549,000,000 war department bill carried funds to give the army additional modern equipment including anti-aircraft guns, semi-automatic rifles and ammunition. It also contained $7,250,523 for strengthening of seacoast defenses, and $6,433,878 for construction at army posts, chiefly in Hawaii and the Panama Canal Zone. Another item was $1,000,000 for construction at national guard camps.

---

24 BOMBERS SET FOR HOP TO S. D.

San Diego Sun

Takeoff Next Tuesday; Arrival May 12

4/27/39

Twenty-four San Diego patrol bombers of Squadrons VP-7 and VP-9 will take off from Norfolk next Tuesday, weather permitting, on a return mass flight to their North Island base from east coast maneuvers, Naval Air Station officials announced today.

Two sister squadrons, VP-11 and VP-12, will remain permanently based in Norfolk. The latter unit will be replaced here by the former Hawaii squadron, VP-18, while the former may be substituted by another Pearl Harbor squadron, VP-1, now tentatively scheduled to fly 15 bombers from San Diego to Honolulu June 28.

Capt. Marc A. Mitscher, Patrol Wing One commander, will lead the flight to San Diego via Guantanamo, Cuba; Coco Solo, Canal Zone; Gulf of Fonseca, Nicaragua; and Magdalena Bay, Mexico. Ten days will be required for the mission, with the planes expected here about May 12.

Guilding the flight and supplying fuel will be the aircraft tenders Sandpiper and Lapwing at Guantanamo, the Aircraft Scouting Force flagship Memphis at Coco Solo, the aircraft tender Wright at Gulf of Fonseca and the destroyers Childs and Williamson at Magdalena. The Memphis, with Rear Adm. Charles A. Blakely, Aircraft Scouting Force commander, aboard, will arrive here about May 16.

Tribune

24 Planes Due In S. D. From East May 12

4/27/39

Return flight to San Diego of 24 giant navy patrol planes, which flew east from here in January, will start Tuesday at Hampton Roads, with the two squadrons, Nos. 7 and 9, due to arrive here May 12. They will arrive at Guantanamo, Cuba, May 3, the Canal Zone May 9, and Magdalena bay May 11.

Two other squadrons of Patrol Wing 1, Nos. 11 and 12, which went to Caribbean waters in January, will remain on the east coast, having been assigned permanently to duty at Norfolk, Va. Surface ships for the 24-plane flight will be the tenders Sandpiper and Lapwing in the Caribbean, the tender Wright in the Gulf of Fonseca, and the destroyers Childs and Williamson along the west coast of Mexico.

A flight of 15 patrol bombers of squadron VP-1, from San Diego to Honolulu, is scheduled for June 28. The squadron is commanded by Comdr. Sam LaHache.

Blakely Relieving King

Rear Adm. Charles A. Blakely, commander of aircraft scouting force, is to arrive here from Hampton Roads May 16 aboard the cruiser Memphis. In June he relieves Vice Adm. Ernest J. King as commander of aircraft, battle force. Blakely will be relieved of the scouting force air command by Adm. Arthur B. Cook, who next week is to be relieved as chief of the bureau of aeronautics, navy department, by Rear Adm. John H. Towers.

The home port of the aircraft carrier Ranger, formerly based at San Diego, has been changed to Norfolk. Lt. Comdr. Cecil B. Gill, assistant operations officer at North Island, has received orders transferring him to the Ranger June 1.

$2,880,000 FOR CONSAIR

S.D. TRIBUNE APRIL 17, 1939

Army Calls For S. D.-Built Bombers

Award to Consolidated Aircraft Corp., San Diego, of a $2,880,000 contract for "heavy four-engine bombers, a new type 24," is included in the army air corps' new contracts for 571 warplanes, largest order ever placed by the war department in peacetime, The Associated Press reported today from Washington, D. C.

Expansion Initiated

The contracts initiated a vast air corps expansion approved by congress. Initial funds were made available yesterday. The announcement did not specify the number of planes in each category.

A Consolidated Aircraft Corp. official said at noon that no official word of the award to the firm had been received up to then, and that no comment on the award could be made.

"We have nothing to say, because of restrictions against publicity imposed by the war department," said the official.

On the question of employment at the aircraft firm, the official declared it "will be some time before we employ additional people," pointing out that much preliminary

(Continued on Next Page, Col. 2)

work on plans and specifications must be done before actual construction work begins on the planes.

To save months of delay, Congress provided that the first planes might be ordered without awaiting the start of the next fiscal year. The bulk of the contracts, however, will be placed after July 1. Funds yet have to be voted.

Keyed to a new tempo in keeping with fast-moving world developments, army officials and manufacturers got preliminaries out of the way while waiting for congress to act. Stores of materials were on hand in anticipation of the starting signal.

Five Firms Get Work

Acting to put into effect the Army Air Corps expansion to 6000 planes, Louis Johnson, assistant war secretary, signed the contracts with five plane manufactures of engines and equipment.

E. T. Price, president of Solar Aircraft Corp., said his firm had equipment on several experimental models at Wright field and he anticipated that his firm would participate in the manufacture of parts for such planes built for the war department. His firm specializes in engine manifolds.

Also anticipating a part of the business, although withholding definite comment pending receipt of more specific information, was T. Claude Ryan, president of Ryan Aeronautical Co., makers of cowlings, manifolds and other parts, as well as complete planes. Ryan explained that parts manufacture probably would be done under sub-contract with contracting plane building firms, while any aircraft orders his firm might receive would be on direct contract with the war department.

Ryan Optimistic

Ryan expressed the opinion that the beneficial effect of the huge warplane order would be felt throughout the industry, both by directly and indirectly participating firms.

President Roosevelt yesterday asked congress to make available immediately $31,621,000 to start a program authorized in a bill he signed yesterday to strengthen the navy's air base system, The Associated Press reported.

The war department appropriation bill also was finally acted upon by congress. It provides for the purely military expenses of the department. The appropriation for the civil phases has not been passed by congress yet.

Of the total in the present bill, approximately $95,000,000 will go toward purchase of about 600 modern fighting planes. Another $53,000,000 will be spent for equipment, including semi-automatic rifles, anti-aircraft guns and tanks.

The total of the war department appropriations bill reported by the White House included direct appropriations of $508,789,824 plus a reappropriation of $5000 and contractual authorizations amounting to $40,205,988.

In addition to the request for cash to start the air base program, Roosevelt also asked that the navy be give nauthority to enter into contracts aggregating $65,000,000. The new air base law authorized outlays of $66,800,000.

ARCHBOLD DUE BACK IN JULY

S.D. SUN 5/4/39

New Guinea Museum Work Completed

Aviation

With work for the American Museum of Natural History expedition in Dutch New Guinea virtually complete, Richard Archbold, millionaire scientist-aviator, next Tuesday will begin a series of four flights to inland jungle country in his San Diego-built airboat, Guba, to transfer personnel and equipment to the seacoast.

This was learned today in short-wave conversations between Mr. Archbold and Barney Boyd, San Diego amateur radio operator.

The Guba, a replica of the Navy's PBY bombers, has flown more than 100,000 miles into hitherto inaccessible regions of New Guinea, carrying scientists, native carriers, escorting soldiers, equipment and supplies, since last June, when Mr. Archbold and his five-man crew made the 7500-mile jaunt to the tropical island from San Diego.

The four flights to the interior will remove 40 of the 100 men of the expedition remaining there and will be finished one week from today.

In mid-May the Guba will be flown to Sydney, Australia, to have her instruments checked before taking off about June 15 on a 5400-mile survey flight across the Indian Ocean to Africa for the Australian government.

Mr. Archbold expects to return to the United States with the Guba in the latter part of July.

Consair Wins $2,880,000 Contract for Army Bombers

S.D. UNION 4/28/39

Will Build Navy Planes; Bid Low On Attack Craft

Bringing the total of local orders for army and navy bombers to $7,580,000, a war department contract for constructing a squadron of four-motored planes at a cost of $2,880,000, was received by Consolidated Aircraft Corp. yesterday.

Last month the Lindbergh field plant received a $4,700,000 contract for building nearly a squadron of four-motored long range bombers which will be twice the tonnage and of greater cruising range than the PBY-type planes now in service. These 30-ton ships are to be delivered to the navy.

DETAILS SECRET

In accordance with government restrictions, Consolidated officials could not reveal any details of the war and navy department contracts although it is generally understood actual construction on the navy bombers will begin early in June and on the army planes in August.

The Consolidated contract does not include the cost of engines, propellers, instruments and accessories or the armament which, it is reported, will exceed the battery of five machine guns carried by the army's "flying fortresses."

SUBMITTED LOWEST

The company recently submitted the lowest bid of eight manufacturers for 1000 attack bombers.

The war department has $19,000,000 to expend on this type of ship and contracts are expected to be awarded within the next two weeks, it was reported from Washington, D. C.

At one period since Consolidated established its plant at Lindbergh field, the number of employes exceeded 3000. At present there are 1400 employed, but officials declare it will be some time before this number is materially increased owing to the delay in obtaining material for the new bombers.

'World Beater' Ordered

LOS ANGELES, April 27 (A.P.)—Two radically new types of military planes manufactured in southern California with considerable secrecy are included in the army air corps' orders for additional fighting craft announced today in Washington.

The number of each type ordered was disclosed neither in Washington nor here, although one has been officially described as a probable "world beater."

Little is known of the heavy 4-engined bomber for which Consolidated Aircraft Corp., San Diego, received a $2,880,000 order. It is a far departure, however, from Consolidated's customary product—the long-range ship-hulled patrol bombers which the navy regards as one of its most potent defense units.

Lockheed Aircraft's $2,180,000 order was reported to include at least a dozen or more 2-engine pursuit inter-centor planes known as the Lockheed XP-38. If the first dozen work all right, the army may order 100 more.

ALMOST FLYING WING

This ship is almost a flying wing. It broke out of army secrecy into the headlines last February when the first one produced crashed in New York after streaking across the continent in less than eight hours, attaining speeds exceeding 400 miles per hour.

Maj. Gen. H. H. Arnold, air corps chief, has said this plane "probably exceeds in performance any military plane in the world."

The plane has a bulgy little single-seat cockpit, a single broad wing and a tail structure appended to a pair of steel frames. It carries six heavy-caliber machine guns in its blunt nose.

Mission to Soviet Told by Designer In Consair's Suit to Recover Advance

S.D. UNION 5/9/39

Gilbert A. Henry, airplane designer, testified yesterday in Los Angeles superior court that he was sent to Russia in 1937 to design for the Soviets "mail cargo flying boats, the same as the Consolidated PBY-1 now used by the United States navy, definitely a bomber with the turret and armor omitted," The Associated Press reported from Los Angeles.

Henry is being sued by Consolidated, San Diego firm, for recovery of $1910 advanced him for the trip. He is asking $2747 from the company. In his complaint he said Consolidated contracted with Russia to aid it in plane construction and that he was one of a group of 13 designers and technical experts who formed the air mission. He said he and two others returned to the United States.

Consolidated asks return of the money on the grounds Henry did not go on from Moscow to his Tagarong destination and the designer countered that Russian conditions were not as represented.

S.D. UNION 5/9/39

Navy Planes Alight On Gulf of Fonseca

After a five-hour flight from Coco Solo, Canal Zone, 24 long-range navy patrol planes arrived at the Gulf of Fonseca yesterday at 12:35 p. m., the Naval Air station here reported.

The planes, under command of Capt. Marc A. Mitscher, are on the way to San Diego from fleet maneuvers. Reports yesterday were that they would leave the Gulf of Fonseca tomorrow for Magdalena Bay, Mex., and leave there Friday morning for San Diego.

S.D. UNION

S.D. Navy Planes At Coco Solo

~~#~~ 5/3/39

Twenty-four planes of Squadrons 7 and 9, Fleet Patrol Wing 1, were reported to have arrived yesterday afternoon at Coco Solo, Canal Zone, en route to San Diego from Hampton Roads, Va., via Guantanamo.

The squadrons, Capt. Marc A. Mitscher in command, left Hampton Roads Monday. They are two days ahead of schedule with a probability they may arrive here Monday instead of May 12. The planes will refuel at Magdalena bay after taking off from Coco Solo for the second leg of the homeward bound flight via the Gulf of Fonseca.

No official word of the probable change in arrival has been received at Naval Air station from Capt. Mitscher.

Buffalo NY

MYSTERY PLANE READY FOR INITIAL AIR TESTS

Consolidated's Giant Craft Excites Much Interest.

SAN DIEGO, Cal., May 5 (AP).—Aviation experts looked today for some of the mystery surrounding a new type giant craft to be dispelled with initial test flights next week. The plane is a twin-motored 50,000-pound flying boat capable of a take-off horsepower of 4000 and accommodating 52 day-time passengers and five crewmen.

Indicating U. S. Navy interest in the craft, the Consolidated Aircraft Corporation, manufacturers, withheld performance figures in a brief description released today. There have been almost incredible unconfirmed reports of the plane's capabilities.

The company statement said "although no performance figures may be released, Model 31 greatly exceeds the PBY's in speed, range and load capacity."

The PBY is the giant two-motored flying boat now used by the Navy in mass flights from here to Hawaii and the Canal Zone. Although built years ago, its true performance abilities have been suppressed by the Navy.

Unofficial analysts of the new ship have estimated its top speed may be almost 300 miles an hour and its range up to 10,000 miles.

The company statements said that "while the Navy department was cognizant of the construction, the development has not been financed by the government."

The craft measures 110 feet across the wing, 73 feet down the hull and stands 22 feet high on its retractable beaching wheels.

The hull has two full decks, one above the other. There are eight cabins besides the large flight control compartment.

CONSOLIDATED WINS U. S. BID

S.D. SUN 4/27/39

3-Million Army Plane Contract Awarded

Consolidated Aircraft Corp. today was awarded a $2,880,000 contract for constructing an unnamed number of heavy, four-motored Army bombers, similar to the "flying fortress" type, the United Press reported from Washington, D. C.

This was one of several orders placed with aircraft manufacturers all over the country by the War Department in a $50,000,000 appropriation for 571 planes, from the huge bombers to swift pursuit and interceptor planes and small photographic craft.

The Consolidated award was made after secret negotiations by the company with the Army, came as a surprise locally.

SECRECY ON DETAILS

Officials of the San Diego concern said they were bound to continued secrecy by the War Department and could give no further details on the type of plane, the number to be built, or when construction would start.

Last month, Consolidated was awarded a $4,700,000 contract for four-motored Navy patrol bombers, the manufacture of which will begin in June or July as soon as necessary materials are received from eastern factories.

The outlook for Consolidated, which was gloomy early this year because of a small backlog of unfilled orders, was brightened considerably today. Not only did the company actually have $7,500,000 in Army contracts, but it had strong possibilities of obtaining a large percentage of future work in the Army Air Corps' expansion program.

LOWEST BID

Its bid on 1000 attack bombers, opened last week, was the lowest of eight manufacturers. An additional $19,000,000 in contracts for this type will be awarded within a few days, the War Department announced.

Consolidated's biggest planes have been two and four-engined seaplanes for the Navy. Its Army land plane contract was received only on the basis of engineering designs submitted, rather than on an actual experimental prototype craft.

Congress has authorized the building up of the Army Air Corps to a total of 6000 planes by July 1, 1941. This means the construction and delivery of 3000 new planes within a two-year period.

300 MILLIONS FOR PLANES

Performance of the four-motored bombers now used by the Army, which the Consolidated product is expected to equal if not excel, includes a flying speed higher than 250 miles per hour and an extremely long range. The "flying fortress' carries five machine guns and a crew of six to nine men.

A total of $300,000,000 will be spent for Army planes by 1941.

The Consolidated contract does not include the cost of engines, propellers, instruments and accessories. The remainder of the first $50,000,000 now available will be used to purchase these parts from manufacturers in quantity lots and will be furnished by the government to the aircraft factories for installation in the planes.

Other Awards

Contracts for four other types of planes were awarded to the following concerns:

Curtiss-Wright Corp., New York, $12,872,398, for single-motored pursuit planes, one of the fastest in the world.

Lockheed Aircraft Corp., Burbank, $2,180,728, for twin-engined pursuit interceptor planes.

Bell Aircraft Corp., Buffalo N.Y., $1,073,445, single-engined pursuit interceptor planes, a new type.

Beech Aircraft Corp., Wichita, Kan., $528,749, photographic planes.

F.R. Signs 549 Million War Department Bill

Washington: The automobile industry has spent millions enlarging its plants for government armament orders and the Army has ordered fighting planes superior to any in the world, it was revealed today as the government pressed to complete its gigantic defense program with all possible speed.

The War Department signed contracts for 571 bombers and pursuit planes to cost $50,000,000, launching the program that will expand its aerial strength to 6000 planes soon after President Roosevelt signed the $549,000,000 War Department appropriation bill from which the money comes.

U. S. Navy Planes Copied in Designs For Soviet by Consair, Testimony

Testimony he was sent to Russia to design "mail cargo flying boats, the same as the Consolidated PBY-1 now used by the United States navy, definitely a bomber with the turret and armor omitted," came today from Gilbert A. Henry, airplane designer, The Associated Press reported from Los Angeles.

Henry testified in trial of a suit filed by Consolidated Aircraft Corp., San Diego, to recover $1910 advanced to him for the trip, and of his cross-complaint asking $2747 from the company.

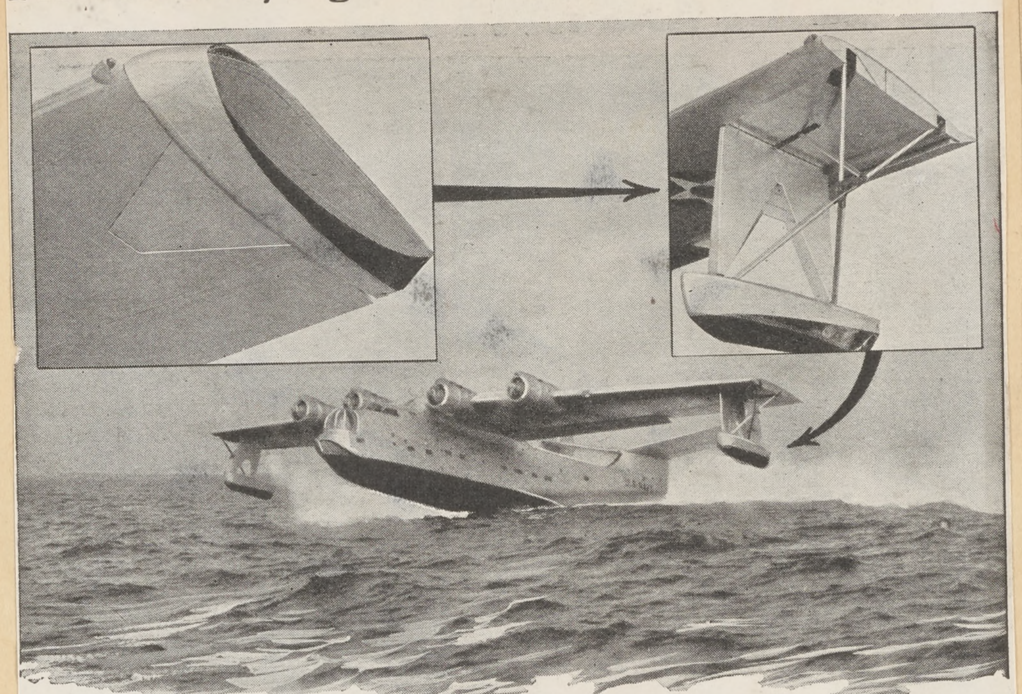
In his complaint, Henry asserted Consolidated had a contract with the Soviet government to aid it in construction of the planes. He said he was one of 13 engineers, designers and technical experts sent by the company to Russia in 1937, and that he and two others returned to the United States.

Consolidated asks return of money advanced to Henry because he did not go on from Moscow to his ultimate destination, Taganrog, as agreed. Henry answered that Russian conditions fell short of what were represented.

S. D. TRIBUNE 5/8/39

Popular Mechanics June 1939

Floats of Flying Boat Retract into Wing Tips

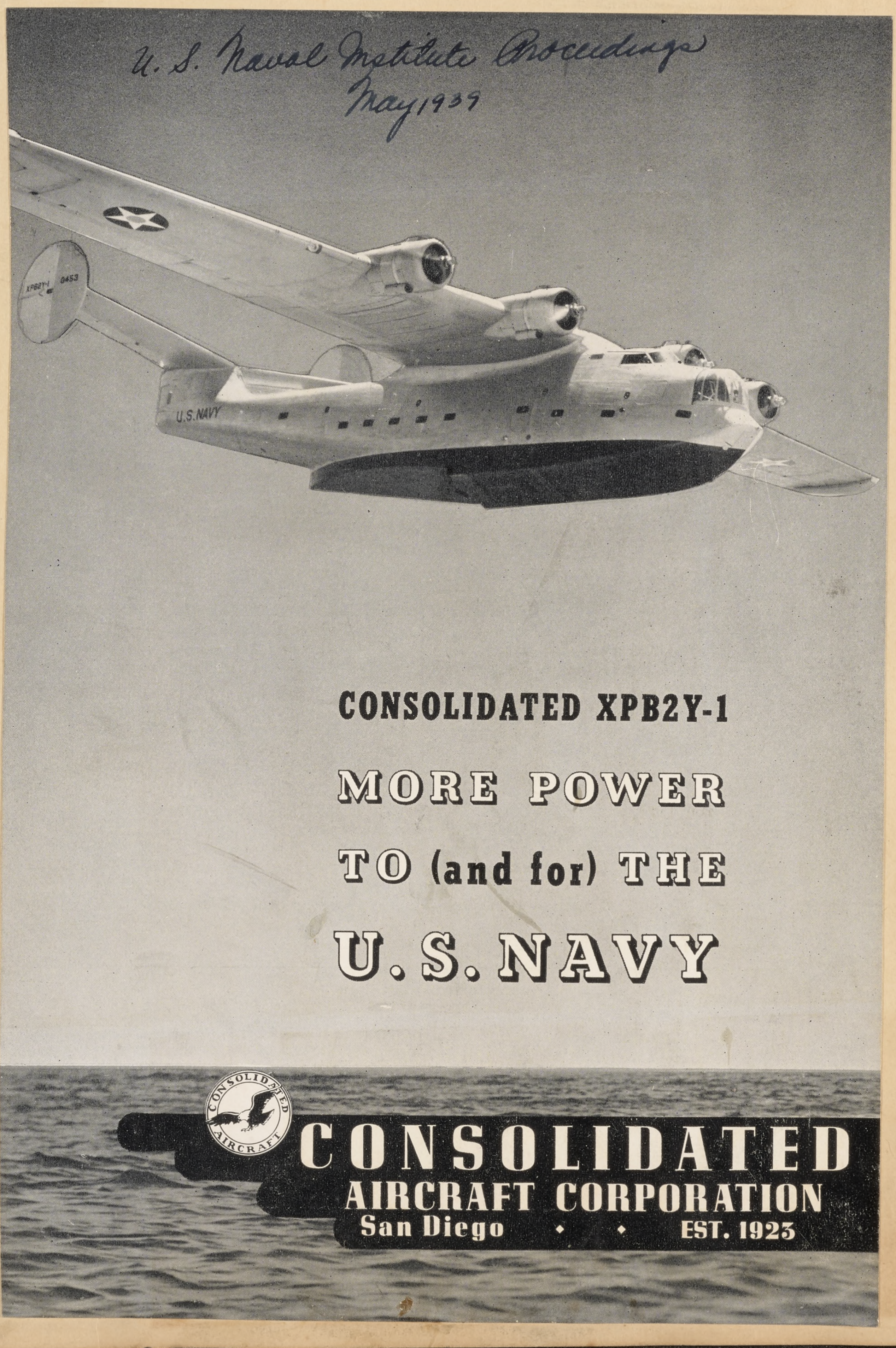


Official U. S. Navy photograph

The Consolidated "XPB2Y-1" caught at the instant it stepped from the water for full flight. Insets show wing-tip floats in retracted and lowered positions; they are sturdily built to support ship in heavy seas

To cut down their drag while in flight, the skiff-like floats of the giant "XPB2Y-1" flying boat withdraw into the wing tips, and it takes just thirty seconds to raise or lower them. The torque-tubes of the retracting mechanism travel through 100 feet of wings from the power source and must turn 3,000 revolutions per minute. As the ship prepares to alight on the water, the lowered floats act as air brakes to slow the approach. The navy has not yet released the details or performance records of this four-motored patrol bomber built by Consolidated Aircraft Corporation.

U. S. Naval Institute Proceedings May 1939



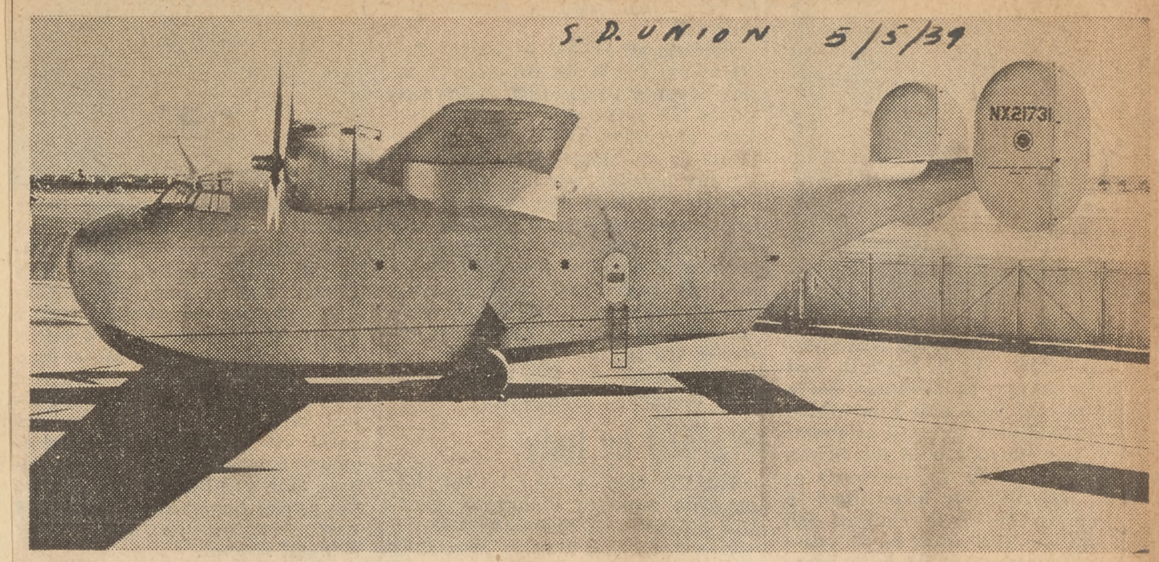
CONSOLIDATED XPB2Y-1

MORE POWER TO (and for) THE U.S. NAVY

CONSOLIDATED AIRCRAFT CORPORATION
San Diego • • EST. 1925

NEW AIR GIANT ROLLS OUT OF S. D. PLANT

S. D. UNION 5/5/39



Consolidated's 50,000-pound two-decker awaits trial flight.

* * *

52-PASSENGER FLYING BOAT COMPLETED BY CONSOLIDATED

2 Motors Power Huge Ship Capable Of Transporting 28 Fares Across Atlantic

A new giant of the sky lanes, a 50,000-pound flying boat designed primarily for the aerial pathways of peace, was rolled out of Consolidated Aircraft's factory at Lindbergh field yesterday and preparations were started for its trial trip, scheduled to begin within the next few days. Capable, its builders say, of carrying 28 passengers across the Atlantic, the big two-decker craft is powered with two 18-cylinder twin-row radial engines, each capable of generating 2000 horsepower at the take-off. For shorter day trips the liner can carry 52 passengers.

Emergence of the planes supplied some of the answers to questions raised when it was learned that Consolidated was grooming a new creation for long-range travel, apart from its noted PBY line of naval flying boats, whose full performance records never have been made public.

HIGH SPEED ESTIMATED

While no data on speed is available, it was estimated that speeds up to 300 miles an hour would be possible with the ship's great power, said to be the most ever put into a two-engined commercial craft.

Designated as Model 31, twin-engine flying boat, the ship has a wing span of 110 feet, is 73 feet long, 22 feet high and has a maximum wing chord of 14 feet.

It is constructed of aluminum-coated aluminum alloy skin internally reinforced with longitudinal stiffeners and transverse bulkheads and frames.

Fuel tanks are built into the wing's center section and the outboard floats retract to the underside of the outer wing panels. This is a departure from the PBY practice of having floats retract to outer wing tips.

Two full decks, one above the other, provide a large flight control room and eight other large compartments.

Beaching gear is of the tricycle type, with the nose wheel housed in the bottom of the hull and side wheels both removable and retractable.

BUILT IN 10 MONTHS

Ten months were required for design and construction of the craft, but no cost estimate was given out.

"Unlike previous experimental flying boats which were constructed under government contract. Model 31 is the corporation's private venture," a company statement said. "While the navy department was cognizant of the construction, the development has not been financed by the government nor subjected to the ordinary procurement routine which adds materially to the cost and time for construction. Development of types of similar magnitude has required from two to three years heretofore."

Latest type instruments are on the control cabin's flight panels.

While the ship was built primarily as a private venture, its military possibilities have not been overlooked, it was indicated in the company statement.

"As a military plane the ship would augment the famous series of twin-engine patrol bombers built for the navy," said a company official. "Although no performance records may be released, the ship greatly exceeds the PBYs in speed, range and load capacity."

The ship is designed to operate with a crew of five—pilot, co-pilot, flight engineer, radio operator and navigator.

ARCHBOLD PLANS AUSTRALIA HOP; WILL GIRDLE WORLD IN JUNE

S. D. UNION 5/8/39

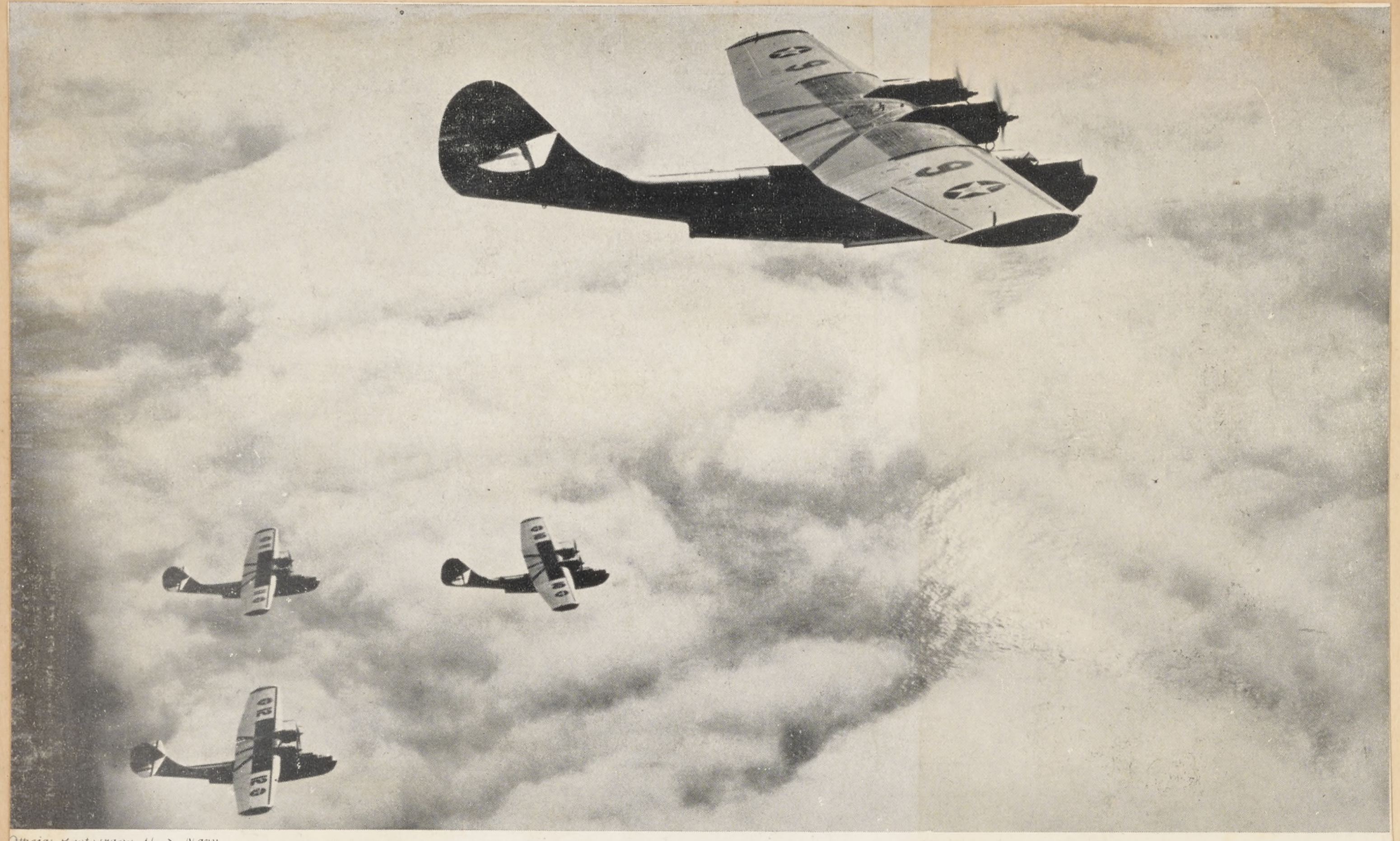
Preparatory to attempting one of the longest seaplane flights in history, Richard H. Archbold, director of American Museum of Natural History, will leave Hollandia, Netherlands, New Guinea, May 16, for Port Moresby, Australia, via Batavia.

According to radio advices from Archbold, he is going to Batavia to extend appreciation to Netherlands government officials for their assistance to the Museum of Natural History's scientific expedition in New Guinea.

Early in June Archbold, in his $250,000 San Diego - built flying boat, the Guba, will leave Sydney for a trail-blazing flight over the Indian ocean, thence to British East Africa, the West Indies, Miami, and overland to San Diego.

Stops will be made at Cocos island, Diego Garcia in the Chagos islands, the Seychelles islands, Mombasa, Lake Victoria, Dakar, St. Thomas and Miami. The plane is due here July 15 where it will be turned over to Consolidated Aircraft Corp., the builders, for overhaul.

During the 20,000-mile flight Barney Boyd, local amateur radio operator, will keep in constant touch with Archbold. The trip from Sydney to Lake Victoria in Africa is being made at the request of the Australian government, Capt. P. G. Taylor of the British royal flying corps, will accompany Archbold on this trail-blazing trip.



Official Photograph, U. S. Navy

United States Naval Institute Proceedings

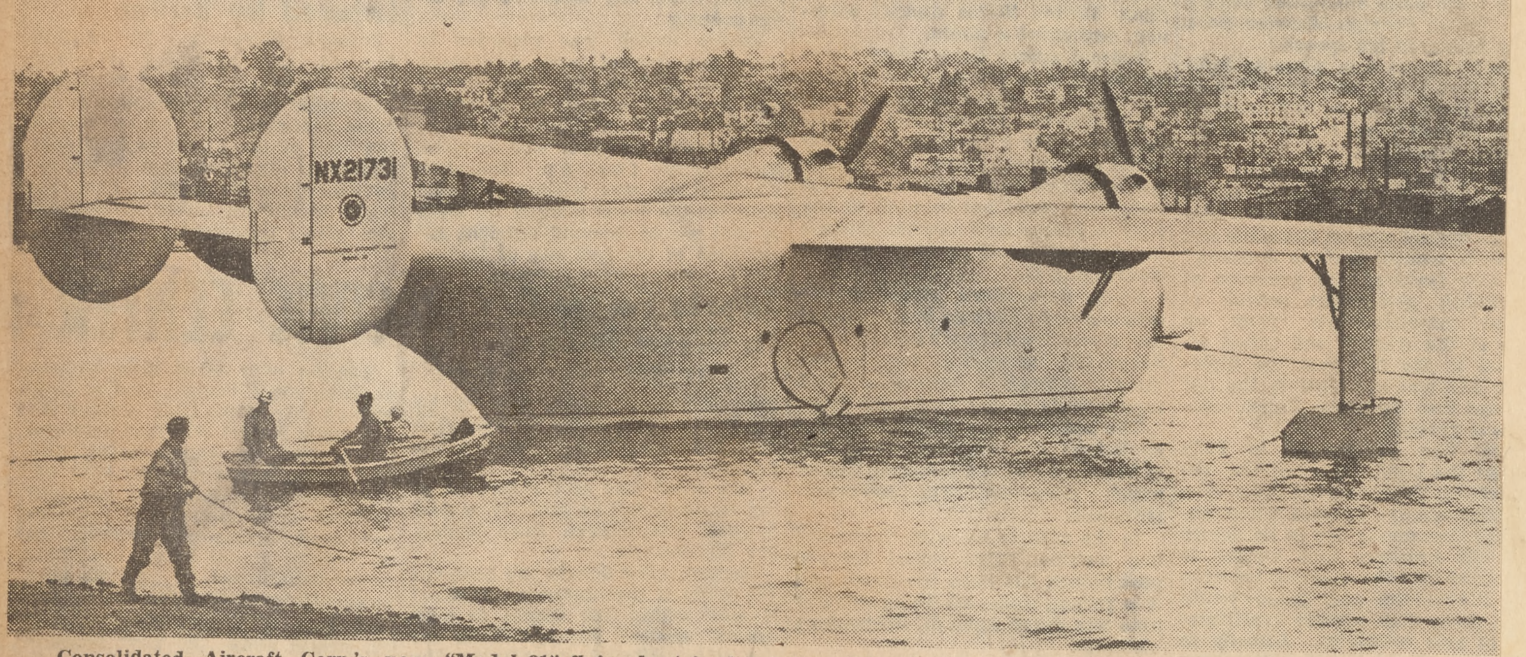
PBY-1 FORMATION

Patrol bombers—a glimpse of the sea from above the clouds.

May 1939

Monster Craft Developed in Local Plant 'Lifts' Easily in Initial Hop

San Diego Evening Tribune - 5 May 1939 --



Consolidated Aircraft Corp.'s new "Model 31" flying boat is shown here lying just off the seaplane ramp at Lindbergh field before it took off today on its initial test flight. The plane's "ground crew," riding in a rowboat, is shown in the foreground.

25-Ton Consair Flying Boat Takes Air In Test Flight; Accommodates 52

Rising easily from the waters of San Diego bay, a new 25-ton, twin-engined flying boat developed in the last 10 months at the Consolidated Aircraft Corp. plant, took off shortly after 11 a.m. today on its initial test flight. The plane, reported carrying three persons, William Wheatley, chief test pilot; George Newman, co-pilot, and Jack Kline, flight engineer, soared over a course from Mission Beach to Imperial Beach.

The take-off came within six hours after the plane was wheeled from the factory to the seaplane ramp at the south end of Lindbergh field. On a short trial run on the bay early this morning, the craft rose for a few feet off the water. During most of the morning it rode in the shallow water at the edge of the ramp, while a crowd of several hundred assembled to witness the take-off.

The giant craft, though carrying no armament, is designed for use either as a military plane or as a commercial airliner, with a maximum capacity of 52 passengers for day operations and 28 passengers for night operations.

"Unlike previous experimental flying boats which were constructed by the Consolidated Aircraft Corp. under government contract, the new plane, known as Model 31, is the corporation's private venture," stated a report from the plant. "While the navy department was cognizant of the construction, the development has not been financed by the government, nor subjected to the ordinary procurement routine which adds materially to the cost and time for construction. Only 10 months were required for the design and construction of the airplane, whereas development of types of similar magnitude has required from two to three years heretofore."

Faster Than Bombers

Although no information was released as to speed possibilities of the craft, it was reported the plane carries two Wright Aeronautical Corp. 18-cylinder twin-row radial engines, each rated at 2000 horsepower for take-off. The plane has a wing span of approximately 110 feet and an over-all length of 73 feet. It stands 22 feet high.

For transatlantic flights, the air giant has accommodations for 28 passengers. On its ability as a military plane, Consolidated officials declared it would augment the famous series of twin-engined patrol bombers built by Consolidated for the navy, and said that although no performance figures may be released, Model 31 greatly exceeds the PBY's in speed, range and load capacity. The navy has been using the PBY-type patrol planes, developed several years ago, in Hawaiian and Panama flights from here.

To Carry Crew of Five

The blunt-nosed flying boat will carry a crew of five, consisting of pilot, co-pilot, flight engineer, radio operator and navigator. Its two full decks, one above the other, provide a large flight control room and eight other large compartments.

The following general description and type of construction of Model 31 was released at the Consolidated plant:

Propellers: Two 16-inch diameter 3-blade Hamilton Standard hydromatic full-feathering propellers.

Construction: Aluminum coated aluminum alloy skin, internally reinforced with longitudinal stiffeners and transverse bulkheads and frames. The wings, tail surfaces and the planing surface of the hull bottom are flush riveted.

Beaching Gear Retractable

Wing: Full cantilever; integral fuel tanks in center section (following Consolidated standard practice); hydraulically operated fowler flaps extend from inboard side of aileron to hull. Outboard floats retract to underside of outer wing panel (tips too small to permit retraction at the tip, as on PBY's). Ailerons and flaps are fabric-covered.

Tail surfaces: Full cantilever stabilizer with twin fins and rudders. Rudders and elevators are fabric-covered.

Hull: Two full decks, one above the other.

Beaching gear: Hydraulically operated retractable tricycle beaching gear. The nose wheel is housed in a well in the bottom of the hull, and the side wheels swing upward into wells in the side of the hull. The side wheels are removable, as well as retractable. The nose wheel well and side wheel wells are completely enclosed by doors for maximum efficiency in flight.

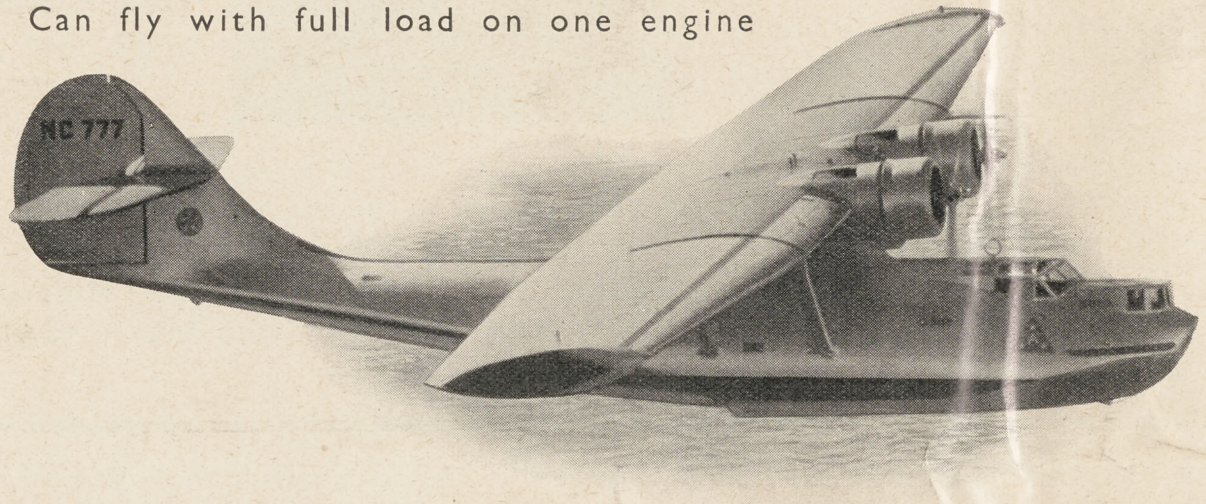
Flight compartment: Completely sound-proofed and furnished with all latest type instruments and equipment.

THE AEROPLANE
FEBRUARY 8, 1939

CONSOLIDATED
Long Range
PBY4 FLYING BOAT

The world's most efficient air liner
as flying boat or amphibian

Can take-off on one engine
Can fly with full load on one engine



★ *Deliveries now available for England-*

SPECIFICATION:

AS AIR LINER. 600 miles range, seats 40; 2,500 miles range, seats 24 or sleeps 12. Maximum payload 10,500 pounds for 1,000 miles range. Maximum range with 2,000 pounds payload 4,200 miles.

AS BOMBER. Maximum range 3,200 miles with 2,000 pounds, bombs and full military equipment. Maximum bomb load 10,000 pounds with 2,000 miles range.

THE WING TIP FLOATS ARE RETRACTABLE

PERFORMANCE

Fullspeed at 12,000 ft.	194 m.p.h.	Service ceiling ..	29,200 ft.
Stalling speed ..	60.8 m.p.h.	Climb to 15,000 ft.	13.4 mins.
Maximum range ..	4,200 miles	Take-off in calm ..	18.0 secs.

Maximum gross weight with unassisted take-off .. 33,000 lb.

OVER 200 PBY BOATS IN SERVICE WITH THE U.S. NAVY

CONSOLIDATED
AIRCRAFT CORPORATION
British Agents: AVIATION CORPORATES LIMITED
50 PALL MALL, LONDON, S.W.1
Telephone: ABBEY 5505

Planes to Hop From Panama For Nicaragua

S.D. UNION 5/8/39

On the second leg of their homeward bound flight from Hampton Roads, Va., 24 long-range patrol bombers of Squadrons 7 and 9 will leave Coco Solo, Canal Zone, this morning for the Gulf of Fonseca, it was announced yesterday at Naval Air station. The planes will refuel and remain overnight in Nicaraguan waters.

According to radio advices from Capt. Marc Mitscher, commander Patrol Wing 1, the 24 planes will leave the Gulf of Fonseca Wednesday for Magdalena bay where they will remain until Friday at daybreak before taking off for the final stage of the flight. They are scheduled to arrive early Friday afternoon.

The cruiser Memphis, flagship of Rear Adm. Charles A. Blakely, commander scouting force aircraft, will leave the canal zone today for San Diego arriving May 16. The aircraft tender Wright will act as plane guard and station ship in the Gulf of Fonseca. The destroyers Childs and Williamson are to act as plane guards at Magdalena bay.

No more extended flights will be made by patrol wing bombers until June 28 when 15 planes of VP-1 squadron are scheduled to leave here for Pearl Harbor, Hawaii. The squadron is commanded by Comdr Sam La Hache.

S.D. UNION

24 Bombers Flying Non-Stop to S. D.

5/10/39

Twenty-four navy patrol bombers left Gulf of Fonseca, 2100 air miles from San Diego, yesterday, 2 p. m., and are expected to reach here this morning, probably before 10 o'clock, the Naval Air station reported. One hundred and seventy men are aboard.

Under command of Capt. Marc A. Mitscher, the big flying boats left here in January for navy maneuvers in the Caribbean and, like the rest of the fleet, were ordered back home when the stay on the east coast was curtailed. They left the Canal Zone Monday for Fonseca, reaching there in early afternoon, following a 540-mile flight.

Decision to fly to San Diego without stopping at Magdalena bay was made by Capt. Mitscher when aerological officers reported weather conditions were ideal.

The planes were averaging 120 miles an hour.

'RIGHT BACK WHERE HE STARTED FROM'

5-7-39

COL. CHARLES A. LINDBERGH

. . . in the cockpit of the new pursuit plane in which he is making a tour of inspection of the nation's aircraft plants for the war department.

The famed airman departing from the Consolidated Aircraft Corp. plant.

* * *

Lindbergh Lands in San Diego to View Local Plant in National Air Survey

At the controls of a new pursuit plane, Col. Charles A. Lindbergh yesterday arrived at the muncipal airport named in his honor. His plane was taxied to the army air corps reserve hangar where it was serviced preparatory to leaving today for March field, Riverside. In striking contrast to his appearance on the March morning in 1927 when he arrived here from St. Louis to complete arrangements for construction of the plane in which three months later he vaulted to fame, Lindbergh yesterday wore the uniform of a colonel of the army air corps.

He was called to special duty by Maj. Gen. Henry H. Arnold and assigned to make a complete survey of the nation's aircraft industry. His report will be submitted to the war department for transmittal to the military affairs committees of the house and senate.

Accompanied by Maj. R. H. Fleet, Consolidated Aircraft Corp. president, Lindbergh was taken for an inspection tour of the plant. He viewed with interest the new 25-ton, 52-passenger plane which was taken aloft on its first test flight

Friday. The plane, which has a flush rivet wing, is reported to be capable of cruising 10,000 miles without refueling, or approximately three times the distance of the navy's PBY craft.

Last night Lindbergh was a dinner guest of Maj. and Mrs. Fleet

Lindbergh Here On Survey Trip

(Continued from Page 1)

at their Pt. Loma home. He spent the night there.

The army flier did not visit the Ryan Aeronautical Co. plant which adjoins the Consolidated factory, although he cordially greeted T. Claude Ryan, Douglas Kelley and several men who worked on the Spirit of St. Louis when it was fabricated at the old B. F. Mahoney plant in the former fish cannery at the foot of Juniper st.

Of the four key men who played a prominent part in the construction of Lindbergh's transatlantic flight plane, Mahoney is engaged in selling trailers, Hawley Bowlus is building and flying gliders. A. J. Edwards is a local automobile salesman and Donald Hall is employed at Consolidated.

Mahoney owned the factory, Bowlus was the plant superintendent, Hall was the designer of the Spirit of St. Louis, and Edwards closed the deal with Lindbergh for the building of the plane.

Lindbergh at San Diego

SAN DIEGO, Calif., May 6 (AP).—Col. Charles A. Lindbergh landed here at the airport which bears his name today after a fast flight from March Field, near Riverdale, Calif.

He was met by Maj. Reuben G. Fleet, president of Consolidated Aircraft Corp., who whisked him to the Consolidated plant, where the colonel apparently made an inspection.

Eagle Photographed on Way to S. D.

Col. Charles A. Lindbergh, San Diego visitor today, is shown here at St. Louis on his way to the coast. With him is Master Sgt. James Tate of the 35th division aviation, Missouri national guard. Tate packed three parachutes which saved Lindbergh's life in jumps made while he was a pilot in St. Louis.

5-7-39

LINDY INSPECTS CONSAIR PLANT; STAYING OVERNIGHT ON S. D. VISIT

Col. Charles A. Lindbergh, here on a tour of local aviation facilities, will spend tonight in San Diego, it was reported following a conference between the famous flyer and Maj. R. H. Fleet, president of Consolidated Aircraft Corp. The speedy plane in which Lindbergh arrived here at 10:30 a. m. from March field, was wheeled into the army air corps reserve hangar at the south end of Lindbergh field.

Lindbergh, making no statements for the press, emerged from the Consolidated Aircraft Corp. plant at 1 p. m., after spending more than two hours in the factory with Fleet. As he departed from Consolidated for luncheon at Fleet's house, the flier was met by newspaper photographers, but declined to pose for a picture.

Lindbergh, who spent last night at Winslow, Ariz., en route to southern California from Washington., D.C., wore a uniform on his arrival here. When he began his tour of the nation to inspect army air corps facilities and aviation centers, he wore civilian clothes but by the time he reached St. Louis he had attired himself in uniform, The Associated Press reported.

Time

TRANSPORT

May 22 - 39

Perfect Wing

From the sprawling Consolidated Aircraft Corp. factory on Lindbergh Field a huge flying boat waddled down to landlocked San Diego Bay one day last week. In the bright California sun her slim wing looked absurdly frail, her huge hull with its upswept stern grotesquely fat. Nevertheless, her little band of professional observers knew they were watching a plane designed to be the last aerodynamic word of 1939.

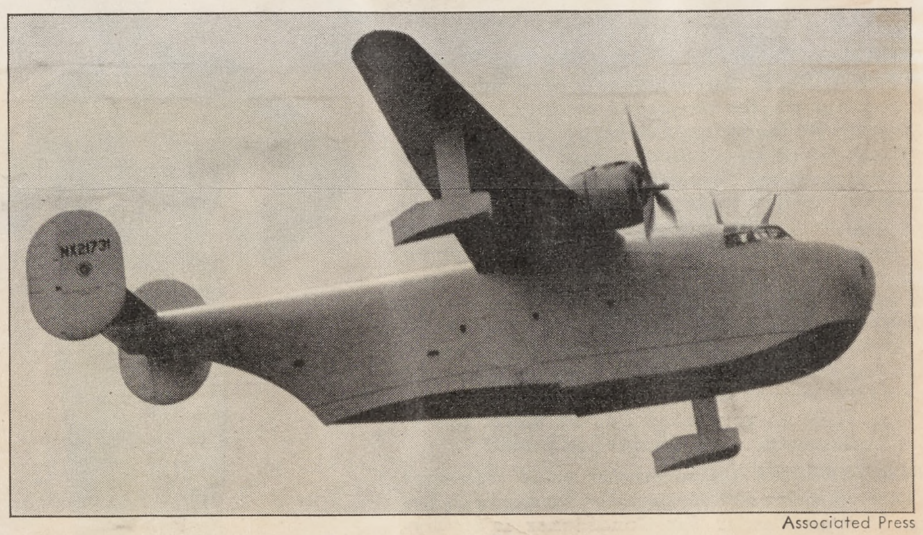
With her two 2,000-h.p. Wright Cyclones rumbling, she taxied out to open water, swung into the wind and poised for flight. Spindrift ripping from her slim stern, she was up on the step. Then she was in the air.

From the beach, factory executives in shirt sleeves, mechanics in overalls watched the new 52-passenger ship as she swung out past Point Loma. Among them, none watched more intently than Engineer David Richard Davis, because none had a bigger stake in her than he. For David Davis had designed her slim 110-foot wing, had calculated on the drawing board and in the wind tunnel that it was close to perfection.

What Pilot Bill Wheatley had to say when he landed confirmed Designer Davis' calculations. Consolidated's new 25-ton Model 31 had a high speed of 275 m.p.h. (75 miles faster than Boeing's four-motored *314* clipper), handled nicely in the air. Gasoline consumption showed that she had a range of 10,000 miles with a light passenger load, that she could lug 28 passengers in Pullman accommodations across the Atlantic at a speed unprecedented for commercial flying boats.

Designer Davis' wing, flush-riveted and smooth of contour, had justified his prediction that it would be 20% more efficient than any in the air today. The product of ten years of work, it had been tried in Caltech's aeronautical laboratories and in test rigs of its designer's own devising. Whether he had achieved a smooth flow of air over virtually its entire surface as National Advisory Committee for Aeronautics has done with its new wing curve (TIME, May 15), David Davis modestly declined to say.

With the Davis "perfect wing" as a starter, Consolidated in ten months built its new boat from the ground up without help from Army or Navy. Long before the ship had flown, however, the news of its spectacular 10,000-mile cruising range was out, and the Navy, one of Consolidated's best customers, poked in its nose. At week's end it appeared likely that Model 31's first assignment will be as a patrol bomber for the fleet.



Associated Press

CONSOLIDATED'S MODEL 31
Her wing and range attracted the Navy's nose.

Pilots' Teeth

After long flights at high altitudes, many commercial pilots are temporarily deaf, hear waterfalls or hissing and crackling sounds that make them sour-tempered and touchy. Army and Navy pilots have the same sensations after tactical flights involving high-speed dives. These sensations were long ago traced to failure of the Eustachian tubes—passages connecting the throat and middle ear—to equalize ear pressures with changes in altitude.

Two and a half years ago Dr. Glenn E. Willhelmy of St. Louis, a Naval Reserve dentist, reported to the Navy that such ear troubles, along with attacks of vertigo (". . . if mild the pilot does not mention it . . . if severe, he crashes"), were most often found in older airmen. His conclusion was that normal wear and loss of teeth make jaws shut out of position, cause a partial closure of the Eustachian tubes. His remedy: an up-building of teeth by inlays and other dental means to make a youthful jaw-fit.

To carry on Dr. Willhelmy's research, the Navy assigned Lieutenant Raymond Andrew Lowry of the Dental Corps. Last week 32-year-old Dr. Lowry, now de-

4/20/39

PACIFIC COAST EDITION, THE WALL STR

April 20-39.

Consolidated Aircraft Rearranges Plant; Will Install Considerable New Equipment

Prepares for Foreign Orders and Inauguration of U. S. Expansion Program

This is the twenty-second article in a series on aviation, and the sixth to give consideration to individual companies in the aircraft manufacturing field.

Article XXII

By T. C. Sullivan

Taking advantage of the tapering off of operations following the completion of a group of contracts for the construction of patrol bombers for the United States Navy, Consolidated Aircraft Corp. has rearranged its plant and will install considerable new equipment in preparation for possible new foreign business and the inauguration of the airplane expansion program for this country.

The company is now completing the last of its several orders from the Navy for PBY two-engined patrol bombers, bringing the total to 210 units delivered in less than three years and placing the company as the leading manufacturer of large flying boats for the Navy. With spare parts, the aggregate of the Navy orders for PBY's has been in excess of $20,000,000, exclusive of engines.

Backlog of unfilled orders at Consolidated now totals approximately $6,000,000, consisting principally of a $4,700,000 contract awarded late in March by the Navy for the new four-engined patrol bomber which the company developed in competition with other manufacturers. The experimental plane of this type built by Consolidated was accepted by the Navy after flying overland nonstop from San Diego, California, to Washington, D. C., and later a return trip was made over the same route. These overland flights by flying boats demonstrated the mobility of the Navy's air force in moving from one ocean to the other. The company's investment in the experimental four-engined plane was charged to cost of products sold during 1938.

how does he know

450,000 Miles Without Mishap

Several times during the past two years the Navy has made "routine" delivery of Consolidated two-engined patrol bombers by flying the planes from San Diego to Hawaii and the Panama Canal Zone. Recently, 48 of these planes completed a mass flight from San Diego to Coco Solo, a distance of approximately 3,087 miles. In flights ranging from 2,500 to 3,000 miles each, the planes have been flown, without mishap, an aggregate distance of approximately 450,000 miles.

Consolidated moved its location from Buffalo, N. Y., to San Diego in 1935, constructing an entirely new plant on the water front where bulk of the Navy's airplanes are based. The plant was enlarged in 1936 and now contains 450,000 square feet of floor area, in addition to which the company has a paved yard containing approximately 215,000 square feet which is available throughout most of the year for assembly work.

The plant rearrangement and installation of additional presses and drop-hammers which are now under way are designed to increase the productive capacity and make Consolidated one of the most modern aircraft plants in the country. The present backlog will by no means tax its facilities so that the company is about the only major unit in the industry ready to accept new business that can be delivered within a comparatively short time. As at December 31, 1938, current assets amounted to $5,225,715, including $3,586,478 of cash, $504,273 in accounts receivable, and the balance in inventories. Current liabilities were $1,554,491, or considerably less than one-half the amount of cash.

1938 Sales, Profits Set Record

Both sales and net profit established new records for Consolidated during 1938. It has been the consistent practice of the company, however, not to take up profits during any year on contracts unless they were substantially completed. At the same time, all operating costs and expenses, including depreciation and amortization of experimental expenses, incurred during the year are considered as elements of cost in determining inventories and cost of products sold.

This accounting policy has been considered necessary in view of the regulations governing naval contracts. In the case of several related contracts, such as those held by Consolidated for 210 large patrol bombers delivered over a period of more than two years, it has tended to distort the company's actual earning ability. Results for the year 1937, for example, provided a ratio of net sales to net profit of only 3.6%, while during 1938 the ratio jumped sharply to 12.5%. Sales volume for the two years were about equal, the difference, however, was that the selling price of over 80% of the reported sales for 1937 was carried at cost pending final determination of costs upon completion of the contracts. The profits on these deliveries were taken up during 1938, thus distorting the earnings picture for both years. An average for the two years brings the ratio of net sales to net profit to 8.3%, which is more in keeping with actual operations. Net sales, net profit and their ratio for Consolidated Aircraft Corp. for the past two years are shown in the following table:

	Net sales	Net profit	Ratio
1938	$12,245,067	$1,535,110	12.5%
1937	11,907,493	462,959	3.6
Two years	$24,152,560	$1,998,069	8.3%

Started With $25,000 Capital

23

Consolidated Aircraft is headed by R. H. Fleet, president and general manager, who has held that position since 1932. Major Fleet joined the Army in 1917 as an airplane pilot and later served as contracting officer for the Air Corps., business manager of McCook Field, and was in charge of inaugurating the air mail service.

The company was formed in 1923 with an initial capital of $25,000 and has been built up to its present size almost entirely through reinvestment of earnings, the only public financing having been the sale of 22,976 shares of $3 convertible preferred stock in 1936, proceeds of which were used to provide equipment and additions to the San Diego plant, and to supply additional working capital.

During the 15 years through 1938, the company made delivery on $51,427,721 of planes and parts. About 58% of this total has been to the Navy, 23% to the Army, and 19% to commercial and export purchasers. Sales of more than $24,000,000 during the past two years represent 46% of the total business done by the company since its inception.

U.S. NAVY
①
②
③
sickening!

This info wasn't in annual statement

1. One of 210 Consolidated patrol bombers for U. S. Navy.
2. Major R. H. Fleet, president, Consolidated Aircraft Corp.
3. New four-engined patrol bomber for the Navy.

yes

~~R.H.F.~~ - D&P

Norm Davidson Scrapbook

THE NEW YORK TIMES, MONDAY, MARCH 6, 1939.

SEA SCOUTING FEAT OF PLANE REVEALED

Patrol Craft Dogged 'Enemy' Fleet 30 Hours Far at Sea Undetected

ON JOB TILL GAS RAN OUT

Marines in Landing Exercises in Caribbean This Week as Part of Navy Manoeuvres

By HARWOOD HULL

Special Cable to The New York Times.

SAN JUAN, P. R., March 5.—Mimic warfare may have its heroes no less than actual combat. At least approaching the heroic was the performance of a navy patrol plane and crew, belonging to Wing 1, but otherwise shrouded in anonymity, about which there is more talk than of any other single incident which has come to light since the completion of the Navy's Problem XX last week.

The opposing forces of Admiral E. C. Kalbfus and Vice Admiral Adolphus Andrews were assembled under Admiral C. C. Bloch, the fleet commander, off Culebra Island long enough at the end of the war game for the story to get around. The more than 130 ships are now temporarily scattered.

The big patrol plane had orders to locate the White attacking fleet under Admiral Kalbfus and spy out its course as it approached the long string of islands which mark the eastern boundary of the Caribbean, of which one island was supposed to be seized for an enemy base if the attack succeeded.

The plane left its base near here and disappeared in the eastern sky. It located the enemy far out at sea from a height of three miles, so the story goes. It followed the wake of Admiral Kalbfus's ships hour on hour.

Darkness followed day and daylight came again. The patrol plane remained aloft, reporting back to its base the White fleet's movement.

Unmolested and Unrelieved

The plane was not forgotten, but for some reason not explained it was neither relieved nor did it get an order recalling it. It was not molested by the enemy nor detected by the umpires.

After more than thirty hours up there, the big plane came back and landed at its base with only fumes left in its fuel tanks.

The craft had been in the air for a longer time than was required in the non-stop flight from San Diego to the Panama Canal and probably had flown a greater distance than the more than 3,000 miles of that flight.

Much to his surprise, the plane commander on his return was asked where he had been.

His explanation was brief and simple. He quoted his orders. He had been sent on a mission and he had stuck to it at 15,000 feet in the air.

When no relief came, he had just continued dogging the enemy fleet and watching its foaming wake until only enough gas remained to fly back to his base.

There may be no official record involved in the performance, but quite possibly when all the facts are checked, this plane's tour of duty may be found to mark a new high for sustained operation in simulated warfare.

At any rate the incident is being cited as demonstrating the value of the air service in hemisphere defense, as well as the possibilities for greater range at sea of planes operating from an advance base in the Eastern Caribbean, the importance of which President Roosevelt stressed on his return from the manoeuvres.

To Meet at Guantanamo

Today the ships of the combined fleet were in scores of ports on the Caribbean and the Gulf of Mexico or en route to ports. Many cruisers went to their name ports, some for the first liberty for their crews since they left the West Coast late in December.

But the Winter's work is not finished. Most of the war vessels are due at the base at Guantanamo, Cuba, on March 15, when a critique of Fleet Problem XX is scheduled to take place aboard Admiral Bloch's flagship, the Pennsylvania.

As chief umpire as well as commander of the fleet, Admiral Bloch is continuing the secrecy surrounding Problem XX. From his temporary base off Culebra, where the greatest number of American warships ever assembled, remained for some time the past week, Admiral Bloch sent word ashore that it was still the navys' policy not to discuss for publication any phase of the problem.

The rendezvous at Culebra coming immediately after the war game, revived speculation on the prospect of future greater use for fleet operations of Viegues Sound.

For several days this area had a thorough test as a fleet anchorage. Vieques Sound extends twenty to thirty miles east and west between Puerto Rico and the Virgin Islands channel and more than ten miles between Culebra and a string of small islands on the north and Vieques Island on the south.

All the islands afford many sheltered anchorages for all types of ships, generally of easy access and with optional exits. Land batteries mounted on heights on the islands might provide adequate protection against possible enemy approach. The area has been the subject of several navy surveys since soon after the purchase of the Virgin Islands from Denmark more than twenty years ago.

With Problem XX ended, new light is shed on the reasons the army did not participate beyond having observers with the navy's key units.

Essentially is was a problem in manoeuvring opposing forces far at sea, supported by airplanes operating either from shore or from sheltered bases. The use of troops ashore or getting them ashore was outside the scope of the problem. When the quitting whistle blew the White and Black fleets were scattered over more than 1,000 square miles of water.

Actual landing exercises, such as those in which units of the army's First Division participated last year, will be under way this week at Vieques. The ships of the Atlantic squadron under Rear Admiral Alfred W. Johnson and the First Brigade of the fleet marine force participating.

Whole War Game Photographed

Much information, particularly photographic, which was gained during the development of Problem XX will be available for the smaller-scale activities now scheduled. New aerial maps have been prepared for all the areas to be utilized in the coming exercises.

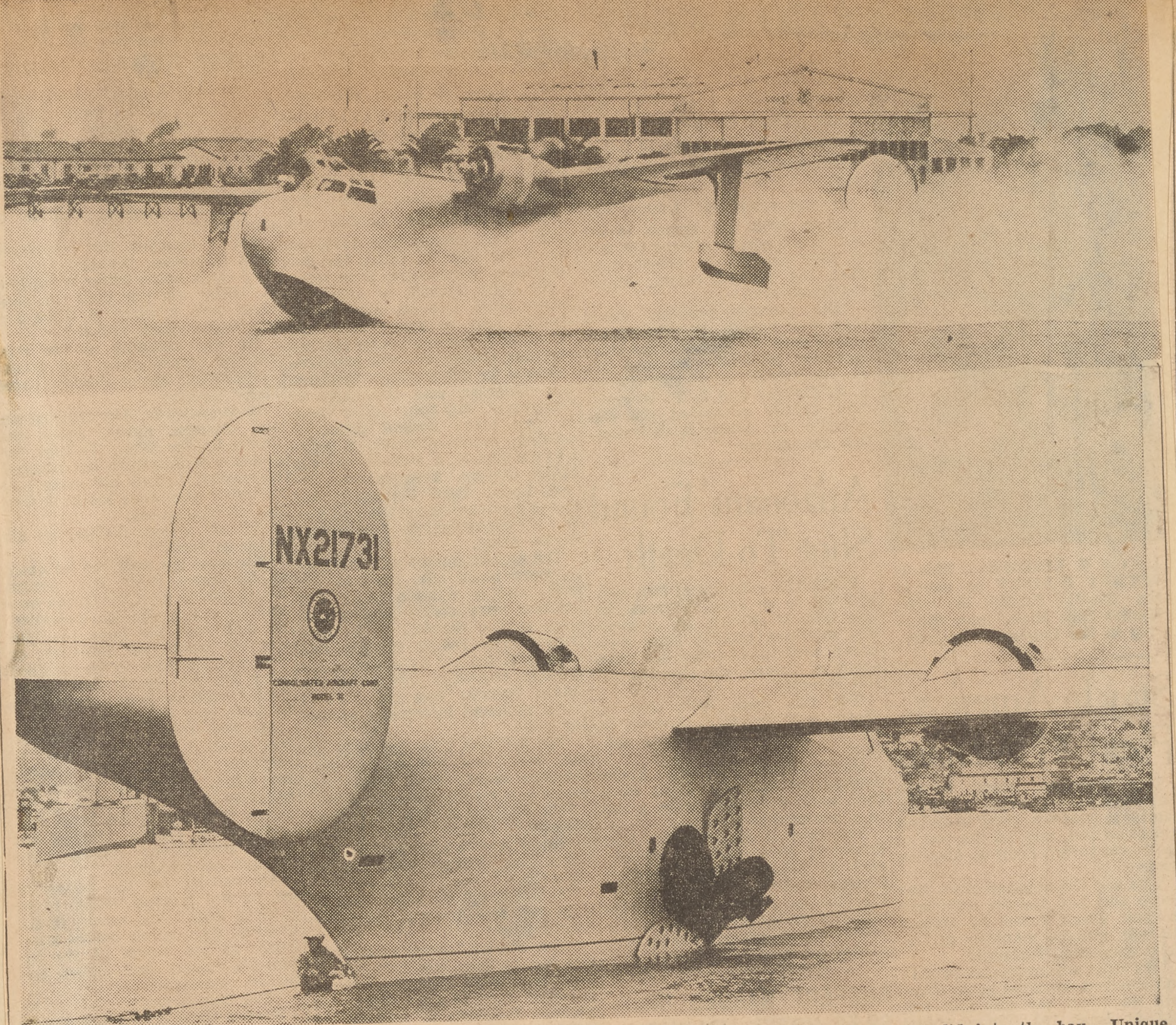
In fact, photography has played a far greater part in this Winter's manoeuvres than in any previous large-scale navy operation. Practically every action recordable by the photographic lens, whether from the air or from surface ships, has been supplied in pictures to Admiral Bloch.

One technique carried to a new point in the war game has been simultaneous photography from two or more planes with cameras operating under radio control.

These pictures will supplement the maps in telling the story of the White and Black Fleets at the critique. Both maps and pictures will be seen for the first time by the navy flag and staff officers when they assemble at Guantanamo.

Six weeks after the critique, the fleet will be at New York for the World's Fair.

S. D. SUN 5/5/39



AMERICA'S NEW AIR MONARCH . . . Consolidated Aircraft Corp.'s "mystery plane" shown at top on a practice power run down the bay shortly after launching this morning. Below, the steep-hulled, pot-bellied ship as she slid into the bay. Unique retractable landing gear is being withdrawn into the airboat's body. Pontoons are drawn to underside of wings when plane is in flight. (Story on Page 1.)

CONSOLIDATED'S NEW MYSTERY GIANT AIRBOAT TRIES WINGS

Pictures on Page 3

By HAROLD KEEN
Aviation Editor

Consolidated Aircraft Corp. today rolled its vaunted "mystery plane" out of the plant where it has been under secret, high-speed construction for 10 months, and claimed that with its launching in San Diego bay this single product may revolutionize the world's airboat industry.

The giant 50,000-pound ship, which presented a startling appearance in comparison with its graceful predecessors, the twin-engined PBY's and the four-motored PB2Y-1, is expected to more than double the cruising range of any seaplane ever built and will be the fastest airboat of aviation history.

Designated simply as 'Model 31' and built ostensibly for commercial use, this air monarch of the future will have a cruising range of at least 10,000 miles and a top speed in excess of 275 miles per hour.

It will be able to fly from San Diego to Moscow non-stop the long route—across the United States, the Atlantic, and over Europe.

It can quickly be converted into an aerial arsenal, with a minimum of eight machine guns or small cannons mounted on all sides of its narrow, extremely steep hull.

But when the 'Model 31' was launched this morning, there was no sign of armament, no gun turrets Navy officials attempted to conceal.

2000-H.P. MOTORS

From tail to engines, the ship is a radical experiment. The motors are 2000-h.p. Wright Cyclones, more powerful than any previously mounted on a plane, and so husky that they require the firing of eight-gauge cartridge shells to turn over the crankshafts.

The wing span is 110 feet, six more than the PBY's, and five less than the four-motored bomber. The over-all length is 73 feet, and the height is 22 feet.

A sharply inclined stern, thus designed to keep the body as light as possible, slants away from the twin-ruddered tail to give the ship a stubby, awkward appearance.

HARD TO START

"She's not good looking, but she's an awfully business-like plane," commented Vice President C. A. Van Dusen today as he watched preparations for launching the "Model 31."

The craft's first dip into San Diego bay was accomplished after more than an hour and a half's attempts to start the engines. The cartridge mechanism of the left motor apparently was defective and about a dozen shells were fired before the engine burst into action. The airboat entered the water at 7:25 a. m. and Test Pilots Bill Wheatley and George Newman, with a large crew of technicians watching their own specialties, spent most of the morning taxiing the plane to get the "feel" of the controls, occasionally racing it on a simulated take off.

At 11:10 a. m., with only four men at the controls — Pilots Wheatley and Newman and Flight Engineers Jack Kline and Robert Keith—the craft rose for the first time.

Only 1000 gallons of the gasoline-carrying capacity of more than 5000 gallons were in the midwing tanks and the airboat, after a fast run of 15 seconds toward North Island. took to the air easily. The plane circled over the bay and the coast north of here for more than an hour and a half while more than 100 persons watched the municipal ramp near the Coast Guard air base.

52-PASSENGER CAPACITY

Five men will be able to operate the ship when in full commission, and as a commercial airliner, the Model 31 will accommodate 52 passengers for day flights and 28 in berths for night travel.

Although planned and built entirely by the company out of its own funds, at a cost of about $500,000 the Model 31's development was closely watched by the Navy, and military secrecy had been imposed during its construction.

AIRLINE INTERESTED

A long study of scores of airboat designs by I. M. Laddon, chief engineer, and his assistants, preceded the adoption of the present ship's lines.

Mr. Van Dusen today admitted that its efficiency as a military plane as well as for commercial use was given consideration in the engineering.

American Export Airlines, which will compete with Pan-American Airways in transatlantic air service, has evinced interest in the Model 31 for its fleet of craft when it is ready to begin regular schedules.

Buffalo NY

Secret Plane Of Consolidated Is Given First Test

San Diego, Cal., May 5 (AP)—Rising easily from the bay, the new 25-ton flying boat built in secrecy by Consolidated Aircraft Corporation, made a successful test flight today.

Bill Wheatley was at the controls. The plane, flying low, shuttled back and forth over a ten-mile course.

The new model 31 is a twin-engined craft with rated horsepower of 4,000 for take-off. It has sixteen-foot three-bladed propellers and daytime capacity of 52 passengers and five crewmen. The wingspread is 110 feet, the height 22 feet from retractable beaching wheels. The 73-foot hull contains two full decks, one above the other, including eight compartments besides the large flight control room.

---

2 Planes Rejoin Patrol Wing

5/12/39
S.D. UNION

Lts. Tom Hamilton and R. E. Coombs of Squadron VP-9, delayed by engine trouble in the Gulf of Fonseca from completing a flight with Patrol Wing 1 from Hampton Roads to San Diego, arrived at 9:50 a. m. yesterday. Both fliers spent Wednesday night at Magdalena bay. Twenty planes of Squadrons VP-7 and VP-9 arrived Wednesday morning after a 2100-mile nonstop flight from the coast of Honduras.

Naval Air station officials announced no word has been received from Pan American Airways as to the departure of the giant new passenger plane now at San Francisco. This ship is to fly to Baltimore via San Diego and New Orleans.

It will join two sisterships in transatlantic passenger and mail service out of Baltimore to French and British ports. This service is to be inaugurated May 20 on the 12th anniversary of Col. Charles A. Lindbergh's flight to Paris.

LONE EAGLE TAKES OFF FROM SAN DIEGO AGAIN

S. D. UNION 5/8/39

Young America watches the nation's idol of the airlanes, Col. Charles A. Lindbergh, take off from municipal airport. The youngster is giving a left-handed salute to shade his eyes from the sun. Inset, Lindbergh in the cockpit of his 300-mile-an-hour pursuit plane in which he is making a tour of the country.

Lindy Finishes Inspection Here

Ending a 24-hour stay in which he inspected the Consolidated and Ryan aircraft factories and conferred with local aviation executives, Col. Charles A. Lindbergh took off from the municipal airport at 12:15 yesterday. He landed an hour later at March field, Riverside.

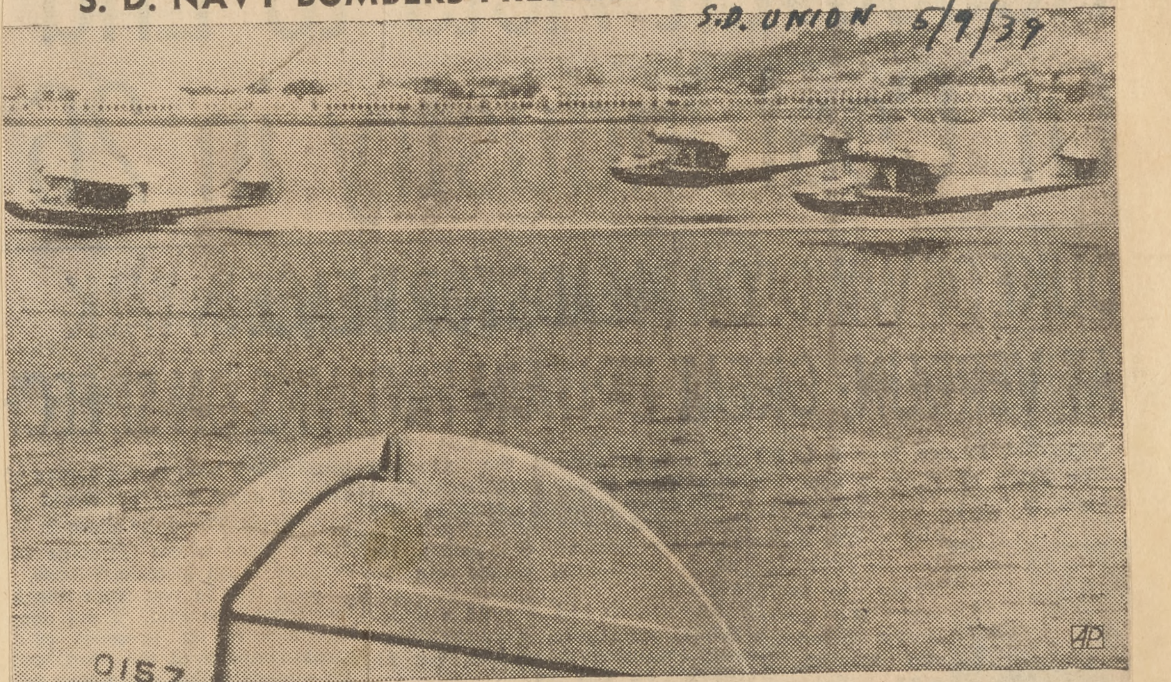
Lindbergh spent the night at the home of Maj. R. H. Fleet. After breakfast he visited the Ryan plant and just before noon went to the army air corps reserve hangar where his 300-mile-an-hour pursuit plane was housed Saturday night.

This morning Lindbergh will visit California Institute of Technology, Pasadena, where with Dr. Clark Millikan, he will inspect the Guggenheim Aeronautics laboratory. He then will visit the Lockheed Aircraft Corp. plant at Burbank, the Douglas Aircraft Co. at Santa Monica, the Vultee Co. plant at Downey and the North American Aviation Co. at Inglewood. From the Los Angeles area he will fly to Seattle to visit the Boeing factory.

At Consolidated Lindbergh's chief interest was in the new four-motored long-range bombers which are being constructed for the army and navy and the new 25-ton commercial passenger plane for transoceanic service. Consolidated has submitted bids for additional army planes on which the army plans to award contracts early next month.

S. D. NAVY BOMBERS PREPARE FOR HAWAII CRUISE

S.D. UNION 5/9/39



Three of the 15 offshore patrol bombers of Squadron VP-1 in a training flight preparatory to leaving here June 28 on a nonstop flight to Hawaii. In background are the Marine base barracks. On the flight to the crossroads of the Pacific the squadron will be commanded by Comdr. Sam La Hace.

S.D.SUN 5/8/39

LINDY EXPECTED TO RE-VISIT CITY

Col. Charles A. Lindbergh, after a thorough inspection of Consolidated Aircraft Corp.'s planes now under construction or being planned, has returned to March Field, Riverside, after indicating to officials of the Ryan Aeronautical Co. he may return later this week to complete unfinished business here.

The flier was in conference for two hours with Maj. Reuben H. Fleet, Consolidated president, in the plant Saturday, and spent the afternoon and evening in further talks with Consolidated executives in Maj. Fleet's Point Loma residence, where he was a luncheon and dinner guest. He stayed there overnight, and took off at 12:15 p. m. yesterday after a brief stop at the Ryan plant.

While on the West Coast in his current inspection of U. S. production and research facilities during special active duty with the Army, Colonel Lindbergh expects to visit Caltech to see the Guggenheim Aeronautical laboratory, the Lockheed plant in Burbank, the Douglas Aircraft Co. in Santa Monica, the Vultee Co. in Downey, the North American Aviation Co. in Inglewood, and the Boeing factory in Seattle.

He Didn't Go, So Firm Sues

S.D.SUN 5/9/39

Because he failed to go to Taganrog, the destination in Russia of a group of Consolidated Aircraft Corp. engineers two years ago, the San Diego concern is suing Gilbert Henry, a former employe, for return of the $1910 it gave him as expenses for the trip, the United Press reported from Los Angeles.

Ten engineers were sent to the Soviet aircraft factory on the Sea of Azov to help establish production methods on a replica of the Navy's PBY bombers. The design of the plane had been purchased from Consolidated with the permission of the U. S. Government.

Mr. Henry, who turned back to Moscow, 500 miles short of Taganrog, has filed a countersuit for $2747 against Consolidated, which he claims greatly misrepresented living conditions in Russia.

The other engineers and their families, numbering 23 persons, returned to San Diego last fall after 15 months in the Soviet.

---

24 NAVY BOMBERS BACK FROM EAST

S.D.SUN 5/10/39

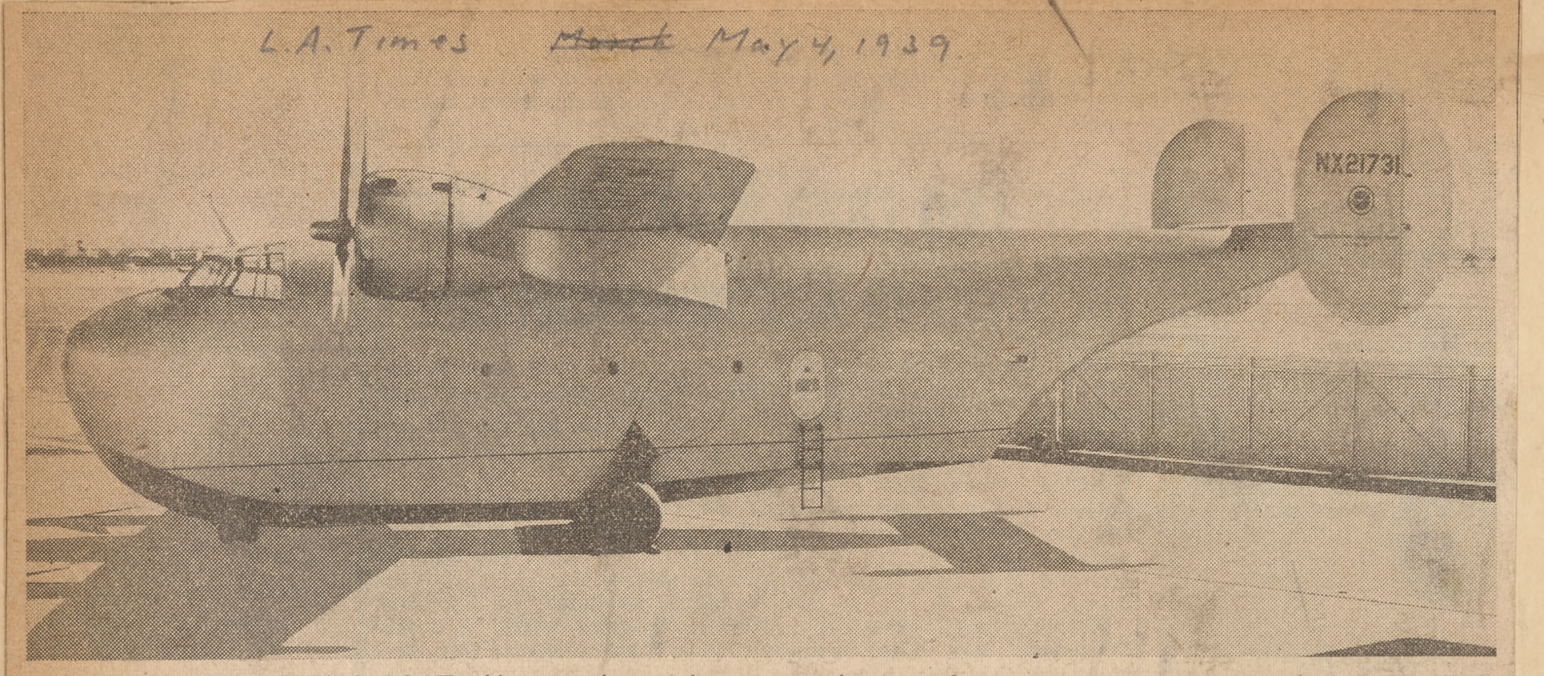
Twenty-four Navy patrol bombers landed on the bay off North Island during a 35-minute period today, after a 2100-mile non-stop flight from the Gulf of Fonseca.

Carrying 170 men under command of Capt. Marc A. Mitscher, the two-motored flying boats left San Diego in January for Navy maneuvers in the Caribbean. With the rest of the Fleet, they were ordered home when the East Coast stay was cut short.

The planes, averaging 120 miles an hour, originally were to stop en route from the Gulf at Magdalena Bay, but when aerological officers reported flying weather ideal, Capt. Mitscher decided to push straight through to the home base. They left the Canal Zone Monday for Fonseca, a 450-mile flight.

The first ship landed in the bay today at 8:30 a. m. and the last at 9:05 a. m.

L.A. Times ~~March~~ May 4, 1939



CONSOLIDATED FLYING BOAT—Here is the mighty 50,000-pound flying boat that may open new chapter in history of over-ocean transportation before it rolled down ramp at Consolidated Aircraft factory in San Diego.

Mighty New Plane Built

Consolidated Flying Boat May Set Precedents; Top Speed 300 M.P.H.

SAN DIEGO, May 4. (Exclusive)—Powered with the strongest engines ever used in an aircraft, a mighty 50,000-pound flying boat that may well set precedents in over-ocean transportation today rolled down the ramp at the Consolidated Aircraft Corp. factory.

First tests will begin next week.

ONLY TWO MOTORS

Emergence of the unique sky monster—which approaches the San Diego firm's four-engined "flying dreadnought" in size while utilizing only two huge powerplants—from the secrecy of its experimental hangar confirmed a story appearing exclusively in The Times last March.

Details of the Consolidated flying boat remained meager.

From company officials, however, it was learned that the 25-ton craft's wing is 110 feet long, that its flush-riveted hull is 73 feet long, that it stands 22 feet high on its retractable beaching wheels.

FIVE IN CREW

Five crewmen, a pilot, co-pilot, flight engineer, radio operator and navigator, will operate the plane.

"Unlike previous experimental flying boats which were constructed by the Consolidated Corp. under government contract, this Model 31 is our private venture," company executives said.

"While the Navy Department was cognizant of the construction, the development has not been financed by the government . . . Only 10 months were required for the design and construction of the airplane, whereas development of types of similar magnitude has required from two to three years heretofore."

EXCEEDS PBY TYPE

Significantly, the company's statement continued: "Although no performance figures may be released, Model 31 greatly exceeds the PBY's in speed, range and load capacity."

The PBY type is the giant twin-engined flying boat currently used by the United States Navy in its mass flights over the 3000-mile routes from San Diego to Pearl Harbor (Hawaii) and Coco Solo (Canal Zone.) Built years ago, its true performance specifications have been jealously guarded by the Navy.

Estimates of the new craft's speed and range have been breathtaking. Based on the fact that Consolidated's latest machine has a wing-loading greatly in excess of anything yet built, observers have figured its top speed almost 300 m.p.h., its range up to 10,000 miles.

CARRIES 52 PASSENGERS

As a commercial over-water transport, Model 31 will carry 52 passengers in daytime operations, 28 in sleeper-travel.

Other features of the giant craft include tricycle beaching gear which permit emergency landings on terra firma as well as easy withdrawal from the water onto seaport runways; a mighty, full-cantilever wing that boasts Fowler flaps which extend outward on long metal fingers to act as efficient "air brakes."

Oddly-shaped, the plane's wing narrows from 14 feet at its maximum chord to a tip so small that outboard floats retract to the underside of the outer wing panel rather than into the tip.

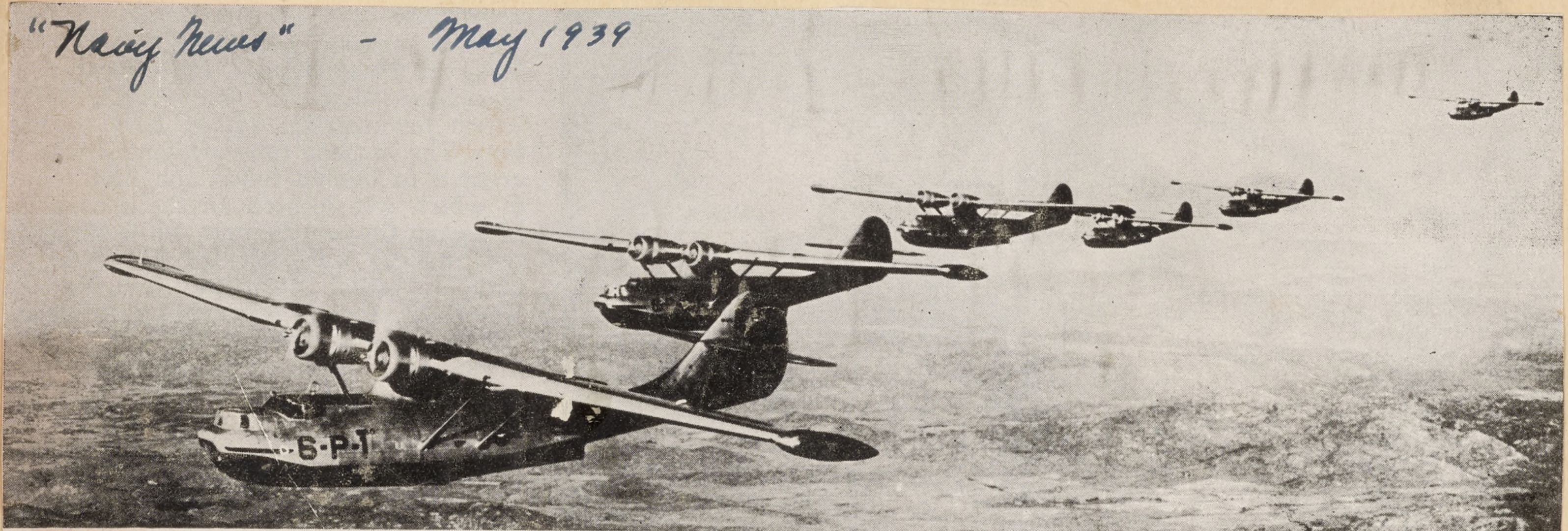
TWO FULL DECKS

Inside the deep hull are two full decks, one above the other, providing a large flight-control compartment and eight additional cabin sections.

Developed as a Navy Department secret, the mighty Wright engines generate 2000 horsepower each at take-off. Partly because of this, and the fact that two engine nacelles offer far less head-resistance than four motors drawing the same total (4000) horsepower, Model 31 will gain its terrific speed, it is believed.

Two 16-foot, three-blade propellers will drive the ship through the skies. These can be full-feathered in the event of engine stoppage in mid-air.

"Navy News" - May 1939



Patron Bombers are Supplanting the Destroyers for Scouting Purposes

---

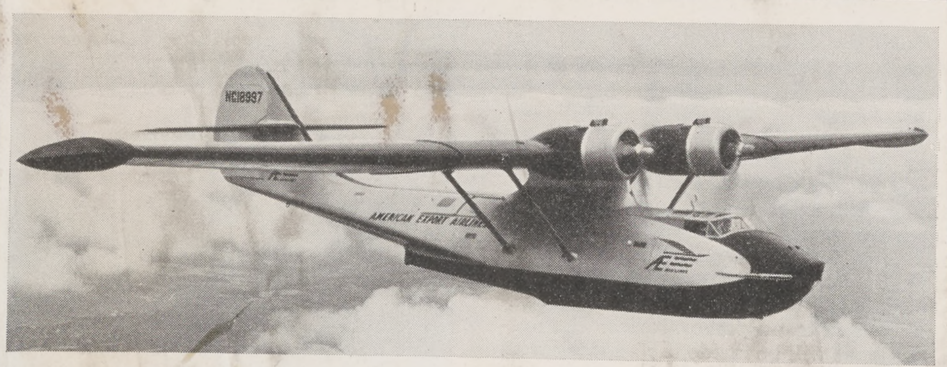


Photo by American Export Airlines

American Export Airlines' new $200,000 survey ship is a Consolidated Aircraft flying boat, released by the Navy from its production line. It is a commercial version of the ships which have successfully completed many notable over-water flights. Equipped with two Pratt & Whitney Wasp engines of 1,200 horse-power each, it has a top speed of 202 miles per hour. Its interior resembles a laboratory and its equipment includes all the latest instruments for long over water journeys. Its sole mission will be to gather scientific information on navigational and meteorological conditions along a route direct from New York to Horta in the Azores, thence to Biscarrosse, France's new trans-Atlantic air base, and on to Marseilles; to check and cross check findings, and to mould data and experience into a routine operation between the eight or more boats along the route, which will be in constant radio contact with the plane. Following the survey flights, American Export Lines plans to acquire sufficient number of these boats to operate two weekly round trips, carrying mail and express. Present plans call for the addition of forty passenger flying boats sometime in the future. P. J. Byrne, loaned to the airline by the Navy, will be in command of the ship.

NATIONAL AERONAUTICS
MAY, 1939

S.D. Union 5/17/39

New Big Engine In Consolidated Flying Boat

WASHINGTON, May 16 (A.P.)—A step forward for the United States in the world race for air supremacy was disclosed today when the army disclosed development of "the world's largest and most powerful air-cooled aircraft engine."

Its strength is indicated by an announcement from Louis Johnson, assistant secretary of war, that only two of them were required to fly the long-range Consolidated flying boat, which carries 52 passengers and a crew of five. It made its first flight last week.

The new engine is a 2000-horsepower "Duplex Cyclone"—500 horsepower more powerful than the "Cyclone 14," which has the highest power rating ever accorded an American-built, air-cooled radial engine by the civil aeronautics authority.

The army already has tried out the engine with success on long-range bombers, and it may soon become standard for some categories of military planes.

Johnson said the engine had been developed by the Wright Aeronautical Corp., Paterson, N. J., with the assistance of the Army Air corps. Information in army circles is that a considerable amount of work of designing was done by the experimental experts of the Army Air corps at Wright field, Dayton, O.

BREWSTER PLANS TO BUILD FLEETS

BREWSTER Aeronautical Corporation on April 14 signed an agreement with Consolidated Aircraft Corporation, of San Diego, Calif., whereby Brewster will acquire all the design rights, design information, jigs and fixtures on nine types of Army and Navy training and observation planes manufactured up to this time by Consolidated.

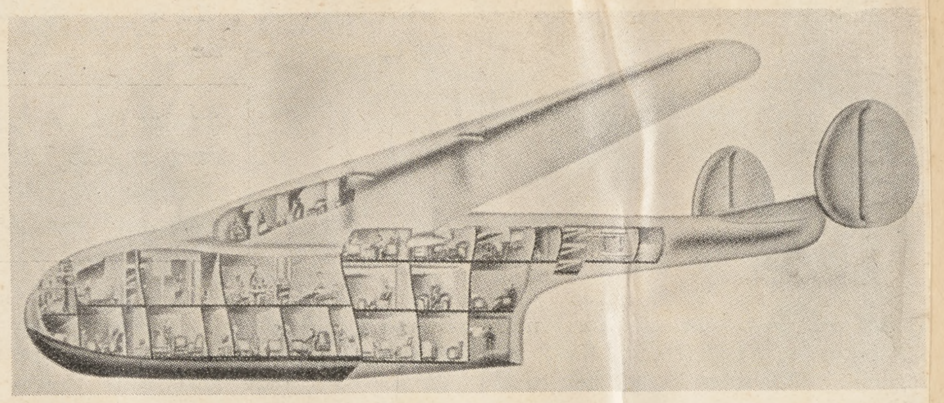
Western Flying May 1939

Cutting from the March 1939 issue of the Danish magazine "FLYV".

FLYVEMASKINER TIL 100 PASSAGERER

(Shell Aviation News)

Flyvemaskinen til 100 Passagerer er ikke længere Fantasi. Amerikanske Fabriker har nu givet ganske nøjagtige Planer og Beregninger for en saadan Type. Vi bringer nedenfor de forskellige Fabrikers Konstruktioner.

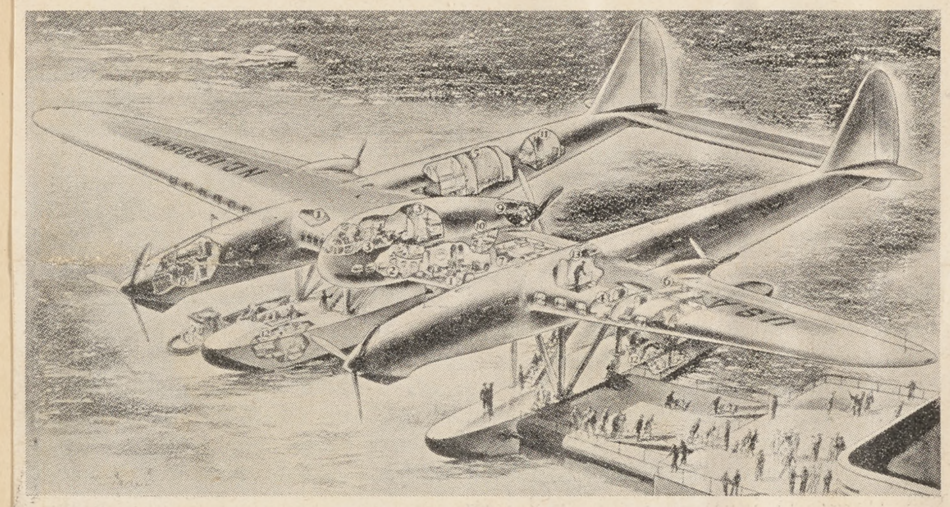


Consolidated Flyvebaad.

FOR et Aars Tid siden sendte Pan American Airways et enslydende Brev til otte Flyvemaskinefabriker, hvori man bad dem om at fremkomme med Forslag til Bygning af Trafikflyvemaskiner, der kunde medføre 100 Passagerer over en Distance paa 8000 km med en største Hastighed paa 480 km/T og en Marchhastighed paa ikke under 320 km/T. Der foreligger nu nærmere Konstruktionsplaner fra fem Fabriker: Douglas, Sikorsky, Consolidated og Boeing, og et Fællestræk hos alle fem Typer er dette, at Motorerne er anbragt paa en saadan Maade, at de er tilgængelige under Flyvning. Boeing, Douglas og Sikorsky anvender seks Motorer, medens Consolidated har fire og Sikorsky otte. Douglas er det eneste Landluffartøj mellem de nye Typer. De er alle udstyret med den størst mulige Komfort for Passagererne. Detaillerede Oplysninger om Kæmpeluftlinerne vil ikke blive offentliggjort, førend Pan American Airways har truffet sin Bestemmelse med Hensyn til Valg af Type, men i det efterfølgende gives en kort Oversigt over de forskellige Typer.

Consolidated Aircraft Corp.

Consolidated er fremkommet med Planer til en Flyvebaad, udstyret med fire vædskekølede Motorer med Luftfortætter, hvis Ydelse ved Jorden er 4×2,150 HK. De anbringes i Bæreplanets forreste Kant, og Propellerne monteres paa de forlængede Krumtapaksler. Firmaet hævder, at Anvendelsen af fire Motorer i Stedet for seks, vil give et bedre Resultat. Udkastet omfatter et Luftfartøj med tre Dæk, idet 36 af de 100 Passagerer vil faa Plads i det meget tykke Bæreplan. De øvrige 64 Passagerer faar Plads i en Række smaa Kabiner til to eller fire Mand. Paa det midterste Dæk er indrettet en Spisesalon, med Plads til 18 Personer, og paa det øverste Dæk findes en rummelig Salon. I den bageste Del af Kroppen er der Opholdsrum for syv Mænd af Besætningen, og helt forude er der Plads til to andre. Der findes tre Post- og Fragtrum; et i Kroppens Næse under Førerrummet, et øverst i Planets Forkant, og et tredje bagude i Kroppen. Hele Kroppens forreste Del af øverste Dæk optages af Arbejdsrum for Flyveren, Næstkommanderende, Flyveingeniør, Radiotelegrafist og Navigatør.



Seversky »Supper Clipper«.

Seversky Aircraft Corp.

Dette Firma var oprindelig ikke iblandt de otte, som Pan-American Airways henvendte sig til, men paa et senere Tidspunkt blev man enige om ogsaa at modtage Tilbud fra Seversky. Super-Clipper er konstrueret til at kunne medføre en betalende Last paa 20.000 kg over en Strækning af 8000 km ved en Mindstehastighed paa 400 km/T. Den skal medføre 120 Passagerer, der faar alle Bekvemmeligheder til Disposition, som findes i en moderne Atlanterhavsdamper. Luftfartøjet er i Virkeligheden en flyvende Vinge, og byder Passagererne nogle meget store Rum. Der vil blive indrettet Spisesalon og en Bar samt et Promenadedæk med rigelig Plads til 60 Personer. I Spisealonen kan der sidde 50 Personer paa een Gang. Det indvendige af Supper-Clipper'en kan gøres tryklufttæt saaledes, at der i 6500 Meters Højde kan vedligeholdes et Tryk, der svarer til 2500 m. Besætningen skal bestaa af 15 Mand.

Planet har en Spændvidde paa 75 m, og Luftfartøjet har to Kroppe, hver udstyret med en Ponton, der kan trækkes ind i Kroppen. Man mener paa denne Maade at kunne kombinere et Søluftfartøjs Fordele med en Landflyvemaskines Ydeevne. Der er otte vædskekølede Motorer, hver paa 2000/2300HK. I Forenden af hver af de to Kroppe vil der blive installeret to Motorer, som trækker een Propel, og et tredje Par Motorer bliver indbygget i den bageste Del af »Førerhuset«, der er anbragt paa Bæreplanets Midterstykke, og som tillige rummer Førerrum, Radiorum, Navigationsrum m. m. Motor Nummer syv og otte anbringes i Bæreplanets Bagkant. Alle Motorerne anbrin-

Flyvemaskiner til 100 Passagerer.

(Fortsat fra Side 75)

ges i Motorhuse, der har Opholdsrum for to Mekanikere, og som bygges tryklufttætte, ligesom Kabiner og Førerrum er det.

Boeing Aircraft Co.

Boeings Udkast bestaar af en Flyvebaad med seks Motorer, anbragt i Planet. Propelanordningen er den samme som Douglas anvender. Af Udseende ligner den nye Boeing Flyvebaad Typen Boeing 314. Kroppen er indrettet med to Dæk.

Douglas Aircraft Co.

I Stedet for en Flyvebaad er Douglas fremkommet med Planer til Bygning af en Landflyvemaskine, et lavvinget Monoplan med seks Motorer anbragt i Planets forreste Kant. I Lighed med Boeing- og Consolidated-Typerne anvender Douglas en selvregulerende Propel med fuldt vendbare Blade, og den er anbragt paa en temmelig lang Aksel. Kroppen er bygget vandtæt, og der hævdes, at den kan holde hele Luftfartøjet flydende i Tilfælde af tvungen Landing paa Søen. Halepartiet bestaar af en enkelt Halefinne og Haleplan med tilhørende Side- og Højderor. Understellet kan trækkes ind. Det formodes, at Landingsstellet bestaar af tre Hjul ligesom paa DC-4.

Sikorsky Aircraft.

I Lighed med Boeings Konstruktion gaar Sikorsky's Projektet ud paa at bygge en Flyvebaad med eet højtliggende Bæreplan, udstyret med seks Motorer. Kroppen er omtrent ens for begge Projekters Vedkommende, omend Sikorsky anvender en Krop af noget større Dimensioner. Halepartiet er derimod forskelligt, idet Sikorsky anvender dobbelt Halefinne og Sideror.

Western Flying Bulletin May 16, 1939

SAN DIEGO
CONSOLIDATED AIRCRAFT CORP'S MODEL 31, POWERED WITH TWO 2000 HP WRIGHT CYCLONES IS ABOUT READY FOR FLIGHT TESTING. REPORTS ARE: 50,000 LBS GROSS WEIGHT; CRUISING RANGE OF 10,000 MILES BETWEEN 200 AND 250 MPH; WING EMBODYING ENTIRELY NEW AIR FOIL; RESEMBLES YACHT; WING LOADING, 50 LBS PER SQ FT; POWER LOADING, 12½ LBS; ACCOMMODATIONS FOR 40 PASSENGERS; ADAPTABLE AS BOMBER OR MILITARY TRANSPORT. RUMORED THAT AUSTRALIA CONTEMPLATES PURCHASE OF 10 MODEL 28'S, THE COMMERCIAL VERSION OF PBY.

U. S. Air Services - May 1939

Record $50,000,000 Air Corps Order

Army Buys 571 Airplanes Within an Hour After the President Approves Bill
First Order on Projected 6,000-Plane Goal

IN AN ACTION UNPRECEDENTED FOR SPEED and size of order involved, the War Department within one hour after President Roosevelt signed the appropriation bill for 1940 placed in a single order contracts for 571 airplanes and accessories totaling about $50,000,000. Announcement of this award was made late on April 26th, and at noon the following day it was supplemented with word that the order would be divided among five plants, as follows:

Curtiss-Wright Corporation, New York, $12,872,398 for pursuit planes, type P-40.

Consolidated Aircraft Corporation, San Diego, Calif., $2,880,000 for heavy 4-engined bombers, type B-24.

Lockheed Aircraft Corporation, Burbank, Calif., $2,180,728 for pursuit interceptor, 2-engined planes, type YP-38.

Bell Aircraft Corporation, Buffalo, N. Y., $1,073,445 for pursuit interceptor planes, single-engined, type XP-39.

Beech Aircraft Corporation, Wichita, Kans., $528,749, for photographic airplanes, type F-2.

The total in these contracts is $19,535,320; the remainder of the $50,000,000 will be devoted to purchase of engines, propellers, instruments and other accessories, in quantity lots. Contracts under this phase of the order are to be announced shortly.

AT THE SAME TIME the President requested a new appropriation of $31,621,000 to begin immediate construction of the chain of naval aviation bases as recently recommended by the Hepburn Board, including sites from Alaska, through the Pacific, around to Puerto Rico and the Atlantic Coast.

The speed of the action, from approval by the President to award of the contracts, resulted in announcement of this tremendous armament step parallel with action of Great Britain in adopting conscription, and as it happened, just two days before Hitler was scheduled to make his reply to the President's virtual demands for longtime peace guarantees from Germany.

Nobody in authority would admit that these developments were in any way related, or that the sequence of events, so far as the United States was concerned, was anything more than coincidence. Nevertheless, Washington observers commented on the significance of the moves in the light of world events, and the fact is there.

America is putting its defense machine into high gear.

The 571 airplanes ordered represent the first instalment of the projected aerial expansion to a possible 6,000-plane force for the Army. It was further indicated, as noted elsewhere in this issue, that the President will shortly outline the actual distribution of the remaining $250,000,000 of the total of $300,000,000 which was asked for the aviation program.

Assistant Secretary of War Louis Johnson said War Department plans were made, and will be submitted to Congress at an early date. Meanwhile, further purchase of other types of aircraft, including training, cargo, etc., will be made when additional funds become available July 1, it was said.

IN ADDITION TO CONTRACTS ANNOUNCED, the War Department will, within a few days of this announcement, place orders totaling $19,000,000 for a number of attack bombers, for which design competitions recently have been held at Wright Field, Dayton, Ohio.

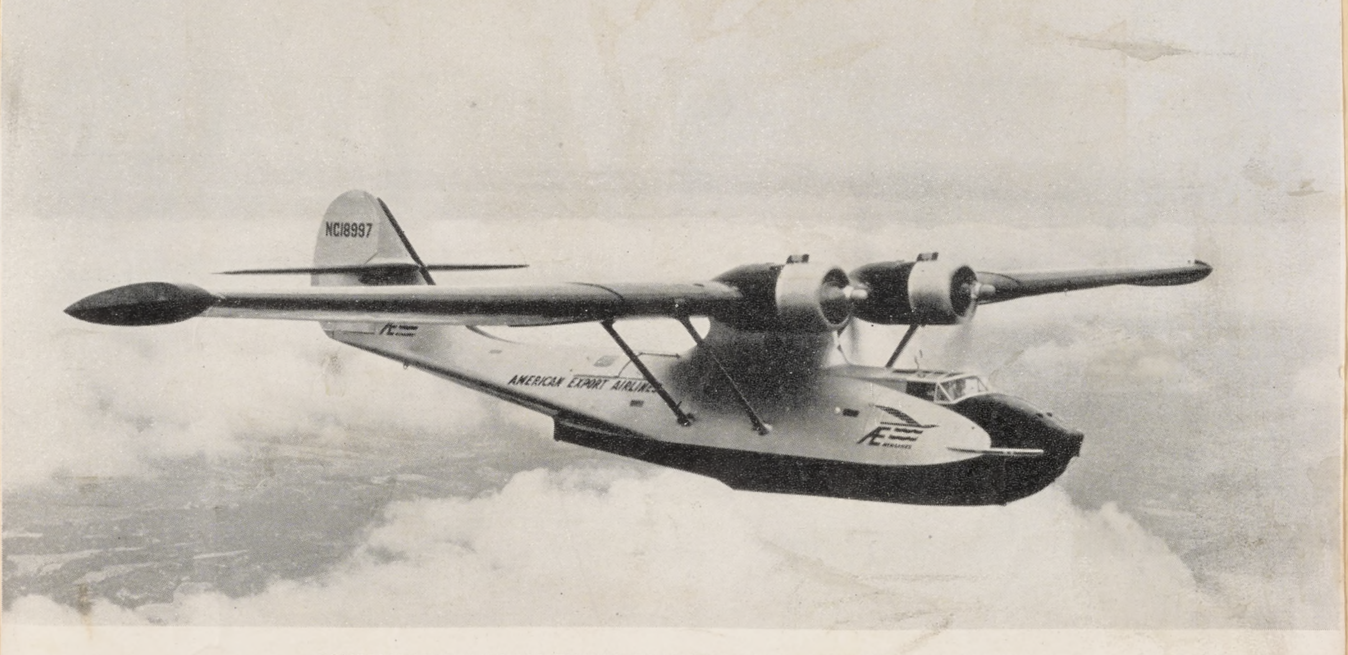
The Consolidated Aircraft Corporation, designated to produce the heavy 4-engined bombers in the order just announced, has been making this type for the Navy, and manufactured the heavy patrol bombers which made mass flights from Norfolk, Va., to San Diego, Calif., in 1935, from San Diego to Hawaii in 1937, and have performed similar feats repeatedly in naval service.

The Curtiss ships are described elsewhere in this issue. The interceptor pursuit type is a recent development designed particularly to attack heavily armed bombers. They develop speeds considerably in excess of 350 miles and are Allison-engine powered, with tricycle landing gear.

The total War Department bill, $549,000,000, is the largest since the World War, just as the plane order was the largest single order of record. Placement of orders now, it was stated, probably will result in important economies as compared with waiting until the new fiscal year.

---

u. S. Air Services May 1939



CONSOLIDATED $200,000 FLYING BOAT FOR AMERICAN EXPORT AIRLINES

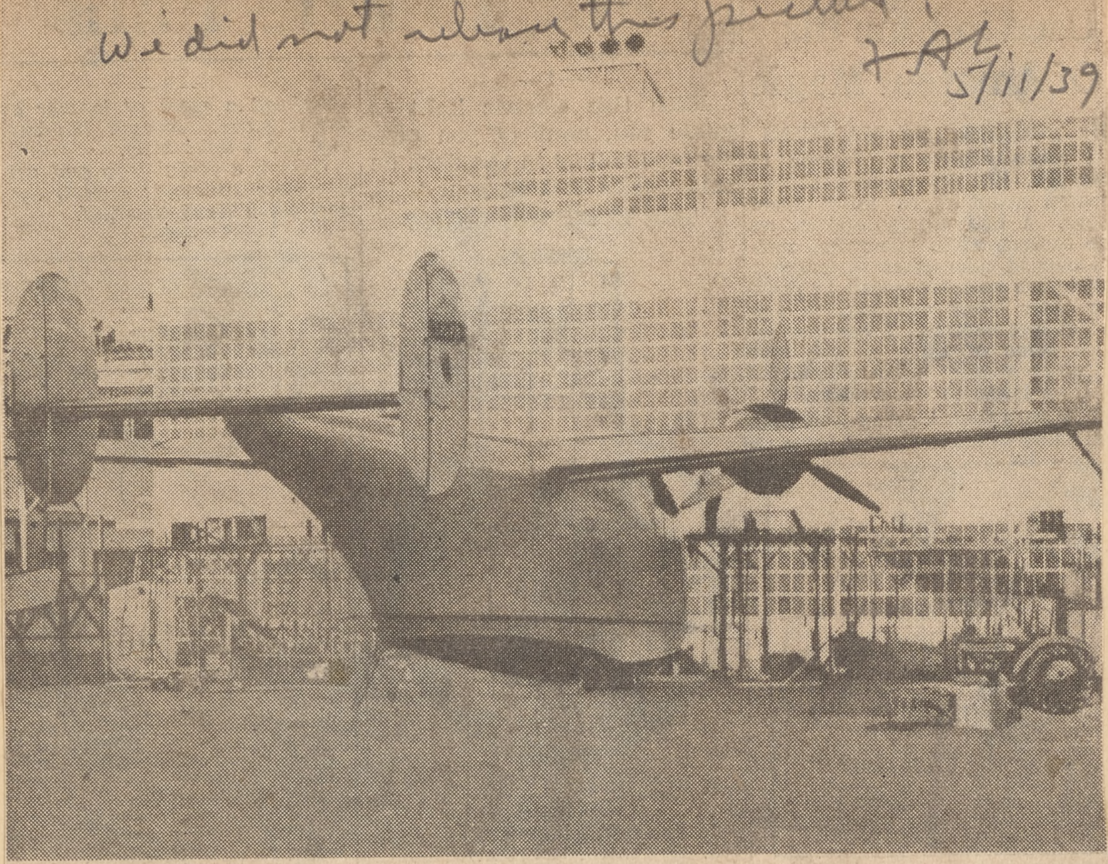
Undergoing Final Test for Its Inaugural Flight Across the Atlantic. The Consolidated Ship Was Released by the Navy From Its Production Line, and is the Commercial Version of Its Predecessors Which Have Successfully Completed Many Notable Overwater Flights. Equipped With Two Pratt & Whitney "Wasp" Engines, of 1200 H-p. Each, It Has a Top Speed of 202 m.p.h. It Will Fly a Direct Route to Horta in the Azores, Thence to Biscarrosse, France's New Transatlantic Air Base Southwest of Paris, and on to Marseilles. Following the Survey Flights, American Export Airlines Plans to Acquire a Sufficient Number of Flying Boats to Operate Two Round Trips a Week, Carrying Mail and Express. The Ship Will Be in Command of P. J. Byrne, Who Has Been Lent to the Air Line by the Navy

---

Buffalo Evening News

We did not release this picture!

FAL 5/11/39



NAVY'S NEW "PERFECT WING" PLANE.—This new Navy plane, being tested at San Diego, Cal., has what the designer, David R. Davis, calls "the perfect wing." It is said to have an airfoil so aerodynamically clean that it will increase a plane's efficiency 20 per cent. Mr. Davis claims that fighting planes which today move at 400 m. p. h. with his wing would increase to almost 500.

WINGS OF THE NAVY

Nieuwe Amerikaansche vliegfilm samengesteld met de hulp van marinevliegers.

Warner Bros brengen binnenkort hier te lande de Amerikaansche vliegfilm „Wings of the Navy", een film, welke is samengesteld met de hulp van den Amerikaanschen marinevliegdienst; dat wat er aan vliegerij in deze film voorkomt is dan ook van zeer bijzonder gehalte. Wij zijn in de gelegenheid gesteld om deze werkelijk zeer goede film gisteravond en petit comité te bewonderen; kapt. ter zee Rost van Tonningen benevens eenige subalterne zee-officieren waren er eveneens getuigen van.

De draad die door deze film loopt is natuurlijk een romantische: een documentaire film is dit dus geenszins, wel een — en een vaak buitengemeen spannend — kijkspel.

Opvallend goed is het vliegen in formatie, uiterst spannend de duikvlucht, waarbij de reacties op den vlieger zoo goed mogelijk zijn weergegeven. Het zal wel een film zijn, waarvan het in het algemeen vrij air-minded publiek zonder twijfel zal weten te genieten.

De Nederlandsche bewerking van de tusschenschriften is in hoofdzaak van den heer Smits, den publiciteitschef der Fokkerfabriek. Dat is een goede gedachte van Warner Bros geweest, want nu staan er geen gekke dingen tusschen, wat zoo vaak bij dergelijke films den totaal-indruk heeft bedorven.

De Ver. Staten wijden veel aandacht aan de luchtstrijdkrachten van hun leger en hun vloot. Het zeer uitgestrekte land is als het ware voorbeschikt om de vliegerij zoowel commercieel als militair tot een zoo hoog mogelijken graad van ontwikkeling op te voeren. Aan de opleiding van hen, die zich geroepen voelen om zich te stellen au service des ailes wordt dan ook de grootste zorg besteed.

Een indruk van de wijze, waarop de instructie wat betreft de marinevliegers geschiedt, geeft de film Wings of the Navy, welke geproduceerd is door Warner Brothers en binnenkort onder den naam van Luchtduivels van de Marine haar rondgang door de Nederlandsche bioscooptheaters zal aanvangen.

De organisatie van de vliegschool is, blijkens de film, voortreffelijk. Een fiksche hijschkraan takelt de vliegtuigen, wanneer de oefening is afgeloopen, uit het water en zet de ranke toestellen met een zwaai op het wagentje waarmee zij naar de loodsen worden gereden. Op eigen kracht rijden (op wagentjes) de vliegtuigen de helling af naar de baai, waar geoefend wordt. Natuurlijk ontbreekt bij de opleiding de vroolijke noot niet. Deze mankeert op geen enkele recrutenschool ter wereld.

Na het brevet te hebben verworven gaan de marinevliegers naar San Diego, de voornaamste luchtvaartbasis der Amerikaansche marine aan de Westkust. Daar wacht hun grooter werk: de vliegbooten, waarvan het tweemotorige type Consolidated P.B. Y wel het voornaamste deel vormt. Zwermen vliegbooten, in formatie vliegend, trokken aan ons oog voorbij. Gevechtsoefeningen worden den toeschouwer getoond, zooals dit bij de U.S. Navy,

Gisteravond heeft deze film voor een klein aantal genoodigden in het theater Tuschinski te Amsterdam gedraaid. De film behoort zonder twijfel tot het beste, wat wij op dit gebied hebben gezien, al laat zij slechts een deel van de Amerikaansche luchtstrijdkrachten, nml. die der vloot, zien.

Bij den aanvang wordt hulde gebracht aan de nagedachtenis van den Amerikaanschen marine-vlieger Harrington, die in den oertijd der vliegerij baanbrekend werk voor den Amerikaanschen marinevliegdienst heeft verricht.

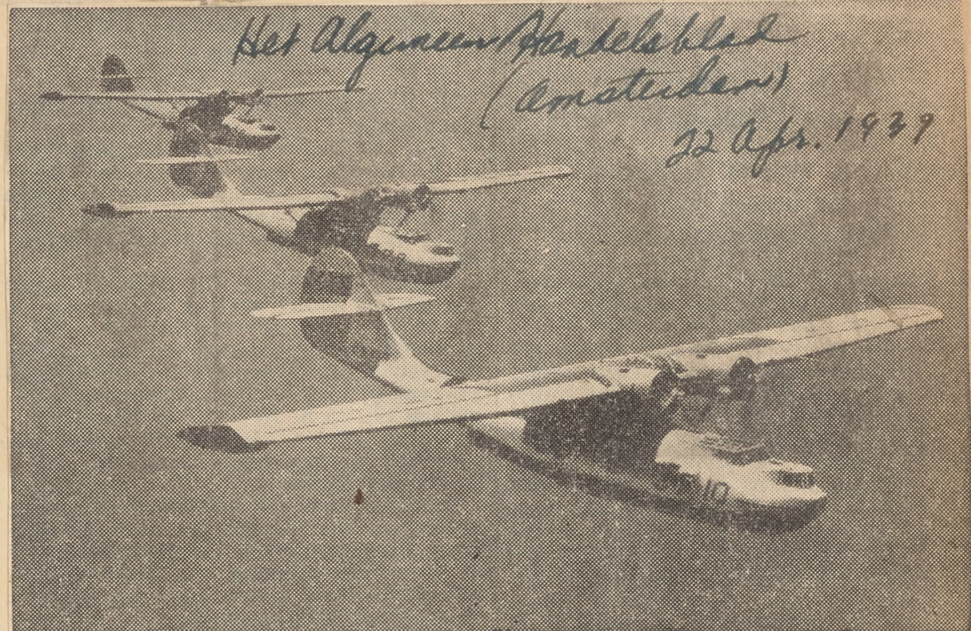
Te Pensacola (Florida) is de opleiding van de marinevliegers gevestigd, die, gelijk elders, „getest" worden op landvliegtuigen en later routine dienen te verwerven op drijver-vliegtuigen, waartoe een-drijver-vliegtuigen, type Curtiss meenen wij, van een verouderd type worden gebezigd. Het leven in deze opleidingsschool is niet ongezellig en het gunstige klimaat is een waarborg, dat de opleiding zonder eenige onderbreking kan worden voortgezet. Ook het formatie-vliegen wordt te Pensacola beoefend en de film laat daarvan verbluffende staaltjes zien, evenals van acrobatiek, die de adspirant marine-vliegers terdege beoefenen.

welke haar volledige medewerking aan de totstandkoming van deze film heeft verleend, pleegt te geschieden. Het vertrek voor een vlucht in formatie van eenige tientallen Consolidated-vliegbooten naar Honoloeloe, waar de commandant „over 20 uur een afspraak heeft" en dus op tijd moet arriveeren, vormt het indtrukwekkende slot.

Tusschen de bedrijven door worden eenige bijzonder belangwekkende tafreelen vertoond met betrekking tot het invliegen van een nieuw type vliegtuig waartoe met een Grumman-jachtvliegtuig wordt gedemonstreerd dat duikvluchten uitvoerd als viel het gelijk een steen uit de lucht.

Om al dit gezoem en gesnor is een petite histoire geweven, waarin George Brent, John Payne en Olivia de Havilland — wier naam overigens een uitstekend figuur in een vliegfilm moet maken — de hoofdrollen vervullen. Maar de mooie oogen van Olivia en de ranke gestalte van John Payne rechtvaardigen ditmaal niet alleen het aanschouwen van de geslaagde Amerikaansche vliegfilm, die ongetwijfeld propagandistische waarde heeft, in het bijzonder voor den marine-luchtvaartdienst der Ver. Staten.

Het Algemeen Handelsblad (amsterdam) 22 Apr. 1939



UIT DE FILM „WINGS OF THE NAVY". — DRIE „CONSOLIDATED" VLIEGBOOTEN IN FORMATIE VLIEGEND.

April 22, 1939 (Netherlands)

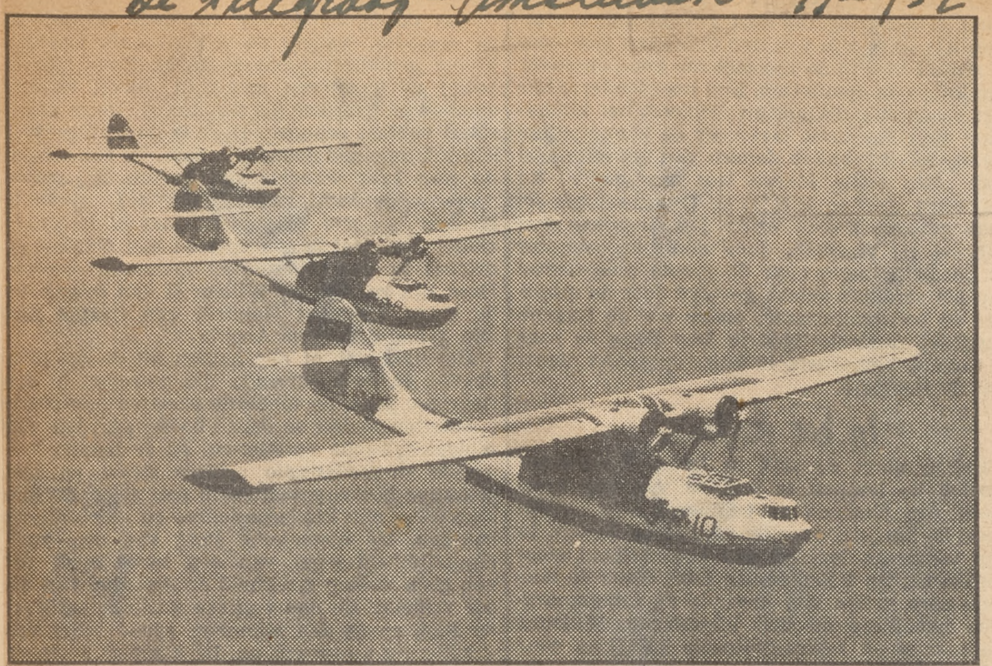
Luchtvaart

DE AMERIKAANSCHE MARINE-LUCHTSTRIJDKRACHTEN

Een aantal Consolidated verkenningsvliegbooten in de luchtvaartbasis der Amerikaansche marine te San Diego.

VLEUGELS VAN AMERIKA'S MARINE.

"De Telegraaf" Amsterdam 7/22/39



Twintig duizend piloten noodig.

Propaganda voor de U. S. Navy.

AMERIKA heeft twintig duizend vliegers noodig. Wat beteekent dat minstens tweehonderdduizend jongelui zich beschikbaar moeten stellen, gezien de scherpe selectie, die wordt toegepast en het onvermijdelijke aantal afvallers tijdens de opleiding. Om dat te bereiken, is een grootscheepsche propaganda noodig. Dat men daarbij van de film heeft gebruik gemaakt, spreekt vanzelf.

Warner Bros vervaardigde derhalve de film „Wings of the Navy", waarbij men de volledige medewerking kreeg van den Amerikaanschen Marine Luchtvaartdienst. Voor de entourage beschikte men daardoor over een onbeperkt aantal medewerkers, de nieuwste jachtvliegtuigen, bommenwerpers en marine-vliegbooten. Om het op zijn Amerikaansch te zeggen: op een gegeven moment ziet men voor een waarde van vijftien millioen dollar in de lucht.

De film toont de opleiding der jonge piloten, hun doopvlucht, de emotie der eerste solovlucht, de instructie in de lucht, het examen. De nieuwste vliegboot-bommenwerpers worden van binnen en buiten bezichtigd. De commandant legt op den bok, in den start, tijdens de vlucht en bij de landing, alles uit. De toeschouwer ervaart hoe de eerste-bestuurder van zulk een vliegend schip, als een kapitein op de brug zijn mannen aanvoert.

En dan zijn er angstig-natuurgetrouwe opnamen van den test-piloot in actie, die met een snelheid van 700 kilometer naar omlaag suist, waarbij men niet weet wat meer te bewonderen, de acteurs, die zich voor deze proeven leenen of de operateur, die er in slaagde alle momenten zoo vast te leggen, dat men inderdaad met de grootste spanning de huiveringwekkende evoluties volgt.

Het is een film, waar de mannen van het vak waardeering voor hebben, waar de jongeren, die droomen van heldendaden in de lucht, van smullen. Want het brengt hun alles wat hun hart begeert en zelfs meer dan dat. Het is de beste propaganda, die er bestaat. De gevaren worden nòch verdoezeld, nòch aangedikt. Men beleeft eenige minder geslaagde manoeuvres van jeugdige onervaren vliegers, waarbij de waarschuwende sirene angstig loeit en de hulp-expedities van alle zijden toesnellen.

Geslaagd mag ook heeten de vlucht van een blindvlieger, die zonder het te weten, geheel alleen, op zijn instrumenten een tocht maakt, soms onderstboven vliegt, herhaaldelijk onwetend een „narrow escape" heeft, om ten slotte, tot opluchting der toeschouwers, behouden te landen.

Typeerend is ook de korte zakelijkheid, waarmee de jongelui geïnstrueerd worden, de hartelijke verhouding tusschen instructeurs en leerlingen en de kordate wijze, waarop zij aangepakt worden.

Het zou geen Amerikaansche film zijn, wanneer men er als een lossen draad geen liefdesgeschiedenis doorheen had geweven. Maar die neemt men graag op den koop toe.

Deze propaganda voor den marine-vliegdienst kan dan ook dienstbaar gemaakt worden aan de opwekking tot deelname aan de luchtvaart in andere landen. Vandaar, dat onze marine-autoriteiten belangstelling toonden voor dit Amerikaansche product. Bij de vertooning in de projectiezaal van Tuschinski bevonden zich naast verschillende luchtvaart-autoriteiten, ook kapitein-ter-zee N. A. Rost van Tonningen, onder-commandant der Marine te Amsterdam, met zijn staf, die met groote belangstelling deze Warner Bros-creatie aanschouwden.

Voor de toelichting had men zich de medewerking verzekerd van den heer J. Smits, chef der afdeeling Publiciteit van Fokker, die op vakkundige wijze de Nederlandsche versie verzorgde.

ARCHBOLD ENDS MUSEUM WORK

'Guba' To Make Survey Hop For Australia

S.D. SUN 5/10/39

Adventure

The American Museum of Natural History's expedition into the jungle country of Netherlands New Guinea, led by Richard Archbold and his San Diego-built Consolidated airboat Guba, today officially came to an end.

The last group of scientists was removed from the island river camp by the Guba and brought to the seacoast base at Hollandia, according to short wave reports received by Barney F. Boyd, San Diego amateur operator.

SURVEY FLIGHT

Tomorrow, the Guba, without Mr. Archbold, will be flown by its regular flight crew to Sydney, Australia, via Port Moresby, British New Guinea, to prepare for an unprecedented survey flight across the Indian Ocean to Africa for the Australian government. Mr. Archbold will leave by steamer for Batavia to wind up affairs of the expedition with the Dutch colonial government there.

Hundreds of rare specimens of plant, animal and bird life were obtained by the expedition during its 11 months' stay in New Guinea. They have been shipped to the Museum in New York City, and Mr. Archbold expects to continue this work late in 1940.

STARTED LAST JUNE

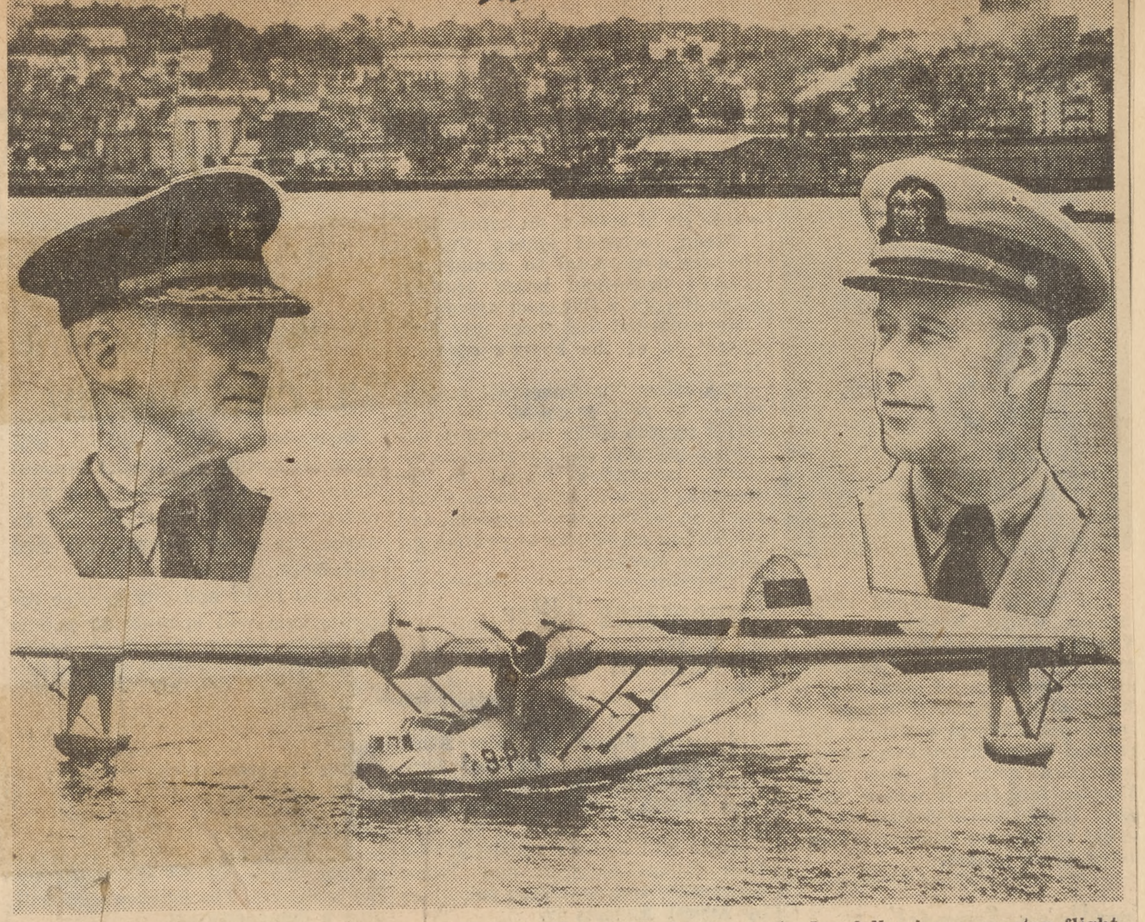
The Guba, which has flown more than 100,000 miles in delivery hops from the coast to the inaccessible interior with supplies and personnel, was piloted by Mr. Archbold to New Guinea from San Diego last June.

On completion of the Indian Ocean flight in July, the Guba will be taken across Africa in easy stages, then vault the Atlantic to St. Thomas, Virgin Islands, and to the New York World's Fair for a short stay before continuing to San Diego. The airboat is due here late in July for overhaul at Consolidated.

Mr. Archbold expects to rejoin his crew in Sydney after his Batavia visit about June 1, and the Guba will leave June 15 for Mombasa, Africa, via three Indian Ocean island stops.

NAVY AIR CRUISERS ALIGHT ON SAN DIEGO BAY

S.D. UNION – MAY 11, 1939



One of the huge bombers of squadron VP-9 landing in the harbor yesterday following a nonstop flight from the Gulf of Fonseca. Inset, left, Capt. March A. Mitscher, commander, Patrol Wing 1, and right, Comdr. B. L. Braun, VP-9 squadron.

20 Big Bombers Arrive After 2100-Mile Hop

Return From Navy 'War' in Caribbean; Will Remain Here

Four months almost to the hour that 48 long-range patrol bombers of Fleet Patrol Wing 1 left San Diego for war exercises in the Atlantic-Caribbean area, 20 of the great air cruisers came winging out of the clouds yesterday morning after a 2100-mile nonstop flight from the Gulf of Fonseca.

Of the four squadrons of 48 planes, VP-11 and VP-12 have been assigned permanently to Hampton Roads. Two planes of squadrons VP-9 and VP-7 were left at Coco Solo, although their crews of 14 officers and men were brought north on other airboats of the two squadrons.

TWO ARRIVING LATE

Ill-luck befell Lt. Thomas Hamilton, piloting plane 10, and Lt. R. E. Coombs, pilot of plane 11 of squadron 9. Because of engine trouble they failed to get their heavily laden planes into the air when squadrons 7 and 9 left the rough waters of the gulf for San Diego at 2 p.m., Tuesday. They took off from the gulf at 5 a.m. yesterday, landed in the afternoon at Magdalena bay and will leave this morning for San Diego, arriving about noon.

In his flagplane, Capt. Marc A. Mitscher was the first of the 20 airmen to land on the bay. He arrived at 8:29 a.m., exactly 19 hours and 30 minutes from the time of take-off in the Gulf of Fonseca. The other planes came in from the sea singly and in groups of three, the last ship reporting in at 9:45. So swiftly did the huge bombers speed up the coast few of the wives and sweethearts were on hand to greet the returning fliers, most of whom came in nearly 90 minutes ahead of schedule.

PERFECT NIGHT FLIGHTS

Capt. Mitscher, veteran flier, described the night flight up the west coast of Central America and Mexico as one of the finest he ever has ever undertaken. Perfect flying conditions prevailed until the two squadrons, breezing along at 8500 feet and logging 120 miles an hour, ran into clouds near Cedros islands.

The planes rode atop the clouds until in the vicinity of Rosarita beach when down through a cloudhole plunged Capt. Mitscher's flagplane. Other bombers discovered cloud holes and all came down to the 2000-foot level and then streaked for home. Once they were hauled up on the ramp, customs and "bug" men inspected the planes and baggage of officers and men.

Although details of the part played by the big bombers in Fleet Problem 20 were guarded, it was

(Continued on Page 2, Col. 1)

learned that the airboats flew more than a 1,000,000 miles in the Caribbean and South Atlantic while acting as "eyes" of the two combatant forces. Not a single plane was damaged in these extended air maneuvers in all kinds of weather, a feat that has added another brilliant chapter to American naval aviation history.

WILL GO TO CAPITAL

This is Capt. Mitscher's last long-distance flight as commander of Patrol Wing 1. He will leave next month for Washington for duty in the navy department, his successor being Comdr. Charles P. Mason, executive officer of the carrier Yorktown, which with the Enterprise is due to arrive at dawn tomorrow from the Atlantic coast.

Capt. Mitscher reported planes of Patrol Wing 1 have no orders to cruise to Alaskian or north Pacific waters and probably will remain based at North Island the rest of the year.

Squadron 1, a 15-plane unit, is scheduled to take off from San Diego June 28 for Pearl Harbor, Hawaii. The squadron is commanded by Comdr. Sam La Hache, Squadron 16, from Pearl Harbor, has replaced squadron 12 in the wing.

Four vessels that have been acting as plane guards on the flight of the patrol wing from Hampton Roads to San Diego, the cruisers Memphis, tender Wright and destroyers Childs and Williamson, are now heading homeward. The Childs and Williamson are expected Sunday, the Wright Monday and the Memphis Tuesday.

EXPEDITION QUITS JUNGLE

By North American Newspaper Alliance.

HOLLANDIA, Netherlands New Guinea, May 12.—The American Museum of Natural History expedition has folded its tents and is moving out of the New Guinea jungles after 11 months' successful exploration for rare and interesting specimens of plant, animal and bird life. Members of the expedition will fly to Sydney, Australia, via Port Moresby, British New Guinea.

Flight Crew Is Sought To Transport San Diego Airboat To England

S.D. SUN 5/14/39

Great Britain is interested in the purchase of a Consolidated airboat similar to the U. S. Navy PBY patrol bombers which have made spectacular non-stop mass flights to Honolulu, the Canal Zone, and over the West Indies in the recent Caribbean war games.

This was reported here yesterday as officials of the English government and Consolidated sought to organize a flight crew for the delivery hop to the British Isles this summer.

Aviation observers saw behind the negotiations between England and the San Diego concern the following possibilities:

1. England, which is not particularly deficient in airboat development, wishes to augment its own overtaxed factory facilities in the current European armament race through the procurement of these long range seaplanes from the United States. Heretofore, virtually all foreign plane orders placed in this country have been for land aircraft.

2. Great Britain is anxious to build a fleet of efficient flying boats less bulky than the giant craft of Imperial Airways, designed for trans-Atlantic travel. Such a fleet would tend to weld more closely the widely scattered units of the Empire.

In either case, purchase of a plane from Consolidated may prove the forerunner of a large production order, it was pointed out.

S.D. UNION 5/19/39

Consolidated Gets $37,000 Pact for Plane Wings

A contract for $37,395 of aircraft wings was awarded to Consolidated Aircraft Corp. yesterday by the navy department, The Associated Press reported. While no details were given in the dispatch, it was assumed the wings were repair parts for Consolidated airboats now owned by the navy.

---

19 Bombers Home; Two Expected Today From East War Games

S.D. SUN 5/11/39

Nineteen Navy patrol bombers, which arrived at North Island yesterday after a 2100-mile nonstop flight from the Gulf of Fonseca, today were joined by two sister planes at 9:50 a. m. after a 750-mile hop from Magdalena Bay. The disabled third was en route aboard the tender Wright, due Tuesday.

The Consolidated seaplanes had completed scouting operations over the Caribbean and Atlantic of unprecedented scope, which were said to have clinched their utility as the advance "eyes" of the Fleet in warfare. Hundreds of thousands of miles were logged during Fleet Problem 20 and subsequent maneuvers without serious mishap.

GAS LOAD REDUCED

Because of a reduced gasoline load, Lieut. Tom Hamilton, former coach of the Naval Academy football team, and Lieut. R. E. Coombs of Patrol Squadron 9 had to land at Magdalena Bay yesterday. They refueled from the destroyers Childs and Williamson and early today took off for San Diego.

The third plane suffered engine trouble at the Gulf of Fonseca and was taken aboard the Wright.

Two other airboats of the original 24-plane group remained at Coco Solo, Canal Zone, for permanent duty, and will be replaced here by a pair of ships held in reserve.

Capt. Marc A. Mitscher, Patrol Wing 1 commander, who led the 19 bombers into San Diego yesterday, soon will leave for Washington, where he is slated to become assistant chief of the Bureau of Aeronautics.

NEW MASS FLIGHT

Meanwhile, preparations continued for a mass flight of 15 airboats of Patrol Squadron 1 from San Diego to Pearl Harbor, June 28. Unless another squadron is assigned to San Diego, North Island will have only three patrol units—one less than before the war games.

Patrol Squadrons 11 and 12 have been based permanently in Norfolk. Only one of these has been replaced—by Patrol Squadron 18, formerly of Hawaii, and originally due to ferry its planes to Pearl Harbor from the Naval Air Station.

S.D. UNION 5/15/39

24 Squadrons Of Navy Planes Based at S. D.

Twenty-four squadrons of naval aircraft, totaling 408 planes, are based at Naval Air station. The planes are to remain here during the summer and autumn for training and tactical exercises.

Sixteen of the squadrons are attached to the aircraft carriers Saratoga, Lexington, Yorktown and Enterprise, four squadrons are with the Fleet Patrol Wing and four are Marine corps units.

Naval air authorities said the only planes that will make the cruise north this summer with the combatant units will be aircraft attached to the cruiser divisions.

Rear Adm. W. F. Halsey, commander of Carrier Division 1, will sail aboard the carrier Yorktown for Mare Island today.

OFFICERS INSPECT S. D. AIR PLANTS

S.D. SUN 5/16/39

Having completed an inspection of factory production methods in the Consolidated, Ryan and Solar plants here, 17 Army, Coast Guard and Marine Corps aviation officers left San Diego for Los Angeles today to continue their nation-wide tour of aircraft factories and maintenance bases.

The contingent, including 12 Army men, three from the Coast Guard, one of the Marine Corps, and one foreign student of the Philippine Army, arrived Sunday from Chanute Field, Rantoul, Ill., where they are enrolled in the engineering course of the Army Air Corps Technical School. The inspection is part of their training.

They will visit plants in the Los Angeles area before proceeding to Cheyenne, Wyo., and Kansas City, Mo., to observe maintenance methods of transcontinental air-lines. The officers are being transported in two of the latest Douglas Army bombers piloted by Capts. W. E. Sloan and Don W. Morrow.

S.D. TRIBUNE

Fleet on Board Of State Chamber

Maj. Reuben H. Fleet, San Diego aircraft manufacturer, was elected a director of the state chamber of commerce yesterday and Hal G. elected a director, The Associated Press reported.

Results of the election were announced by the state chamber after state-wide balloting. Besides Fleet other new directors are A. C. Mattei, San Francisco oil executive; D. P. Boothe, Modesto packer, and George G. Hoberg, Lake county resort owner.

5/9/39

NORWAY ROYALTY ARRIVES IN L. A.; IN S. D. TOMORROW

S.D. UNION 5/15/39

Crown Prince Olav and Crown Princess Martha of Norway, who will be entertained by the local Norwegian colony and chamber of commerce officials tomorrow, arrived in Los Angeles yesterday, The Associated Press reported.

The prince re-emphasized, in answer to interviewers' questions, that northern countries of Europe traditionally have tried to keep out of war and "we certainly hope to retain that policy as long as possible."

Civic dignitaries and others, including Sonja Henie, actress, greeted the royal couple upon their arrival at Los Angeles on their 70-day American tour. After luncheon, the party went to Sycamore grove, where the crown prince addressed in native tongue the Los Angeles organization of Sons of Norway.

After a round of entertainment, Prince Olav and his wife will motor to San Diego tomorrow, arriving at U. S. Grant hotel at noon. Roy Hegg, Norwegian vice consul, heads the local committee which will entertain them at luncheon at 1 p.m. in Casa del Rey Moro.

The royal party will visit the House of Pacific Relations and Consolidated Aircraft plant before taking a train at 4:15 for San Francisco.

Australia-to-Africa Flight Planned by Archbold

By North American Newspaper Alliance.

HOLLANDIA, New Guinea, May 8.—While England rearms for any emergency one of the great links of her empire, the commonwealth of Australia, is quietly preparing to survey an air route to Africa which would be a reserve protection for Great Britain's communications in case of war. This was disclosed as the twin-engined flying boat Guba, owned by the millionaire aviator-scientist of the American Museum of Natural History, Richard Archbold, was made ready to leave here for Sydney for a final check-up before attempting, in June, to span the Indian Ocean—still unconquered by air.

The Reserve Route Flight

THE PROPOSED SURVEY of the Imperial Reserve Route across the Indian ocean, already referred to briefly in THE AEROPLANE by cable, is scheduled to take place between June 1 and August 1. It will be an Australian-American effort inasmuch as Captain P. G. Taylor will represent Australia. We learn from Australia that everything else about the expedition will be American, and serve us right, except the "official newspaper correspondent," a Mr. J. Percival, Junr., who has been working for Captain Taylor for a time but has also been publicity manager for the Marcus Show, a denuded American revue, and aviation correspondent for the *Sydney Morning Herald*. In Australia he is regarded as anti-British and as preferring anything Dutch or American. Apart from that it is a good expedition.

The personnel will be:—

Richard Archbold, American multi-millionaire owner of the flying-boat *Guba*, who has been researching in New Guinea on behalf of the American Museum of Natural History.

P. G. Taylor, in charge of the survey, who has done many excellent things in aviation and some crazy things—such as flying the Pacific with the late Sir Charles Kingsford Smith in a single-motor Lockheed.

Capn. L. A. Yancey, navigator, who like Captain Taylor has done much meritorious flying and much crazy flying, as when he flew a single-motor Ballanca non-stop from New York to Spain. He made a good job of the *Guba's* trans-Pacific flight from the United States to New Guinea.

R. Rogers will be first pilot. He was one of the trans-Pacific crew of the *Guba*, and a veteran U.S. boat pilot. R. Booth[illegible] will be radio operator. G. Brown and S. Berrinka will be mechanics. Mr. Brown flew near the North Pole with Sir Hubert Wilkins. ↔Booth also.

The *Guba* is a Consolidated P.B.Y. flying-boat with two 1,000 h.p. Pratt and Whitney motors. It cost Dr. Richard Archbold £62,000, and is equipped in the most luxurious style. It has six comfortable full-length bunks, a kitchen range, ice-box and home comforts almost like an Empire boat.

Capn. Yancey, in describing the preparations, said that the pioneer crossing of the Indian Ocean would represent something entirely new in aerial exploration. "Instead of a cramped overloaded 'plane in which the crew is surrounded by petrol tanks unable to move or sneeze without risk of wrecking it, we shall have comparatively speaking a flying hotel." Everyone will be able to get normal sleep and food, and so far as the ship itself is concerned the crew will stand watches exactly as on board ship. There will be two pilots, a navigator and a mechanic on duty all the time. The rest of the crew will eat or sleep.

He added that the navigator has a chart deck as big as that on any ship, and the full-length bunks are as comfortable as human ingenuity can make them. He adds that Dr. Archbold is a magnificent cook, who specialises in aerial flapjacks and syrup. He believes that the duty pilots will have very little work to do as the automatic pilot does most of the flying.

The radio equipment is the most powerful set in any aircraft in the World, according to the owner's claims, which are justified by the fact that throughout the Pacific flight and all the time the machine has been in New Guinea the crew have maintained direct communication with the United States,—a depressing thought.

Immediate arrangements include fitting two new Pratt and Whitney motors in New Guinea, which will be run in on the flight to Western Australia. This will be by way of Brisbane and then non-stop to Carnarvon (West Australia)—a considerable portion of the journey over land. A chartered steamer will deliver petrol and oil to the intermediate ports.—2,500 gallons will be unloaded at each.

The *Guba* in its present trim has a non-stop range of 4,000 miles. The actual flight will start probably from Onslow in West Australia and stage distances will be: Onslow to Cocos Island, 1,230 miles.—Cocos to Diego Garcia, 1,472 miles.—Diego Garcia to Seychelles, 1,022 miles.—Seychelles to Mombassa, 950 miles.—Total approximately 4,674 miles.

The 'plane is to remain at Cocos, Diego Garcia and the Seychelles at least a week so that Dr. Archbold can make investigations whilst Capt. Taylor will spy out the land for suitable boat bases. Captain Taylor and Mr. Percival will leave the 'plane at Mombassa and return to Australia by boat—whether flying or surface has not so far been decided.

Dr. Archbold and his crew will then proceed across Africa to Boma, to Bathurst then to the Azores, Bermuda and New York. The *Guba* will then only have to fly across the States to complete its circuit of the World.

Financial arrangements have not been fully revealed but the fact has been made known that neither Capt. Taylor nor Dr. Archbold will get any pay. Fuel and the wages of the crew will be paid by the Commonwealth Government, as also will be the charter costs of the special steamer which will convey the fuel to the islands in the Indian Ocean.

Our correspondent learns that Dr. Archbold is not making any charge for the use of the boat.—A fine sporting act which ought to make Imperial Airways and our Air Ministry feel quite small.

So far no definite arrangements have been made for the carriage of mail but probably philatelists will be given a chance of helping the Australian Government to pay its share of the flight and mail will be accepted to the limit of the available loading.

The flight is the culmination of years of effort by Captain Taylor backed by much opinion and no practical effort. The last hope was that the Empire boat *Centaurus* would have made the flight when it had finished its trans-Tasman survey at the end of 1937 but nothing was done.

In a candid discussion on the prospects of the flight Captain Taylor told our correspondent that the idea came to him following a suicidal thought that he might attempt a non-stop flight from Western Australia to Cape Town on the Great Circle course.

"That suicidal idea left me," said Captain Taylor, "when I realised that to succeed would mean nothing commercially and be little more than an advertisement for the aeroplane builder and a hollow personal triumph. On the other hand to have failed would have meant damage to the cause of aviation in general.

"Then I started looking around for a sensible crossing of the Indian Ocean for three reasons (1) the need for an alternative or reserve Empire route in the event of trouble in the Far East (2) an additional route which though not possibly justified for passenger traffic might be valuable for fast mail-carrying flying-boats (3) the fact that the Indian Ocean is the only important ocean in the World which has never been crossed by aircraft."

For years Captain Taylor has been endeavouring to obtain a suitable boat. His only disappointment in the present arrangements is the fact that it is not an All-British effort.

Proposals have been considered at various times by the Air Ministry and Imperial Airways and information was received in Australia early this year that Imperial Airways might undertake the survey with one of the C class Empire boats while waiting for the trans-Tasman service to open. The objection appeared to be more to Captain Taylor than to the survey.

Capt. Taylor seems never to have been in Imperial's good books since he made some outspoken criticism of the machines which he had been engaged to fly for Qantas Empire Airways. He did not take up his appointment and it seems that Imperials have not been anxious to further any plan outlined by Capt. Taylor since then. In fact our correspondent learned that on occasions they have even failed to answer correspondence and cables.—An old English custom.

Efforts to make the survey flight as one of the spectacular sidelines of Sydney's 150th Anniversary Celebrations were made at the beginning of last year and Capt. Taylor then visited England and America in the hope of being able to get support for the plan. Economics as usual came into the picture. Manufacturers had too much work to do to be bothered about the advertising potentialities of what was described as a stunt flight—and air line operators were faced with the problems of maintaining enough equipment to operate existing routes without bothering about new ones.

The present arrangements seem to be the best possible and an Australian-American alliance is perhaps the next best thing to an all-British effort. But some people in England certainly have missed a great opportunity for an exploratory flight of first-class importance. It should have been an essentially British enterprise and flown with British equipment but nobody, now that the opportunity has been lost, will fail to wish the crew good luck and good fortune in their exploration of a route which may well become a vital Empire life-line.

The reforming influence in the Commonwealth Government which made possible the official interest was the Treasurer, Major Casey, himself an able private pilot, who persuaded his cabinet colleagues that the flight was necessary. The ready co-operation of Dr. Archbold made the rest easy.

New Consair Ship

S.D. UNION 5/24/39

To Get Final Test

Under supervision of civil aeronautics authority inspectors, final tests of Consolidated Aircraft Corp.'s new commercial flying boat will be held next week.

The tests were delayed several days pending changes in fuel dumping facilities required by the government on all commercial passenger planes and which were a direct result of the fatal accident to Capt. Ed Musick, veteran Pan-American Airway pilot, when his clipper plane caught fire near Pago Pago, Samoa.

Following completion of the tests, the plane will be flown nonstop to New York, where it is to be used by American Export lines in transatlantic survey flights this summer. Capt. P. J. Byrne will be at the controls.

S.D. TRIBUNE 5/15/39

LARGEST ENGINE, WORD ON U. S. ARMY AIR MONSTER

WASHINGTON, May 15 (A.P.)—The war department today announced development of "the world's largest and most powerful air-cooled aircraft engine"—a 2000-horsepower, 18-cylinder monster.

The engine is the creation of the Wright Aeronautical Corp. of Paterson, N. J., assisted by the army air corps.

With two rows of nine cylinders each [illegible]e engine, said Louis Johnson, assi[illegible]nt secretary of war, "is 500 horsepower more powerful than the 1500 horsepower double-row cylinder 14 which has the highest power rating ever acocrded an American-built air-cooled radial engine by the civil earonautics authority."

The new engine, known as the duplex cyclone, has been under development for the last two years. Its first commercial application has been made in a long-range flying boat which carries 52 passengers and a crew of five. The plane, flown for the first time last week, is powered by two of the new duplex-cyclones.

Developed from the double-row cyclone 14, the new engine will be displayed publicly May 20 in the army air corps exhibit at the New York world's fair.

The plane which made the flight, according to International News Service, was the new long-range flying boat developed by Consolidated Aircraft Corp., carrying 52 passengers and crew of five. The plane made its first flight May 5.

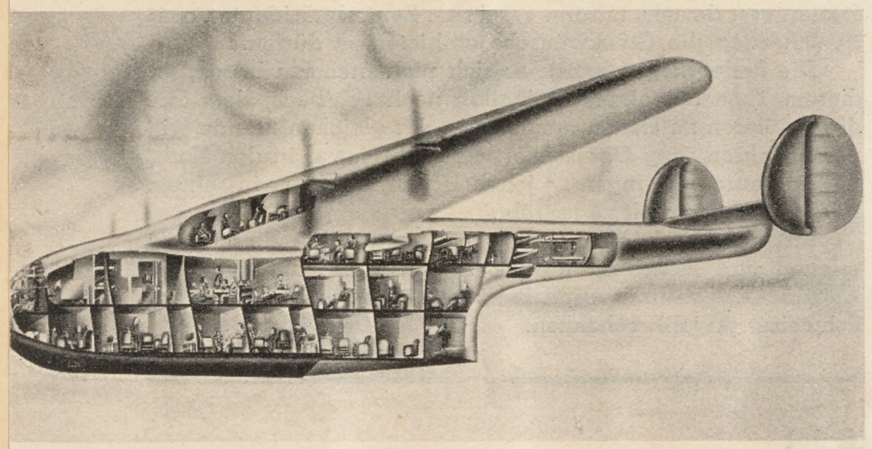
VERKEHRSFLUGWESEN · AVIATION COMMERCIALE

Ein Preisausschreiben für ein Hundert-Passagierflugzeug.

Von Willy Ley.

Im Dezember 1937 versandte die grosse amerikanische Luftverkehrsgesellschaft Pan American Airways System an die acht grössten Flugzeugfabriken der Vereinigten Staaten ein Rundschreiben, welches gewissermassen ein Preisausschreiben darstellte. Pan American Airways bat die Flugzeugfabriken um Angebote für drei, sechs oder auch ein volles Dutzend Riesenflugzeuge. Die Bedingungen hätten noch vor fünf Jahren einfach phantastisch geklungen, einhundert Passagiere, sechzehn Mann Besatzung, Nutzlast 11,500 Kilogramm, Mindestgeschwindigkeit 325 Kilometer pro Stunde und Flugweite mindestens 8000 Kilometer bei dieser Geschwindigkeit.

Es wurde dabei erwähnt, dass die Angebote an Charles A. Lindbergh eingereicht werden müssten und dass diese Flugzeuge für regelmässigen Dienst über grosse Strecken offenen Wassers bestimmt seien. Also kurz: für einen regelmässigen Transatlantikdienst.



Durchschnitt durch den Entwurf der Consolidated. ● Coupe du projet de la Consolidated.
Weitere Bilder siehe Tiefdruck.

Von den angefragten Firmen antworteten vier, Sikorsky, dessen Fabrik an der Ostküste der Vereinigten Staaten sich befindet; Boeing, dessen Sitz in Seattle im Staate Washington an der Pazifischen Küste ist und Douglas Aircraft und Consolidated Aircraft, die beide in Kalifornien ansässig sind. Alle vier Firmen haben bereits erfolgreich Riesenflugzeuge gebaut und also Spezialerfahrung, trotzdem ist dieser Auftrag selbst für sie eine ganz besondere Aufgabe. Trotz allen amerikanischen Getöses um die « China Clippers » ist das grösste bisher jemals gebaute Flugschiff immer noch der Do-X. Die Bedingungen der Pan American Airways machen dagegen ein Flugzeug von mindestens der doppelten Grösse des Do-X nötig.

Man kann an den eingereichten Entwürfen durchaus den Stil ihrer Firmen sehen. Der Entwurf der Consolidated ist in der Hauptsache eine sinngemässe Vergrösserung ihres berühmten Flugbootes XPB 2 Y, welches als Probeauftrag für die amerikanische Marine geliefert wurde. Wie dieses, ist auch der Entwurf des neuen Riesenflugzeuges viermotorig, nebenbei bemerkt der einzige viermotorige Entwurf, alle andern sind sechsmotorig.

Allen Entwürfen ist gemeinsam, dass es sich um Ganzmetallhochdecker handelt, bei denen die Motoren in die Flügel eingebaut sind, so dass sie während des Fluges leicht erreicht, direkt beaufsichtigt und nötigenfalls repariert werden können. Alle Entwürfe sehen auch luftdichte Kabinen vor, so dass der Innendruck etwa einer Flughöhe von 2000 Metern entspricht, während die Maschine in Wirklichkeit etwa 4000 oder 5000 Meter hoch fliegt.

Der Entwurf von Boeing ist besonders interessant in seiner Linienführung, weil diese eine Kombination von zwei berühmten Boeing-Typen darstellt. Boeing baut hauptsächlich Landflugzeuge, hat sich aber auch mit grossen Flugbooten, kürzlich z. B. mit dem sogenannten Pan-American-Clipper, einen Namen gemacht. Während nun das 100-Passagierflugzeug von Boeing als Flugboot gebaut werden soll, hat es doch vollkommen die Linienführung des sogenannten « Stratoliners » (siehe Artikel in « Aero-Revue » Nr. 16, Seite 352), eines Landflugzeuges für Verkehr in sehr grossen Höhen, welches jetzt endgültig seiner Fertigstellung entgegensieht.

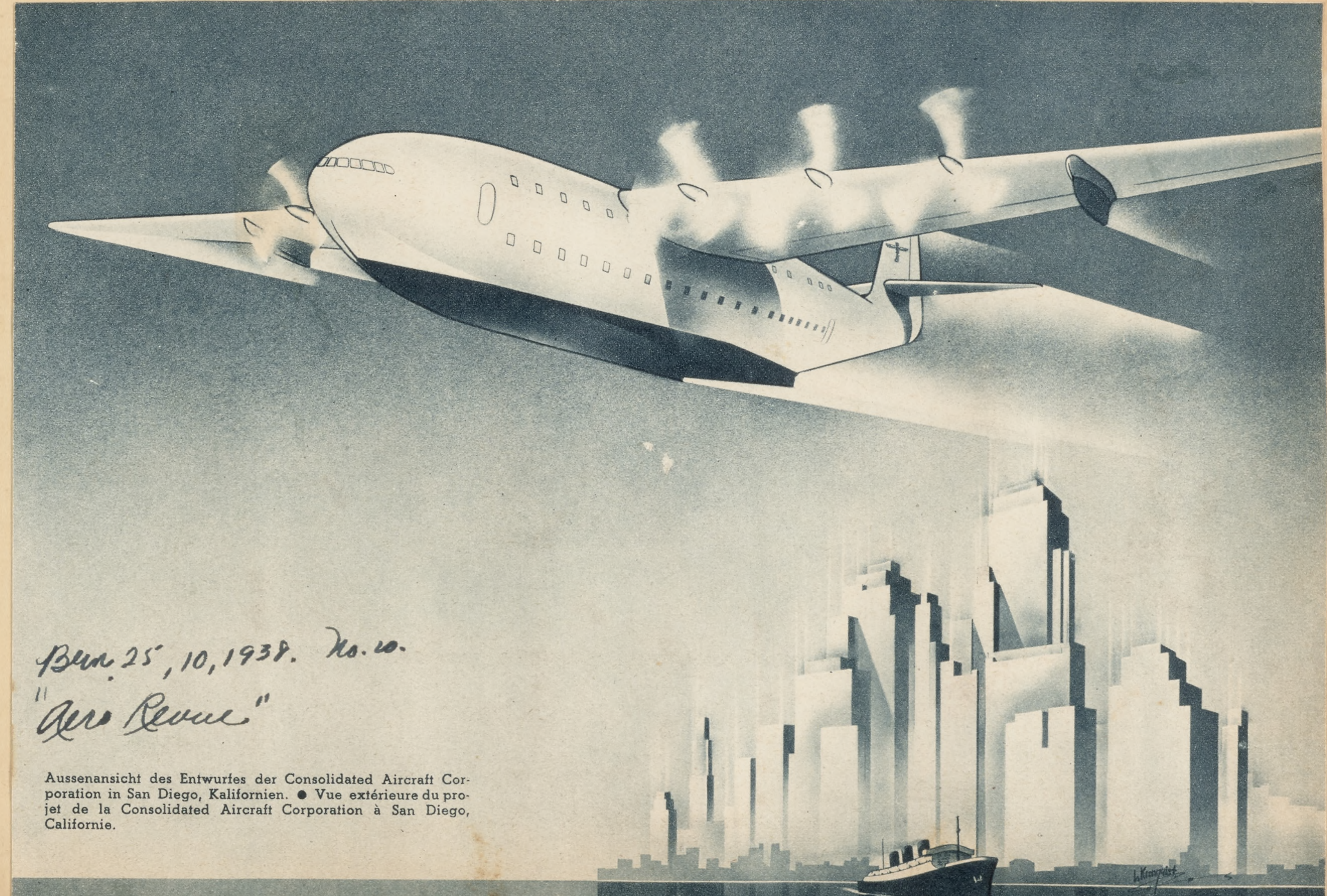
Der Entwurf der Firma Douglas ist der einzige, der ein Landflugzeug vorsieht, trotzdem Ozeanstrecken damit geflogen werden sollen. Da aber auch diese Maschine für verhältnismässig grosse Flughöhen gedacht ist, wird durch die geschlossene luftdichte Kabine ein Treiben auf dem Wasser sichergestellt, welches ermöglicht, auch bei stürmischer See auszuharren, bis Hilfe gebracht wird.

In amerikanischen Fachkreisen ist man sehr gespannt, welcher Firma schliesslich der Auftrag, das Flugzeug auch wirklich zu bauen, zufallen wird. Für das Reisepublikum aber bedeutet allein die Tatsache eines solchen sehr geschäftsmässigen Preisausschreibens, dass der regelmässige Transatlantikverkehr mit Riesenflugbooten in spätestens zwei bis drei Jahren Tatsache sein wird.

Bern, 25.10.1938 No. 20

MAY 15 1939

"Aero Revue"



Bern. 25, 10, 1938. No. 20.
"Aero Revue"

Aussenansicht des Entwurfes der Consolidated Aircraft Corporation in San Diego, Kalifornien. ● Vue extérieure du projet de la Consolidated Aircraft Corporation à San Diego, Californie.

WESTERN FLYING'S *Review of the* FLYING WORLD

May 1939

U. S. GREATEST AIR FORCE IS STARTED BY FIVE BIG ORDERS

FOR weeks the manufacturers, the purveyors of material and equipment, and the procurement division of the Army Air Corps have been cleaning up the details preliminary to a mass production of airplanes. Even before the appropriation bills authorizing the expansion of the Air Corps were passed by Congress, the supply men had their instructions, and the manufacturers of materials were clearing the decks, so that actual manufacturing of aircraft would not be held up for lack of supplies.

On April 25, Congress finally passed a measure appropriating $549,000,000 for the War Department, with $50,000,000 available for immediate purchase of aircraft. On April 26 the President signed the bill, and on that same day the Army awarded contracts for 571 military planes, at a total cost of about $20,000,000. The production departments of the five companies to whom contracts were awarded immediately swung into action, and the country was forthwith on its way to fulfillment of the 6,000-plane complement of the Army Air Corps.

Contracts were awarded as follows: Curtiss-Wright Corporation, $12,872,398 for single-engined pursuits; Consolidated Aircraft Corporation, $2,880,000 for heavy bombers; Lockheed Aircraft Corporation, $2,180,728 for twin-engined pursuits; Bell Aircraft Corporation, $1,073,445 for twin-engined pursuits; Beech Aircraft Corporation, $528,749 for photographic planes. The number of planes to be built by each company was not announced, but the total was given as 571.

The Consolidated order was for a four-motored bomber, said to be bigger than the Boeing B-15. So far it is a drawing-board airplane, and has never been built. It is said to be based on the big flying boat which Consolidated developed for the Navy, and for which an order for $4,699,057 was awarded Consolidated on March 22. It is believed that the Navy order was for six ships, and, on that basis, the Army order is for about three.

Lockheed's order is for the twin-engined single-seater which Lieut. Ben Kelsey flew to New York last February, and which crashed on arrival. It is powered with two Allisons, and is the flying wing type, with the empennage surfaces on the end of a pair of booms. It carries six heavy machine guns, and is supposed to have a speed of over 400 m.p.h. It is impossible to guess how many of these were provided for in the order.

The Curtiss-Wright order is for the new Curtiss P-40—a single-engined, one-place, all-metal pursuit, with retractable landing gear and tailwheel developed for high speed, high altitude operations. It carries oxygen equipment.

Bell's order is for the "Airacuda," with its two Allisons installed to spin-pusher propellers. The Beech order is the first to be received by that company from the Army.

Within the next few days the Army is expected to place orders for approximately $19,000,000 worth of bombers. Bids have been received from 11 different manufacturers on bombing types in the past month, and it is supposed that the forthcoming contracts will be divided among several of these companies.

On March 17 the Army opened bids on a twin-engined bomber from North American, which bid $456,000 for one plane or $51,000 in lots of 700 to 2000; Glenn L. Martin, which bid $993,500 on one ship or $56,000 in lots of 2000; and Stearman Aircraft Corporation, which bid $435,000 for one, or $70,686 to $83,280 in lots of 300.

On April 18 the Army opened bids for attack bombers from the following manufacturers: Consolidated Aircraft Company, San Diego, Calif., $585,000 and $48,951; Curtiss-Wright Corporation, Buffalo, N. Y., $878,385 and $89,940; Glenn L. Martin Company, Baltimore, $950,000 and $64,000; Bell Aircraft Company, Buffalo, $504,000 and $78,000; Lockheed Aircraft Company, of Burbank, Calif., $1,225,000 and $75,540; North American Aviation Corporation, of Inglewood, Calif., $760,000 and $58,190; Douglas Aircraft Corporation, El Segundo, Calif., $742,000 and $55,623, and Douglas, Santa Monica division, Santa Monica, Calif., $207,500 and $56,000.

A week previous to opening the bids the North American entry was destroyed on its final test flight, but it is understood that the Army already had obtained practically all the information it required, so that it was not eliminated from the competition by the disaster.

■

LARGEST PLANE ENGINE TESTED

War Department Ends 2-Year Secret Job

S.D. SUN 5/18/39

Aeronautics

The War Department today formally announced completion of two years' secret experimental construction of the world's largest air-cooled aeronautical engine—the 2000-horsepower Wright Cyclone, which was given a preview to San Diego naval and aviation observers May 5 at the launching of Consolidated Aircraft Corp.'s "mystery" Model 31.

The Consair plane, whose top speed will approach 300 miles per hour and whose non-stop cruising range will be 10,000 miles, is powered with two of the engines.

2 MILLION CONTRACT

It is believed they may be used in the four-motored bombardment plane for which the San Diego firm has been awarded a $2,000,000 contract by the Army for construction of an experimental prototype and a small number of service test-craft. They generate double the power in each of the four engines now used in the Boeing "flying fortress," the Army's largest plane.

Assistant Secretary of War Louis Johnson in Washington, described the 18-cylinder engine as a development of the 14-cylinder Wright Cyclone now being used on some of the Army's newest planes.

VIRTUALLY TWO ENGINES

It operates virtually as two nine-cylinder engines, he said, and is built with a single crankcase and shaft.

His announcement had awaited successful completion of the first test flights of the Consolidated airboat, it was believed here.

The motor will be exhibited at the New York World's Fair. Experts say it is a big step toward attaining a flying speed of 500 miles per hour and that it may insure successful operation of combat ships at the dizzy altitude of 35,000 feet.

Maj. Gen. H. H. Arnold, chief of the Army Air Corps, recently told a closed Congressional committee hearing that such speeds and altitudes are imperative if the United States is to regain supremacy in the air.

"A 1000-horsepower engine used to be a big one," Gen. Arnold said. "Everybody was satisfied to think in terms of 1000 horsepower. But today it is not a drop in the bucket. We went to 2000 recently.

"We should have one of 3000 on the drawing boards available for dynamometer tests next year. The only way to do it is with money. We do not know much yet about speed in excess of 400 miles per hour."

G-Men Mum On Consair Investigation

5/23/39

S.D. UNION TRIBUNE

Federal bureau of investigation agents have begun an investigation of charges that sabotage was responsible for wrecking of planes being built by factories in southern California, including the Consolidated Aircraft Corp. plant at San Diego, The Associated Press reported from San Francisco.

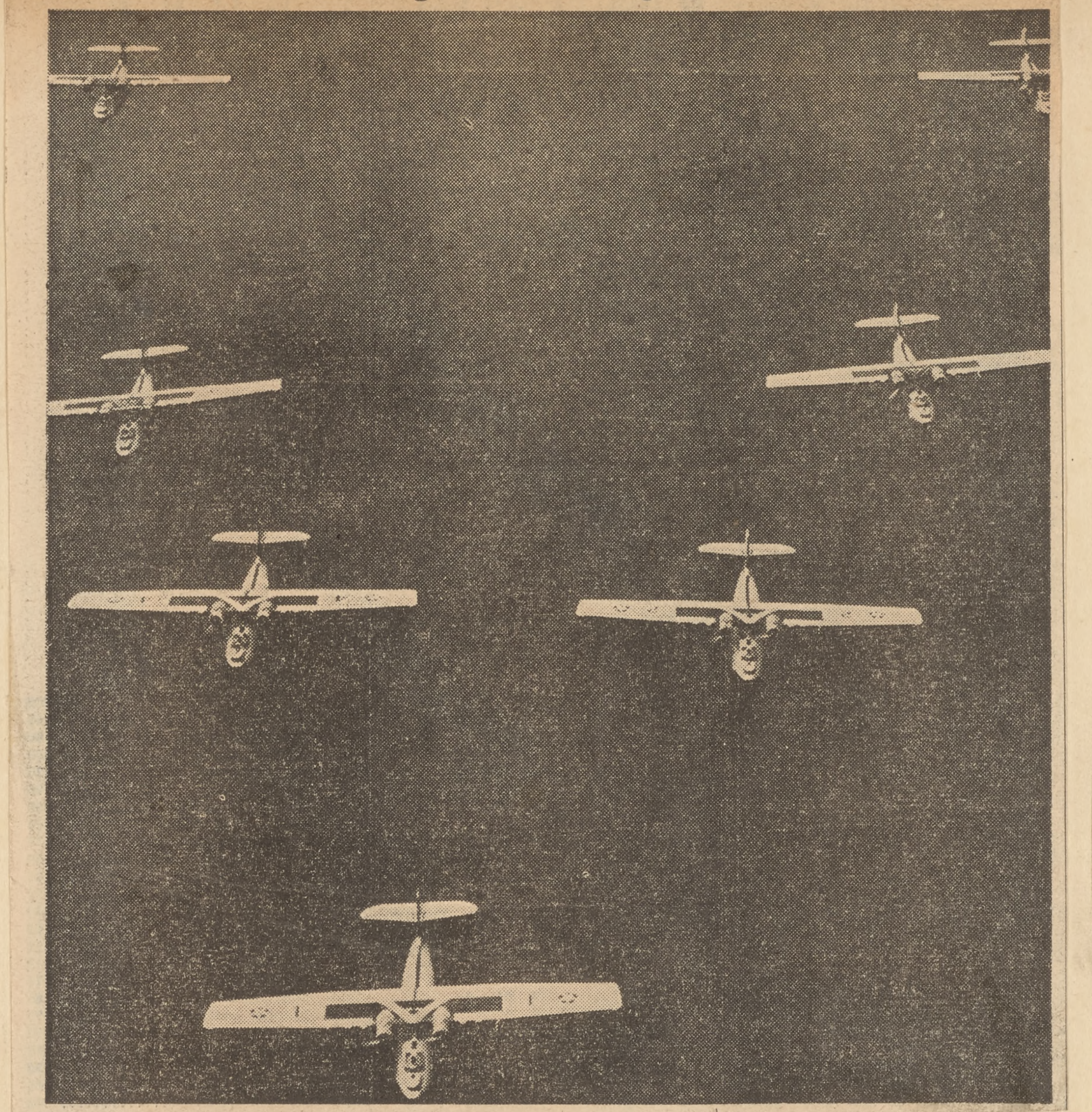
F.B.I. agents declined to talk about the investigation or say what caused it to be launched.

Harry Bridges, West Coast C.I.O. director, charged last January that Nazi agents were sabotaging planes in the Consolidated plant here. The charge was denied at the time by executives of the company and naval intelligence officers.

Bridges asked President Roosevelt for an investigation by the department of justice and claimed planes being constructed for the government in the Consolidated plant and the North American Aviation Co. plant at Los Angeles had been damaged by sabotage. He cited the 1938 accidents to "approximately 12 navy bombers manufactured by Consolidated."

Giant Bombers Practicing for Mass Flight, S. D. to Honolulu

S.D. TRIBUNE 5/16/39



Preparing for a mass flight this summer from San Diego to Honolulu, seven big two-motored navy patrol bombers of the 12-ship VP-1 squadron are shown, upper, in a practice formation flight over the Pacific after taking off from here. Leading the group is the plane of Lt. Comdr. Sam La Hache, commander of the squadron. Lower, La Hache, right, and Lt. Herschel House are shown in front of one of the planes conferring on plans for the flight.

MYSTERY AIRBOAT TRIES WINGS AGAIN

S.D. SUN 5/18/39

Consolidated Aircraft Corporation's half-million dollar twin-motored "mystery" airboat was taken aloft today in another series of test flights. The government is interested in the tests, as the 52-passenger ship represents new departures in construction.

Piloting the plane today was William B. Wheatley; George Newman Jr., co-pilot; Jack Kline, flight engineer, and Robert Tibbs, assistant flight engineer.

Consolidated officials said the flight was "routine," but it was understood pilots were instructed to test the ship for speed and endurance.

Air Commerce Bill Opposed

S. D. UNION

5/28/39

Further hearings on an assembly bill designed to place intrastate air operations under control of the state railroad commission will be held by the senate committee on aviation and aircraft Thursday afternoon, Sen. John D. Foley, committee chairman, notified the San Diego chamber of commerce last night. Taking the position that a "multitude of regulations" tend to retard commercial aviation, chamber directors voted 21 to 2 to oppose the measure pending in Sacramento.

Sen. Ed Fletcher, San Diego, member of the senate aviation and aircraft committee, notified the chamber that American Air Lines, Transcontinental and Western Air, Federated Trades and Labor council, Aircraft lodge 1125, International Assoclaiton of Machinists, Ryan Aeronautical Corp., Solar Aircraft Corp., San Diego harbor commission and "many other organizations and individuals" have voiced opposition to the bill.

Chamber directors held that for the present, control of commercial air operations, as vested in the civil aeronautics authority, created by the last congress, is adequate.

Maj. R. H. Fleet, Consolidated Aircraft Corp. president, informed the directors that approval of the measure, A. B. 2701, would tend to "destroy competition in commercial intrastate air operations, and would tend to create a monopoly in favor of existing lines."

Monday, May 1, 1939

PLANELY SPEAKING

By Major Al Williams

Westbrook Pegler is on his annual four-weeks vacation. While he is away, Major Al Williams, noted aeronautics authority and Scripps-Howard Aviation Editor, conducts a column in this space. —The Editor.

S. D. SUN

New Game Of Waiting For That Fellow To Drop His Other Shoe

FROM WHAT I can gather from the War College boys these days, surface fleets at sea are having a tough time cooking up plans for defense against air attack.

For instance: There's a hostile battleship and cruiser fleet loose, somewhere within a thousand square miles of ocean. Shore-based flying boats are out on a scouting mission to locate that fleet. The old Navy way to locate that enemy fleet would have been to send light, fast scouting cruisers and destroyers out.

Scouting Plans

Centuries of naval warfare developed a dozen or more cute little scouting plans. No naval commander would dare to split his strength, and was therefore forced to shape his fleet's position in line with what he thought the enemy wanted to do.

The modern air setup follows the basic plan of naval search. The long-range flying boats are all radio-equipped, and, spreading fan shape, they can comb an ocean in jig time.

Aerial observers enjoy a great advantage since they see the surface vessels long before they themselves are sighted or detected. They use this advantage by hanging in the low-lying cloud formations, or just far enough away from the surface fleet to maintain contact, but remain undiscovered.

They Congregate

Meanwhile, they radio the other searching aircraft, and in a short time these vultures congregate.

The fleet they are waiting to pounce upon has, of course, its aircraft carriers, with hundreds of little fast fighters on board. These little wasps could make it pretty hot for the big flying boats—if they knew they were near; and if near, where.

Modern long-range flying boats can remain aloft for 20-odd hours, and at some time during that period they will find visibility most suitable for attack and most disadvantageous for the defense.

The bad light just before sunrise, or the shading of sunset—plus cloud protection—gives all the surprise factors to the air attack. Hanging on in the distance, just waiting for the kill, the flying boats are generally in and out again before the surface fleet can get its guns manned and its aircraft carrier planes into the air.

First Attack

The first attack is launched against the aircraft carriers, the most vital elements of a fleet, and, at the same time, the most vulnerable. One 500-pound bomb on the landing deck, and an aircraft carrier is out of commission. And no matter how rabid the admirals may be about the superiority of steel-sided fleets, none dare maintain that such a fleet has a ghost of a chance against an enemy when stripped of all its fighting aircraft. This is one point they don't argue about.

And so the headache problem of naval strategists today is to be ever and always ready to ward off an air attack without demoralizing the crews of the surface vessels. Only a few minutes intervenes between the just-out-of-sight position of the bombers and the first bomb drop. During these few minutes guns must be manned, ammunition hoists in operation, range finders and keepers in the mast tops on the job, and squadrons warmed-up and launched from the carrier's decks.

Scared 'Em

Peacetime war games at sea have scared the wits out of the old seadogs, and they have learned from experience that the surprise attack is aviation's most deadly and unpredictable feature. They know the dread of bombers gathering in the distance—holding off for the bad light and flying for the kill.

It's a greatly expanded version of waiting for the fellow upstairs to drop the other shoe.

Most Powerful Plane Engine Goes to Army

Air-cooled radial develops 2,000 horsepower; only two needed for flying boat

Washington, D. C., May 15 (AP)—A step forward for the United States in the world race for air supremacy was disclosed today when the army announced the development of "the world's largest and most powerful air-cooled aircraft engine."

It is a 2,000 horsepower "duplex cyclone"—500 horsepower more powerful than the "cyclone 14" which has the highest power rating ever accorded an American-built air-cooled radial engine by the Civil Aeronautics Authority.

Its strength is indicated by an announcement from Louis Johnson, assistant secretary of war, that only two of them were required to fly the long-range consolidated flying boat which carries 52 passengers and a crew of five. It made its first flight last week.

The army already has tried out the engine with success on long-range bombers, and it may soon become standard for some categories of military planes.

Johnson said the engine had been developed by the Wright Aeronautical Corporation, Paterson, N. J., with the assistance of the Army Air Corps. Information in army circles is that a considerable amount of work of designing was done by the experimental experts of the Army Air Corps at Wright Field, Dayton, O.

The new engine is a double-row, air-cooled radial, with eighteen cylinders arranged in two rows of nine cylinders each. Johnson said it was "virtually two nine-cylinder engines built on one crankcase with a common crankshaft."

Two years were spent in developing it, Johnson said. It is based on the double-row "cyclone 14" engine of 1,500 horsepower but has four more cylinders.

The public will get its first glimpse of the new engine when the Army Air Corps puts it on display May 20th in the Aviation Building at the New York World's Fair.

"The Dope on Paint" — Continuation

May 1939

May 1939

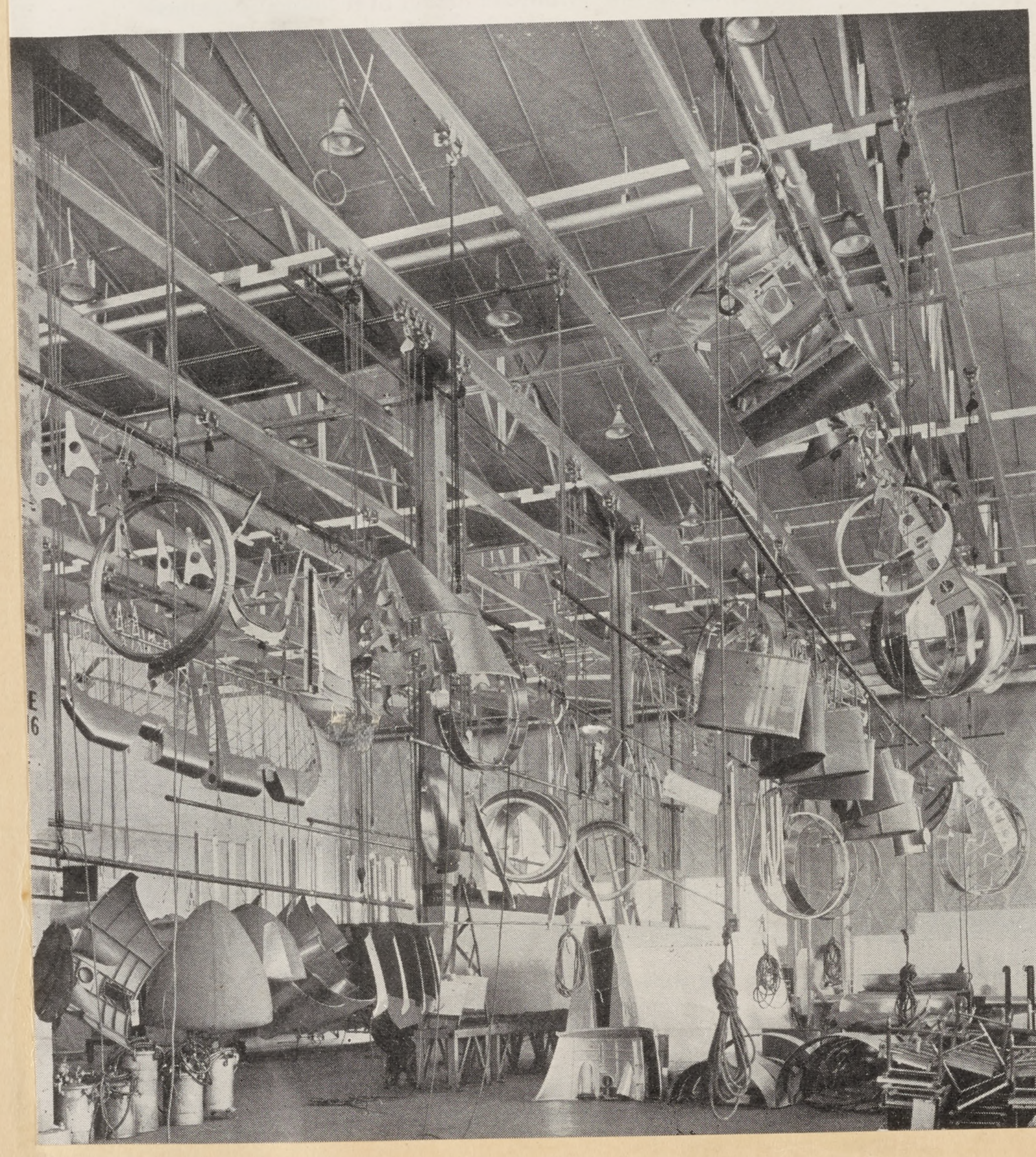
Western Flying

except by the long process of test and elimination of organic coatings available. As the aircraft industry increased in size and the synthetic resin suppliers and the paint manufacturers increased their technical staffs, organic protective coatings were made available to fit peculiar problems. The result today is that the larger users of coating materials have technical men well versed on organic protective coatings which fit their particular needs.

The first step in filling a peculiar need for a protective coating for aircraft was the use of a cellulose material on fabric to obtain a taut surface. Cellulose as we know it constitutes the principal material of the cell walls in plants, but when treated with sulphuric and nitric acids produces a film-forming material soluble in esters and alcohol, which we know as dope and lacquer solvents. The selection of proper solvents and plasticizers in nitrocellulose makes up the nitrated dope as used in the aircraft industry today. The most important point in the manufacture of dope is the control of nitrocellulose to plasticizer ratio, in a properly balanced solvent. Acetate dopes have been tried many times to replace the conventional nitrate dope system in the hope of overcoming the extreme fire hazard which goes with a nitrate dope. It is now generally agreed that the only cellulose material suitable for use on fabric in aircraft operation must be more or less of a non-thermal plastic nature.

In the early days of the production of aircraft the principal materials used in construction were steel, wood, fabric, and some aluminum. The aeronautical engineer's principal problem was making an airplane that would fly at the highest speed and maintain the highest pay load possible for his airplane and, of course, have a good margin of safety. These requirements make it necessary to use only the lightest gauges of aluminum alloy which in turn require a satisfactory protective coating for these metals. The many variables in the paint industry itself could offer very little technical information on organic coatings that would be of value to an aircraft designer without investigation.

The paint shop at Consolidated Aircraft Corporation showing the method of hanging finished parts from the monorail overhead.

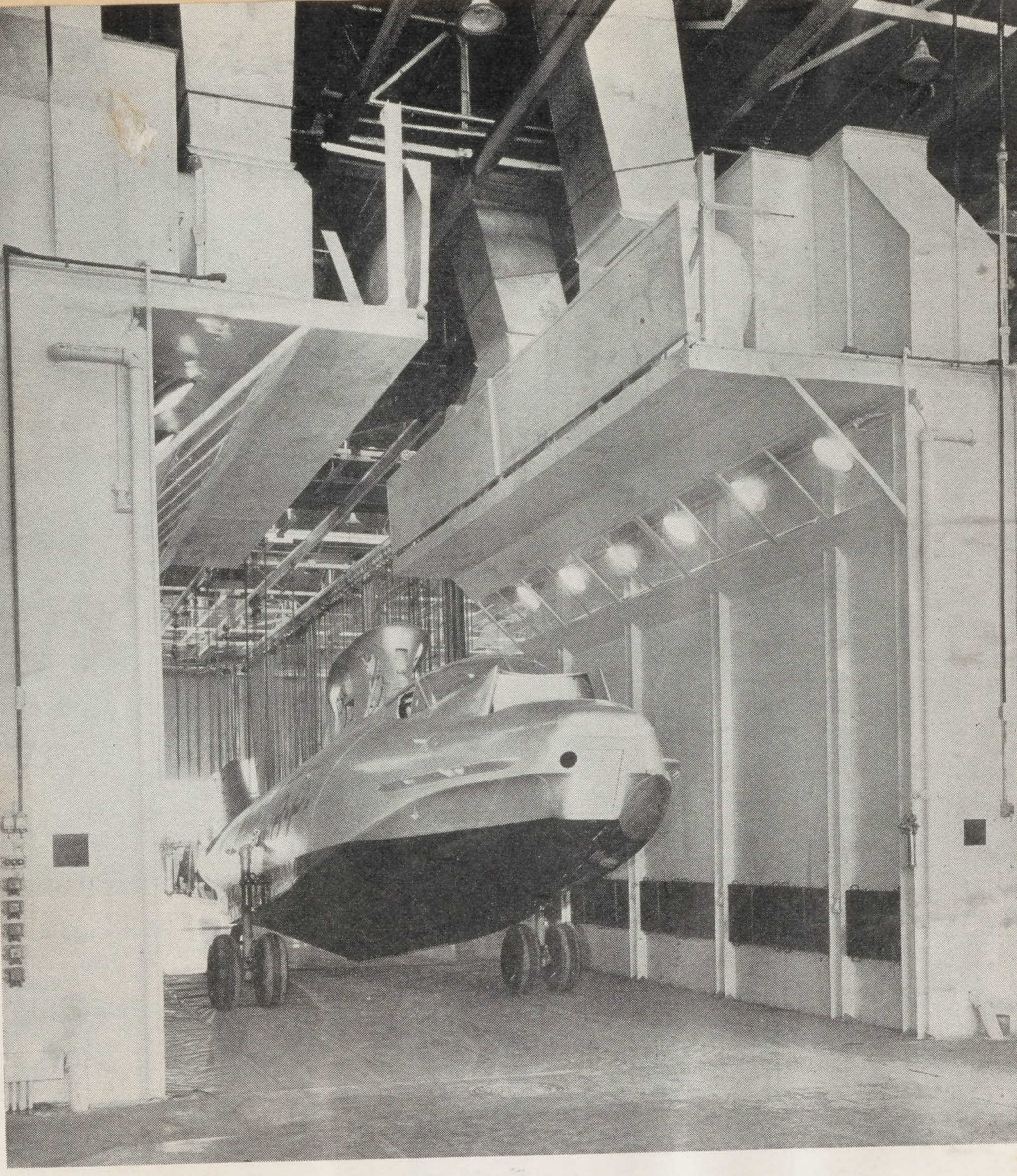


The first finish coatings commonly used 10 years ago were the oleoresinous type of enamel commonly known as the "four-hour enamel." The primer was of the iron oxide type but other types were used, such as pyroxylin or lacquer base. In those days the finishing systems seemed to always change with every new model and each aircraft manufacturer worked out the finishing system that he found most practical.

The Army and the Navy air services were compelled to work out a finishing system which would fit the peculiar needs of military aircraft. At the same time, such rigid specifications were drawn up as to enable the procurement of these products from any responsible paint manufacturer, because the government cannot purchase proprietory products on the open market. After many sad experiences with organic coatings on aircraft, the Army and the Navy air services, in cooperation with some of the larger aircraft manufacturers and aircraft operators, set up quite an extensive program to investigate the most suitable finishing systems for aircraft.

The results of this extensive investigation were tabulated more or less in a roundabout way, but they bring out some very interesting facts. Probably the most important discovery was that zinc chromate pigment was the only pigment available which had corrosion-inhibiting properties when used on aircraft metals. These tests were repeated many times with the same corrosion-inhibiting results. It was concluded that these corrosion-inhibiting properties were derived from the electrolytic depolarizing of the chromate ions liberated due to the slight water-soluble nature of this pigment. In 1934 the first steps were taken to incorporate this pigment into a proper synthetic base that would be suitable for use as a primer on aircraft metals. This was accomplished by blending pure glycerol phthalate resins with a special type of Bakelite resins, with the result that this primer today is a standard aircraft primer in the United States for all types of aircraft metal finishes.

The investigation for the most suitable finish coat produced a somewhat different reaction in the aircraft industry. Some of the people concerned were in favor of continuing use of the four-hour enamel as a finish coat. Others felt that the synthetic glycerol phthalate type would be much more suitable because these resins had better flexibility, gloss, and color retention when compared with the four-hour enamel type. Then a third group preferred a lacquer finish because of the fast-drying characteristics which would be a big advantage under production conditions and at repair stations. This condition continued for a long while, but every effort was made to come to some kind of an agreement.



A spray booth at Consolidated Aircraft Corporation, where an entire flying boat hull may be finished.

The operation of Naval aircraft was considered the most important from a protective standpoint because of the serious corrosion trouble which had to be considered in the development of a standard aircraft finish coat. It was agreed that a finish coat with lacquer drying characteristics which would yet maintain a gloss and color retention, with adhesion and flexibility of the glycerol phthalate enamels would be the ideal aircraft finish coating. From this information efforts were made to draw up synthetic lacquer specifications to produce a protective coating with the characteristics outlined. Today, these lacquers have a remarkable degree of flexibility, gloss, and color retention, yet dry to handle in about 30 minutes, are ready for masking in one hour, and in many respects are superior to the glycerol phthalate enamels.

With these new coatings which were especially developed for use on aircraft, a finishing schedule was finally worked out which is very simplified, giving a very practical and economical system with the maximum protective properties, and a saving in weight as far as finish coatings are concerned. This standard finish is using the zinc chromate primer for all interior surfaces and on exterior surfaces where finish coatings are specified. On interior surfaces a second coat is applied with this primer — plus a small amount of aluminum paste with a touch of black, so as to give the finish a soft, dull green tint. In many instances this scheme is followed through on the interior of cargo ships, crew quarters, etc. This finishing system works out to be not only the most durable finish obtainable, but also the lightest in weight.

In many cases the use of zinc chromate primer is also recommended for the inside of integral gasoline tanks, providing, however, about 10 days are allowed for air drying so as to completely oxidize the film. For the finishing of the inside of the pilot's cockpit the tendency is to finish in a dark, flat green rather than use the black as was the common practice. A study made on colors for pilot's cockpit indicates that green is preferable because the human eye adjusts itself more quickly from green to outside light than from black to outside light. Another study is being conducted concerning color with the lowest fatigue value for the finishing of interiors of long-range transports or flying boats. It appears that on long-range flying boats a pastel shade of blue-green, on the blue side, has the lowest fatigue value, and on long-range transport airplanes a pastel shade of blue-green, on the green side, has the lowest fatigue value.

The present accepted finishing system for fabric-covered airplanes is still the conventional nitrate dope which requires from seven to fourteen coats, depending upon the type of finish desired. One of the military air services requires a cadmium semi-pigmented dope, without the use of any clear dope. It has been found that cadmium pigment is very desirable to reduce fabric fires, as this pigment does prevent smouldering around any burns that might be made in the fabric finish from hot exhaust carbon or cigarette burns. However, this system will sustain combustion. Another trend to obtain fireproofing on fabric finishes and reduce fabric fire hazards is to obtain the required tautness with the conventional nitrate dope, but to finish with a pigmented fire-resisting acetate dope.

Some of the new products that may soon be introduced in the aircraft industry to serve some peculiar aircraft need will include synthetic organic plastics which are non-drying and non-hydroscopic formulated in such a way as to produce an ideal sealing compound for integral gasoline tanks, watertighting flying boat hulls, watertighting the wings, stratosphere sealing, and the insulating of dissimilar metals. The use of these compounds indicates that it will reduce engineering time and production costs probably 40 per cent over any other material on the market today.

STATE AIRLINE CONTROL HIT

C. of C. Opposes Assembly Bill

S. D. SUN 5/13/39

State Legislature

Growing opposition to an Assembly bill designed to place intra-state commercial airline operations under the control of the State Railroad Commission was indicated today in reports reaching the Chamber of Commerce from Sacramento.

Meanwhile the Senate Commission on aviation and aircraft Thursday afternoon will conduct further hearings on the measure, Sen. John D. Foley, committee chairman, notified the chamber.

By a vote of 21 to 2 chamber directors voted to oppose the bill, holding that "a multitude of regulations tends to retard commercial aviation."

Sen. Ed Fletcher, member of the Senate aviation and aircraft committee, notified the chamber that the American Air Lines, Transcontinental and Western Air, Federated Trades and Labor Council, Aircraft Lodge 1125, International Association of machinists, Ryan Aeronautical Corp., Solar Aircraft Corp., San Diego Harbor Commission and "many other organizations and individuals" already have voiced opposition to the bill.

CAA 'ADEQUATE'

Chamber directors held that for the present, control of commercial air operations, as vested in the Civil Aeronautics Authority, is adequate.

Maj. R. H. Fleet, Consolidated Aircraft Corp. president, informed the directors that approval of the measure, A. B. 2701, would tend to "destroy competition in commercial intra-state air operations, and would tend to create a monopoly in favor of existing lines."

BRITISH INTEREST IN U.S. FLYING BOAT

BOMBER WITH DUAL USE

By Group Capt. L. G. S. Payne

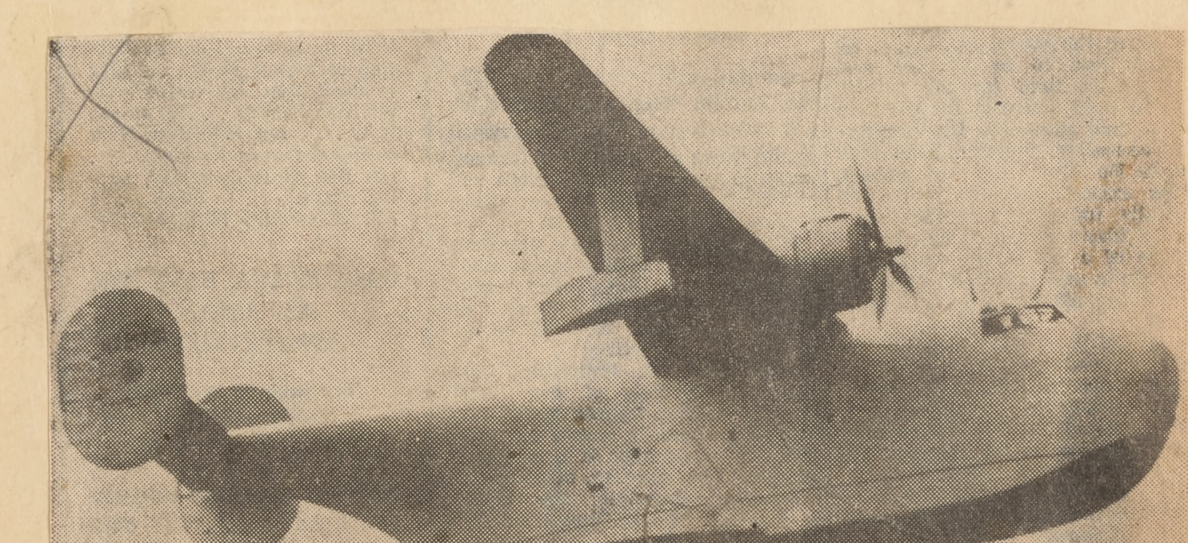
According to a B.U.P. message, officials of the Consolidated Aircraft Corporation of San Diego, California, declared yesterday that Great Britain was now interested in purchasing 'planes similar to the Consolidated PBY long-range flying boat.

This can be employed either for reconnaissance or bombing, and is used by the United States Navy.

It is said that the first indication of British interest in these machines was afforded when the company's officials and English experts began to seek men for a crew to fly an experimental machine across the Atlantic this summer.

When equipped with two Wright Cyclone engines, the PBY boat has a top speed of 204 m.p.h. and a maximum range of 4,000 miles.

D.T. 15/5/39



NEW FLYING BOAT TAKES THE AIR—The secretly-built 25-ton, double-decker flying boat, constructed at San Diego, Cal., by the Consolidated Aircraft Corporation, is shown in the air in its successful first ~~test~~ flight Saturday. The big ship will have a load capacity of 52 passengers and ~~a~~ crew of five. (AP) Wirephoto

SAN DIEGO NORWEGIAN COLONY AND CHAMBER HOSTS TO PRINCE AND PRINCESS

S.D. UNION 5/17/39

The local Norwegian colony and chamber of commerce were hosts to their royal highnesses, Olav and Martha, during their San Diego visit and here they are with D. E. Hanson, chamber president, and Roy Hegg, Norwegian representative.

Military cooperation has been extended from coast to coast in making their American tour pleasant for Prince Olav and Princess Martha. Shown with them are, left to right, Vice Adm. E. J. King, Rear Adm. Sinclair Gannon, Maj. Gen. Louis McC. Little and Col. R. E. Guthrie.

Royal Visitors Smile on S.D.

S.D. UNION 5/17/39

'Beautiful—Kind, Say Olav, Martha

By RUTH TAUNTON

Out of the land of brave Norse legend came Crown Prince Olav and Crown Princess Martha yesterday to make us feel anew what a wonderful thing is international friendship and the brotherhood of man.

Without the slightest sign of pose or snobbery, the democratic heir to the throne of Norway stepped from an automobile in front of U. S. Grant hotel at 12:30 yesterday afternoon and lent a strong arm to his princess before turning to the cheering crowd.

Appealing in his sincere naturalness, his greetings to the welcoming committee at the hotel, to the press in a close, small bedroom, to civic and military officials in Sala de Oro, to 150 guests at Casa del Rey moro luncheon, to the public in the House of Pacific Relations and to those who took his party on a tour of Consolidated Aircraft factory included expressions of gratitude for the hospitality of Americans on his 70-day tour of the United States.

"THANK YOU, THANK YOU"

Likewise, his last words at Santa Fe station where the royal party took the streamliner for San Francisco at 4:15 were: "Thank you, thank you, thank you! San Diego is so beautiful and her people are so kind. The princess and I never will forget. I hope—sincerely hope—we may meet again."

Tall, broad shouldered, with sea-blue eyes and thinning blond hair, Prince Olav has the tenor-pitch voice that comes as such a surprise from one of his athletic build and prowess. And there was more sunshine in his smile than all southern California was able to muster for their trip into our southland, although there was blue sky overhead when Olav and Martha walked beside the pansy beds from the House of Hospitality to Norway cottage in the Park's international colony.

Roy Hegg, Norwegian vice consul; John Johnson, Norwegian cottage president, and Dr. H. V. Sverdrup, Norwegian-born scientist, welcomed the prince and princess at U. S. Grant hotel and Hegg was official host for all entertainment of the afternoon.

POSE FOR PICTURES

After they had rested in their suite for only 10 minutes, Prince Olav, wearing a gun-metal gray suit and black tie, entered the room where reporters and photographers were waiting. With him was Princess Martha, her black costume reminding one that the court at Norway still is in semi-mourning for the English-born Queen Maud, mother of Olav.

Urbane and seemingly unwearied by continuous rounds of entertainment provided for them since their arrival in New York April 27, they posed for pictures and then looked expectantly at the battery of interviewers.

Asked if he could pass on to the United States the secret that has kept Norway out of war for 100 years, the prince's answer implied that it might be because his country has no designs on what belongs to another—and that Norway, happy and prosperous as a small country, yet has little to stir envious designs in the hearts of aggressors.

"We have only one neighbor," he said, "and we are at peace with her. We do not go afield looking for trouble."

The prince, speaking of modern social progress in Norway, said that men and women have complete equality before the law. Both he and his princess raised their eyebrows in surprise when they were told that such is not the case in the United States.

"But why?" asked the prince. "You are one of the most industrially modern nations in the world."

SPEAKS IN NORWEGIAN

Speaking briefly at the luncheon, the prince said that, unlike the '49ers, he and his princess did not come to California to seek gold or to speculate in oil.

"We came to America," he said, "just because we wanted to know you and to see the land in which you live. What we hear of California, land of sunshine and plenty, conjures up visions you could hardly imagine in those of us who live in faraway northlands."

In the House of Pacific Relations, where representatives of many nationalities greeted the royal visitors, Martha stood by the side of her prince while he addressed the throng first in Norwegian and then in English, pleading that "every individual in the world work for a just peace of cooperation and progress."

Then came an experience new to the Crown Prince and Crown Princess from Oslo, judging from their expressions of mingled interest and utter bewilderment. They viewed a Navajo sand painting. They met Chief At-sidda Begay of New Mexico. Confused, but irreproachably polite, the royal couple received the blessings of Chief Albanes, San Diego county Mission Indian in full native dress, after Dr. C. E. Nelson has explained that the prince was to be an honorary chief. And every inch the perfect guests, they gave undivided attention to tribal songs as each chief presented his solo.

SHAKE CHIEFS' HANDS

"Because we were the first Americans," said the Mission Indian chief, "and because California originally was our own, I came down from Palomar mountain to welcome the prince and princess of Norway. My ancestors, too, were rulers.

"Thank you very much," said Olav—and Martha extended a black-gloved hand to each chief.

From the House of Pacific Relations the party was taken to the Consolidated Aircraft factory where Major Reuben H. Fleet personally conducted them on a tour of the plant.

Gifts to the royal couple included a corsage of lilies of the valley (national flower of Norway) and orchids from the House of Norway club to the princess; red roses from Our Savior's Lutheran church; a tinted picture of the House of Norway in a silver frame, and a beautiful floral flag of Norway (red, white and blue flowers) from Sons of Norway lodge. The flag decorated the table at which the prince and princess sat at luncheon.

The civic and military reception for the visitors was held in Sala de Oro preceding the luncheon, when they were welcomed by Mayor Percy J. Benbough; D. E. Hanson, chamber of commerce head; Vice Adm. E. J. King, Rear Adm. Sinclair Gannon, Maj. Gen. Louis McC. Little, Col. R. E. Guthrie and other dignitaries.

The police motorcycle escort, on duty from the time the seven-car caravan entered the city limits until the departure of the royal couple by train, led the way across Cabrillo bridge and in the main plaza of the park the prince and princess received a military salute and the marine band played "Fa, Vi Elske" ("Yes, We Love Our Country"), the Norwegian national anthem. Marine musicians played from the balcony throughout the luncheon and they contributed to the House of Pacific Relations program.

It was the prince himself who provided the occasion for the band to play our own national anthem when, at the luncheon, he lifted a glass of water and proposed a toast to the President of the United States.

A San Diego Bid For Role in Air

May 22 1939

Special to The Christian Science Monitor

SAN DIEGO, Calif.—San Diego makes its bid for a role in the trans-Atlantic air drama with the Consolidated Aircraft Company's new 25-ton flying boat.

The air liner can carry 28 passengers across the Atlantic, and 52 passengers on shorter trips, according to officials of Consolidated. The plane has a wing span of 110 feet, is 73 feet long, 22 feet high, and has a maximum wing chord of 14 feet.

Two full decks, one above the other, provide for a flight control room and eight compartments for passengers.

The ship is powered with two 18-cylinder twin-row radial engines, each capable of generating 2,000 horsepower at the take-off. They are said by the War Department to be the world's largest and most powerful air-cooled aircraft engines.

Construction is of aluminum-coated aluminum alloy skin internally reinforced with longitudinal stiffeners and transverse bulkheads and frames.

Ten months were required for design and construction of the craft, and the Navy Department was in touch with the Company during the construction period. The ship is designed to operate with a crew of five—pilot, co-pilot, flight engineer, radio operator, and navigator.

Test flights of the new craft were successfully completed shortly after it was hauled from the factory.

ARCHBOLD STARTS 20,000-MILE FLIGHT TODAY IN RETURN FROM AUSTRALIA

S.D. UNION 6/2/39

Richard H. Archbold, associate director, American Museum of Natural History, will take off from Sydney this afternoon for a 20,000-mile return flight to San Diego via Africa, the West Indies and Miami.

Piloting the $250,000 Consolidated built "flying laboratory" with which which he completed a successful scientific expedition in Netherlands New Guinea, Archbold first will attempt to span Australia on a 2200-mile non-stop flight.

BLAZE AIR ROUTE

From Port Hedland on the east coast of the land of the southern cross, Archbold will head out over the Indian ocean to Mombassa, Africa. From Mombassa he will fly to Lake Victoria, thence to Dakar, St. Thomas and Miami. He is expected to arrive at San Diego July 1.

Archbold will blaze a new air route of almost 5000 miles over the Indian Ocean to East Africa.

The flight is sponsored by Capt. Percy G. Taylor of Sydney, who proposed it five years ago, urging the route as an alternative for the England-Australia airmail service in time of war, The Associated Press reports.

BONUSES FOR CREW

Taylor has been prominent in Australian aviation for many years. He was the late Sir Charles Kingsford-Smith's navigator on flights from Australia to New Zealand in the "Southern Cross" in 1933 and 1934 and second pilot on the flight from Brisbane to California in the "Lady Southern Cross" in 1934.

Archbold will receive no payment from Australia as owner of the Guba, but the crew of the flying boat will receive bonuses.

Lewis A. Yancey, American aviator who flew the Atlantic to Rome in 1929, will be navigator, and Russell Rogers, veteran American flying boat pilot, will be first pilot.

Archbold Maps Hazardous Flight Across Australia In Airboat Guba

The Consolidated airboat Guba, owned by Richard Archbold, scientist-aviator, will take off from Sydney at 10 p. m. (PST) tomorrow, (weather permitting) in an attempt to span Australia non-stop on a 2200-mile flight, it was learned today.

With Mr. Archbold and Russell Rogers as co-pilots, the San Diego-built plane will set as its goal, Port Hedland, on the east coast of the continent, after a hazardous crossing over an area where large water bodies are scarce.

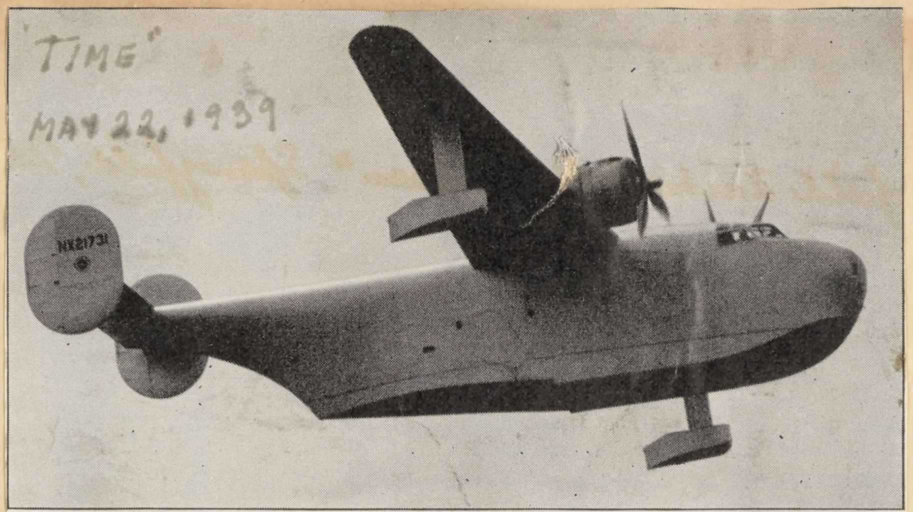
SURVEY FLIGHT

From Portland, the Guba will fly across the Indian Ocean to Mombasa, Africa, on a survey flight for the Australian government to establish an air route over friendly territory to be used as a reserve line for Great Britain's communications with Australia in event of war.

Three island groups will serve as stops on the Indian Ocean in a 5400-mile hop. From Mombasa, the Guba will head for Lake Victoria, in the African interior, and on to Dakar, on the east coast, before proceeding across the Atlantic to St. Thomas, Virgin Islands. From here, the seaplane will fly either to Miami or New York and then to San Diego, where it is expected about July 1.

EXPLORATION TRIP

Accompanying the Guba on the first crossing by airplane of the Indian Ocean will be Capt. P. G. Taylor, noted Australian trans-oceanic aviator. The plane has been used for the last year in transporting personnel and equipment into The Netherlands New Guinea jungles for an American Museum of Natural History expedition, headed by Mr. Archbold. Exactly one year ago tomorrow, the Guba left San Diego on a 7500-mile flight to New Guinea, via Honolulu and Wake Island. It has flown more than 100,000 miles since. S.D. SUN 6/1/39



"TIME" MAY 22, 1939

Associated Press

CONSOLIDATED'S MODEL 31
Her wing and range attracted the Navy's nose.

Perfect Wing

From the sprawling Consolidated Aircraft Corp. factory on Lindbergh Field a huge flying boat waddled down to land-locked San Diego Bay one day last week. In the bright California sun her slim wing looked absurdly frail, her huge hull with its upswept stern grotesquely fat. Nevertheless, her little band of professional observers knew they were watching a plane designed to be the last aerodynamic word of 1939.

With her two 2,000-h.p. Wright Cyclones rumbling, she taxied out to open water, swung into the wind and poised for flight. Spindrift ripping from her slim stern, she was up on the step. Then she was in the air.

From the beach, factory executives in shirt sleeves, mechanics in overalls watched the new 52-passenger ship as she swung out past Point Loma. Among them, none watched more intently than Engineer David Richard Davis, because none had a bigger stake in her than he. For David Davis had designed her slim 110-foot wing, had calculated on the drawing board and in the wind tunnel that it was close to perfection.

What Pilot Bill Wheatley had to say when he landed confirmed Designer Davis' calculations. Consolidated's new 25-ton Model 31 had a high speed of 275 m.p.h. (75 miles faster than Boeing's four-motored *314* clipper), handled nicely in the air. Gasoline consumption showed that she had a range of 10,000 miles with a light passenger load, that she could lug 28 passengers in Pullman accommodations across the Atlantic at a speed unprecedented for commercial flying boats.

Designer Davis' wing, flush-riveted and smooth of contour, had justified his prediction that it would be 20% more efficient than any in the air today. The product of ten years of work, it had been tried in Caltech's aeronautical laboratories and in test rigs of its designer's own devising. Whether he had achieved a smooth flow of air over virtually its entire surface as National Advisory Committee for Aeronautics has done with its new wing curve (TIME, May 15), David Davis modestly declined to say.

With the Davis "perfect wing" as a starter, Consolidated in ten months built its new boat from the ground up without help from Army or Navy. Long before the ship had flown, however, the news of its spectacular 10,000-mile cruising range was out, and the Navy, one of Consolidated's best customers, poked in its nose. At week's end it appeared likely that Model 31's first assignment will be as a patrol bomber for the fleet.

S. D. AIRPLANT SPIES HUNTED

S.D. SUN 5/23/39

G-Men Probe Charges Made By Bridges

The Federal Bureau of Investigation has started an investigation of charges that Nazi spies are active in San Diego's Consolidated Aircraft Corp. and the North American Aviation Co. of Los Angeles, the United Press reported today from San Francisco.

Three Federal agents, it was disclosed, have been making a quiet inquiry of sabotage charges contained in a telegram from Harry Bridges, West Coast CIO director, to President Roosevelt last Jan. 23.

Mr. Bridges was reported to have offered Federal authorities additional alleged material to support charges of sabotage in plants making planes for the Army and Navy. Mr. Bridges has been in Washington this week and was due to return to San Francisco tonight.

SABOTAGE CHARGED

In his telegram to the President Mr. Bridges charged that Nazi spies, in the guise of employes, had entered the San Diego and Los Angeles aircraft companies, and had sabotaged airplanes under construction.

He charged further that government and company officials had declined to make an investigation. Mr. Bridges appealed to the President to place the inquiry in the hands of "some Federal agency, free of employer coercion."

NAVY CRITICIZED

Mr. Bridges also said that "all the Navy has done" about recent crashes of its airplanes "is to hold short inquiries to determine whether investigations are necessary.

The CIO director also declared that "Nazi agents and Bund members" served the two-fold purpose of acting as "labor spies and union disrupters, while deliberately sabotaging planes."

AIRBOAT READY FOR HOP TO N. Y.

Consolidated Plane To Take Off Tuesday

S.D. SUN JUNE 2, 1939

Aviation

With Civil Aeronautics Authority officials completing their inspections, the plane is ready for commercial air service, the Consolidated airboat of American Export Airlines is being groomed today for a transcontinental hop to New York soon, it was announced at the plant today. The ship will be used on three transatlantic survey flights this summer.

The plane is scheduled to make a round-trip "shakedown flight," to Boulder Dam possibly next week, and at daybreak the following morning the craft, with a six-man crew, will take off from the bay for Galveston, Tex., where she will be refuelled before proceeding either non-stop to New York or via Norfolk, Va., according to Capt. P. J. Byrne, commanding officer.

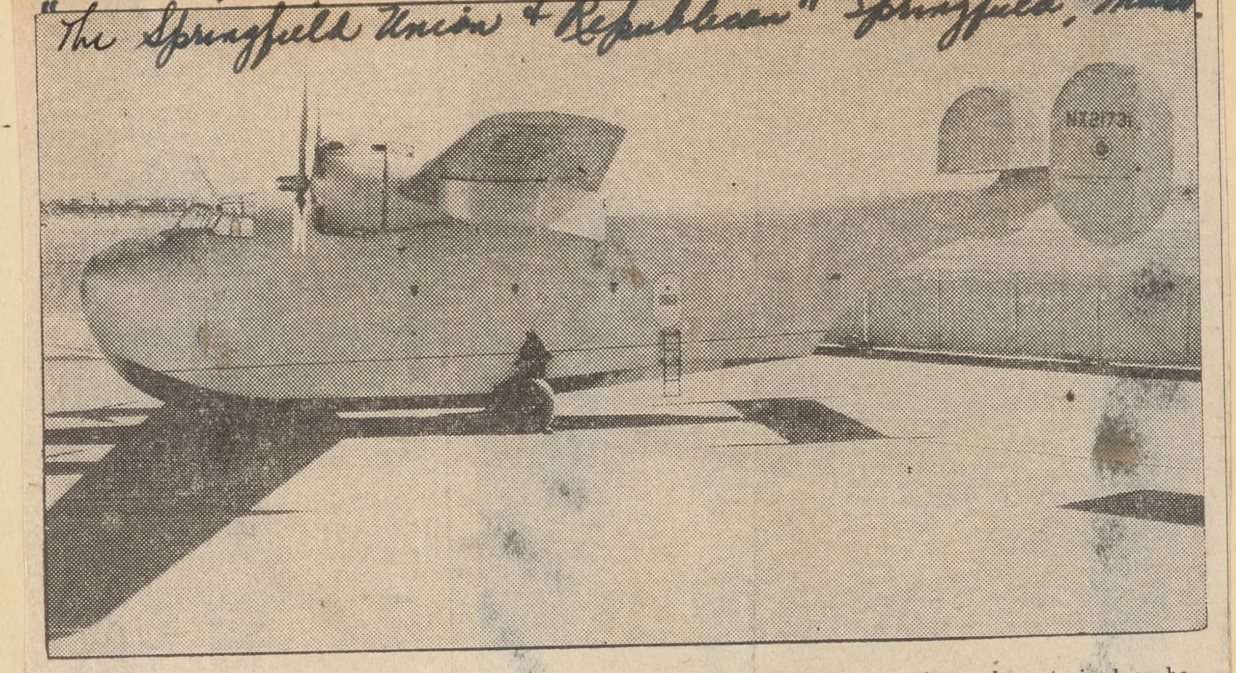
Flight tests which failed to satisfy CAA inspectors have delayed the plane's departure since mid-March.

Included in the crew, in addition to Capt. Byrne, will be T. S. Terrill, first officer; M. J. Doyle and R. V. Carlson, engineering officer, and W. W. Ehmer and E. L. Stuhrman, radio officers.

Consolidated's Latest Bid

May 7, 1939

"The Springfield Union & Republican" Springfield, Mass.



What makes this 25-ton flying boat of special interest is the fact that it has been characterized as being capable of flying nonstop from the West coast to Asia and back as far as Wake island, at a speed of little less than 300 m. p. h. Although the company denies these predictions, information about the plane points to tremendously improved performance over present flying boats.

Take a look at this flying boat which Consolidated Aircraft corporation of San Diego, Cal., first showed to the public Friday. It has been constructed under strictest secrecy and was the subject of a yarn by Jim Bassett, West Coast aviation writer credited with knowing his aviation. Bassett's story predicted the craft could fly nonstop to China, from the California coast, and back as far as Wake island. Not only this, but it would be able to cruise at a speed of between 285 to 300 miles per hour.

While the company officially denied the story in all detail, aviation experts and observers throughout the country declared such performance was impossible, and then, after a second thought, began to wonder just how such potentialities would change the nation's defense picture. Possessors of a number of such flying boats could bomb the East coast, with a start and return in Europe.

"Greatly Exceeds PBY"

The company, in announcing its new craft, fails to indicate performance figures, but contents itself with saying "the model 31 greatly exceeds the PBY in speed, range and load capacity." The PBY had a top speed of 190 m. p. h. at 10,500 feet; a range of 4000 miles, and cargo capacity of slightly more than 4½ tons.

In gross weight, the model 31 is nearly twice as big as the PBY, scores of which are in navy service as patrol bombers. Approximate gross weight of the new craft is 50,000 pounds, as compared to 27,080 pounds for the PBY.

New twin-row 18-cylinder radial engines developed by Wright will develop a maximum of 2000 horsepower apiece for takeoff. This is 500 horsepower more, per engine, than the Wrights installed in the Boeing Clippers. Two engines on the Consolidated job will turn up 66 2-3 per cent the power capacity of the four power plants of the Boeing giant. Hamilton Standard hydromatic propellers 16 feet in diameter are used.

Vital statistics include: Wing span, 110 feet; overall length, 73 feet; hight, 22 feet, and maximum wing chord, 14 feet. The flying boat is built of aluminum-coated aluminum allow skin, internally reinforced with longitudinal stiffeners and transverse bulkheads and frames. Wings, tail surfaces and the planing surface of the hull bottom are flush-riveted.

A new method of handling wing floats has been devised. Whereas the wing tips of the PBY were so constructed as to serve as wing floats, the wing tips of the model 31 are too small, comparatively, to permit retraction at the tip. The wing is full cantilever, with integral fuel tanks in the center section. The outboard floats retract to the under side of the wing panel.

The hull has two full decks, as in the Boeing, with the upper deck for flight control work, with eight additional compartments available for crew, cargo, etc.

Not Guided by Government

Concerning its new craft, Consolidated's spokesman wrote:—

"Unlike previous experimental flying boats which were constructed by the Consolidated Aircraft corporation under government contract, the model 31 is the corporation's private venture. While the navy department was cognizant of the construction, the development has not been financed by the government nor subjected to the ordinary procurement routine which adds materially to the cost and time for construction. Only 10 months were required for the design and construction of the airplane, whereas development of types of similar magnitude has required from two to three years heretofore.

"The flight compartment has been completely soundproofed and furnished with all latest type instruments and equipment. As a commercial airliner, the model 31 has a maximum capacity of 52 passengers for day operations and 28 passengers (sleeper) for night operations. For transatlantic flights, the airplane has accommodations for 28 passengers."

FINAL AIRBOAT TESTS SLATED

CAA Men To Observe Consolidated Plane

S.D. SUN 5/23/39

Aviation

Final tests to satisfy Civil Aeronautics Authority officials as to the airworthiness of the craft will be conducted here this week on the Consolidated airboat "Model 28," a replica of the Navy's PBY bombers to be used by American Export Airlines for several trans-Atlantic survey flights this summer.

Latest in several delays on acceptance of the big seaplane by the CAA, has been occasioned by modifications of fuel-dumping apparatus, required by the government on all commercial flying boats.

LAST DEMONSTRATION

The last mid-air fuel-disposal demonstration was scheduled for this afternoon. If CAA inspectors approve of the operation, the ship will be prepared for a takeoff possibly late this week on a nonstop flight along a mid-continent route to New York.

With trans-Atlantic service already inaugurated by Pan American Airways, American Export Airlines is anxious to finish its survey flights and begin regular passenger and mail schedules in competition.

Meanwhile, the firm, which spent about $200,000 for its plane in San Diego, has filed with the CAA in Washington, D. C., an application for a permanent certificate of convenience and necessity covering routes between New York, or Baltimore and Charleston across the Atlantic via Botwood, Newfoundland, to Foynes, Ireland; Horta, Azores, Biscarosse and Marseilles, France.

AIDED BY SHIPS

Helping the airboat on its survey flights will be a fleet of 18 surface ships of American Export Lines, Inc., the airline's parent concern. From five to eight of these vessels are nominally at sea at all times between New York and Gibraltar and will radio complete weather and direction finding information along the flight routes.

Immediately after the proving flights, the concern proposes to purchase enough airboats to operate two round-trips a week with mail and express. Following this experience, American Export plans to acquire long range craft capable of carrying 40 or more passengers in addition to mail and express next year.

NEW MODEL LURES

Officials of the company have expressed interest in the new Consolidated twin-engined "Model 31," which can fly 10,000 miles non-stop and has a capacity of 52 passengers.

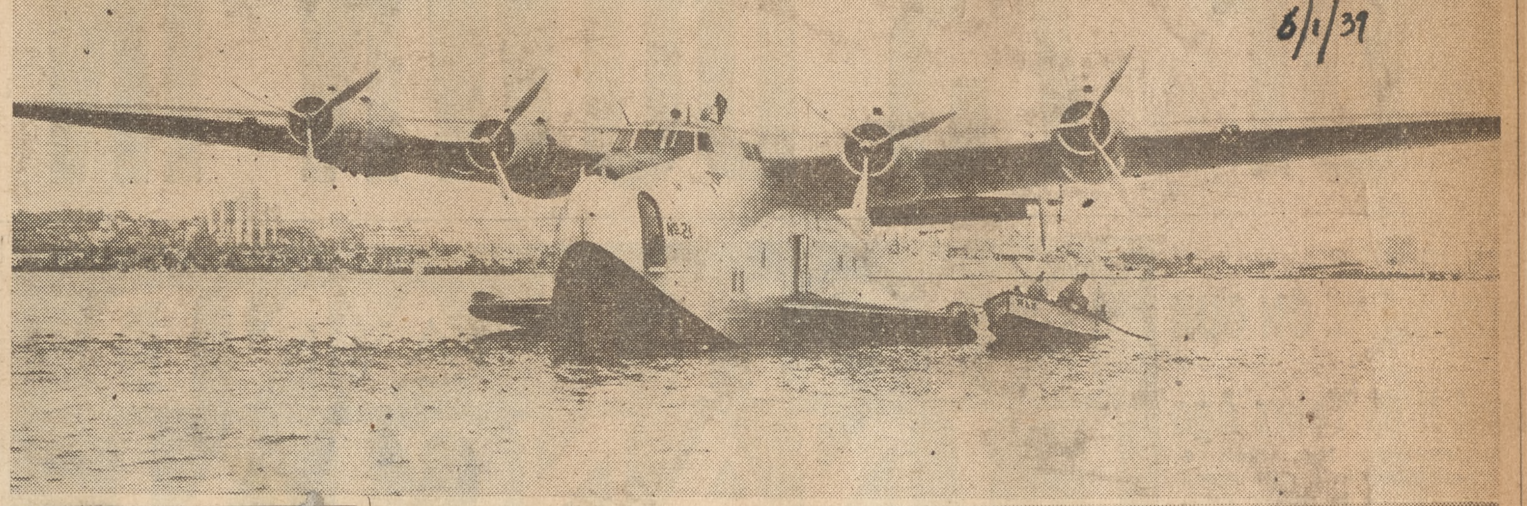
A gloomy financial picture was given by the firm in its application for the trans-Atlantic route certificate. It predicted a gross revenue of $37,500 the first year, increasing to $250,000 the fifth year, as against a net loss, without compensation for mail carriage, of from $2,065,000 the first year to $2,108,000 the third year.

The "Model 28" will be piloted by an experienced six-man flight crew led by Capt. P. J. Byrne.

New Transatlantic Clipper Spends Night on San Diego Bay on Long Hop

~~S.D.TIME~~

S.D.TRIBUNE 6/1/39



The Pan American Airways' huge clipper, which arrived here yesterday from San Francisco, is shown on San Diego bay. The plane, piloted by Capt. R. O. D. Sullivan, took off at 5:30 a.m. today for Baltimore, from where it will be operated with the line's Yankee Clipper in transatlantic service. Lower: Comdr. Andrew Crinkly, U.S.N., pilot of the navy's Consolidated-built XPB2Y-1 four-motored plane, left, welcomes Sullivan.

S.D.SUN ~~NEWS~~

S. D. SAIL PLANERS WIN TOP HONORS

JUNE 5, 1939

Three San Diego sailplane pilots won top honors in the opening day's competition of the second annual southwestern soaring contest at Wichita Falls, Tex., it was reported here today.

John Robinson, who has broken the national altitude record unofficially three times in flights from Clark Dry Lake, Borego Valley, flew his streamlined craft "Robin" 165 miles from Wichita Falls, staying in the air six hours, 15 minutes. Although approximately 50 miles short of his goal, Amarillo, the 24-year-old pilot was awarded a $100 prize for his performance.

On another long-distance attempt, Woodbridge Brown of La Jolla landed six miles from Chillicothe, Tex. Alan Essery, in a two-place sailplane with Lucretia Boxton of Lennox, Cal., as passenger, won the first goal-to-goal flight for craft of that class by landing at Electra, 27 miles from Wichita Falls. The three are planning to continue to Elmira, N. Y., on completion of the Texas meet next Sunday to seek national laurels.

S.D. SUN 5/31/39

S. D. EXECUTIVE NEW CHAMBER DIRECTOR . . . A. J. MacFadden (center), re-elected to presidency of the California State Chamber of Commerce, welcomes Reuben H. Fleet, executive of the Consolidated Aircraft Corporation of San Diego (left), and George G. Hoberg, of Lake county, recently elected Chamber directors.

ARCHBOLD TO START 2200-MILE HOP TODAY

Richard Archbold and the flight crew of the San Diego-built airboat Guba, accompanied by Capt. P. G. Taylor, Australian transoceanic aviator, were scheduled to take off at 11 p. m. (PST) today from Sydney on a non-stop 2200-mile hop to Port Hedland, on the east coast.

ARCHBOLD ON SECOND LEG OF HOP; FLIES NEW ROUTE FROM AUSTRALIA

S.D. UNION 6/5/39

The San Diego-built flying boat Guba, carrying Richard H. Archbold, research director of American Museum of Natural History, took off from Port Hedland, Australia, yesterday on the second leg of a 20,000-mile flight from Sydney to San Diego via Africa, the west Indies and Miami, The Associated Press reported.

Archbold's destination is the island of Cocos, which became a British possession in 1857. From Cocos, the new airway-blazing flight will be to the island of Diego Garcia in the Chagos islands group which also belongs to Britain.

After a brief stop here, the Guba will wing its way to the Seychelles group of islands, thence to Mombassa, Africa. From there the route will be to famed Lake Victoria in mid-Africa, to Dakar on the African west coast, St. Thomas, D.W.I., Miami and home to San Diego.

Archbold left Sydney for Port Hedland Saturday and made the 2000-mile nonstop flight in less than 18 hours.

Lewis A. Yancey, American aviator who flew the Atlantic to Rome in 1929, is naviagtor of the Guba and Russell Rogers is first pilot.

The flight from Sydney to Mombassa over a hitherto uncharted airway of the Indian ocean is sponsored by the Australian government.

The American Museum of Natural History's scientific expeditionary base at Hollandia, Netherlands New Guinea, is to be abandoned this week when two members of the expedition, William Richardson and Dr. Bass, sail for the U. S.

S. D. Soaring Pilots Win Texas Honors

S.D. UNION 6/5/39

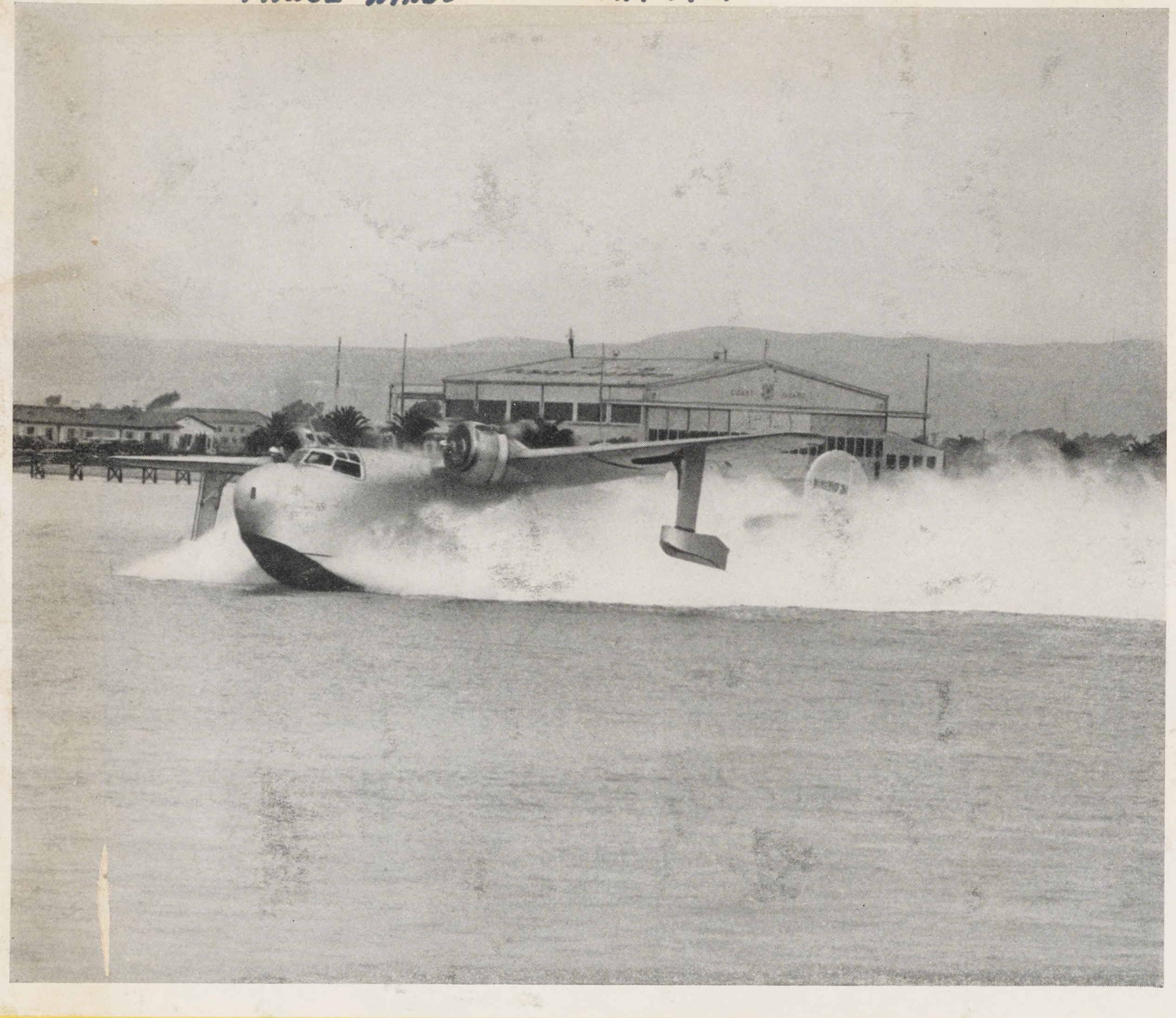
San Diego sailplane pilots scored heavily in the opening day events of the second annual southwest soaring meet at Wichita Falls, Tex., yesterday, The Associated Press reported.

John Robinson took first honors when he remained aloft 6 hours and 15 minutes but he failed in his projected hop from Wichita Falls to Amarillo, 210 miles airline. His actual flight distance was 165 miles. He received a $100 prize.

Woodbridge Brown, La Jolla, landed six miles from Chillicothe after being in the air three hours.

Dick Essery, another San Diego pilot, and Miss Lucretia Buxton, Lennox, Calif., won the first goal flight to Electra, a distance of 27 miles from Wichita Falls.

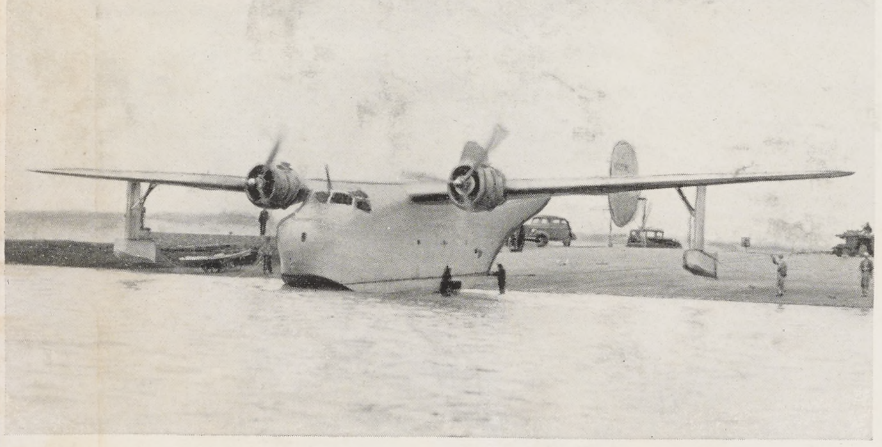
"TRADE WINDS" MAY 1939



"Two Duplex-Cyclones Make a Consolidated Announcement."

New Consolidated 52-Passenger Flying Boat Powered by Two 2000 H. P. Duplex-Cyclones

"TRADE WINDS" MAY 1939



Consolidated Aircraft's new 52-passenger long-range flying boat enters the water for the first time. Powered by two 2000 h.p. Wright Duplex-Cyclones, the most powerful radial, aircooled, aircraft engines in the world, it incorporates many distinctive new features which give it remarkable performance. Among these is the so-called "perfect wing," a flush-riveted structure with improved aerodynamic qualities.

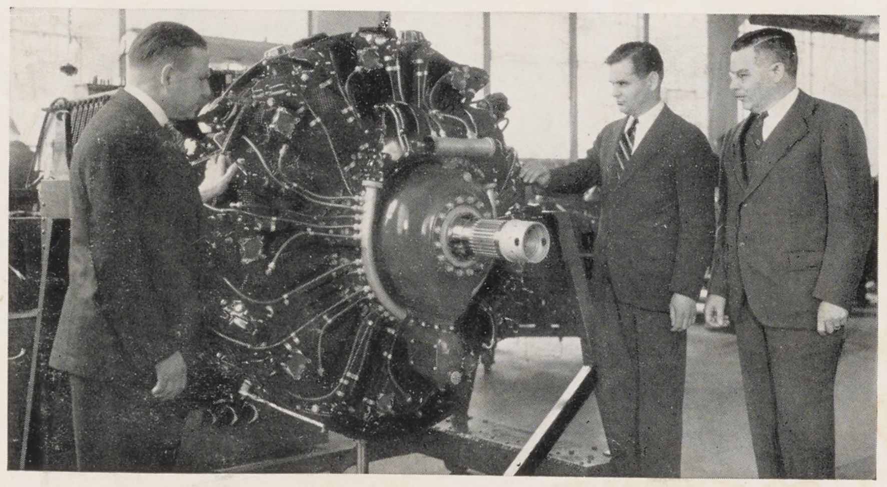
FROM the waters of San Diego Bay, one day early this month, there rose on its maiden test flight a gigantic flying boat pulled aloft by the tremendous power developed by 36 Wright Cyclone cylinders. The 4,000 h.p. which virtually catapulted the latest development of the Consolidated Aircraft Corporation into the air, however, was not the output of four 1000 h.p. Cyclones but the power developed by the largest pair of radial air-cooled aircraft engines which ever have lifted an airplane off the ground or the water — two Wright Duplex-Cyclones — 18 cylinder, double-row engines each rated at 2,000 h.p.

Duplex-Cyclone

Close upon the heels of the announcement of the successful test flight of the new Consolidated commercial boat designed to carry 52 passengers and a crew of five over long distances, came an official dispatch from Washington that the Duplex-Cyclone with which the ship is powered was the development of the Wright Aeronautical Corporation and the Army Air Corps engineers. Assistant Secretary of War Louis Johnson, who made the War Department announcement, characterized the new engine as the most powerful aircraft engine of its type in the world, stating further that "it is 500 h.p. more powerful than the 1500 h.p. Wright Double-Row Cyclone 14 which has the highest power rating ever accorded an American-built air-cooled radial engine by the Civil Aeronautics Authority."

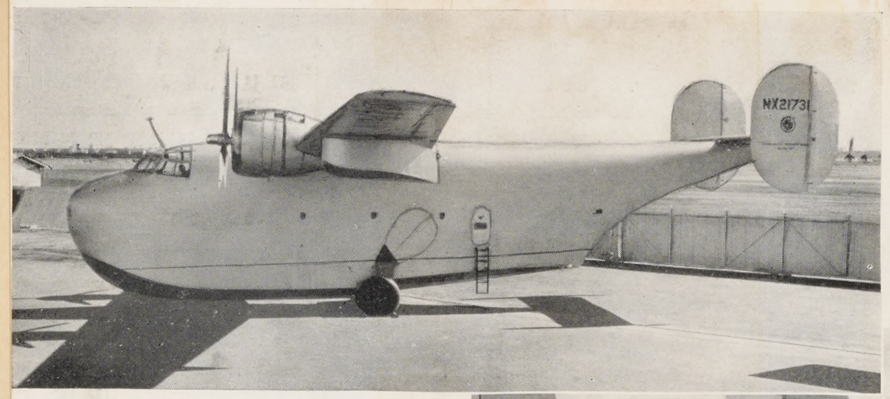
18-Cylinders

The name Duplex-Cyclone, selected by the Wright company for the new power plant, is particularly apt. The 2000 h.p. engine is, as its name implies, two nine cylinder Cyclones built on one crankshaft. The two rows of cylinders are staggered in construction as is customary in double-row radial engine design, i.e., the cylinders in the rear row are arranged on the crankcase to fill in the gaps between the cylinders of the front row, providing an adequate flow of cooling air over cylinders of both front and rear banks.



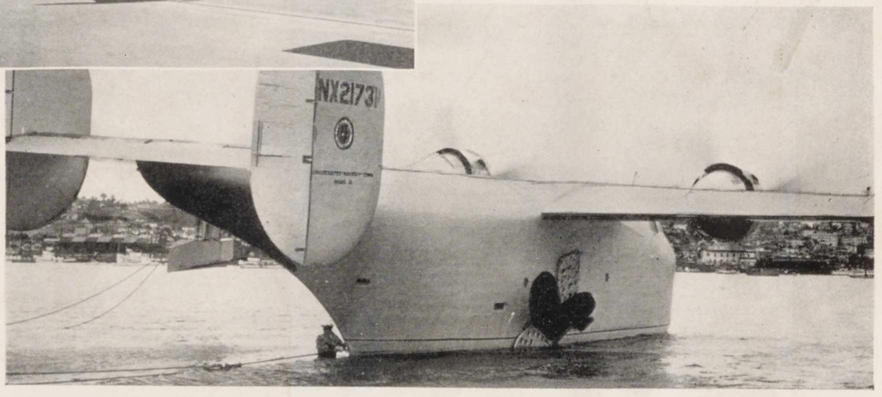
Officials of the Wright Aeronautical Corporation examine a 2000 h.p. Duplex-Cyclone which is now on exhibition at the New York World's Fair by the U. S. Army. Shown left to right are George Chapline, vice-president of sales; P. B. Taylor, chief engineer; and M. B. Gordon, vice-president and general manager. Other views of the engine on a pedestal-type stand are shown on the following page.

TRADE WINDS MAY 1939



A new type of retractable beaching gear is featured in the Consolidated Model 31 flying boat. When retracted the gear is fully enclosed in the bottom and sides of the hull. The gear may also be removed if desired.

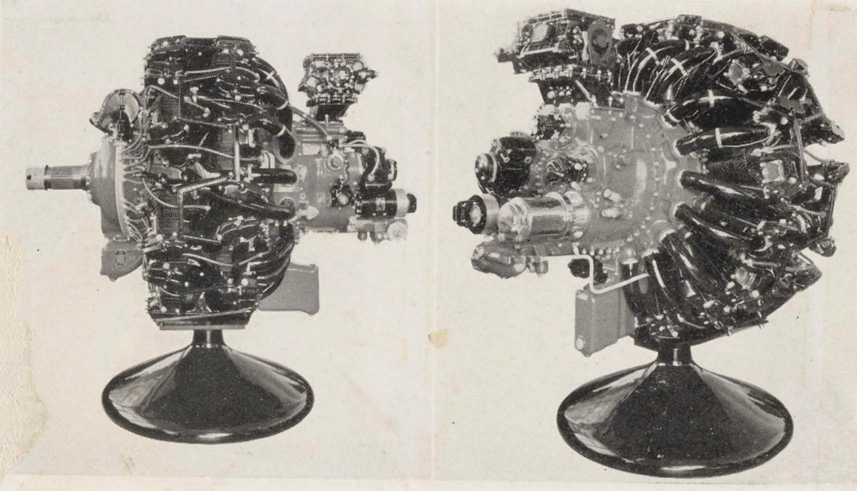
Operation of the retractable beaching gear is demonstrated as the ship enters the water. Wheels fold into compartments in the side and are closed in by doors.



As new as the 2000 h.p. Duplex-Cyclones with which it is powered is the Consolidated flying boat. The latest commercial product of an aircraft manufacturer who has designed and built some of the world's finest naval and commercial flying boats, the huge new craft was designed and completely constructed in the comparatively short space of 10 months. Development of types of similar size, the manufacturer pointed out, usually required two to three years.

Weighs 25 Tons

With a gross weight of approximately 50,000 pounds (25 tons), the new long range Consolidated ship, designated the Model 31, will have a maximum capacity of 52 passengers for day operations and 28 passengers as a sleeper for night flight. If used for trans-Atlantic operations, it will accomodate 28 passengers in spacious, comfortable quarters. The 22 foot high by 73 foot long fuselage contains two full decks, one above the other, providing a large flight control cabin and eight large passenger compartments.



Side and three-quarter rear views of the 2000 h.p. Wright Duplex-Cyclone which is being exhibited by the U. S. Army Air Corps at the New York World's Fair. This engine develops 500 horsepower more than the Double Row Cyclone 14 which has the highest power rating ever accorded an air cooled radial engine by the Civil Aeronautics Authority.

The monoplane wing which mounts the two 2000 h.p. Duplex-Cyclones of the Model 31 has a span of 110 feet and a maximum chord of 14 feet. The wing is of full cantilever construction with fuel tanks built integral with the center section, following standard Consolidated practice. Hydraulically operated Fowler flaps extend from the inboard side of the ailerons to the hull.

Retractable Floats

The outboard floats, also a Consolidated development which eliminate the necessity of sponsons or stub wings attached to the hull near the water line for stability, retract to the underside of the outer wing panel instead of to the tip of the wing as in the famous Consolidated PBY series of flying boats. Ailerons and flaps are fabric covered. Tail surfaces consist of a full cantilever stabilizer with twin fins and rudders. Rudders and elevators are fabric covered.

The fuselage or hull is constructed of aluminum coated aluminum alloy skin internally reinforced with longitudinal stiff[illegible] and transverse bulkheads and frames. The wings, tail surfaces and planing surface of the hull bottom are flush-riveted.

Beaching Gear

A unique feature of the Consolidated Model 31 is its hydraulically operated retractable tricycle beaching gear. Standard practice on flying boats is merely to provide fittings for the attachment of equipment of this type. On the Model 31 a nose wheel, housed in a well in the bottom of the hull, and twin main wheels, which swing upward into the sides of the hull, are provided. The side wheels are removable as well as retractable. All three wheels are completely enclosed within the hull by doors leaving no projections from the hull to interfere with maximum efficiency in flight.

CONSOLIDATED.

THE CONSOLIDATED AIRCRAFT CORPORATION.

HEAD OFFICE AND WORKS: LINDBERGH FIELD, SAN DIEGO, CAL.
Incorporated: May, 1923.
President and General Manager: R. H. Fleet.
Vice-President and Chief Engineer: I. M. Laddon.
Vice-President [illegible] Factory Manager: C. A. Van Dusen.
Secretary: [illegible]anberry.
Treasurer: W. M. Shanahan.

During 1937-38 the Consolidated Aircraft Corporation continued the engineering and research work which it has carried on in recent years in high-performance military aeroplanes. Orders for the PBY-1, PBY-2 and PBY-3 were completed and the completion of orders for the PBY-4 was expected early in 1939, making an aggregate production of 250 PBY boats for the U.S. Navy alone.

In addition to normal production the Company built the PB2Y-1 four-engined patrol flying-boat for the U.S. Navy. Full tests of this flying-boat were expected to be completed at the end of 1938.

THE CONSOLIDATED PBY SERIES.

TYPE.—Twin-engined all-metal long-range patrol-bombing flying-boat.

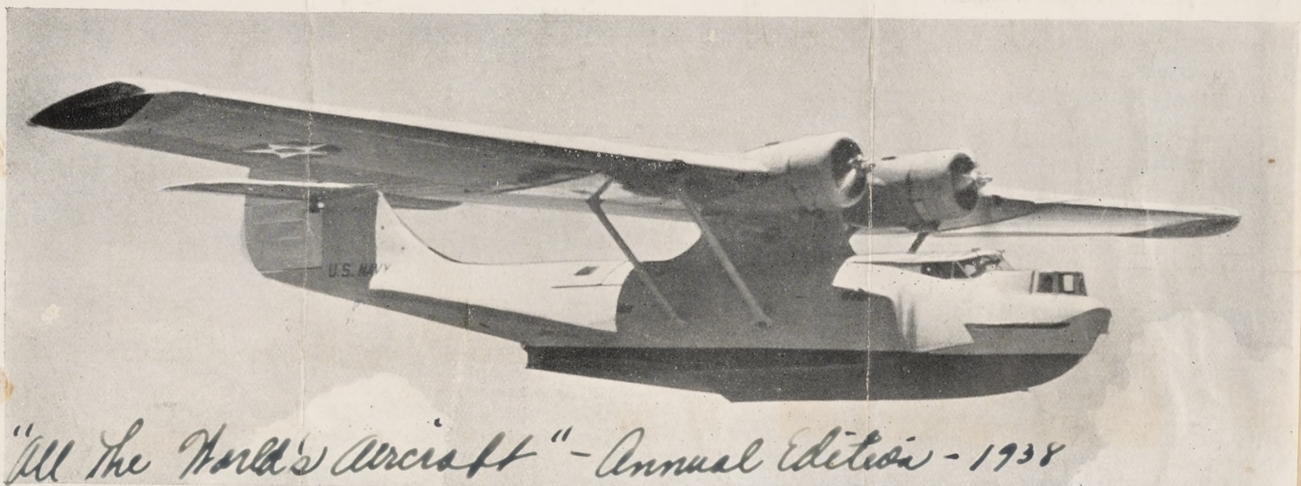
WINGS.—Semi-cantilever high-wing monoplane. Wing in three sections, the centre-section supported above the hull by a streamline superstructure and braced by two pairs of parallel streamline struts to the sides of the hull. Wing structure is of the beam bulkhead and stressed-skin type, the skin being reinforced with "Z" section extruded stiffeners. The trailing-edge section consists of aluminium alloy ribs cantilevered from the main beam and covered with fabric. Aluminium-alloy-framed balanced ailerons covered with fabric. An adjustable camber device is installed on the upper surface of the ailerons.

HULL.—Two-step semi-circular topped hull, of all-metal construction. Aluminium-alloy bulkheads, framing stringers and skin. All-metal retractable wing-tip floats. When the floats are retracted they form tips to the wings and the float struts and bracing structure are recessed flush with the lower surface of the wings. Electrical and mechanically-operated retracting mechanism. Automatic locks and warning lights.

TAIL UNIT.—Monoplane cantilever type. Lower fin built integral with the hull. Tail-plane and upper section of fin covered with smooth metal sheet reinforced with extruded sections. Elevators and rudder are aluminium-alloy structures with fabric covering. Trimming-tabs in elevators and rudder.

POWER PLANT.—Two 1,000 h.p. Pratt & Whitney "Twin-Wasp" R-1830-S3C3G or Wright "Cyclone" GR-1820-G103A radial air-cooled engines on welded steel-tube mountings in the leading-edge of the centre-section. N.A.C.A. cowlings. Hamilton-Standard constant-speed airscrews. Fuel tanks (1,750 U.S. gallons) are integral with the structure of the centre-section.

ACCOMMODATION.—Bow compartment for mooring gear, etc. Enclosed pilot's compartment seating two side-by-side with dual controls. Engineer's station in hull below centre-section. Details of military equipment not available.



"All The World's Aircraft" - Annual Edition - 1938

The Consolidated PBY Patrol Flying-boat (two 1,000 h.p. Pratt & Whitney "Twin-Wasp" engines).

ARCHBOLD SAFE IN EAST INDIES

Scientist-Aviator Lost Six Hours

S.D. SUN JUNE 5, 1939

Aviation

Lost for six hours on a 1350-mile flight from Port Hedland, western Australia, to Cocos Island in the Indian ocean, Richard Archbold, millionaire scientist-aviator, and six-man crew in the Consolidated airboat Guba landed at Batavia, Netherlnds East Indies, today as a search was being organized for them, the United Press reported.

The plane had taken off from Port Hedland at 12:30 a. m. Sunday, San Diego time (6:30 p. m. Sunday, Australia time), only six and a half hours after completing a 20-hour flight from Sydney 2200 miles non-stop across the Australian continent.

BEARINGS LOST

Six hours overdue at Cocos Islands, Mr. Archbold radioed that he had lost his bearings and was flying back to Batavia, with his fuel running out. He had circled the ocean, he reported, apparently only about 100 miles from Cocos Island, but was unable to contact a ship which could give him radio cross bearings.

As the hours passed, anxiety increased and Prime Minister R. G. Menzies of Australia wirelessed the British representative in Batavia to start a search for the airboat.

UNPRECEDENTED HOP

Mr. Archbold was on the first leg of an unprecedented survey flight to Africa for the Australian government, over a route never before attempted by plane. In the crew of his San Diego-built plane were Lewis Yancey, navigator; Russell Rogers, co-pilot; Gerald Brown, flight engineer; Raymond Booth, radio operator; Stephen Barrinka, assistant engineer; and Capt. P. G. Taylor, noted transoceanic navigator representing the Australian government.

The Guba is expected back in San Diego about July 1.

S.D. SUN 6/8/39

Guba Reaches Famed Cocos

Archbold To Return To S. D. July 1

A second attempt to reach Cocos Island in the Indian Ocean had been successful today for the Consolidated airboat Guba, commanded by Richard Archbold, millionaire research associate of the American Museum of Natural History.

The San Diego-built plane flew from Batavia, Netherlands East Indies, where it had landed early this week after the crew lost its bearings on a flight from Port Hedland, on the west coast of Australia, to Cocos Island. Total distance of the journey from Batavia—first lap in a survey jaunt across the Indian Ocean to Africa for the Australian government—was approximately 1000 miles. About three days will be spent in Cocos Island, which gained international attention during the World War, when the notorious German raider Emden was wrecked on its shores after a battle with an Australian battleship.

Two more island stops—at Diego Garcia and Mahe—are scheduled in the Indian Ocean before the Guba lands at Mombasa, Kenya Colony, Africa. From there the local plane, which was used to transport material and personnel in a Netherlands New Guinea expedition during the past year, will continue across Africa and the Atlantic to San Diego, arriving here about July 1.

Consair Plane Hops East for Atlantic Test

S.D. UNION 6/8/39

San Diego's entry in the race for commercial air supremacy over the Atlantic ocean, the Consolidated model 28-4, a development of the famous PBY navy plane, left yesterday morning at 4:35 for France, via Galveston and New York.

The plane landed at Galveston at 3 p.m. San Diego time yesterday afternoon, The Associated Press reported, and is to start this morning on the next leg of its flight.

Consolidated officials reported the craft has been purchased by American Export lines to survey an Atlantic route which the line expects to develop in competition with Pan-American, now operating an Atlantic service with clipper planes.

After servicing and checking in New York the plane is to begin its transatlantic flight about June 21, according to reports received here.

Aboard the big ship when it roared off the bay a few minutes before sunrise were Capt. P. J. Bryne, T. S. Terrill, first officer; W. W. Ehmer, radio officer; Michael J. Doyle, engineering officer; R. V. Carlson, assistant engineering officer, and George Newman, Consolidated test pilot. All the others are Export line airmen.

The ship has a wingspread of 104 feet and is 67 feet over-all. The gross weight is 30,500 pounds and it is powered with two 1200-horsepower twin row engines swinging 12-foot propellers. Its number is NC-18997.

FIVE GLIDERS IN AIR FOR RECORD TRIES; THREE FROM S. D.

WICHITA FALLS, Tex., June 8 (A.P.)—Tulsa this afternoon was the goal of four southwestern soaring meet pilots carried northward on a strong tail wind while a two-seater transport plane headed for Oklahoma City.

The five ships left municipal airport between 11:40 a.m. and 12:15 p.m.

Woody Brown, of San Diego, who set a new American distance record Tuesday with his flight to Wichita, Kan.; John Robinson, of San Diego, No. 2 man of the meet; Harvey Stephens, Los Angeles movie actor, and Delbert Booth, of Lafayette, Ind., soared aloft for Tulsa.

Dick Essery, of San Diego, was piloting the transport with Jack Begley, of Wichita Falls, as navigator. S.D. TRIBUNE 6/9/39

New York Next Goal Of Consair Plane

S.D. TRIBUNE 6/8/39

A Consolidated-built plane, recently purchased by American Export lines to survey an Atlantic air route, was expected to arrive at New York today after a one-stop flight from San Diego which began yesterday. The plane was at Galveston, Tex., last night, and took off from there for New York at 3:18 a.m. (PST). The plane is expected to start its Atlantic survey work June 21.

Another Consolidated-built plane, the Guba, $250,000 flying boat owned by Richard Archbold, research associate for the American Museum of Natural History, is at Cocos island, in the Indian ocean, on a survey flight across that ocean for the Australian government. Archbold is expected to depart Saturday for Diego Garcia, in the Chagos islands group, where, after a stay of a few days, he will proceed to the Seychelles islands, and then to Kenya colony, from where he plans to span Africa and the Atlantic, bound for San Diego. Archbald left here a year ago this month in the Guba for New Guinea to carry on a scientific expedition for the museum.

ARCHBOLD LANDS AT COCOS; AFRICAN EAST COAST NEXT.

S.D. UNION 6/8/39

San Diegans following the progress of Richard Archbold's flying boat Guba on its westward flight to San Diego from the far east are finding the job of converting antipodes time to local time rather confusing.

F. A. Learman of Consolidated Aircraft, where the Guba was built, got a message yesterday that the ship had arrived at Cocos island at 4 p. m. Australian time Tuesday.

But it seems that Australian Tuesdays are San Diego Wednesdays, so the ship didn't land at Cocos until Wednesday morning around 2 o'clock, as nearly as Learman could figure.

The Cocos island mentioned is not the famous one of that name off South America, but lies about 1500 miles from Australia and 800 west of Java. The Guba, which flew from San Diego to the far east is going on around the world.

Archbold expected to stay three days on Cocos before leaving for Mombassa, British East Africa, he notified Barney Boyd, local radio amateur.

S. D. 'SOARERS' SMASH MARKS

S.D. SUN 6/9/39

'Big Three' Pilots In Wichita Falls Meet

Sailplane

San Diego's "big three" of soaring—Woody Brown, John Robinson and Dick Essery—continued to smash national records in phenomenal sailplane performances at the southwestern gliding meet in Wichita Falls, Tex.

Mr. Essery, with Jack Begley of Wichta Falls as passenger, flew to Oklahoma City yesterday, 109 miles, to crack the distance record for two-place sailplanes.

ALMOST DOUBLED

This almost doubled his own previous mark, set Tuesday, when he flew with a passenger from Wichita Falls to Lawton, Okla., 64 miles.

Woody Brown piloted his motorless craft to Shawnee, 80 miles short of his predetermined goal, Tulsa, completing a 155-mile flight in four hours, 17 minutes. Last Tuesday he set a national distance record of 280 miles and national altitude mark of 7600 feet on a flight from Wichita Falls to Wichita, Kan.

182 MILES

John Robinson, unofficial holder of the U. S. record at 11,000 feet, maneuvered his sailplane 182 miles to five miles north of Bristow, Okla., yesterday.

The San Diegans have monopolized all honors at Wichita Falls, and will depart at conclusion of the meet Sunday for Elmira, N. Y., to compete for the national soaring championship.

S.D. UNION 6/14/39

Archbold Spans Sea Stretch in Latest Hop

Richard Archbold, flying his $250,000 Consolidated flying boat Guba on a 1717-mile flight from Cocos Island, was believed to have landed yesterday at the Diego Garcia islands about 1000 miles south of Ceylon.

Word of the take-off from Cocos island at 5 a. m. (P.S.T.) yesterday was received here by Barney Boyd, radio amateur. No further word of the plane's progress was received. Radio contact with the ship has been irregular, however, Boyd reported, and he expected to receive word of the Guba's safe arrival at the Diego Garcia isles early today.

ARCHBOLD WORKS ON 1800-MILE HOP

S.D. SUN 6/9/39

HONOLULU, T. H.—As casually as he might face a trip across the street, Richard Archbold, young Standard Oil heir, tinkered with his $250,000 plane on remote Cocos Island today, preparing for an 1800-mile hop across open water to Diego Garcia Island, a tiny spot in the Chagos archipelago, lying almost due south of India's tip.

Archbold and his six companions flew to Cocos Island Wednesday from Batavia, in the Dutch East Indies, by way of Christmas Island, according to belated word received by Amateur Radio Operator Harold Smith. As is his custom, he did not announce his departure and made no attempt to keep in touch with radio operators during his flight.

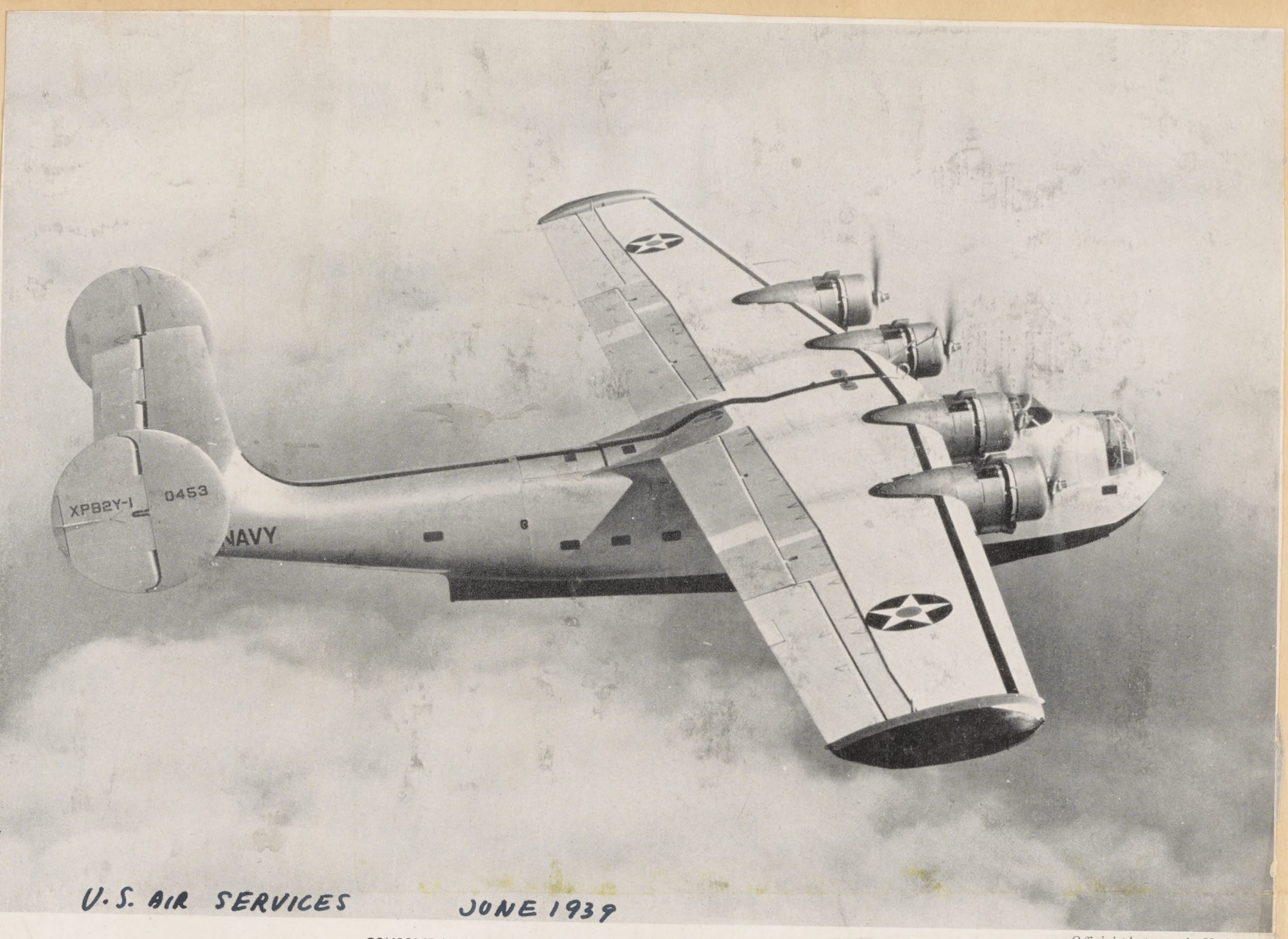
HAROLD RAMM GLAD TO BE BACK IN S. D.

S.D. SUN 6/13/39

Glad to be home after 14 months in the Netherlands New Guinea wilderness, Harold Ramm, radioman of the American Museum of Natural History Expedition led by Richard Archbold, was enjoying well-earned rest here today, while awaiting orrders from his "boss," which may carry him to another strange destination.

Mr. Ramm returned from Hollandia, New Guinea, being met at the dock in Wilmington by his wife, who has not seen him since he left their former residence in Denver Febuary, 1938.

He was with the first group of scientists to arrive in New Guinea, and established the powerful short-wave station PK6XX, which kept in direct contact with San Diego, 7500 miles away, as well as the interior auxiliary stations in the New Guinea jungles. First of the expedition to return from the tropics, Mr. Ramm will rest in San Diego until arrival of the Archbold airboat, Guba—now flying the Indian Ocean—about July 1.



U.S. AIR SERVICES JUNE 1939

CONSOLIDATED EXPERIMENTAL PATROL BOMBER IN USE BY U. S. NAVY

Official photograph, U. S. Navy

Equipped With Pratt & Whitney Engines, This Airplane Indicates Trend of Our Navy Toward Long-Range and Greater Ordnance Carrying Facilities

---

"All the World's Aircraft" – Annual Edition – 1938

#3059

The Consolidated PBY Patrol Flying-boat. This view shows the beaching chassis and the lowered wing-tip floats.

DIMENSIONS.—Span 104 ft. (31.72 m.), Length 65 ft. 1 in. (19.83 m.), Height 18 ft. 6 in. (5.64 m.).

WEIGHTS AND LOADINGS (Pratt & Whitney "Twin-Wasp" engines).—Weight empty 14,240 lbs. (6,465 kg.), Weight loaded 27,080 lbs. (12,295 kg.), Wing loading 19.13 lbs./sq. ft. (93.35 kg./sq. m.), Power loading 13.4 lbs./h.p. (6.08 kg./h.p.).

WEIGHTS AND LOADINGS (Wright "Cyclone" engines).—Weight empty 14,538 lbs. (6,600 kg.), Weight loaded 27,080 lbs. (12,295 kg.), Wing loading 19.35 lbs./sq. ft. (94.42 kg./sq. m.), Power loading 12.31 lbs./h.p. (5.58 kg./h.p.).

PERFORMANCE (Pratt & Whitney "Twin-Wasp" engines).—Maximum speed at 10,500 ft. (3,200 m.) 190 m.p.h. (304 km.h.), Stalling speed at sea level 61.5 m.p.h. (98.4 km.h.), Climb to 5,000 ft. (1,525 m.) 4.5 mins., Climb to 15,000 ft. (4,575 m.) 15 mins., Service ceiling 25,200 ft. (7,686 m.), Maximum range (1,750 U.S. gallons of fuel) at critical altitude 4,000 miles (6,400 km.).

PERFORMANCE (Wright "Cyclone" engines).—Maximum speed at 14,300 ft. (4,360 m.) 206 m.p.h. (330 km.h.), Stalling speed at sea level 61.9 m.p.h. (99 km.h.), Climb to 5,000 ft. (1,525 m.) 4 mins., Climb to 15,000 ft. (4,575 m.) 12.9 mins., Service ceiling 29,700 ft. (9,060 m.), Maximum range (1,750 U.S. gallons of fuel) at critical altitude 4,000 miles (6,400 km.).

THE CONSOLIDATED XPB2Y-1.

TYPE.—Four-engined Patrol flying-boat.

WINGS.—High-wing cantilever monoplane. Wings mounted direct to top of hull and taper in chord and thickness, with a swept-back leading-edge and a straight trailing-edge. All-metal structure with stressed aluminium-alloy skin. Entire trailing-edge hinged, the outer portions acting as ailerons and inner portions between ailerons and hull as flaps. Ailerons and flaps have metal frames with fabric covering. Stabilising floats retract and form wing-tips when the boat is in the air.

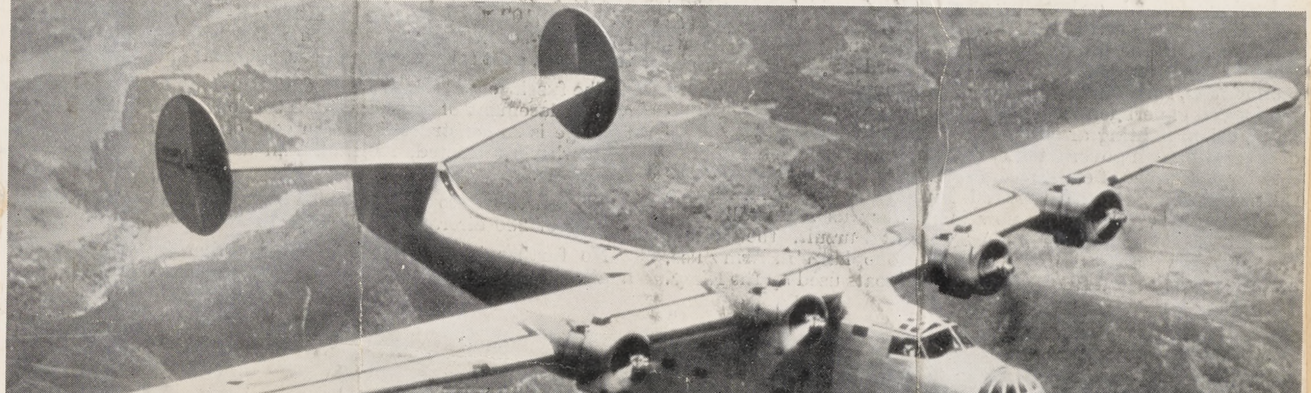
HULL.—Two-step semi-circular topped hull of all-metal construction. The after step terminates in a vertical knife-edge. Hull treated inside and out with anti-corrosion finishes, the exterior finish being an aluminium-pigmented paint. Stabilising floats retract to form wing-tips, the supporting struts being recessed flush with the underside of the wings.

TAIL UNIT.—Cantilever monoplane type with twin fins and rudders. All-metal structure with fabric-covered elevators and rudders. Statically and aerodynamically-balanced movable surfaces, which are also fitted with trimming-tabs.

POWER PLANT.—Four 1,050 h.p. Pratt & Whitney "Twin-Wasp" radial air-cooled engines in line along the leading-edge of the wings. N.A.C.A. cowlings. Three-bladed Hamilton-Standard airscrews.

ACCOMMODATION.—Details of internal arrangement unknown. Pilot's compartment in front of leading-edge of wings, gunner's turrets in nose and stern and navigation turret amidships over trailing-edge of wing. For sustained cruises the hull is provided with commodious sleeping and living quarters, galley with electric range and refrigerator, workshop, independent electric generating system to supply A.C. current throughout the boat, complete inter-position telephone system, etc. Equipment includes beaching-gear, lifting slings for engines, etc. Fully soundproofed and provided with heating and ventilating systems.

DIMENSIONS, WEIGHTS AND PERFORMANCE.—No data available.



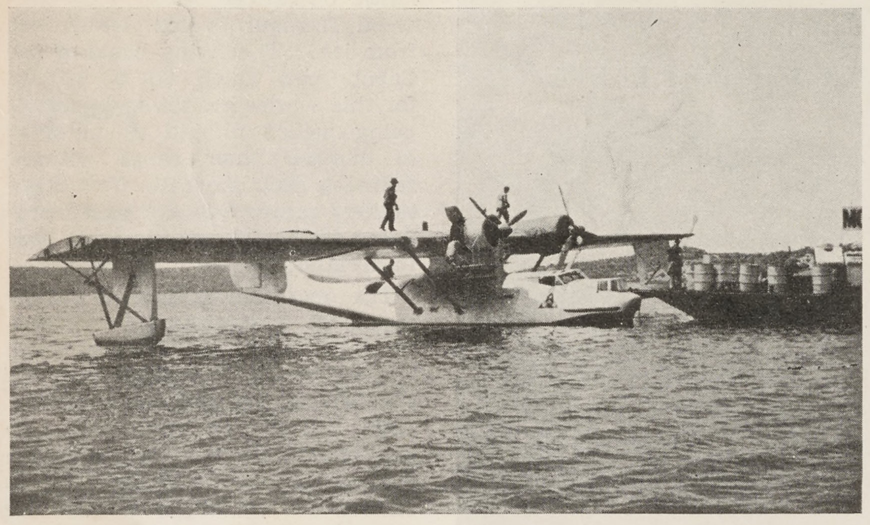
The Consolidated XPB2Y-1 Patrol Flying-boat (four 1,050 h.p. Pratt & Whitney "Twin-Wasp" engines).

"The Air-Log" (Australia) May, 1939

Indian Ocean Survey Flight

Most Important Project.

Of supreme importance to Australia is the survey flight, which is planned to commence about the middle of next month, from West Australia to Africa.



Richard Archbold's Consolidated PBY-2 Flying-Boat, "Guba," which will carry the trans-Indian Ocean survey party from West Australia to Africa, via the Cocos Islands, Chagos Islands and Seychelles Islands, in June. It is seen refuelling in Rose Bay, Sydney. *("Air-Log" photo.)*

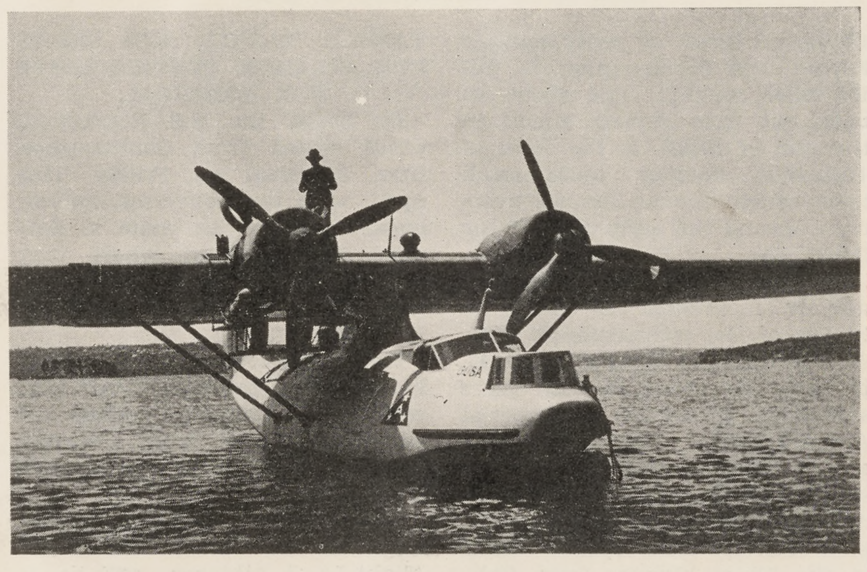
Variously referred to as "The Reserve Route" and in other fashions, it might well become, under exigencies of circumstance, the ONLY aerial route open between England and Australia for link communication by aircraft, so it should be regarded as a much more important piece of work than the "Reserve" title suggests. Though it is not the only possible All-Red aerial route (we could travel via Canada) seasonal severity in the North Atlantic make that crossing a definitely inferior one from the ease-of-operations point of view to that which could link England with Australia via the west coast of Africa—trans-Africa—trans-Indian Ocean route.

By arrangement with the Commonwealth Government, the well-known American millionaire, Mr. Richard Archbold, research associate of the American Museum of National History, has made his Consolidated PBY-2 flying-boat,

Australia's Vital Interest

"Guba," available for the survey.

This very fine product of aircraftsmanship received its name from a type of tropical storm common to New Guinea, where Mr. Archbold's first expedition, about three years ago, lost the Fairchild Amphibian with which they were preparing to make exploratory excursions as the result of one of these tropical willy-willies turning up at an inappropriate moment.



Close-up of the "Guba". Note engineers sitting in frame seats working on starboard engine. Everything on the "Guba" "breathes" comfort. *("Air-Log" photo)*

Ordinarily, the Consolidated PBY-2 is a twin-engined 14-place flying boat, with a wing span of 104 feet, length of 67 feet 1 inch, gross weight of 27,000 lbs., and a maximum payload of 9,250 lbs. Its engines are twin-row Pratt and Whitney radials of 900 h.p. each, and it has a cruising range of 4,000 miles and a cruising speed of 170 m.p.h. The "Guba" is, indeed, a most luxurious craft.

On the projected flight the personnel will be:—

Mr. Richard Archbold, owner of the "Guba," reputedly one of the wealthiest of citizens of the U.S.A.;

Captain P. G. Taylor, who will be in charge of the survey. Mr. Taylor holds one of the only two first-class aircraft navigators' licences in force in Australia;

Captain Lewis A. Yancey, navigator to the Archbold Expedition and also on this flight;

Mr. R. Rogers, Chief Pilot;

Mr. R. Boothe[illegible] Radio Operator;

Mr. G. Brown, Chief Engineer;

Mr. S. Berrinka, Second Engineer; and a

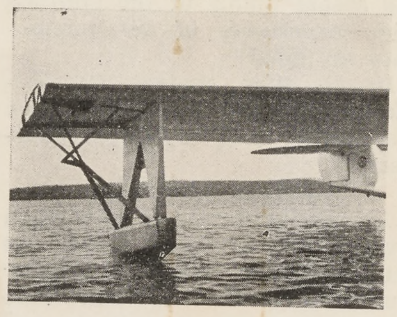
Mr. J. Percival, in charge of mail.

The route to be flown will be from the West Australian coast (probable point of departure, Port Hedland) to Cocos Islands, about 1,230 nautical miles (1,416 statute miles); Cocos Island to Diego Garcia, Chagos Islands, 1,472 nau-

(Continued on next page.)

tical miles (1,680 statute miles); Chagos Island to Seychelles Is., 1,022 nautical miles (1,184 statute miles), and Seychelles Is. to Mombasa (Kenya) 950 nautical miles (1,083 statute miles)—a total of 4,674 nautical (or 5,363 statute) miles. (The nautical mile in British usage is 6,080 feet).

A special Air-mail stamp with a face value of 5/- is to be printed.



The unusual and efficient wing-tip float of a Consolidated PBY-2 Flying-Boat. It folds into and forms the wing-tip in flight.

~~S.D. UNION~~ S.D. TRIBUNE 6/14/39

Archbold at Chagos After 1700-Mile Hop

Completing a 1700-mile leg of his survey flight for the Australian government, from Hollandia, New Guinea, Richard Archbold, scientist-explorer, today was believed to have landed at Diego Garcia island, in the Chagos group, 1000 miles south of Ceylon in the Indian ocean.

Archbold took off from Cocos island, where he had stopped several days, yesterday at 2 a.m. (Pacific time).

Barney Boyd, local radio amateur, contacted a Sydney, Australia, radio station at 9:30 p.m. (Pacific time) yesterday which relayed the information that the big Consolidated plane was 160 miles from its destination. The plane was reportedly performing smoothly and was in constant radio touch with the steamer City of Manchester.

Boyd was unable to contact the Guba direct but said today he would attempt to establish communication with Archbold again tonight.

CONSOLIDATED EXPANSION DUE

Sulphur Refinery May Be Built In S. D.

S.D. SUN 6/8/39

Large-scale industrial expansion in San Diego, involving possible enlargement of the Consolidated Aircraft Corp. plant, and establishment of a new sulphur refinery here, was studied by the Harbor Commission today.

The aircraft concern has applied for additional space on Lindbergh Field to enable it to expand the entire 2200-feet length of its present property and 200 feet west into the municipal airport, it was disclosed.

The extra space, which would add approximately 66 per cent to the land now occupied by the plant (2200 feet by 300 feet), is required in anticipation of airplane orders that may overtax the present productive capacity.

REFINERY INDICATED

At the same time, it was revealed that negotiations are under way to build a sulphur refinery either in Calexico or San Diego, with a payroll of 200 to 300 persons and a productive capacity of 25,000 tons per month. To be known as the Gulf-California Co. and backed by the American Smelter and Refinery Co., the concern has sought information from the Harbor Commission on the cost of purchasing or leasing tidelands in San Diego. Further plans include construction of a dock and dredging to sufficient channel depth to accommodate large ocean-going vessels.

Port Director Joe Brennan pointed out that, regardless of where the plant eventually is located, San Diego will benefit by export of the refined sulphur through the port. The raw supply would originate at a veritable "mountain of sulphur" situated 20 miles below Mexicali, whose ownership is shared by certain San Diegans.

BIG MARKET EXISTS

Officials who have contacted the Harbor Department declared that Australian interests are willing to contract for the export of 10,000 tons of sulphur per month for 10 years. A large market also exists in the auto tire industry in and around Los Angeles, it was said. Mr. Brennan commented that the best location for such a plant probably would be in the Chula Vista-National City south bay area.

The Consolidated expansion would require approval, not only of the Harbor Commission, but of the Civil Aeronautics Authority, due to a necessary realignment of Lindbergh Field's north-south runway. Arthur Ayres, regional airport engineer for the CAA, notified the Harbor Commission today that he would attempt to visit here late this month to consider the plan.

Consolidated Aircraft Corporation is still testing the **American Export Corporation's** twin engined flying boat which was due for delivery a couple of months ago. A group of Australian Royal Air Force officers have been inspecting the boat with the possibility in mind of placing an order for ten of them. Western Flying 6/39

LOCAL PILOT MAKES DISTANCE FLIGHT

DICK ESSERY S.D. UNION

. . . with record-smashing sailplane.

6/9/39

S. D. Flier Breaks Sailplane Mark

Takes Passenger On 109-Mile Hop

OKLAHOMA CITY, June 8 (AP.)—Dick Essery of San Diego landed his sailplane late today on a vacant tract southwest of the Oklahoma capitol and claimed a new record for motorless distance flight with a passenger.

Excited state employes telephoned the capitol press room "a big red airplane has crashed." But the few persons who saw the plane touch ground marvelled at the skill with which the glider was wafted down.

Essery took off at 1 p.m. from Wichita Falls, Tex., where the Southwest Soaring meet is in progress. He landed here at 4:20 p.m. and nonchalantly climbed out with his passenger, Jack Begley of Wichita Falls.

The distance from Wichita Falls to the municipal airport here is 109 miles, but Essery figured he had covered between 126 and 127 miles in his flight.

SECOND RECORD IN WEEK

The record was the second passenger-carrying distance mark Essery has broken this week. Tuesday he flew a passenger from Wichita Falls, to a point north of Lawton, Okla., 64 miles.

Begley said the sailplane reached a maximum altitude of 6200 feet. The glider will be dismantled and taken back on a trailer.

Woody Brown, of La Jolla, another entrant in the soaring meet, came down at Shawnee today, about

(Continued on Page 3, Col. 4)

80 miles short of his announced destination, Tulsa.

Brown was one of four glider pilots who left Wichita Falls on an "objective" flight to Tulsa this afternoon. He ended his 155-mile trip at 4:17 p.m., 4 hours and 17 minutes after his departure.

John Robinson, San Diego sailplane pilot, landed five miles north of Bristow, Okla., late today after riding the wind approximately 182 miles from Wichita Falls.

Actor Crashes Ship

PAWNEE, Okla., June 8 (A.P.)—Harvey Stephens, Los Angeles film star, wrecked his sailplane but escaped injury in landing near here at 4:45 p.m. today in an attempt to glide from Wichita Falls, Tex., to Tulsa.

Wrecking of the glider probably will prevent his competing in an Elmira, N. Y., contest, he said.

S. D. Glider Pilots Set Sights On National Meet In New York

S.D. SUN 6/13/39

Three San Diego glider pilots who won practically every trophy and cash prize offered at the southwest soaring contest in Wichita Falls, Texas, just completed, today set their sights on the national competition at Elmira, N. Y., June 24 to July 9.

Because of his remarkably accurate goal-to-goal and long distance hops in the only two-place sailplane entered in the meet, Dick Essery received the largest number of awards. He set a national distance record for two-place sailplanes by flying from Wichita Falls to Oklahoma City, 109 miles.

Closely behind Mr. Essery in honors won were Woody Brown of La Jolla, who broke the national distance record by soaring 280 miles from Wichita Falls to Wichita, Kan., and set a new altitude mark of 7600 feet on this flight; and John Robinson, who flew more miles than any other contestant, falling short by only a few miles on his final attempt Sunday to equal Mr. Brown's distance feat.

In addition to trophies and aeronautical instruments, $650 in cash awards were presented at a banquet honoring the contestants last night.

WEATHER DELAYS ARCHBOLD FLIGHT

Takeoff of Richard Archbold's airboat Guba on the second lap of an Australia to Africa survey flight was postponed 24 hours and the plane today was still at Cocos Island, in the Indian Ocean, apparently awaiting better weather before leaving on a 1500-mile hop to Diego Garcia.

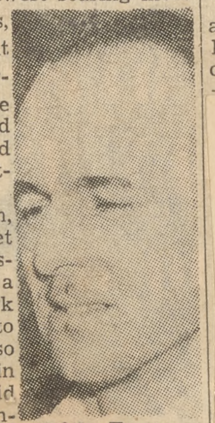
This information was received today by Barney Boyd, operator of Mr. Archbold's local base station. Diego Garcia, a British-owned island in the Chagos archipelago, lies 1000 miles south of Ceylon, India. From there, the Guba will fly to Mahe, in the Seychelles group of islands, and then to Mombasa, Kenya Colony, on the east coast of Africa, goal of the survey mission for the Australian government.

S.D. SUN 6/12/39

S. D. PILOTS LEADING PRIZE WINNERS IN TEXAS SOARING COMPETITION

S.D. UNION 6/13/39

Dick Essery, San Diego seaplane pilot who flew the only two-place ship in the southwest soaring meet at Wichita Falls, Tex., last night collected the largest share of the cups, trophies and cash prizes posted for the contestants.



Dick Essery

Woody Brown, La Jolla, who set an American distance record and a new altitude mark in a flight to Wichita, Kan., also shared heavily in the spoils as did John Robinson another San Diego flier. Robinson flew more miles and achieved more goal flights than any contestant, although he failed by a few miles equaling Brown's 280-mile jauunt, The Associated Press reported.

Essery set two transport distance records and a spot landing record besides succeeding on several goal flights.

A total of $650 and numerous cups and aeronautical instruments were handed out in a dinner honoring contestants.

Testing Consair Bomber; Built for Britain

S.D. TRIBUNE 6/14/39

With William B. Wheatley test pilot, at the controls, a giant patrol-bombing seaplane built by Consolidated Aircraft Corp. for the British air ministry, today took off from the bay here on its first "shake-down" flight.

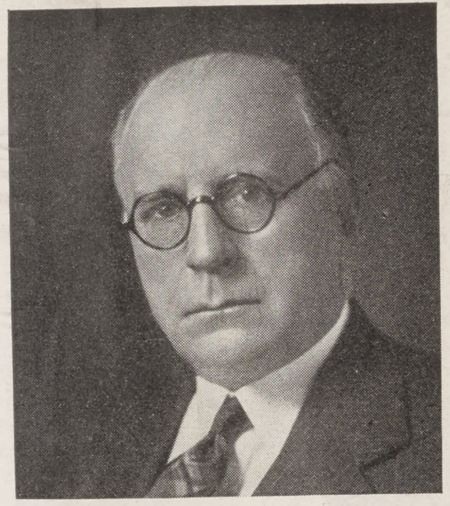
The airboat, designated as Model 28-5 and developed from the familiar U. S. navy's PBY series, will be flown to England early in July. Flight personnel and the route have not been announced.

After completion of its shake-down flights, the big plane will be put through a rigid test-flight series. The craft bears the military markings of the royal air force. It was ordered from the local plant during the recent visit of air ministry officials.

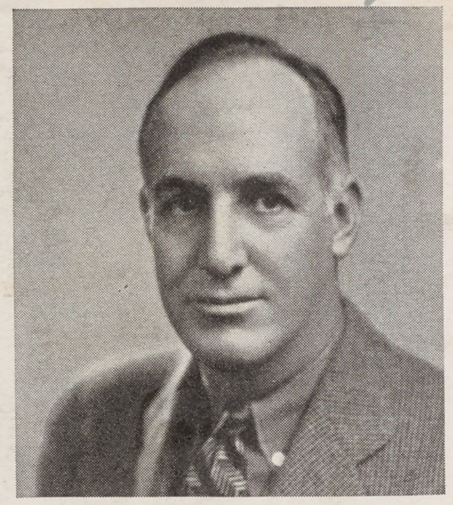
The new Consolidated XPB2Y-1 patrol bomber. A fleet of these are being built for "the Navy."

Model Airplane News Sept. 39

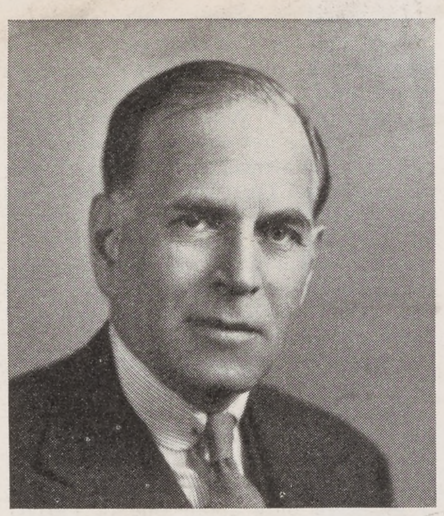
"Popular Aviation" July 1939



William H. Coverdale is the self-made millionaire who heads American Export.



It's up to Durston Richardson to set up Export's airline and make it run safely.



Jim Eaton, who knows his ocean airline business. is executive vice-president.

TRANSATLANTIC NEWCOMER

by SPENCER GREGG

Three tough, air-minded business men with plenty of cash have started an airline well worth watching

★

IF you plopped Durston G. Richardson down in the middle of a Guatemalan jungle armed with nothing but a pocket knife and some usable profanity that he could lay a practiced tongue to, he would emerge a few weeks later, freshly shaven, carrying a deed to the country.

That is information only incidental to our story, but it serves to show what kind of a man has become top hand in the only airline in the history of aviation which proposes to start from scratch and fling an operation across 3,000 miles of open ocean.

Richardson looks rather silly sitting there behind a highly polished desk in the heart of the nation's biggest city, doing things with pencils and sheets of paper which presently should materialize into a transoceanic transport line. He looks silly because he is a hard-fisted hombre who started his kindergarten work in flying back in the days when a World War instructor thought nothing of denting a student's skull with a wrench if the fool jammed his foot against right rudder in the midst of a port bank. Richardson sits there with his pencils and paper, flanked by a comely secretary, itching for the day when he can go out to Floyd Bennett Field on Long Island and bellow to the skipper of an American Export Airlines flying boat: "All right, get that big piece of tin out of here—and don't go making eyes at any of those native wenches in the Azores!"

Richardson is operations manager for a company which proposes to bridge the Atlantic to France and fly far into the Mediterranean, with great metal wings marked "Made in America." This is the story of that venture. . .

More years ago than he cares to remember a youngster named Willie Coverdale was born in modest circumstances in a little Canadian community on the banks of the St. Lawrence. If Willie was not born with a silver spoon in his mouth, he had the makings of one. More than that, he had a Midas touch. Engineer and business man, William H. Coverdale had made a fortune—and lost it—at a time in his life when most young men are trying to figure out a career.

One of the favorite stories about him impinges on the hard times of the year 1907 when he walked the streets of New York, fingering a thin dime in his pants pocket.

"How much?" he asked a street peddler, pointing to a sack of peanuts and an apple.

"A dime," replied the peddler.

Coverdale handed it over. He was broke but he had his dinner.

Two years later he was drawing $100,000 a year.

This same Coverdale, a director in numerous corporations, coiner of fortunes for himself and others, president of a transatlantic steamship line, now proposes to establish an airline to Europe which eventually expects to offer nonstop service from the American mainland to cities of the Old World.

There has been some jeering, but you can't jeer assets of several million dollars without making yourself look foolish. Coverdale has a lot to learn about flying, but he knows business and he knows men. He picked Jerome C. Hunsaker, head of the department of mechanical engineering at Massachusetts Institute of Technology and one of the country's outstanding research scientists, as aeronautical consultant to American Export Airlines. He picked James M. Eaton, one-time head of Ludington Airlines and former general traffic manager for Pan American Airways, as a vice president. And of course, on the recommendation of Eaton, he picked Durston Richardson who has taught flying, dusted cotton and for ten years held down one of the toughest assignments in aviation—managing operations in Pan American Airways' western division where the jungles are interminable and every cloud hides a mountain as hard as flint.

American Export Airlines, a subsidiary of American Export Steamship Lines, is starting from scratch. Just about 30 months ago Tommy Hitchcock, the wartime flyer, business man and polo player, approached Eaton.

"What about starting an airline over the Atlantic?" asked Hitchcock quizzically.

Eaton nodded. "Airplanes can be built for it," he said.

An electrical engineer and graduate of the University of Maine, Eaton had taken his first flight in 1912. A year later, with Tony Janis, he started what he calls the first commercial airline in the world. It was in Florida. Its lone piece of equipment, a Benoist flying boat, sported an engine in the hull which whirled a wooden prop by a chain drive. The tariff was four cents a pound for each passenger on the hoof and the Benoist faithfully churned the air between Tampa and St. Petersburg once each morning and afternoon.

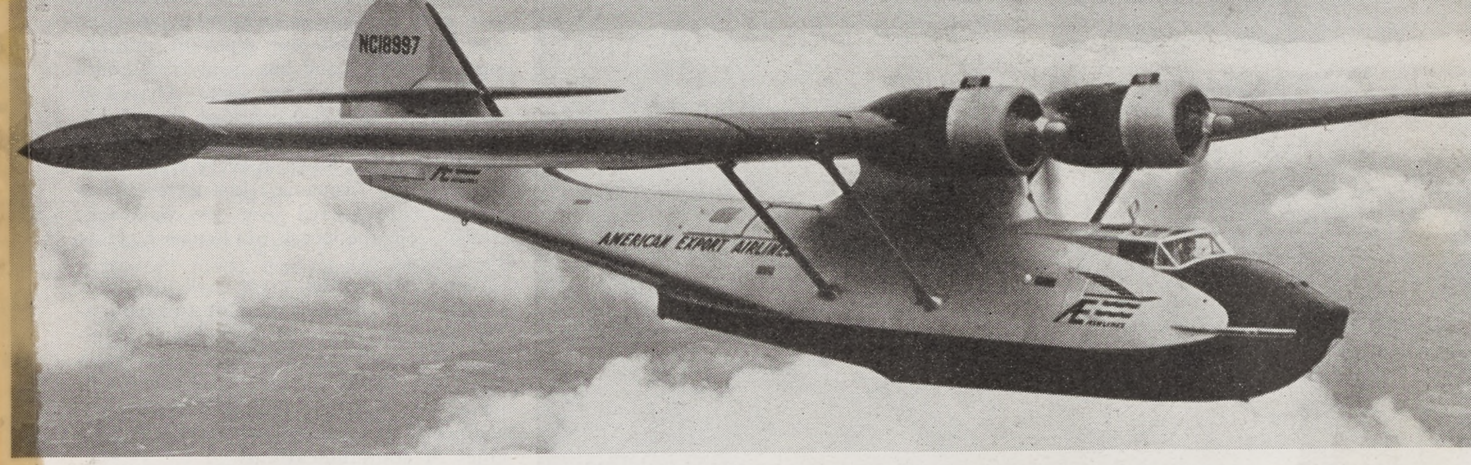
Eaton worked at that for a year. Fourteen years were to elapse before he again got his fingers into flying. A specialist in engineering management, he had charge of purchasing all the materials for the American Ordnance Base Depot in France during the war. Returning to the United States, he took charge of materials purchasing for the Hog Island shipyards.

And—an interesting sidelight—14 of the freighters now being used by American Export Steamship Lines were built at that time at Hog Island.

Eaton's work for Pan American is a well-worn story. He laid out an organization chart and suggested expansions when Panair was shuttling back and forth over that 90 miles separating Key West from Havana. He knew the Caribbean and he knew the kind of equipment that was needed to push that puny operation to Nassau, Jamaica, Haiti, Santo Domingo, Puerto Rico and Panama. In four years he watched Panair's route mileage jump to 19,000.

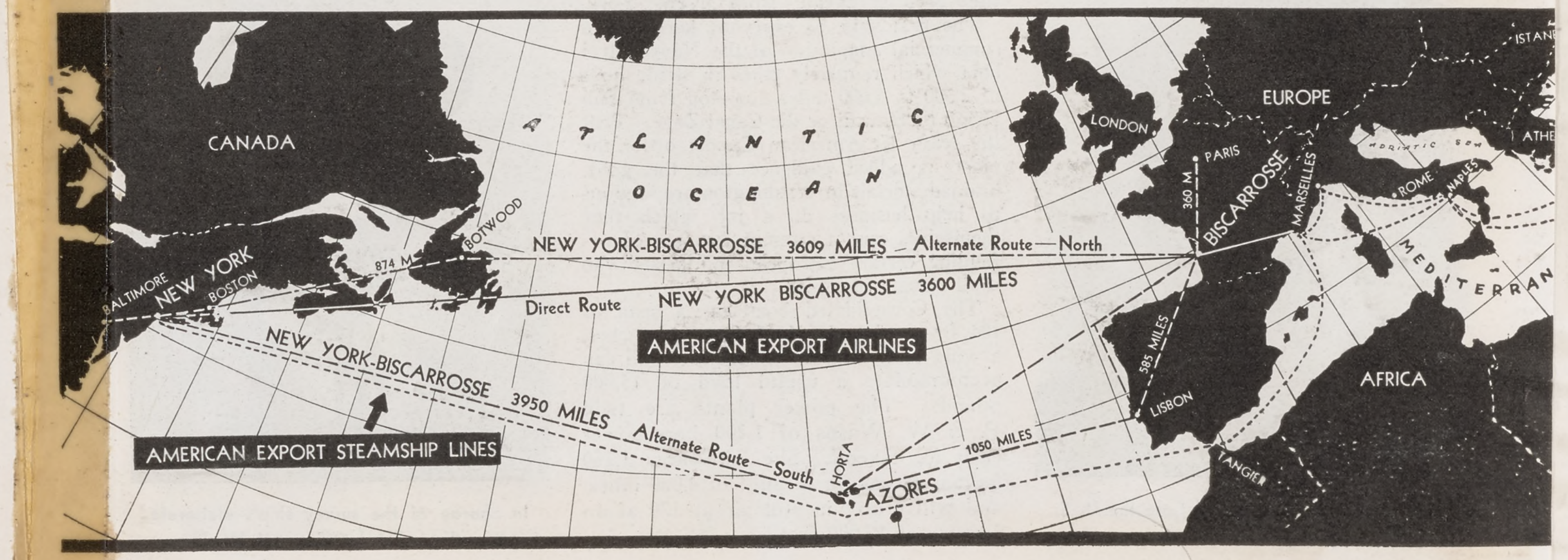
The Ludington venture was a success for everybody except the man who rang the cash register. Its New York-Washington merry-go-round reached a peak load of 300 passengers a day, but Eaton concluded it was an unsound business without a mail contract. He sold it.

When Hitchock rapped on his door, Eaton was ready for him. He had devoted himself to a study of airplanes for transportation. His argument was that a plane had to be built for a given job. He took Coverdale to the Glenn L. Martin plant at Baltimore. There the engineering and financial genius of dozens



Survey flights between the United States and the Mediterranean countries will start soon with this Consolidated boat. A commercial version of a Navy patrol bomber, American Export's ship cost $200,000.

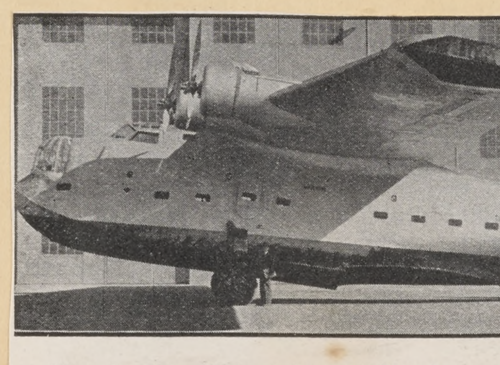
The lowest dotted line on the map below shows AE's ship routes. Routes above that are the airline's.



THE Man UNDER THE Hood

POPULAR AVIATION 7/39

MOST secret of all new Air Corps battleplanes is the **Consolidated** four-engined B-24 bomber . . . it's supposedly the next step ahead of the Boeing B-17s . . . it's a landplane with a tricycle landing gear, a particularly excellent high speed and range—and a cruising speed said to be in the vicinity of 200 m.p.h. . . . the company has a contract to build five, we hear . . . for a total of $2,880,000 . . . this ship may be flying by the time you read this . . . surprise in all this is the fact that **Consolidated** has been concentrating for the last five years on Navy business.



Navy buying will stress big patrol-bombers. Above, the Consolidated XPB2Y-1

Gott Completes Work In N. Y.; Begins At Consair On Return

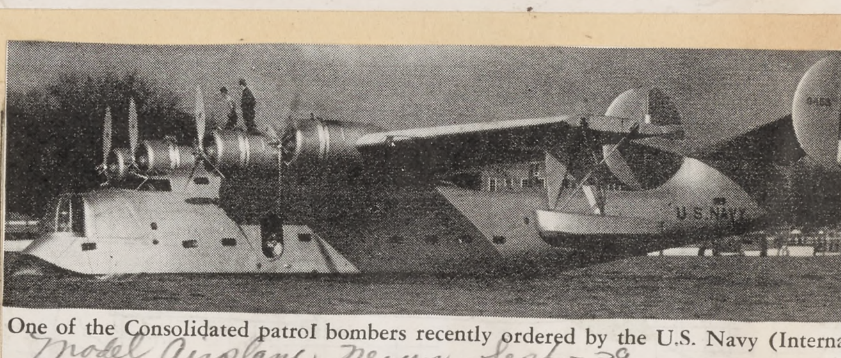
S.D. SUN 6/16/39

Vice President Edgar N. Gott of Consolidated Aircraft Corp., today completed his special duties as assistant to John H. Jouett, president of the Aeronautical Chamber of Commerce of America, in reorganizing and revitalizing the aircraft manufacturing industry's trade association.

He has been assisting Mr. Jouett at the New York headquarters since last February and will resume his work with Consolidated immediately.

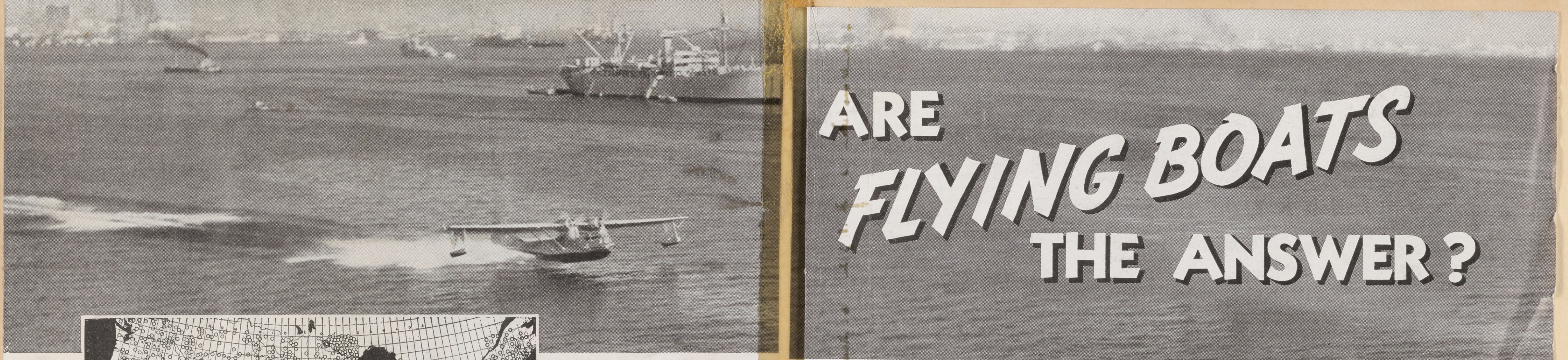
Mr. Gott possesses an impressive background in the aviation industry. A graduate of the University of Michigan in 1909 with a Bachelor of Science degree, he was one of the original incorporators of the Boeing Airplane Co., at Seattle, serving as vice president and general manager until 1922, when he was elected president.

In 1925, Mr. Gott became vice president of Fokker Aircraft Corp., Hasbrouck Heights, N. J., and in 1926 went to the Keystone Aircraft Corp,. at Bristol, Pa., as president and chairman of the board, where he remained until 1932. He joined Consolidated in San Diego four years ago. Mr. Gott is expected back home early next month.

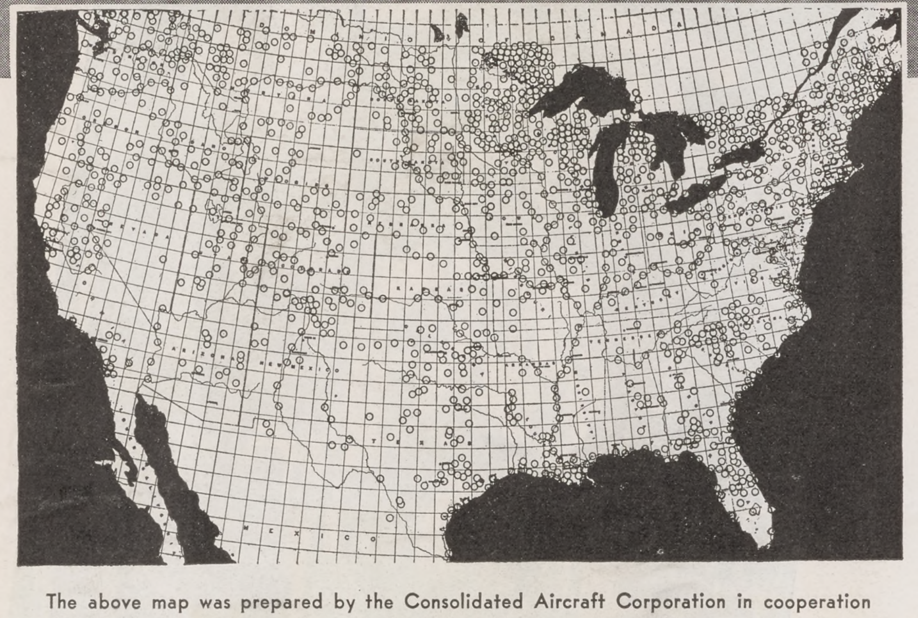


One of the Consolidated patrol bombers recently ordered by the U.S. Navy (Internat'l)

Model Airplane News Sept-39



ARE FLYING BOATS THE ANSWER?



The above map was prepared by the Consolidated Aircraft Corporation in cooperation with the Federal Government. Each circle indicates water facilities capable of caring for large passenger-carrying flying boats. It can readily be seen that transcontinental routes are feasible. In winter the southern, ice-free route would be used.

As airliners get larger, airports grow smaller. Instead of spending unlimited millions on enlarging present-day fields, the airlines might well consider using the limitless water facilities of the nation.

by

EUGENE P. LYLE III

THE scene opens a few years in the future. Perhaps five years from today; not over 10 at the most.

Several big trans-Pacific airboats are moored at the public ramps and floats at Treasure Island. This is a man-made island in San Francisco Bay, built for the 1939 exposition, and afterwards developed as an airboat terminal. Next to the Pacific clippers is berthed a little airboat belonging to the Southern Express. This latter is barely larger than the Boeing "314" of 1939.

Its freight has been stowed, its crew of eight and its 90-odd passengers are aboard. The hatches have been sealed and the six motors are idling. The clearance call comes from the control tower. Six propellers beat the air to a din, but to the passengers inside the airtight, insulated hull, the sound is only a muffled hum. They feel a slight vibration, and glancing out the double-glass windows, see the shoreline spin around in dizzy circles as the pilot warms the engines by taxying. Then the ship straightens out, heads down the bay a way, and swings round into the wind for the take-off. The ship takes the air, and the hum of the motors quiets to a steady purr. The airboat rises over the Golden Gate Bridge, then dips its port wing and heads south, following the broken coast line.

First stop is San Pedro Harbor, on the outskirts of Los Angeles. Here additional passengers come aboard and the plane takes off again, heading eastward across the continent. It wings over the Salton Sea, over Parker Lake on the Colorado River, to Roosevelt Reservoir in Arizona. Some passengers stop over at the resort while others are shuttled to Phoenix and Tucson by "tiny" 30-passenger amphibians or by bus.

Coolidge Lake in Arizona and Elephant Butte reservoir in New Mexico can be seen on the next leg of the trip, which ends with a landing on an artificial lake on the outskirts of El Paso, Texas. This is a lake created especially for cross-country airboats, fed by the Rio Grande and developed into an attractive civic park. A half hour before the plane's arral sirens warned bathers and canoers c of the water. An airport speedboat bught in laggers 15 minutes before aival.

rom El Paso the flight continues to Lke Worth on the outskirts of Fort Vorth. From here amphibians shuttle psengers to Lake Brownwood at Bownwood, Texas, to Whiterock Reservr at Dallas, to Galveston on the Gulf al about any place else within a 500-me radius where passengers and freight oers. At Fort Worth fuel is pumped ino the wing tanks—sufficient to carry th plane over 2,500 miles, so that even inbad weather it has plenty of reserve rage to reach waterways far off its reular course.

he next hop ends at McAlester Lake at Little Rock, Ark. More passengers diembark to be whisked by amphibian to Cross Lake at Shreveport, La., to New Oeans, to Memphis on the Mississippi Rier. Then the express continues on to Nshville's Skyport Lake, fed by the Cmberland River, especially created as wa the lake at El Paso.

Vinston-Salem, N. C., comes next, where a lake has been created by dammig the Yadkin River. Very soon now the ship is working its way into the thikly populated eastern seaboard where the waterways are almost within gliding disance of one another. A landing is mae on the Potomac River at Washington, D. C., and feeder lines branch out in ll directions. Then one more short hop for the express, a neat landing on Nev York's Upper Bay, a quick taxi to the Midtown Skyport, and the cross-coninental journay is over. At New York the really large trans-Atlantic clippers await European-bound passengers and express.

. . . .

Now we're back in 1939 again. We still reg the Boeing "314" and the DC-4 as e planes. Has this prophecy of a tra continental airboat service sounded fan tic? It was not intended to. Some of t most conservative engineers in the wo today are thinking along those line

Present-day cross-country commercial flight is faced with a serious problem, that of building fields large enough to accommodate projected giant landplanes.

Quizzed by Los Angeles reporters, Jack Frye, president of TWA, made this statement the other day:

"Los Angeles must build up its municipal airport if it wishes to continue to rank as a Class A-1-A city among major American air centers . . . Expenditure of $8,000,000 there would give the city a field comparable to New York's $37,000,000 North Beach port now being completed."

Mr. Frye might have included most of the terminals and intermediate fields in the United States in the inadequate class. There are only about four which are thoroughly suitable from the pilot's point-of-view.

Eight million dollars is a lot of money to spend improving an already costly field. Thirty-seven million dollars, the total cost of the New York terminal, would buy a right fancy railroad station. And airplanes do not have the traffic

Giant boats like Pan America's transatlantic clippers might well be use for the longer transcontinental airlines. Shortest coast-to-coast route is 2,57 miles.

Popular Aviation July 1939

S.D. UNION 6/20/39

Report that Richard Archbold's flying scientific expedition is safe on the Isle of Paradise in the Scychelles islands was received here yesterday by Bernard F. Boyd, radio contact man for the flight. Previous reports stated Archbold had flown his giant San Diego-built flying boat, Guba, to Mombasa, Kenya colony, East Africa.

Boyd said he contacted the Hollandia, New Guinea, base of the expedition yesterday for the first time in three days and learned that Archbold had been making short trips through the island group.

Hollandia radio operators told him Archbold plans to take off tomorrow morning (tonight, Pacific standard time) for Mombasa.

"Modern Transport" – 6/3/39

New American Flying-boat.

A new passenger flying-boat has been built by the Consolidated Aircraft Corporation, and first test flights were conducted recently. The machine has been styled Consolidated Model 31, and has been designed and constructed as a private venture. Passenger accommodation is for 52 persons, and the designers state that accommodation on transatlantic services would be for 28 passengers. This suggests that the flying-boat may be taken up by American Export Lines for their projected service. It has an all-up weight of 50,000 lb. The span is 110 ft. and length 73 ft. Power is derived from two Wright engines of a new type. These are Wright Duplex-Cyclones, and are two-row, air-cooled, 18-cylinder radials rated at 2,000 h.p. each. This new engine is a development of the 1,500 h.p. two-row, 14-cylinder Cyclone, and is being shown at the World's Fair in New York. The Consolidated Model 31 will have three-bladed Hamilton fully feathering airscrews. To facilitate beaching there is a retracting nose-wheel and two side wheels, the latter being removable. The high wing is equipped with partly retractable outboard floats and hydraulically operated Fowler flaps. There are two decks, and the crew is accommodated on the upper one. No performance figures have so far been released, but claims are understood to have been made for a speed in excess of 250 m.p.h.

NEW FLYING-BOAT TO BE TESTED

30/5/39 (England)

U.S. MACHINE WITH 3,000 MILES RANGE

By Major C. C. TURNER

Flight delivery to Felixstowe Marine Aircraft Experimental Station of a Consolidated Military PBY flying-boat—a picture of which appeared in THE DAILY TELEGRAPH on Saturday—will take place early in July. There it will undergo Air Ministry tests.

The flying-boat will leave San Diego, California, and will pass over Kansas City, Chicago, Detroit, Toronto, Ottawa, Montreal, and Quebec, to Botwood, Newfoundland (British Transatlantic service base), and thence cross the Atlantic, passing Cardigan Bay on its way to Felixstowe.

The total distance to be flown is 5,750 miles.

The PBY is extensively used by the U.S. Navy for long-range reconnaissance, and frequently transfers from base to base 3,000 miles apart.

FOUR MACHINE-GUNS

A commercial version of the same machine, Model 28, known as the "Guba" (Sudden Squall), will next month make an exploratory route flight from Perth, Australia, to Mombasa, Africa, crossing the Indian Ocean, with a view to developing, for strategical reasons, an alternative route between Australia and Great Britain. This flight has the financial backing of the British Government.

The flying-boat has an all-up weight of 12¼ tons. With twin Wright engines, it has a top speed, at 14,000 feet, of 206 miles an hour, and cruises at its economical speed at 150 m.p.h.

The military type is armed with four machine-guns, all movable, and placed for defence in all directions.

Are Flying Boats . . .

(Continued from page 70)

more of these before long.

But the greatest drawback is the cost of changing over to airboats, or of making the initial step in opening new lines for them. Airlines are already equipped with fleets of landplanes and the personnel trained to operate them. They have spent years and much money educating the public to their services. And, most important of all, no manufacturer is building commercial airboats on a production basis at the present time.

How would airboats compare in cost with landplanes? The only airboat manufactured in quantities is the Navy's PBY long-range patrol-bomber. It costs, completely equipped except for armament, from $110,000 to $115,000. The DC-3, slightly smaller than the PBY, faster and with better performance but less range and payload capacity, costs the airlines about $100,000. This is the closest comparison that can be made between airboats and landplanes. It is not altogether a fair comparison. The DC-3 is outfitted much more luxuriously than is the military plane, but does not need as complex equipment for navigation and radio. The PBY was first produced in 1932, the DC-3 in 1937, so that the latter has the benefit of five years more experience in design. Then too, the PBY would cost less if manufactured in quantities for commercial lines, because when built for the navy government inspections and red tape slows production.

It is probable that large airboats would cost less than comparable landplanes in commercial production. The hull of the airboat is more costly to build than the fuselage of the landplane, but the landing gear of the latter more than offsets the difference.

When a special landplane is developed the first model might cost as much as $2,000,000, as has the DC-4. Subsequent editions of the DC-4 will get down to a reasonable figure. Boeing contracted to build six of the "314s" at $500,000 each and is said to be losing money at that price. Now that the dies and tools are set up and production of this particular ship is organized, future "314s" should drop considerably in cost.

Last November Igor Sikorsky, lecturing in Berlin before the Lilienthal Society for Aeronautical Research, made aerodynamic comparisons of airboats and landplanes. At no place within known gross weight limits does the airboat possess the *aerodynamic* efficiency of the landplane, Mr. Sikorsky's figures show. In the very small sizes, around 2,000 lb., the airboat requires nearly twice the horsepower. Aerodynamic efficiency of each type of plane increases as the size is increased. *But*—from around 20,000 lb. to 200,000 lb. the airboat's efficiency increases at a much greater rate than that of the landplane. In the 22,000 lb. class the airboat requires 75.5 h.p. per ton (metric) of gross weight and the landplane 49.2 h.p. per ton. In the 110,000 lb. class the airboat rates 28.5 h.p. to the landplane's 22.8. The planes we have discussed fall between these figures, the PBY (commercial) weighing 28,000 lb. gross, the DC-4 65,000 lb. gross, and the "314" 84,000 lb. gross. But when still larger ships come, see how the aerodynamic comparison grows close. In the 551,000 lb. class the airboat requires 14.4 h.p. to the landplane's 12.7! Beyond this size the comparison is any man's guess, though it is reasonable to believe that the airboat, in sizes not yet conceived, will equal if not surpass the aerodynamic efficiency of the landplane. In the large sizes the landplane still has the edge in speed and climbing ability, the airboat in range and payload capacity.

The reason for these differences is due mainly to the shape of the airboat's hull, and to the landing gear of the landplane. In the small sizes the airboat must have a cabin higher than is necessary for crew and passengers, or else a superstructure, in order to keep the propellers above the spray level. Where the superstructure is used it takes several forms in different types of airboats. In the PBY it is a streamlined member housing the engineers' cabaña that raises the wing above the hull. Both the Martin and Sikorsky clippers have somewhat similar streamlined members to raise the wing. The Douglas *Dolphin* has its propellers raised above the wing. In either case a drag is caused. But the spray level remains nearly constant. Therefore if the airboat is large enough it may be designed aerodynamically perfect except for the bottom of the hull, and its propellers will be naturally placed high enough to clear the spray. No superstructure to raise them is needed. Examples of such large airboats are the Boeing "314", the Sikorsky XPBS-1, and the Consolidated XPB2Y-1. Landplanes, on the other hand, require a relatively more complicated and heavier landing gear as they increase in size.

So you have here a summary of some of the problems caused by increasing airport costs and landplane sizes. They inevitably bring up the question, "Will airboats be the answer?"

END

Other men have read and profited by our free books "Patent Protection" and "Selling an Invention." Fully explain many interesting points to inventors and illustrate important mechanical principles. With books we also send free "Evidence of Invention" form. Prompt service, reasonable fees, deferred payments. Write immediately to: Victor J. Evans & Co., Registered Patent Attorneys, 117-H, Victor Building, Washington, D. C.

PATENT YOUR IDEA

COLT 45 Cal. "FRONTIER" MODEL $1.45

Basswood construction kit with working plans, machined barrel, cylinder and all necessary hardware.

COLT 45 Cal. "FRONTIER" model kit, 4¾" barrel. $1.45
COLT 45 Cal. "FRONTIER" model kit, 5½" barrel. 1.55
COLT 45 Cal. "FRONTIER" model kit, 7" barrel. 1.70
COLT 45 Cal. Automatic Pistol kit. 1.00
Full scale Thompson Sub Machine Gun model kit. 3.00
SAVAGE Cal. 32 Auto. Pistol kit, machined barrel. .75
LUGER Auto. Pistol with 4" machined barrel. 1.75
LUGER Auto. Pistol with 6" machined barrel. 1.90
COLT 25 Cal. Automatic Pistol kit. .50

These beautiful kits are complete in every detail and made of the best basswood. All parts are cut to shape and require only a short time to finish. Postpaid in U. S. A.

GUN MODEL CO.
Dept. K67, 2908 N. Nordica Ave., Chicago, Ill.

BUILD ONE IN A COUPLE EVENINGS AT HOME
Megow's
COMMANDER
Gas-Powered MODEL

$4.95 plus 20c postage

FASTER and faster come new ideas from the experimental field and experimental laboratory work of Megow engineers . . . ideas that are producing the most interesting easy-to-build and easy-to-fly models in the world. If you really want to learn the principles of flying—without spending too much time on tedious details—build Megow models!

See your dealer, or send for new Megow catalog showing the latest championship gas and rubber-powered models and such advancements as Megow's hollow-carved and finished Leading Edge, revolutionary monocoque (skin construction) fuselages that are so easily and quickly built, PLANEFILM Magic Covering . . . everything that's newest in Model Airplanes, Ships and HO-Gauge Railroads.

Send 5c postage today for your copy of the new Spring and Summer Catalog

Monocoque constr. fuselage, hollow-carved Leading Edge, strongest wing constr. ever designed, Clark Y Airfoil, high Aspect Ratio. Extremely flat glide, max. climbing ability. Span 6 ft. Stab. span 29⅞ in. Wing area 570 sq. in. Uses any ⅞ in. motor. 3½ in. spec. rubber wheels.

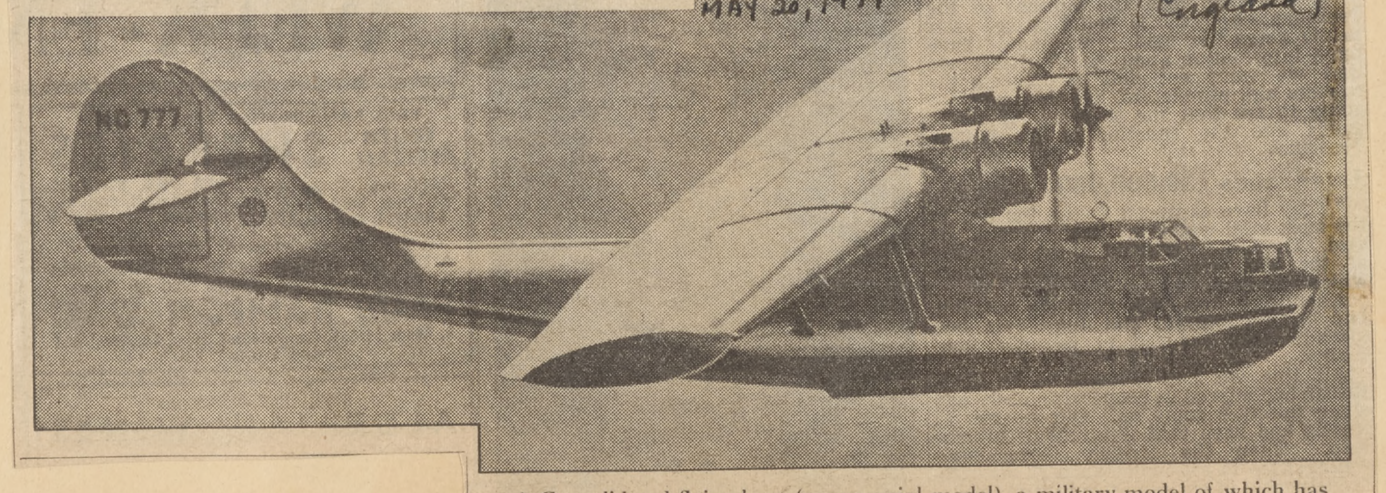
New Class C Endurance Contest Model $1.50 *plus 15c postage*

Rubber powered. Latest type folding prop. increases glide. Wing streamlined into fuselage. Removable tail simplifies winding. Rubber Tensioner prevents shifting wt. of unwinding rubber. Span 41". Wt. 4.23 oz.

Megow's
Dept. PA, Howard and Oxford Sts., Philadelphia, Penna.
or 217 N. Desplaines St., Chicago,
or Great Western Merc. Co.,
718 Mission Street, San Francisco

AMERICAN FLYING BOAT

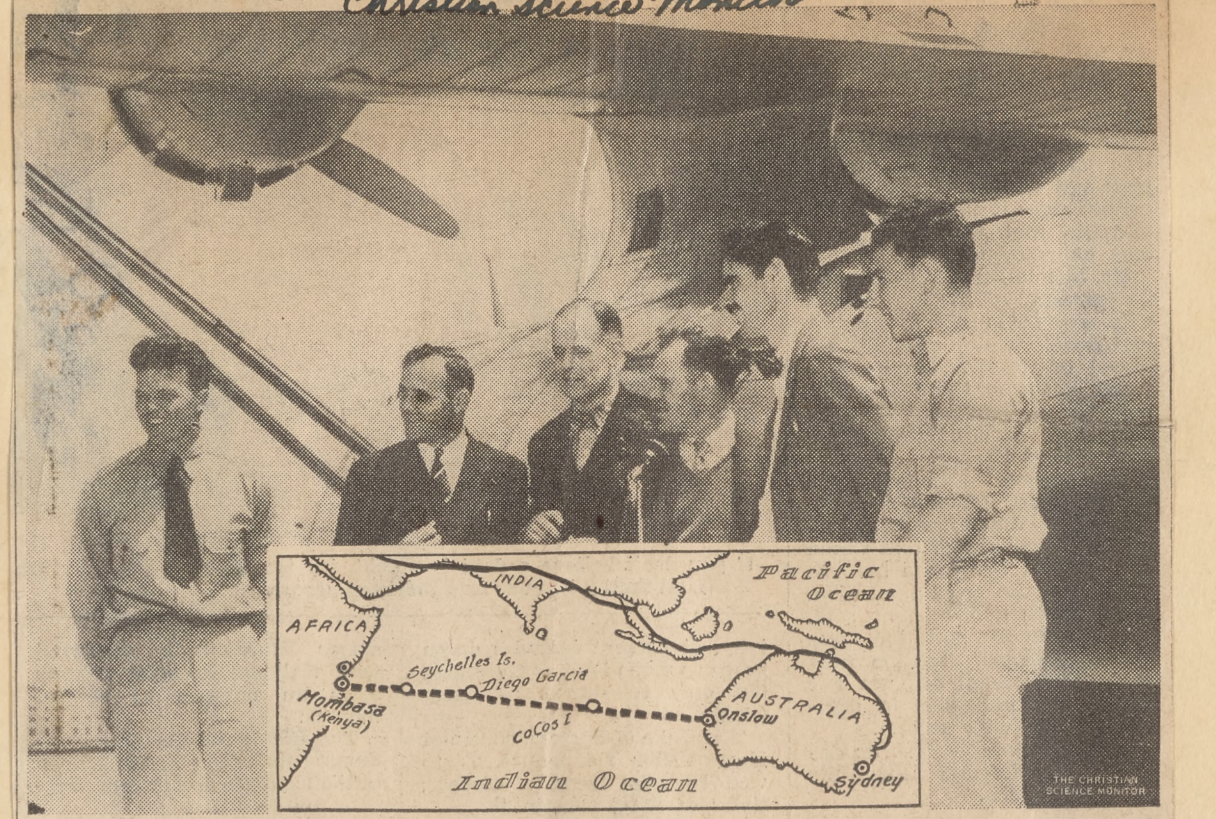
"TELEGRAPH + MORNING POST"
MAY 20, 1939
(England)



A Consolidated flying-boat (commercial model), a military model of which has been bought by the Air Ministry and will be flown from San Diego, California, to Felixstowe Experimental Station for Air Ministry tests.

Flying Laboratory Heads for Africa

Christian Science Monitor



Wide World

The Guba Starts Air Trail From Australia

From among those shown with the flying laboratory plane on a previous flight are several participants in the Australia-Africa hop. Left to right: Stephen Barinka, an engineer; Raymond Booth, radio operator; Lewis A. Yancey, navigator on the present flight; Russell Rogers, pilot on the present flight; Richard Archbold, owner who has loaned the ship for the journey, and Gerald Brown, engineer.

The inset shows, in dotted lines, the water route the Guba will survey after the journey from Sydney to Western Australia. The solid line shows the present Empire air route from Europe to Australia.

Australia-Africa Air Trail Tried By Flying Boat

SYDNEY, New South Wales, June 5 (AP)—The flying boat Guba took off June 3 on the first leg of an attempt to blaze a new Australia-Africa air trail.

Lewis A. Yancey, American aviator who flew the Atlantic to Rome in 1929, is navigator, and Russell Rogers, American flying boat pilot, is first pilot. Mombasa, Kenya, 5,000 miles over the Indian Ocean, is the ultimate objective.

The Guba was lent by Richard Archbold, a wealthy young American, for the flight sponsored by Capt. Percy G. Taylor of Sydney, who proposed it five years ago, urging the route as an alternative for the England-Australia airmail service in time of war.

Captain Taylor has been prominent in Australian aviation for many years. He was navigator for the late Sir Charles Kingsford-Smith on flights from Australia to New Zealand in the Southern Cross in 1933 and 1934, and second pilot on the flight from Brisbane to California in the Lady Southern Cross in 1934.

He enlisted the co-operation of Mr. Archbold, who led an American Museum of Natural History scientific expedition at Moresby, Papua.

Archbold Bound for Chagos Isles In Flight Across Indian Ocean

S.D. TRIBUNE
6/13/39

Speeding across the Indian ocean on a survey flight for the Australian government, Richard Archbold's $250,000 Consolidated-built flying boat, the Guba, today was en route from the Cocos islands group to Diego Garcia, in the Chagos islands, which lie about 1000 miles south of Ceylon. Archbold, research associate of the American Museum of Natural History, and his flight companions took off from Cocos islands at 2 a.m. (PST), and at 5 a.m. still had 1500 miles to go on the 1717-mile distance between the two island groups.

Word of the take-off was received here in a direct short-wave radio contact between Ray Booth, radioman aboard the Guba, and Barney F. Boyd, 4635 Fifty-sixth st., radio amateur, who has maintained radio communication with the Archbold expedition ever since the Guba left San Diego June 2, 1938, for New Guinea, where Archbold carried on scientific work for the American Museum of Natural History for nearly a year.

Four Contacts Made

Jubilant because today was the first time he has made direct contacts with the plane since the flying boat left the New Guinea base camp at Hollandia several weeks ago, Boyd said he made four contacts with the plane from 4:35 a.m. to 6 a.m. The last position report was latitude 10 degrees, 46 minutes south; longitude 89 degrees, 20 minutes east.

After leaving New Guinea the Guba was flown to Australia to be made ready for the flight across the Indian ocean and pick up Capt. P. G. Taylor, Australian government representative. The plane left Sydney June 3 and flew 2000 miles across Australia to Port Hedland, on the west coast, in less than 18 hours. It left the Australian mainland for the Cocos islands a week ago yesterday.

"Archbold reported he plans to spend several days at Diego Garcia," said Boyd. Weather conditions for the flight today were described as good, and Boyd said Booth reported from the plane that "everything is going along nicely."

No More Until Tonight

An interesting feature of the contacts made between Boyd and the Guba today was the fact that Boyd was in contact both with the Guba, flying over the Indian ocean more than 10,000 miles from San Diego, and with a radio operator remaining at the base camp in New Guinea, 7178 miles from here, but the base camp radio operator could not hear the radio messages from the plane. Those on the plane, Boyd said, could hear the base camp operator, but he couldn't hear them, although he could hear Boyd.

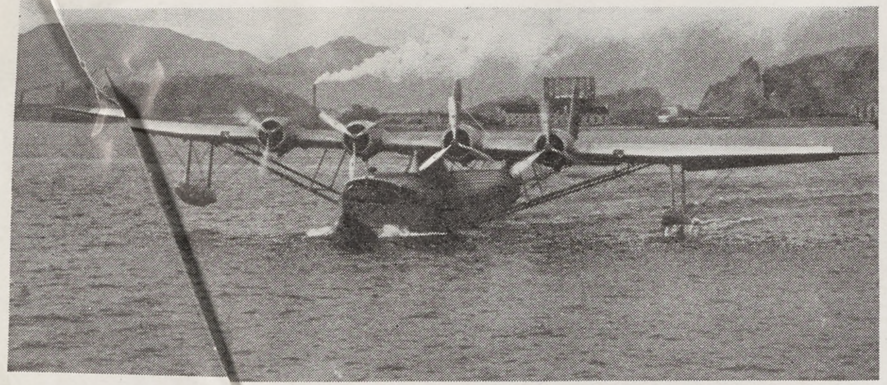
The 6 a.m. radio contact with the Guba was the last Boyd will hear until tonight, he said.

Boyd yesterday visited with Harold Ramm, radioman who was with the Archbold expedition in New Guinea, who turned to San Diego by steamer. Ramm, who went to New Guinea by steamer from New York early in 1938, said details of the accomplishments of the expedition are to be released by Archbold and the museum.

"We had the best of radio equipment in New Guinea, and I don't recall a day when we were not in communication with some part of the United States," said Ramm. Commenting on the weather in New Guinea, Ramm said, "when Barney would call for the weather I'd tell him 'sun shining in the west, cloudy in the east, temperature 86' almost every day." Ramm was welcomed by Mrs. Ramm when he left the liner at San Pedro. He plans to be here to welcome Archbold when the Guba returns to San Diego after a flight across Africa and the Atlantic ocean about July 1.

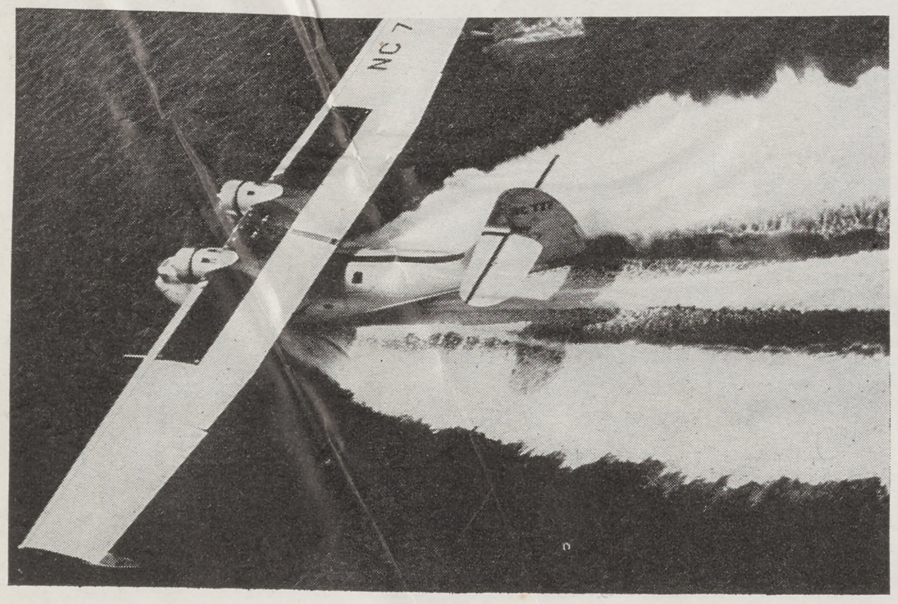
The Chagos islands, the Guba's goal on today's flight, belong to Great Britain. The total land area is about 76 square miles. Most of the population, about 500, are Negroes, who live on Diego Garcia, which is the largest of the islands, being 13 miles in length and six miles wide. Diego Garcia has a large lagoon, where the Guba is expected to alight.

Richard Archbold has spanned the continent five times in his first and second Consolidated flying boats ('Guba II' above). Such flights are as safe as with landplanes.



Flying boats have access to hundreds of lakes, rivers, bays and harbors. Practically every major city in the U. S. has some water facilities adaptable to these ships.

With large ships water take-offs are, by comparison, much safer than with landplanes in case of engine failure. The boat pilot simply lets his craft settle onto the water.



railroads have. Then, too, in many case there is no more land available for en larging existing fields, and growing citie are crowding them. New routes will b opened to accommodate future demand Will these routes be as castly to buil and maintain as existing ones? Probabl more so.

So—the demand for a solution to th airport problem is opening a brand ne field to pioneering—that of using air boats for cross-country work. Most o the pioneering along this line so fa has been incidental to other objects. Th Navy and Coast Guard have made prac tical demonstrations in coastal flying Twice in 1938 Naval patrol-bomber spanned the continent non-stop. Th object was to demonstrate that such bi airboats could be based on either coas and be transferred quickly to the othe coast. Richard Archbold, noted ex plorer, has five times spanned the con tinent in his PBY airboats. Three c these trips were non-stop. At preser Archbold's ship, the *Guba,* makes almos daily flights from Hollandia on the coas of New Guinea Netherlands to Lak Habemma, 12,000 feet high in the dee interior of the island. These fligh transport food and scientists and nati workers over jungles and mountains t camps that would be impossible to reac by any other means.

Such feats, routine to the men wh perform them, demonstrate the pract cality of using airboats on commerci overland routes. Commercial interes are just beginning to investigate seriou ly the possibilities. It is known th Pan American has men busy at pap work on the problem, and that Conso dated Aircraft in San Diego is unde taking a considerable research. Rumo whisper that several other airlines a manufacturers are playing with the ide

Airboats flying across the contine at first thought, sounds as dangerous landplanes flying the Atlantic. But isn't, really. Glance at the map. The are thousands of lakes, rivers and ha bors in the United States suitable f the heaviest airboat to take off fro Many rivers and lakes form continuo landing areas for hundreds of mil Besides these, there are thousands other bodies of water, smaller, thou quite large enough for emergency lan ings. An airboat can land in about h the distance a landplane requires becau of the braking effect of the water. making a slightly zigzag course acr a southern route, for instance, the av age distance between water is 60 mil No distance is greater than a hundr miles.

But what would happen if an airb had to make a forced landing wh there was no water? That's a go question, and there's a good answer it, because it has already happened number of times. A few years ago passenger disembarking from o American's Consolidated Co stood on the landing float lookin ship.

"You know," he said to the p was in a plane just like this th

(*Continued on page* 70)

Are Flying Boats . . .

(*Continued from page* 26)

day when it made a forced landing in the interior of Cuba. No one was hurt and it didn't seem to do any damage."

The pilot laughed. "Yes, I remember that," he replied. "This is the same ship that made the ploughed-field landing, and I'm the same pilot!"

He didn't explain how the ship was moved to the nearest water. That, of course, must have been a feat. But, in an emergency, it is comforting to passengers to realize that an airboat can sit down anywhere a landplane can, and many more places besides.

The U. S. Army and other organizations have had experience with amphibians landing on an airport with the wheels retracted because the pilot forgot to lower them—a fairly common occurrance a few years ago. Seldom has serious damage been done in such landings. The hulls of amphibians and airboats are built to withstand high impact loads. A landplane alighting on anything except a smooth field would have its wheels retracted anyway, to avoid nosing over or ground looping. Though passengers and crew might escape injury in such landings, certainly the plane's belly, wings and propeller would be damaged. The airboats wings and propellers, built high to clear the water, would be more likely to avoid damage in an emergency ground landing.

Of course a landing in mountainous terrain would be disastrous to either type of plane. But then again, the airboat flying cross-country would be safer if it lost its way, because there are always alternative bodies of water in all directions scattered over the country. The landplane off an established airway is helpless until it finds another airway with its line of emergency fields and airports, and these usually are hundreds of miles apart. The same applies when a different route must be taken because of a sudden storm.

Because water landing areas often are unlimited, it is safer to land an airboat in poor visibility than a landplane, which must find a comparatively small target. Water take-offs also are safer in case of engine failure. The airboat has merely to settle back in the water, while the landplane is off its level runway and must crash.

If we concede the safety of airboats in cross-country flying, why, then, are they not used commercially in that work? At first glance the economics involved appears to favor the airboat. Probably the greatest saving would be in terminals and emergency fields. Water costs little if anything to maintain. In places where it does not already exist in convenient locations, dams might be built or basins flooded. These might serve also as recreation lakes, or as storage and power reservoirs. The Civil Aeronautics Authority has requested $37,000,000 for modernization of airways. A small part of this sum would provide a cross-continental airway for the big boats.

Passengers likely would prefer airboats, especially when great speed and a direct route are not essential. For one thing the necessarily high wings offer an unobstructed view of the ground. And then waterways, with their shipping and vegetation, are always more interesting than straight land. Certainly resorts would develop at some of the more picturesque stopping places.

Along the coasts, from Maine to Florida, from San Diego to Alaska, there exists almost continuous landing areas of harbors, esturaries, rivers and lakes. The Coast Guard and the Navy have used these daily for years in routine patrols and maneuvers. Yet the possibilities have barely been scratched by commercial operators.

The trans-ocean lines probably will not bother with the coast trade, any more than trans-ocean steamers find it worth while to compete with coastal steamers. Coastal steamers act as feeders for their big sisters. It seems logical that coastal airboats should play the same part in relation to trans-ocean airboats. The necessary equipment would actually be cheaper per passenger mile than that used by steamship companies. There would be less initial expenditure and less operating cost.

Now let's examine the drawbacks which, at present, are serious. One is the fact that some inland cities do not have convenient bodies of water. A way of overcoming this would be to use amphibians. They can be built as large as any landplane, and the cities on the route away from water would then have to accommodate them with landing fields of sufficient size. Amphibians, however, because of weight and drag, are less efficient than either landplanes or airboats. And yet, if the demand was great enough, engineers would find means for increasing their efficiency. Another means of serving cities off the waterways would be to develop artificial lakes. Very little depth would be needed—a landing channel six feet deep would do.

Another, though lesser problem, is that of pilots. The airboat pilot must be a good sailor as well. This was demonstrated several years ago when General Italo Balbo brought a squadron of Italian Savoia-Marchetti airboats on a trans-Atlantic tour. The pilots were all Army fliers, as was their commander. In preparation for the tour they were given what was then thought an extensive course in airboat work. It was not enough. They were still soldiers. Numerous disasters befell them, all during surface maneuvers and all due to poor seamanship. Commercial airboat pilots must be given special training.

The Civil Aeronautics Authority inherited a regulation prohibiting public carrier airboats from flying over land, though landplanes carrying passengers are permitted to fly over water. This is a foolish regulation and is almost certain to be cancelled soon. The CAA is now making a thorough investigation of three projected cross-continental routes for airboats and will probably be asking for an appropriation to develop one or

(*Continued on page* 76)

S.D. UNION 6/20/39

Report that Richard Archbold's flying scientific expedition is safe on the Isle of Paradise in the Scychelles islands was received here yesterday by Bernard F. Boyd, radio contact man for the flight. Previous reports stated Archbold had flown his giant San Diego-built flying boat, Guba, to Mombasa, Kenya colony, East Africa.

Boyd said he contacted the Hollandia, New Guinea, base of the expedition yesterday for the first time in three days and learned that Archbold had been making short trips through the island group.

Hollandia radio operators told him Archbold plans to take off tomorrow morning (tonight, Pacific standard time) for Mombasa.

"Modern Transport" - 6/3/39

New American Flying-boat.

A new passenger flying-boat has been built by the Consolidated Aircraft Corporation, and first test flights were conducted recently. The machine has been styled Consolidated Model 31, and has been designed and constructed as a private venture. Passenger accommodation is for 52 persons, and the designers state that accommodation on transatlantic services would be for 28 passengers. This suggests that the flying-boat may be taken up by American Export Lines for their projected service. It has an all-up weight of 50,000 lb. The span is 110 ft. and length 73 ft. Power is derived from two Wright engines of a new type. These are Wright Duplex-Cyclones, and are two-row, air-cooled, 18-cylinder radials rated at 2,000 h.p. each. This new engine is a development of the 1,500 h.p. two-row, 14-cylinder Cyclone, and is being shown at the World's Fair in New York. The Consolidated Model 31 will have three-bladed Hamilton fully feathering airscrews. To facilitate beaching there is a retracting nose-wheel and two side wheels, the latter being removable. The high wing is equipped with partly retractable outboard floats and hydraulically operated Fowler flaps. There are two decks, and the crew is accommodated on the upper one. No performance figures have so far been released, but claims are understood to have been made for a speed in excess of 250 m.p.h.

NEW FLYING-BOAT TO BE TESTED

30/5/39 (England)

U.S. MACHINE WITH 3,000 MILES RANGE

By Major C. C. TURNER

Flight delivery to Felixstowe Marine Aircraft Experimental Station of a Consolidated Military PBY flying-boat—a picture of which appeared in THE DAILY TELEGRAPH on Saturday—will take place early in July. There it will undergo Air Ministry tests.

The flying-boat will leave San Diego, California, and will pass over Kansas City, Chicago, Detroit, Toronto, Ottawa, Montreal, and Quebec, to Botwood, Newfoundland (British Transatlantic service base), and thence cross the Atlantic, passing Cardigan Bay on its way to Felixstowe.

The total distance to be flown is 5,750 miles.

The PBY is extensively used by the U.S. Navy for long-range reconnaissance, and frequently transfers from base to base 3,000 miles apart.

FOUR MACHINE-GUNS

A commercial version of the same machine, Model 28, known as the "Guba" (Sudden Squall), will next month make an exploratory route flight from Perth, Australia, to Mombasa, Africa, crossing the Indian Ocean, with a view to developing, for strategical reasons, an alternative route between Australia and Great Britain. This flight has the financial backing of the British Government.

The flying-boat has an all-up weight of 12¼ tons. With twin Wright engines, it has a top speed, at 14,000 feet, of 206 miles an hour, and cruises at its economical speed at 150 m.p.h.

The military type is armed with four machine-guns, all movable, and placed for defence in all directions.

Are Flying Boats . . .

(*Continued from page* 70)

more of these before long.

But the greatest drawback is the cost of changing over to airboats, or of making the initial step in opening new lines for them. Airlines are already equipped with fleets of landplanes and the personnel trained to operate them. They have spent years and much money educating the public to their services. And, most important of all, no manufacturer is building commercial airboats on a production basis at the present time.

How would airboats compare in cost with landplanes? The only airboat manufactured in quantities is the Navy's PBY long-range patrol-bomber. It costs, completely equipped except for armament, from $110,000 to $115,000. The DC-3, slightly smaller than the PBY, faster and with better performance but less range and payload capacity, costs the airlines about $100,000. This is the closest comparison that can be made between airboats and landplanes. It is not altogether a fair comparison. The DC-3 is outfitted much more luxuriously than is the military plane, but does not need as complex equipment for navigation and radio. The PBY was first produced in 1932, the DC-3 in 1937, so that the latter has the benefit of five years more experience in design. Then too, the PBY would cost less if manufactured in quantities for commercial lines, because when built for the navy government inspections and red tape slows production.

It is probable that large airboats would cost less than comparable landplanes in commercial production. The hull of the airboat is more costly to build than the fuselage of the landplane, but the landing gear of the latter more than offsets the difference.

When a special landplane is developed the first model might cost as much as $2,000,000, as has the DC-4. Subsequent editions of the DC-4 will get down to a reasonable figure. Boeing contracted to build six of the "314s" at $500,000 each and is said to be losing money at that price. Now that the dies and tools are set up and production of this particular ship is organized, future "314s" should drop considerably in cost.

Last November Igor Sikorsky, lecturing in Berlin before the Lilienthal Society for Aeronautical Research, made aerodynamic comparisons of airboats and landplanes. At no place within known gross weight limits does the airboat possess the *aerodynamic* efficiency of the landplane, Mr. Sikorsky's figures show. In the very small sizes, around 2,000 lb., the airboat requires nearly twice the horsepower. Aerodynamic efficiency of each type of plane increases as the size is increased. *But*—from around 20,000 lb. to 200,000 lb. the airboat's efficiency increases at a much greater rate than that of the landplane. In the 22,000 lb. class the airboat requires 75.5 h.p. per ton (metric) of gross weight and the landplane 49.2 h.p. per ton. In the 110,000 lb. class the airboat rates 28.5 h.p. to the landplane's 22.8. The planes we have discussed fall between these figures, the PBY (commercial) weighing 28,000 lb. gross, the DC-4 65,000 lb. gross, and the "314" 84,000 lb. gross. But when still larger ships come, see how the aerodynamic comparison grows close. In the 551,000 lb. class the airboat requires 14.4 h.p. to the landplane's 12.7! Beyond this size the comparison is any man's guess, though it is reasonable to believe that the airboat, in sizes not yet conceived, will equal if not surpass the aerodynamic efficiency of the landplane. In the large sizes the landplane still has the edge in speed and climbing ability, the airboat in range and payload capacity.

The reason for these differences is due mainly to the shape of the airboat's hull, and to the landing gear of the landplane. In the small sizes the airboat must have a cabin higher than is necessary for crew and passengers, or else a superstructure, in order to keep the propellers above the spray level. Where the superstructure is used it takes several forms in different types of airboats. In the PBY it is a streamlined member housing the engineers' cabaña that raises the wing above the hull. Both the Martin and Sikorsky clippers have somewhat similar streamlined members to raise the wing. The Douglas *Dolphin* has its propellers raised above the wing. In either case a drag is caused. But the spray level remains nearly constant. Therefore if the airboat is large enough it may be designed aerodynamically perfect except for the bottom of the hull, and its propellers will be naturally placed high enough to clear the spray. No superstructure to raise them is needed. Examples of such large airboats are the Boeing "314", the Sikorsky XPBS-1, and the Consolidated XPB2Y-1. Landplanes, on the other hand, require a relatively more complicated and heavier landing gear as they increase in size.

So you have here a summary of some of the problems caused by increasing airport costs and landplane sizes. They inevitably bring up the question, "Will airboats be the answer?"

END

Other men have read and profited by our free books "Patent Protection" and "Selling an Invention." Fully explain many interesting points to inventors and illustrate important mechanical principles. With books we also send free "Evidence of Invention" form. Prompt service, reasonable fees, deferred payments. Write immediately to: Victor J. Evans & Co., Registered Patent Attorneys, 117-H, Victor Building, Washington, D. C.

PATENT YOUR IDEA

COLT 45 Cal. "FRONTIER" MODEL $1.45

Basswood construction kit with working plans, machined barrel, cylinder and all necessary hardware.

COLT 45 Cal. "FRONTIER" model kit, 4¾" barrel	$1.45
COLT 45 Cal. "FRONTIER" model kit, 5½" barrel	1.55
COLT 45 Cal. "FRONTIER" model kit, 7" barrel	1.70
COLT 45 Cal. Automatic Pistol kit	1.00
Full scale Thompson Sub Machine Gun model kit	3.00
SAVAGE Cal. 32 Auto. Pistol kit, machined barrel	.75
LUGER Auto. Pistol with 4" machined barrel	1.75
LUGER Auto. Pistol with 6" machined barrel	1.90
COLT 25 Cal. Automatic Pistol kit	.50

These beautiful kits are complete in every detail and made of the best basswood. All parts are cut to shape and require only a short time to finish. Postpaid in U. S. A.

GUN MODEL CO.
Dept. K67, 2908 N. Nordica Ave., Chicago, Ill.

BUILD ONE IN A COUPLE EVENINGS AT HOME
Megow's
COMMANDER
Gas-Powered MODEL

$4.95 plus 20c postage

FASTER and faster come new ideas from the experimental field and experimental laboratory work of Megow engineers . . . ideas that are producing the most interesting easy-to-build and easy-to-fly models in the world. If you really want to learn the principles of flying—without spending too much time on tedious details—build Megow models!

See your dealer, or send for new Megow catalog showing the latest championship gas and rubber-powered models and such advancements as Megow's hollow-carved and finished Leading Edge, revolutionary monocoque (skin construction) fuselages that are so easily and quickly built, PLANEFILM Magic Covering . . . everything that's newest in Model Airplanes, Ships and HO-Gauge Railroads.

Send 5c postage today for your copy of the new Spring and Summer Catalog

Monocoque constr. fuselage, hollow-carved Leading Edge, strongest wing constr. ever designed, Clark Y Airfoil, high Aspect Ratio. Extremely flat glide, max. climbing ability. Span 6 ft. Stab. span 29⅞ in. Wing area 570 sq. in. Uses any ⅞ in. motor. 3½ in. spec. rubber wheels.

New Class C Endurance Contest Model $1.50 *plus 15c postage*

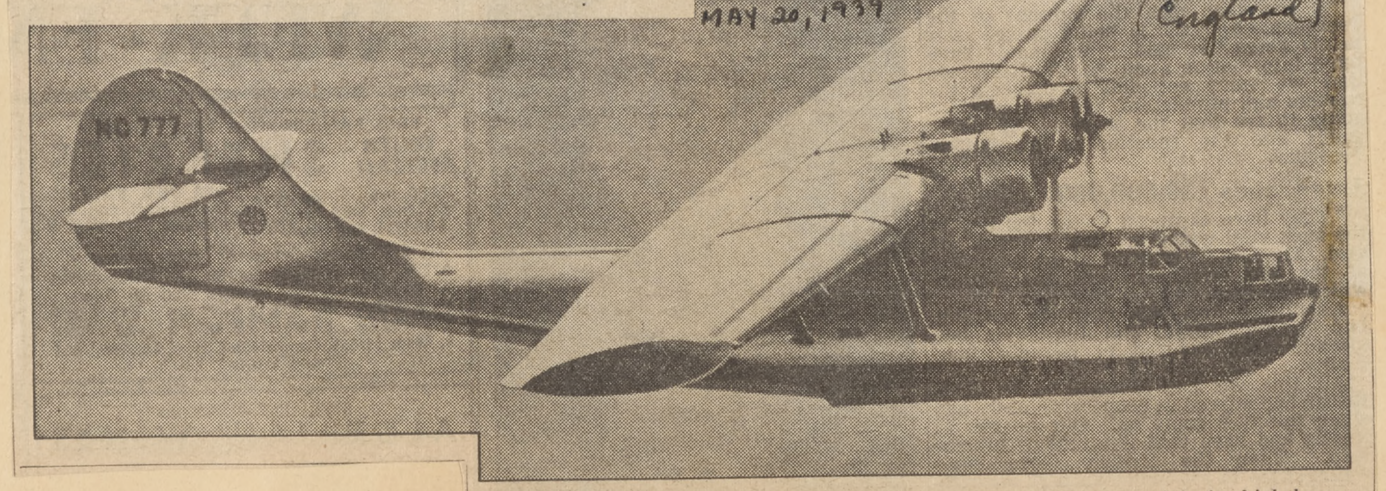
Rubber powered. Latest type folding prop. increases glide. Wing streamlined into fuselage. Removable tail simplifies winding. Rubber Tensioner prevents shifting wt. of unwinding rubber. Span 41". Wt. 4.23 oz.

Megow's
Dept. PA, Howard and Oxford Sts., Philadelphia, Penna.
or 217 N. Desplaines St., Chicago,
or Great Western Merc. Co., 718 Mission Street, San Francisco

---

AMERICAN FLYING BOAT

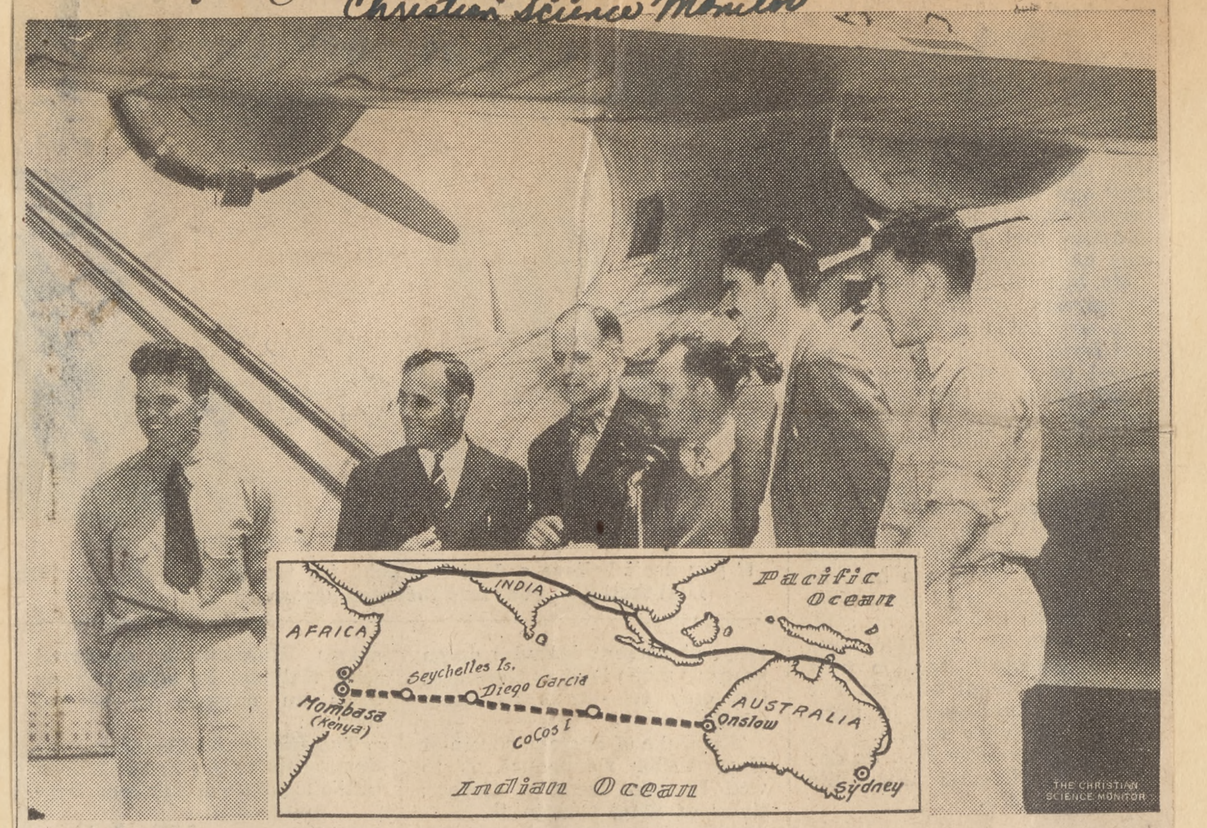
"TELEGRAPH + MORNING POST"
MAY 20, 1939
(England)



A Consolidated flying-boat (commercial model), a military model of which has been bought by the Air Ministry and will be flown from San Diego, California, to Felixstowe Experimental Station for Air Ministry tests.

Flying Laboratory Heads for Africa

Christian Science Monitor



Wide World

The Guba Starts Air Trail From Australia

From among those shown with the flying laboratory plane on a previous flight are several participants in the Australia-Africa hop. Left to right: Stephen Barinka, an engineer; Raymond Booth, radio operator; Lewis A. Yancey, navigator on the present flight; Russell Rogers, pilot on the present flight; Richard Archbold, owner who has loaned the ship for the journey, and Gerald Brown, engineer.

The inset shows, in dotted lines, the water route the Guba will survey after the journey from Sydney to Western Australia. The solid line shows the present Empire air route from Europe to Australia.

Australia-Africa Air Trail Tried By Flying Boat

SYDNEY, New South Wales, June 5 (AP)—The flying boat Guba took off June 3 on the first leg of an attempt to blaze a new Australia-Africa air trail.

Lewis A. Yancey, American aviator who flew the Atlantic to Rome in 1929, is navigator, and Russell Rogers, American flying boat pilot, is first pilot. Mombasa, Kenya, 5,000 miles over the Indian Ocean, is the ultimate objective.

The Guba was lent by Richard Archbold, a wealthy young American, for the flight sponsored by Capt. Percy G. Taylor of Sydney, who proposed it five years ago, urging the route as an alternative for the England-Australia airmail service in time of war.

Captain Taylor has been prominent in Australian aviation for many years. He was navigator for the late Sir Charles Kingsford-Smith on flights from Australia to New Zealand in the Southern Cross in 1933 and 1934, and second pilot on the flight from Brisbane to California in the Lady Southern Cross in 1934.

He enlisted the co-operation of Mr. Archbold, who led an American Museum of Natural History scientific expedition at Moresby, Papua.

Archbold Bound for Chagos Isles In Flight Across Indian Ocean

S.D. TRIBUNE 6/13/39

Speeding across the Indian ocean on a survey flight for the Australian government, Richard Archbold's $250,000 Consolidated-built flying boat, the Guba, today was en route from the Cocos islands group to Diego Garcia, in the Chagos islands, which lie about 1000 miles south of Ceylon. Archbold, research associate of the American Museum of Natural History, and his flight companions took off from Cocos islands at 2 a.m. (PST), and at 5 a.m. still had 1500 miles to go on the 1717-mile distance between the two island groups.

Word of the take-off was received here in a direct short-wave radio contact between Ray Booth, radioman aboard the Guba, and Barney F. Boyd, 4635 Fifty-sixth st., radio amateur, who has maintained radio communication with the Archbold expedition ever since the Guba left San Diego June 2, 1938, for New Guinea, where Archbold carried on scientific work for the American Museum of Natural History for nearly a year.

Four Contacts Made

Jubilant because today was the first time he has made direct contacts with the plane since the flying boat left the New Guinea base camp at Hollandia several weeks ago, Boyd said he made four contacts with the plane from 4:35 a.m. to 6 a.m. The last position report was latitude 10 degrees, 46 minutes south; longitude 89 degrees, 20 minutes east.

After leaving New Guinea the Guba was flown to Australia to be made ready for the flight across the Indian ocean and pick up Capt. P. G. Taylor, Australian government representative. The plane left Sydney June 3 and flew 2000 miles across Australia to Port Hedland, on the west coast, in less than 18 hours. It left the Australian mainland for the Cocos islands a week ago yesterday.

"Archbold reported he plans to spend several days at Diego Garcia," said Boyd. Weather conditions for the flight today were described as good, and Boyd said Booth reported from the plane that "everything is going along nicely."

No More Until Tonight

An interesting feature of the contacts made between Boyd and the Guba today was the fact that Boyd was in contact both with the Guba, flying over the Indian ocean more than 10,000 miles from San Diego, and with a radio operator remaining at the base camp in New Guinea, 7178 miles from here, but the base camp radio operator could not hear the radio messages from the plane. Those on the plane, Boyd said, could hear the base camp operator, but he couldn't hear them, although he could hear Boyd.

The 6 a.m. radio contact with the Guba was the last Boyd will hear until tonight, he said.

Boyd yesterday visited with Harold Ramm, radioman who was with the Archbold expedition in New Guinea, who turned to San Diego by steamer. Ramm, who went to New Guinea by steamer from New York early in 1938, said details of the accomplishments of the expedition are to be released by Archbold and the museum.

"We had the best of radio equipment in New Guinea, and I don't recall a day when we were not in communication with some part of the United States," said Ramm. Commenting on the weather in New Guinea, Ramm said, "when Barney would call for the weather I'd tell him 'sun shining in the west, cloudy in the east, temperature 86' almost every day." Ramm was welcomed by Mrs. Ramm when he left the liner at San Pedro. He plans to be here to welcome Archbold when the Guba returns to San Diego after a flight across Africa and the Atlantic ocean about July 1.

The Chagos islands, the Guba's goal on today's flight, belong to Great Britain. The total land area is about 76 square miles. Most of the population, about 500, are Negroes, who live on Diego Garcia, which is the largest of the islands, being 13 miles in length and six miles wide. Diego Garcia has a large lagoon, where the Guba is expected to alight.

SCIENCE CRUISE IS SHOP TALK HERE

S.D. UNION 6/13/39

MRS. RAMM HAROLD G. RAMM
. . . tells her about Hollandia and his trip around the world.

* * *

Archbold Radioman Returns to S.D.

★ ★ ★ ★ ★ ★

HAROLD RAMM REVIEWS SCIENCE TRIP

"It was a great experience—but San Diego never looked better to me."

This is the way Harold G. Ramm, radioman with the Richard Archbold Hollandia scientific expedition, put it yesterday when he returned after almost 16 months away from the United States.

"I wished a number of times that I had gone along, too," said vivacious Mrs. Ramm, who met her husband when his ship docked at Wilmington yesterday morning. They were busy unpacking in their quarters in Arista apartments, 433 Nutmeg st., when they were interviewed.

'WHERE'S THE GUBA?'

"Where's the Guba?" Ramm asked, referring to Archbold's big San Diego-built ship in which he went from Hollandia, New Guinea, to Sydney, Australia, to catch a steamer for the United States.

"That reminds me," he said. "I'm supposed to go out and see Barney Boyd. I talked with him almost every day for the last 14 months and it will be good to see him again."

Ramm's job in Hollandia was to run the base communication system for the Archbold expedition,

(Continued on Page 2, Col. 3)

Richard Archbold, flying scientist, was to take off today at 2 a. m., Pacific standard time, from Cocos island, on a 1400-mile flight to Diego Garcia island in the Indian ocean, on the next leg of his air journey from Hollandia, New Guinea. The take-off, originally scheduled for yesterday, was delayed, according to information received from the Hollandia base camp by Barney Boyd, local short-wave amateur.

---

2 Lose Lives, 11 Hurt In $100,000 S. F. Fire

SAN FRANCISCO, June 12 (A.P.)—A $100,000 fire brought death to two Japanese, injured 11 firemen and destroyed the Japanese American News building near here today.

Michi Kugenuma, 21, was burned to death when, police said, he stopped to pack a suitcase. H. Tanaka, 41, a printer who was among those carried from the four-story building by firemen, died of burns in a hospital.

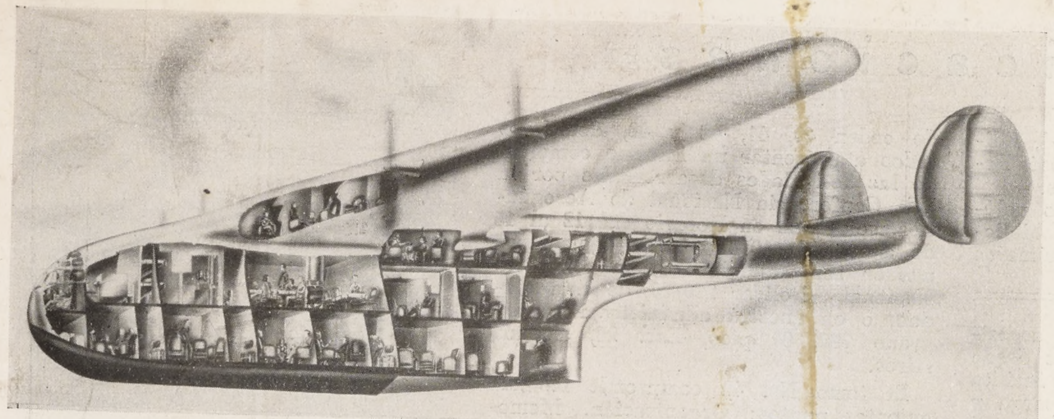
None of the 11 firemen injured during the three hour fight against the flames was badly hurt.

Argentina

Marzo 1939

AVIA

El Hidroavión proyectado por la Consolidated Aircraft Corporation para el transporte trans-atlántico de 100 pasajeros



Sección longitudinal ideal del hidroavión proyectado por la Consolidated para el transporte de 100 pasajeros sobre las rutas del Atlántico. Nótese las cabinas situadas en el ala y la forma no común de la parte posteroinferior del casco, que lo asemeja al Handley-Page «Hampden». Sus cuatro motores estarán alojados en el interior de la célula.

El hidroavión Consolidated para 100 pasajeros, diseñado para llenar los requisitos exigidos por la Pan American Airways en su concurso para la adquisición de aviones para el servicio transatlántico, es un aparato no sólo veloz y económico, sino también confortable y conveniente para los pasajeros. Los requisitos esenciales para este avión de pasajeros eran: carga comercial, cerca de 11.500 Kg.; 16 tripulantes; radio de acción, 8000 Km. y cabina preferiblemente sobrecargada, para volar a 6.000 m. con una presión interior de la cabina equivalente a 2.450 m.

Como resultado de estudios previos, se llegó a la conclusión de que con los motores obtenibles actualmente o en un futuro cercano, el hidroavión proyectado debería ser propulsado por seis grupos motopropulsores, lo que daría por resultado un peso total, con carga completa, de más de 90 toneladas, a menos que se hallase el medio de aumentar la eficiencia del diseño y permitir una reducción material en el tamaño de la concepción original. Tal reducción traería automáticamente aparejados muchos refinamientos, tales como la eliminación de las ineficiencias resultantes del mayor número de motores. Este nuevo avión, diseñado de acuerdo a las tendencias de la Consolidated, incorpora características tales como elevada relación de alargamiento alar y carga por unidad de superficie sustentadora, remaches exteriores a nivel con el revestimiento, en toda la superficie, y flotadores auxiliares escamoteables en el intradós del ala.

Se desprende de inmediato que esta reducción de tamaño comprometía directamente y en razón directa el alojamiento de los 100 pasajeros y 16 tripulantes y sus facilidades de habitación. Un estudio detallado de este aspecto del proyecto reveló que con sólo un ligero aumento del espesor alar y un consecuente aumento de resistencia muy pequeño, sería posible que 36 de los 100 pasajeros fuesen alojados en el ala, así como también los motores, lo que mejoraría enormemente el rendimiento.

El problema principal que se planteó para acomodar los pasajeros en el ala fué que las cabinas serían atravesadas por las costillas. Esta dificultad fué allanada colocando costillas principales a los costados de cada compartimiento, en forma de tabiques y fijando entre cada una de ellas costillas auxiliares formando arcada, de manera de no reducir la altura efectiva de la cabina. El diseño del ala para llenar esta finalidad demostró tener otra ventaja importante. El revestimiento usado para resistir las cargas de flexión del ala sería amplio, sin otros refuerzos, para soportar las cargas de presión que se presentan en el vuelo subestratosférico.

El diseño del hidroavión Consolidated quedó por lo tanto establecido. Este aparato con cabinas sobrecargadas estaba en condiciones de llenar los requisitos de la Pan American, con un peso total, cargado, de 77.000 Kg. desarrollando un promedio mínimo de velocidad de crucero de 386 Km/h. para un radio de acción de más de 8000 Km. Los cuatro motores enfriados por líquido, de 2[illegible]0 C.V. cada uno están alojados en el ala, entre las costillas, con árboles de extensión que accionan las hélices tractoras. Estos motores serán accesibles en vuelo, para su mantenimiento y reparaciones menores.

El interior de la aeronave ha sido dispuesto con 36 pasajeros en el ala y el resto, o sea 64, en el fuselaje, con cabinas de 2 ó 4 plazas. Sillones giratorios de descanso, de tipo ajustable y confortablemente tapizados, serán provistos para los vuelos diurnos. Durante la noche, estos sillones son rápidamente convertibles en cómodas camas inferiores, mientras que las superiores se forman extrayéndolas de la pared, al estilo de los pullman ferroviarios. Ambas camas tienen suficiente espacio en alto para permitir sentarse en posición erguida en ellas, sin tocar la de arriba o el techo de la cabina. Todas las cabinas de dos plazas tienen la conveniencia de haber sido dotadas de un lavatorio combinado con tocador, plegadizos, mientras que las cabinas para cuatro personas están provistas de 12 tocadores, diseminados por todo el avión.

Cada cabina, además de estar hermosamente tapizada y decorada, está completamente aislada contra los ruidos y posee aire acondicionado, con un difusor a presión, sin corrientes de aire. La temperatura, grado de humedad y presión en todo el avión, son reguladas desde un tablero central de control.

El salón comedor, situado en el centro con todos los pasadizos y corredores desembocando directamente en él, acomoda a 18 personas por vez. El viajero, mientras paladea su merienda, tiene al mismo tiempo una vista clara y sin obstrucciones del panorama, a través de la ventana que tiene a su lado. El confort del pasajero es aun aumentado mediante comodidades para el descanso, para escribir y para pasearse.

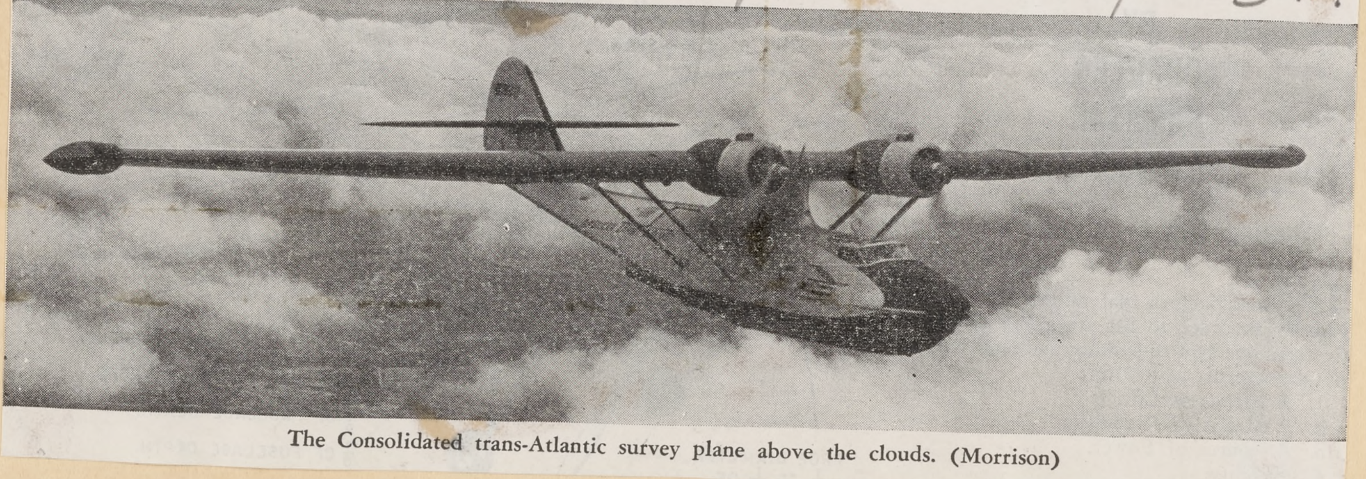
La tripulación se acomoda en dos cabinas separadas. La mayor de las dos está en la parte posterior del avión y tiene comodidades para siete personas. Además de las siete grandes literas, hay en esta cabina un tocador y un lavatorio, como también gavetas para los objetos personales de la tripulación. La otra cabina de tripulantes, con literas y gavetas para dos personas, se encuentra en la parte anterior del avión.

La cocina y despensa se hallan adyacentes y delante del salón comedor, lo que permite un servicio conveniente. El equipo de la cocina incluye tanques de agua, horno, refrigerador, depósito de desperdicios y una abundante cantidad de gavetas y cajones para los alimentos y utensilios. El equipo ha sido distribuído de la manera más conveniente y no habrá posibilidades de confusión entre el personal de cocina.

Todo el equipaje de mano será instalado en la cabina que ocupará su poseedor. El equipaje más pesado, como ser baúles, será alojado en los compartimientos de carga y correo. En este avión habrá tres de estos compartimientos, uno de ellos en la proa, inmediatamente debajo de la cabina de pilotaje, otro en el borde de ataque del ala y sobre la cocina y el tercero en la cola del fuselaje. Todos estos

---

Model Airplane News Sept '39.



The Consolidated trans-Atlantic survey plane above the clouds. (Morrison)

WRIGHT DUPLEX CYCLONE IS ANNOUNCED; RATED AT 2000 H.P.

DEVELOPMENT of the world's largest and most powerful air-cooled aircraft engine by the **Wright Aeronautical Corporation,** of Paterson, N. J., with the assistance of U. S. Army Air Corps' engineers, was announced May 15th by Louis Johnson, Sec'y. of War.

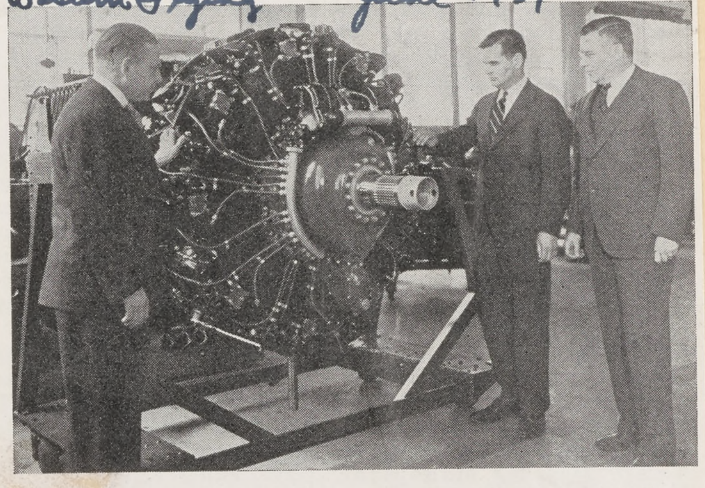
The new engine is the Wright Duplex-Cyclone and is a double-row, air-cooled, radial type with 18 cylinders arranged in two rows of 9 cylinders each and rated at 2000 h.p.

It is 500 h.p. more powerful than the 1500 h.p. Double-Row Cyclone 14 from which it was developed, and which has the highest power rating ever accorded an American-built air-cooled radial engine by the Civil Aeronautics Authority.

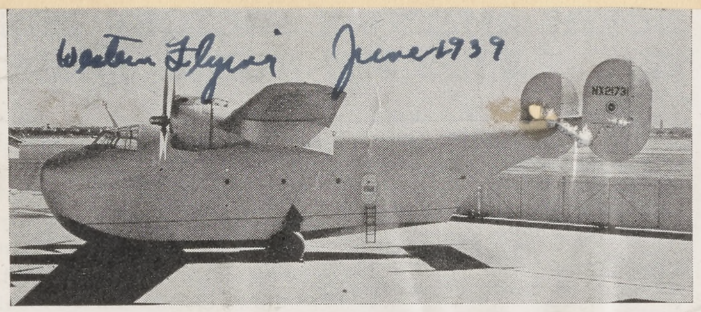
The new Duplex-Cyclone has four more cylinders than the Cyclone 14 however and as its name implies is virtually two 9-cylinder engines built on one crankcase and using a common crankshaft.

Two of these engines powered the new long range Consolidated Flying Boat which made its first flight in May with 52 passengers and a crew of five on the Pacific Coast.

Western Flying June 1939



The Duplex Cyclone is here being admired by (left to right) Vice-President George Chapline, Chief Engineer P. B. Taylor, and General Manager H. B. Gordon, of Wright Aeronautical Corporation.



Western Flying June 1939

Consolidated's new Model 31—a revolutionary flying boat.

NEW AIRFOIL, NEW ENGINES ARE FEATURES OF CONSOLIDATED 31

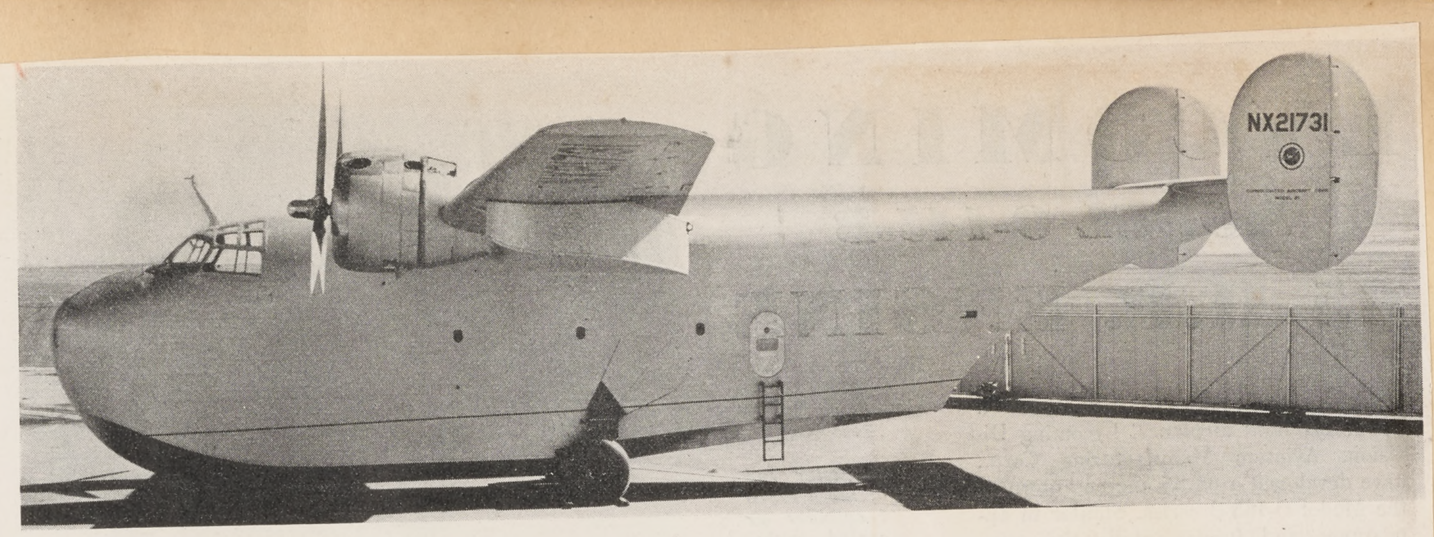
THE Consolidated 31 is still undergoing tests at San Diego and while it is the private project of **Consolidated Aircraft Corporation** it is being treated with as much secrecy as though it were being built for the Government. Consolidated points out that, after all, the Navy is the best prospective customer for this revolutionary type of flying boat and that in view of the possibility the Navy considers its purchase, it is following Navy policy insofar as publicity releases and photographs are concerned.

No specifications of the ship have been released. It is learned, however, that its two most significant features are the two 18-cylinder Wright Duplex Cyclones (GR3350-A-71) which supply it with a total of 4,000 h.p., and an entirely new air foil developed by David R. Davis. Few details of this new wing curve have been released, but it is noteworthy that the wing is small, considering the size of the airplane which it supports and that estimated wing loading is 50 lbs.

The hull is very deep, giving room for two decks, each with a head clearance of 6 ft. 6 in., and is so designed and shaped that practically all of its interior, with the exception of a few cubic feet in the tail of the ship, may be utilized.

In spite of its small wing, the ship is said to have displayed remarkable performance on its first test flight. The wing floats are said to have shown a tendency to plow, and this is being remedied by redesigning the nose of the floats. Unlike the conventional Consolidated float, which retracts into the end of the wing, the float on the 31 is located about midway of the span of the wing. In the extended position, the float projects down from the wing on the end of a strut, which, in the retracted position, folds up against the bottom of the wing and apparently is covered by the float itself.

The 31 has a wing span of 110 feet, an overall length of 73 feet, a height of 22 feet, and a maximum wing chord of 14 feet. These figures are approximate. Gross weight is 50,000 pounds. Wings, tail surfaces, and planing surface of the hull are flush riveted and control surfaces are fabric covered. Accommodations may be installed for 52 day passengers, or 28 sleeper passengers. The beaching gear is of the tricycle type, the nose-wheel retracting into the bottom of the hull, and the side wheel into the sides.



CONSOLIDATED 25-TON MODEL 31 FLYING BOAT

- Ten months after it was conceived, the 25-ton Model 31 flying boat made its initial flight over San Diego to bring to a successful culmination one of the few non-government projects undertaken by the Consolidated Aircraft Corp.

Adaptable either for commercial or military purposes, Model 31 also marked the initial public demonstration of Wright Aeronautical's new 18-cylinder double row engines rated 2000 hp for take-off, and about which no data is presently available. These engines are equipped with 16′ dia. Hamilton Standard hydromatic full-feathering propellers.

As a commercial transport, the new Consolidated can carry a maximum of 57 passengers for day operations, and has sleeper accommodations for 28 passengers for trans-oceanic flights. Provision is made for a flight crew of five—pilot, co-pilot, flight engineer, radio operator and navigator.

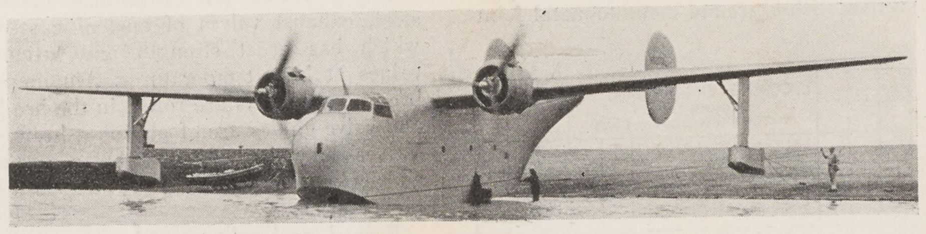
Wings have a span of about 110 ft. and a maximum chord of 14 ft. They are all-metal flush riveted full cantilever units employing three sections—two outer panels and the center section which incorporates integral fuel tanks. Fabric-covered Fowler trailing edge flaps are hydraulically actuated and extent inboard from the fabric-covered ailerons to the hull. Because of a tip section which is smaller than that on its PBY type, Consolidated has found it desirable to employ an outboard float which retracts into the underside of each outer wing panel instead of at the tip.

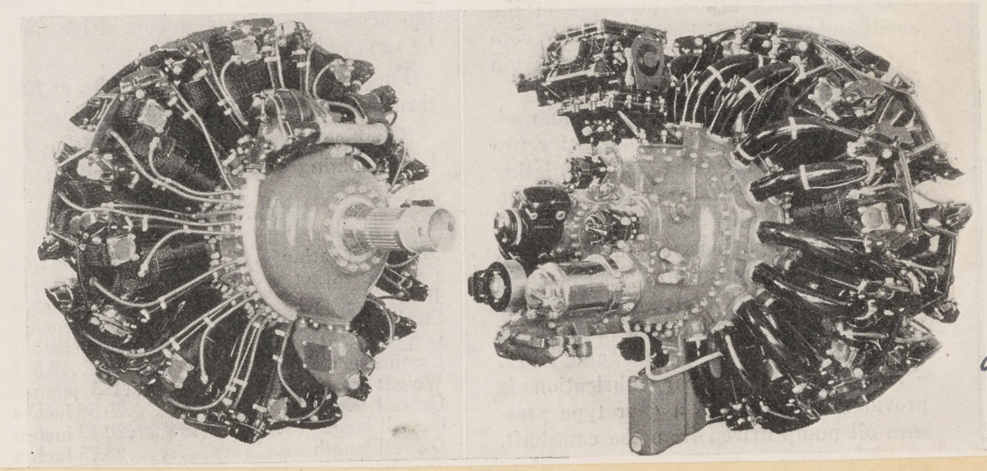
The hull is a single-step type of semi-monocoque structure internally reinforced by longitudinal stringers and transverse bulkheads and frames. Outer covering is aluminum-coated aluminum alloy, the planing surface of the bottom being flush riveted. The interior presents a double-deck arrangement—one over the other to provide a large soundproofed flight control compartment above, and eight large compartments below. Overall length of the boat is about 73 ft., overall height approximately 22 ft.

Fixed tail surfaces are also flush riveted metal and cantilevered; the moveable surfaces are fabric covered. Use is made of twin fins and rudders, the latter being provided with trimming tabs.

Equipment includes a hydraulically operated retractable tricycle beaching gear. Side wheels swing upward into wells in the hull sides where they are fully enclosed by doors which fit flush into the hull lines. The nose wheel is housed in a well in the hull bottom and is also closed in by a door which is flush with the bottom contours.

As a military airplane, Model 31 would augment the PBY type patrol bomber built by Consolidated for the U. S. Navy. While no performances data is available, Consolidated officials reported that the new flying boat embodies extensive advances over the PBY type in speed, range and load capacity.





Three-quarter front and rear views of the Wright double-row engine rated at 2000 hp for take-off. The view above shows the installation of two of these engines in the new Consolidated Model 31 flying boat being test flown at San Diego, California

Aero Digest
June 1939

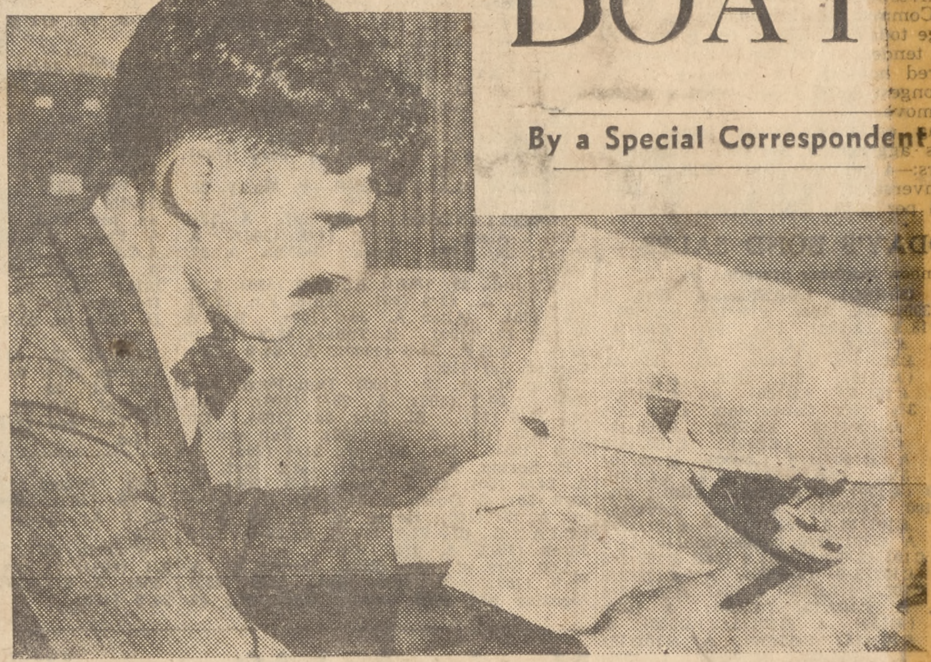
MELBOURNE "HERALD", 29/3/39.

ACROSS THE INDIAN OCEAN BY FLYING BOAT

By a Special Correspondent

Australian pioneers of the air have conquered the Pacific and the Atlantic Oceans, and now a conspicuous figure among them, Captain P. G. Taylor, is to attack the Indian Ocean.

This article describes the route which the flying-boat Guba, chartered by the Commonwealth Government, will take on its survey flight, on which Captain Taylor will represent the Commonwealth and bear the responsibility of organisation.



Mr Richard Archbold, owner of the Guba, looking at a picture of the machine.

CAPTAIN TAYLOR'S projected flight, over 4000 miles from Onslow in Western Australia to Mombasa in Africa, is an enterprise comparable to his Pacific flights with Kingsford-Smith, and to the flights of the American clippers from San Francisco to China.

In one respect, in particular, the adventure of the Indian Ocean will resemble the Pacific flights—it will consist of a series of "hops," from one continent to another, with romantic little equatorial islands as resting places.

How appropriate it is that, in this official Australian enterprise of Empire, the first stop of the flying-boat should be at the Cocos Islands! For these islands, of course, are now famous in Australian history as the scene of our first distinctive sea-battle, the destruction of the German raider Emden by H.M.A.S. Sydney.

Early in the Great War the Emden had been carrying out a campaign of destruction in the Indian Ocean, and because of this Australian troopships had to be heavily guarded. The Sydney, sturdy battleship among the convoys, smashed the Emden at a distance of three miles, and left the raider a broken wreck on one of the islands.

Many Australians know the Cocos group at firsthand, because it is a port of call of certain mail steamers plying between this country and England. At least, the steamers stop in the vicinity, and the islanders sail or row out to get their mails, etc.

A low-lying, picturesque group, suggesting from a distance a mere expanse of palm-trees, the Cocos Islands—called also the Keeling Islands and sometimes the Cocos-Keeling Islands—have an interesting history.

The original name commemorates Captain William Keeling, who discovered the strangely isolated coral outcrops in 1609. He found them to be a group of 23 islands, with the whole atoll only about 10 miles wide, covered for the most part with tropical flora.

"King" Of Cocos

BECAUSE of their isolation the islands remained unclaimed for centuries; but in 1823, Alexander Hare, an English adventurer, settled on the southernmost island with a number of slaves. A few years later the Clunies Ross family settled on Direction Island, and for years there was a feud between the rival settlers. To this day the name of Clunies Ross is closely associated with Cocos.

Indeed, John Clunies Ross is by way of being the "monarch" of Cocos. But he does not, according to report, care for the title of "King"; he prefers to be known as "sole proprietor" of the islands.

Be that as it may, the Ross rule appears to be quite effective; there has not been a serious misdemeanor on the Cocos Islands for more than a quarter of a century.

The islands were declared a British possession [illegible] were placed under the control of Ceylon in 1878, and subsequently under the control of the Straits Settlements. In 1902, a station on the Cape-Australia cable route was established on Direction Island, in the north-eastern part of the group. This station was the subject of attack by the Emden in 1914.

The population of the Cocos Islands is approximately 1300. Life centres mainly on the cable station, but there are large coconut plantations and copra, oil, and nuts are exported.

Time slips by pleasantly enough on the islands, judging by the men who make their bow to the mail steamers. One young fellow who smiled up at a recent vessel was asked by a passenger why he affected a majestic beard.

"This," he shouted back, "is a sensible place——there's no need here to use a razor!"

One imagines, however, that the islands will be stirred out of their usual placidity when the flying-boat Guba drops down from the clouds. P. G. Taylor will probably be their most distinguished visitor since the days when Charles Darwin studied corals there

Diego Garcia

FROM Onslow to the Cocos Islands is little more than 1000 miles—a relatively brief hop for a man who has done his two and three thousand miles non-stop across the Pacific. The second "leg," however, is longer, being approximately 1500 miles from Cocos to Diego Garcia, in the Chagos Islands.

To most Australians, perhaps, the Chagos group is but a name, a speck on the wastes of the Indian Ocean. Actually, the islands are an interesting little archipelago, belonging to Great Britain, and administered by Mauritius. They lie about 1000 miles south of Ceylon, and are, therefore, well off the track of mail steamers.

The total land area in the Chagos group is approximately 76 square miles. Half a dozen islands of a coralline nature constitute the archipelago, but most of the population —only about 500, mostly negro laborers from Mauritius—live on Diego Garcia, which, the largest of the islands, is 13 miles long by 6 miles wide.

Diego Garcia has an excellent lagoon, typical of most of these coral atolls. It is there, presumably, that the Guba will rest. This lagoon has accommodated some large vessels from time to time.

The French occupied the islands in 1791 from Mauritius, and the oil industry (from which the group is sometimes called the Oil Islands) came into the hands of French Creoles. In 1814, Mauritius and its dependencies were ceded to England, and now comes a development never dreamed of in those days—the Chagos takes a place as an Empire airways link.

The Seychelles Group

THE last of the three island links in the new chain is the Seychelles group, some 900 miles due west of Diego Garcia. Here is a large and relatively important archipelago, since the islands have a total area of 156 square miles, and a population of nearly 30,000.

Lying about 600 miles north-east of Madagascar, and about 800 miles from the coast of Africa, the Seychelles consist of 10 islands, and a large number of coral banks. The largest and most central island, Mahe, is 17 miles long and about seven miles across at its widest point. It has a very good harbor, Port Victoria, and it is to this that Captain Taylor and his companions will bring their flying-boat.

Seychelles is a British Crown Colony administered by a governor, assisted by a nominated executive and legislative councils. Most of the population consists of negroes (descendants of slaves from Mauritius and Africa), Indians, and Chinese. The white residents number only about 1000.

The Seychelles have been known for at least 400 years; they are marked on Portuguese maps dated 1502. The first recorded visit, however appears to have been that of an English ship in 1609. Well over a hundred years later the islands were formally annexed by France, upon which the group was named after an important French official, Moreau de Sechelles, and the principal island after Mahe de la Bourdonnais, Governor of Mauritius.

The first permanent settlement was made about 1768, when the town of Mahe was founded. Spice plantations were secretly made (with the object of wresting this trade from the Dutch) but they were destroyed by fire by the French on the appearance in the harbor, in 1778, of a vessel flying the British flag. That was a bad mistake, for the ship proved to be merely a French slaver, which had hoisted the Union Jack in the belief that the British were in possession.

The islands were occupied in 1810 by the British, to whom they were ceded by the treaty of Paris in 1814. J. B. Queau de Quincy, governor under the Monarchy, the Republic, and the Empire, was appointed by the British to be agent-civil, and he acted until his death in 1827. In all, that remarkable official governed the Seychelles for 38 years.

MELBOURNE "HERALD", 29/3/39.

EMERGENCY INDIAN OCEAN ROUTE

Strategic Value Of Flight

ptain P. G. Taylor's Indian Ocean survey flight, to be made ne in the Archbold Expedition's flying-boat Guba, is re- d by strategists in both England and Australia as a vital in safeguarding the Empire's wartime communications.

importance of an alternative as impressed on the Common- Government during the Septem- s, when several Australia-bound oats were temporarily held in n case war broke out. lling by way of Lisbon to the ast of Africa, then across the t to Mombasa, the take-off point four ocean stages, boats using the Empire route" would avoid the ions of the existing route which rded as particularly vulnerable ime.

are the Mediterranean and the between Singapore and Australia.

LAST OCEAN

se of the existing emergency in the strategic aspect of the flight its interest as the crossing of ocean of the world to be con- by the aeroplane.

both points of view it is the tion of years of planning by Taylor, who has been attempt- ecure backing for the flight since en he first saw the possible weak- of the present Empire route and , at the same time, that an ian pilot should make the first Ocean crossing.

When he was in England at the be- of last year, he discussed the with British Air Ministry offi- ut found there was then no suit- ritish flying-boat available. He ent to the United States, where table boat was available for

PACIFIC CROSSING

is return, Captain Taylor placed ns before the Prime Minister (Mr secured the active support Federal Treasurer (Mr Casey). tiations with Mr Richard Archbold, the young millionaire American scientist, whose flying-boat Guba had already crossed the Pacific from California to New Guinea, were begun, and in December, Captain Taylor inspected the Guba at Williamstown and in Sydney.

Keenly interested in the proposal, Mr Archbold sent Captain Lewis Yancey, his navigator, to Sydney some weeks ago, and the agreement between Captain Taylor, Mr Archbold and the Commonwealth Government was completed at the week-end.

SHELTERED LAGOONS

Captain Taylor's data about the three island stopping-places, accumulated over years, show that all have sheltered harbors suitable for flying-boats. On his flight he will spend some days at each island taking soundings in lagoons and seeking both bying-boat and landplane aerodromes by air and ground surveys.

Distances of the four ocean stages are:

	Land miles.
Onslow (W.A.)—Cocos Is.	1435
Cocos Is.—Diego Garcia	1717
Diego Garcia—Seychelles	1192
Seychelles—Mombasa (Kenya)	1110

Because the longest of these stages is 500 miles shorter than the San Francisco-Hawaii air route which Pan-American Airways has been operating for three years, no doubts about the feasibility of the route are entertained.

LONG RANGE

The Guba, a standard American Navy patrol-boat, has a range of 4000 nautical miles as she is now equipped and, if necessary, she could carry enough extra fuel to enable her to fly the 4600 nautical miles from Onslow to Mombasa non-stop.

Preparations for the flight have been the best-kept secret in Australian aviation. Some weeks ago, to brush up his knowledge of modern flying technique and engines, Captain Taylor made a number of flights between Sydney and Melbourne in Australian National Airways Douglasses—a route he had often flown nine years ago when he was one of the select band of Fokker pilots employed by the original Australian National Airways.

Despite his unusual appearance as a supernumerary member of an airliner's crew, however, only a handful of men in Australia knew what he was planning.

PIONEER WORK

After Captain Taylor's flight, Australia will have the satisfaction of having pioneered the air trails across the two oceans that touch the Continent.

His close friends, the late Sir Charles Kingsford-Smith and Mr C. T. P. Ulm, made the first and so far only America-Australia flight in 1928, and, in 1934, Sir Charles and Captain Taylor made the only Australia-America flight.

By his splendid navigation on that flight, on several Tasman crossings in the Southern Cross and the Faith in Australia, and with the Faith in Australia on its fast flights from Australia to England and back, Captain Taylor has earned the title of the leading air navigator in Australia and one of the most famous in the world.

COST £3000

It was officially announced in Canberra today that the flight would cost the Commonwealth £3000.

The Commonwealth would bear the entire cost. Although Britain had been advised, the project was entirely Australian.

Asked if the route could feasibly be developed, officials refused to comment. They declined to state also how long it would take to establish a regular service; whether Australia would be responsible for the cost and upkeep of the bases if the service was established, and whether flying boats were available for an early start with the service.

On To Mombasa

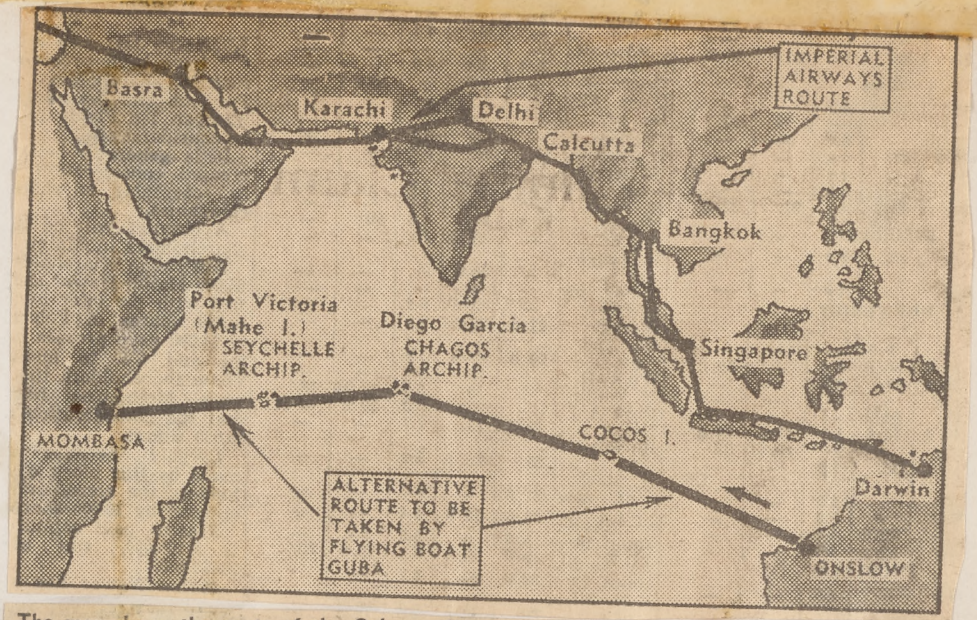
THE most important industries of the Seychelles are fishing and agriculture. For many years these islands have been producing spices, cotton, coffee, tobacco, sugar, maize, rice, bananas, yams, coconut oil, timber, fish and tortoise-shell. Cocoa, too, has been extensively cultivated, and in recent years vanilla has been produced in large quantities. The medium of exchange is the Indian rupee, with the subsidiary coinage of Mauritius.

Early in the present century agriculture slumped badly in the Seychelles. During 1905-1910, however, successful efforts were made to broaden the economic resources of the colony.

Since that time direct telegraphic communication with Mauritius, Zanzibar, Aden, and Colombo has been established, and a Government wireless telephone service was opened in 1926 between Victoria and the Parslin Islands.

Captain Taylor's final stage, from the Seychelles to the African continent, will bring him to a country with older human contacts than any of his island ports, the ancient land of Kenya. It is a romantic spot for the conclusion of a journey by air across the Indian Ocean.

7


Basra
Karachi
Delhi
Calcutta
IMPERIAL AIRWAYS ROUTE
Bangkok
Singapore
Port Victoria (Mahe I.) SEYCHELLE ARCHIP.
Diego Garcia CHAGOS ARCHIP.
MOMBASA
COCOS I.
Darwin
ONSLOW
ALTERNATIVE ROUTE TO BE TAKEN BY FLYING BOAT GUBA

The map shows the route of the Guba, and part of the Imperial Airways route to Australia.

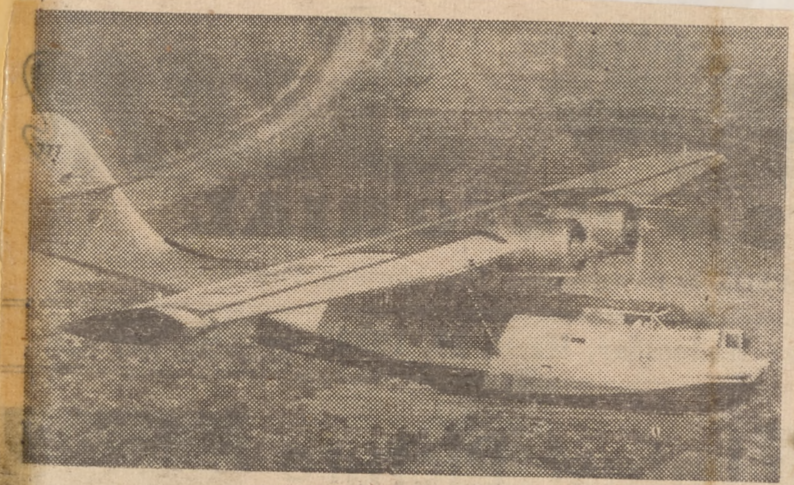
OCEAN SURVEY FLIGHT ORDERED
INDIAN

Melbourne March 29, 1939

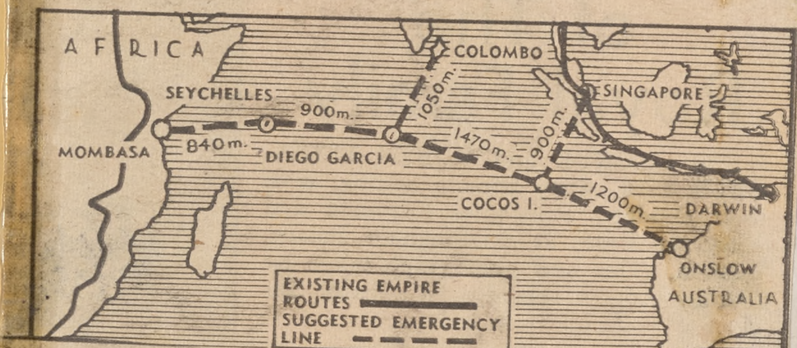
AUSTRALIA TO MOMBASA BY FLYING BOAT

The Sun News Pictorial

Captain P. G. Taylor Will Make Trip in Guba



THE FLYING BOAT GUBA



Captain P. G. Taylor

CANBERRA, Tuesday. — Capt. P. G. Taylor, colleague on several great ocean flights with the late Sir Charles Kingsford-Smith, and one of Australia's greatest aviators, is to pioneer another ocean air route.

Federal Cabinet decided today to sponsor a trans-Indian Ocean survey flight in June.

The long-range flying boat, Guba, will be used, and Capt. Taylor will be accompanied by Mr. J. Percival as official correspondent, and by Dr. Richard Archbold, owner of the Guba; Capt. L. A. Yancey, an Atlantic flyer, and Mr. Russell Rogers, an American test pilot.

THE survey flight will have great defence significance, as it will prove the practicability of the Indian Ocean route for civil and defence planes in the event of war.

The Minister for Civil Aviation (Mr. Thorby) announced tonight that the Guba would leave Onslow on the north-west coast of West Australia and would fly to Mombasa on the east coast of South Africa by Cocos Island, Diego Garcia in the Chagos Islands, and Victoria, Mahe in the Seychelles Islands.

At each of these points, Mr. Thorby said, conditions existed for the development of flying boat bases.

Data For Island Bases

CAPT. TAYLOR and his companions would make meteorological and other observations over the whole route and time would be spent at each island in the collection of data suitable for base establishment.

The Government, he added, had chartered the Guba from Dr. Richard Archbold, research associate of the American Museum of Natural History, the agreement having been completed with Capt. L. A. Yancey, acting on Dr. Archbold's behalf.

An agreement between the Government and Dr. Archbold stipulates that the flight shall be made between June 10 and August 1.

Flight Of 4000 Miles

THE distance from Onslow to Mombasa is about 4000 miles. It will be covered in the following stages: Onslow to Cocos Island (1000 miles), Cocos to Diego Garcia (1250 miles), Diego Garcia to Seychelles (850 miles), Seychelles to Mombasa (800 miles).

The longest stage is about 100 miles more than that from Sydney to Wellington (N.Z.).

Mr. Thorby said that the Australian expedition would be accompanied by Dr. Richard Archbold, who would make scientific investigations during the flight.

The Commonwealth would bear the whole cost of the flight. There would be no vessel to patrol the route in case of mishap.

Fuel Arrangements

A SPECIAL vessel has been chartered to carry 2500 gallons of fuel to each of the islands.

For more than four years Captain Taylor has advocated the survey of a reserve Empire air route across the Indian Ocean. Many critics believe the present route to be too vulnerable in the event of European hostilities.

The Indian Ocean route does not cross the country of any power other than those likely to be friendly. It is the only ocean that has not been crossed by a flying machine.

Will Carry Mail

CAPT. TAYLOR would represent the Government on the expedition and would be responsible for the whole organisation, including the provision of stores and fuel supplies and accommodation at all stopping places.

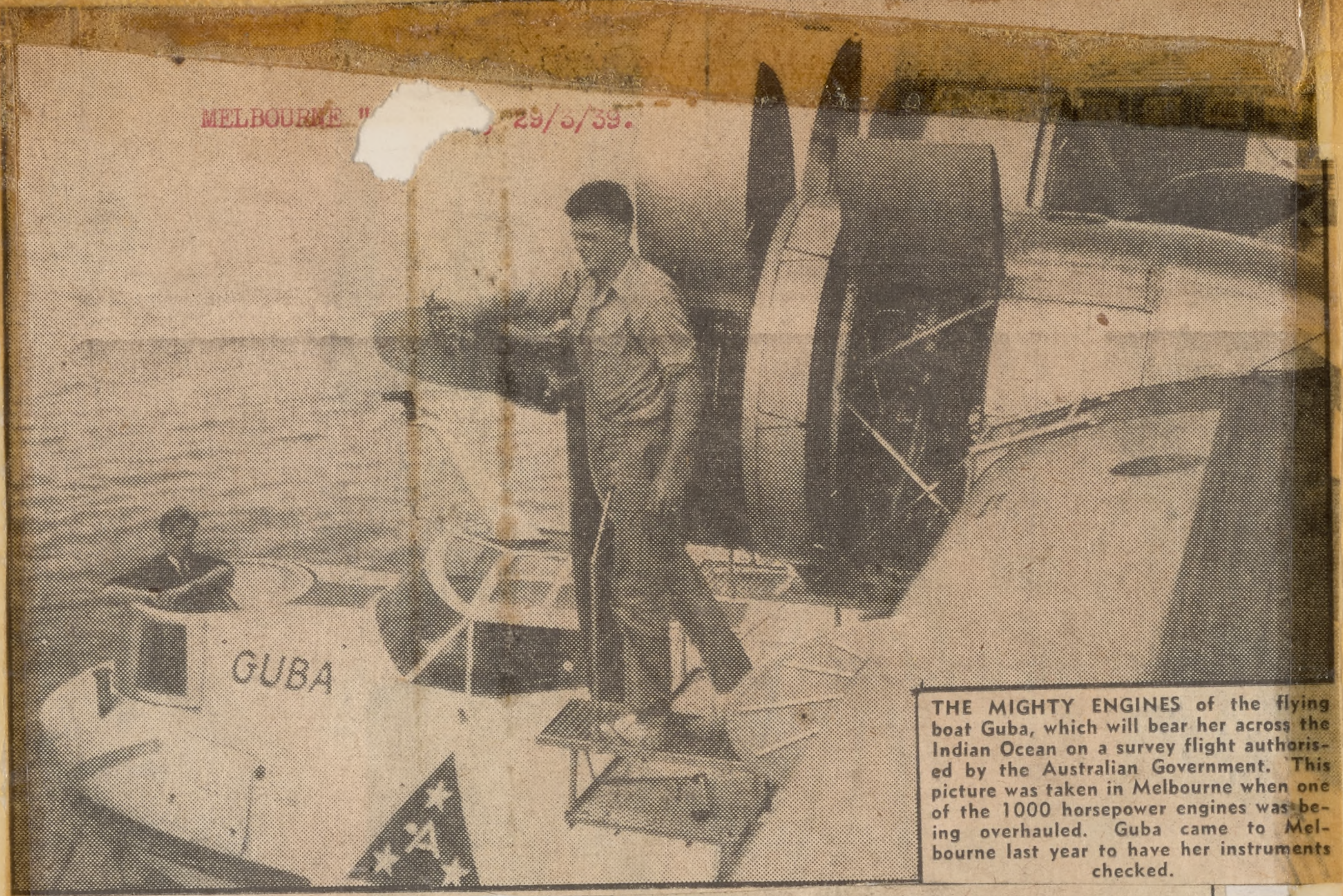
Mr. Percival would be subject only to Capt. Taylor's directions and would be in sole control of publicity, news, photographs, motion pictures and broadcasting.

The Guba, said Mr. Thorby, would be overhauled at Rose Bay, Sydney, before the flight and would carry 400lb. of mail.

DOOLITTLE DUE S. D.

Maj. Jimmy Doolittle, nationally famous flier, arrived at Lindbergh Field in a fast Seversky pursuit plane this afternoon for conferences with local aircraft officials, including Maj. Reuben H. Fleet, president of Consolidated Aircraft Corp. Maj. Doolittle now is aviation adviser to an oil company. SDSUN 6/15/39

MELBOURNE " 29/5/39.



THE MIGHTY ENGINES of the flying boat Guba, which will bear her across the Indian Ocean on a survey flight authorised by the Australian Government. This picture was taken in Melbourne when one of the 1000 horsepower engines was being overhauled. Guba came to Melbourne last year to have her instruments checked.

SURVEY FLIGHT OF INDIAN OCEAN

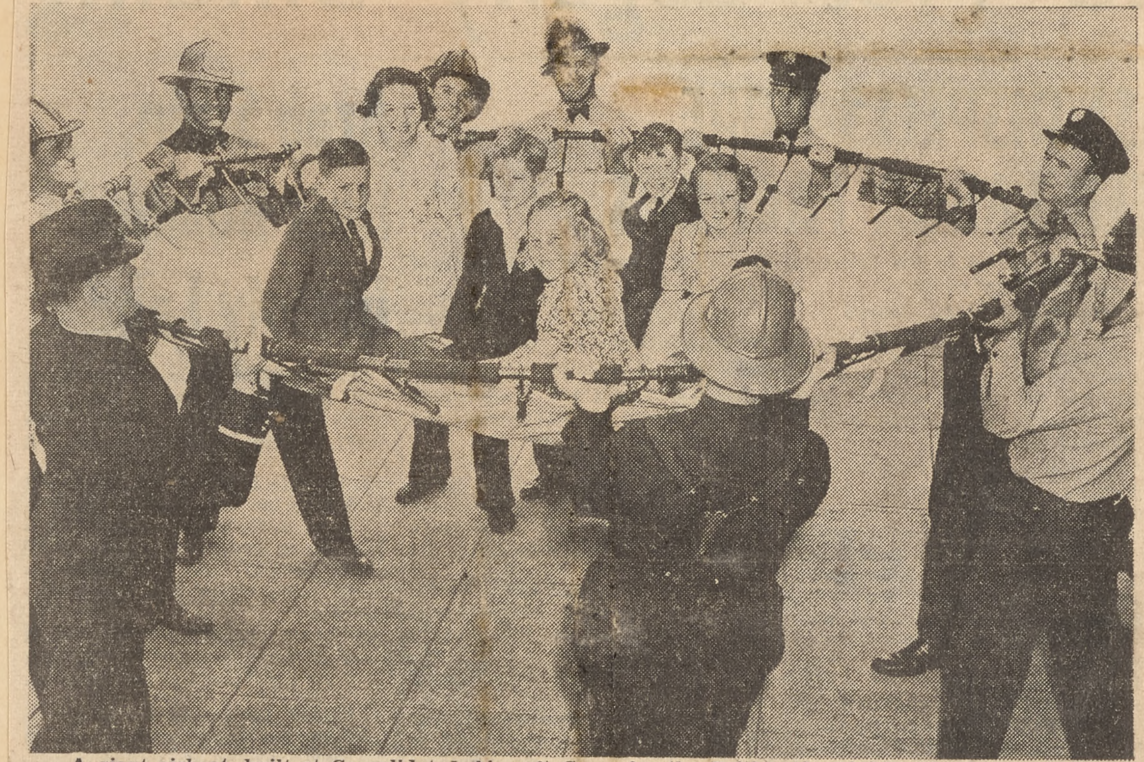
THESE TWO MEN, Mr Russell Rodgers (left) and Captain L. A. Yancey, navigator and Atlantic flyer, will be in the Guba on her survey flight. They were photographed in Melbourne on the visit of the great flying boat.

CORRESPONDENT of Guba's flight will be Mr J. Percival (above) a Sydney journalist.

IN CHARGE of Guba and the flight will be Captain P. G. Taylor (above) famous navigator, seen here testing an instrument.

San Diego Tribune - Thursday, June 15, 1939

Flying Giant Air Boat From San Diego to England X



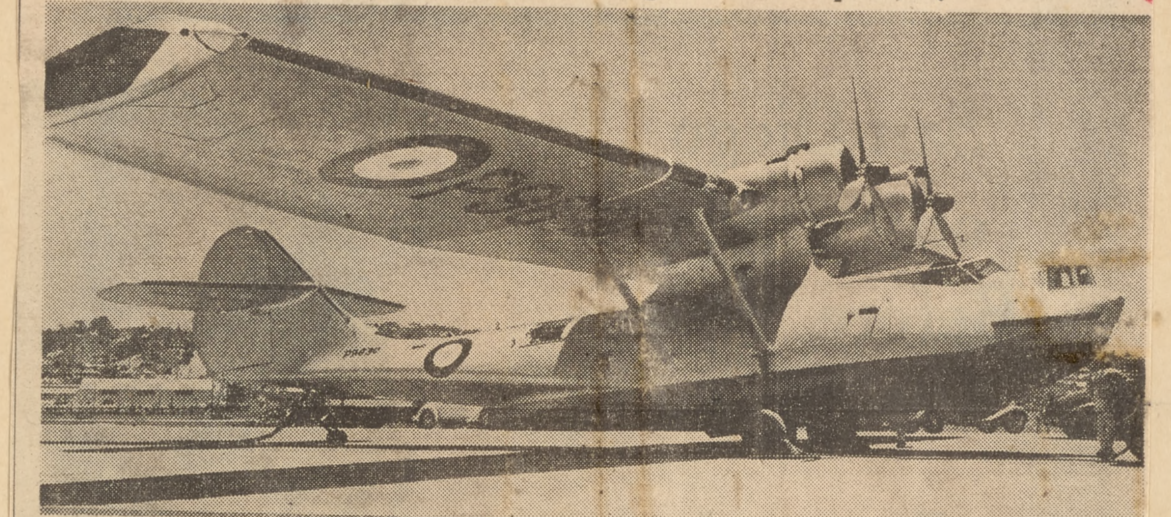
A giant airboat, built at Consolidated Aircraft Corp. for the British air ministry, is shown above at Lindbergh field, from where it made its first test flight yesterday. The flying boat is expected to be flown to England from San Diego this summer. Developed from the navy PBY-type, it was ordered on a recent visit of a British air mission.

transposition of Captions!

Thursday, June 15, 1939

THE EVENING TRIBUNE, San Di

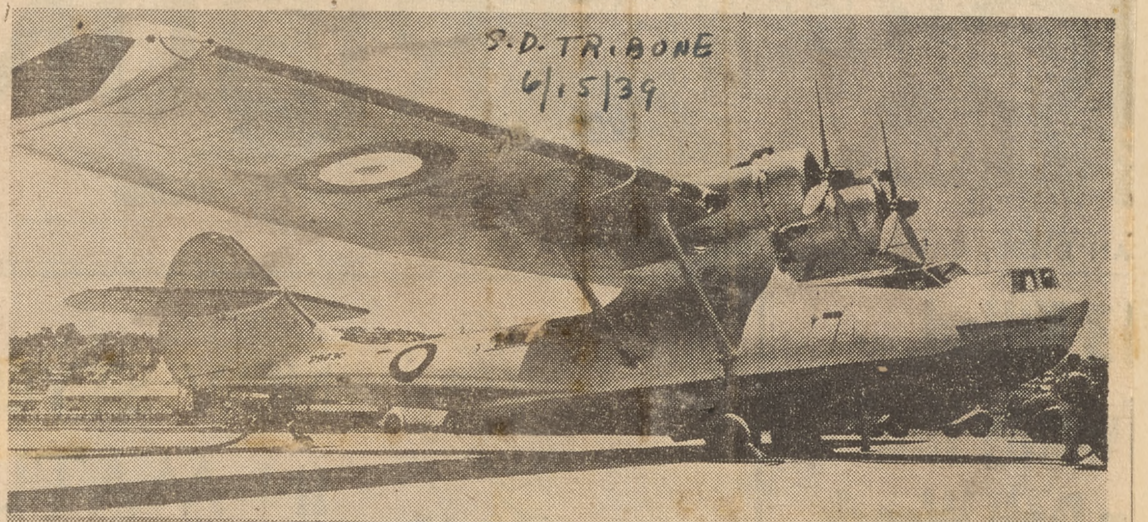
They'll Be Guests of Firemen at Big Show July 4 X



There will be no dull moments on the night of July 4 for these children of the Boys and Girls Aid society pictured in the life net. They were invited to the fire department headquarters and presented with complimentary tickets to the firemen's second annual circus and fireworks show to be held in the stadium. Snow White and the Seven Dwarfs will be reproduced in fireworks. Other highlights of the pyrotechnic display will be naval battles, fighting airplanes and Niagara Falls. Other institutions who will be guests of the fire department Fourth of July night will be the Helping Hand Home, the Rest Haven Preventorium and the Iindoor Sports club.

Flying Giant Air Boat From San Diego to England

Corrected Caption

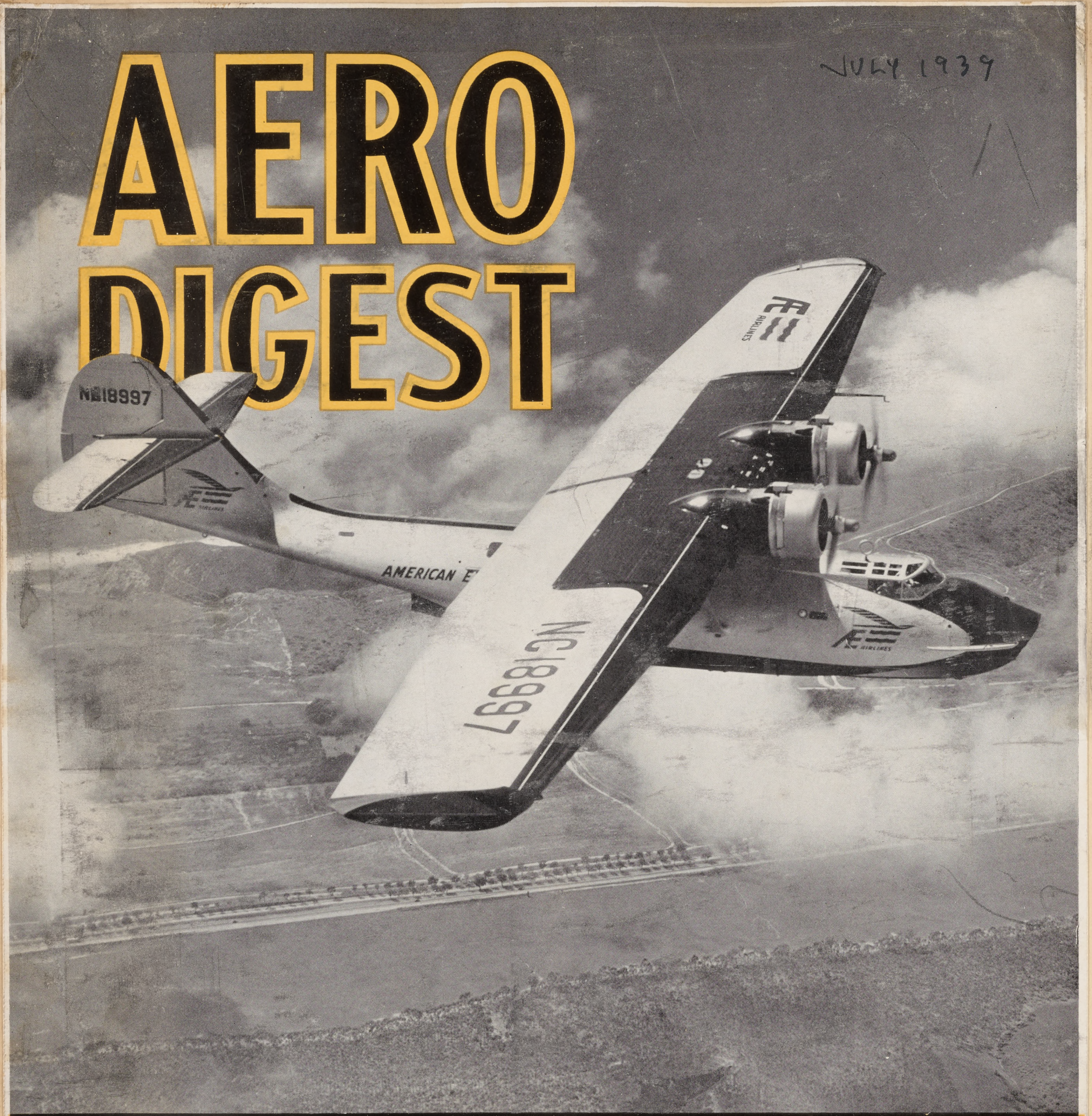


S.D. TRIBUNE
6/15/39

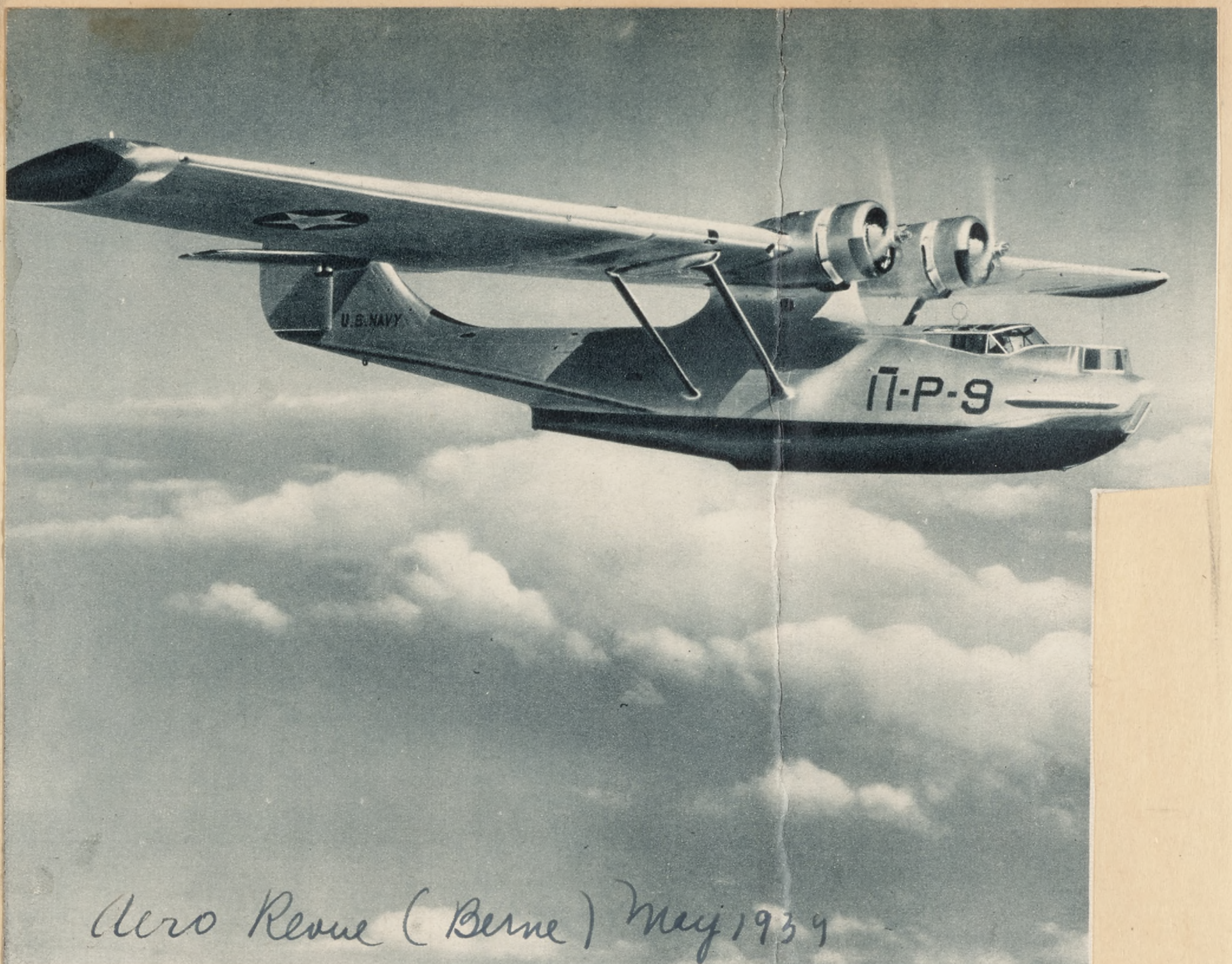
A giant airboat, built at Consolidated Aircraft Corp. for the British air ministry, is shown above at Lindbergh field, from where it made its first test flight yesterday. The flying boat is expected to be flown to England from San Diego this summer. Developed from the navy PBY-type, it was ordered on a recent visit of a British air mission.

AERO DIGEST

JULY 1939



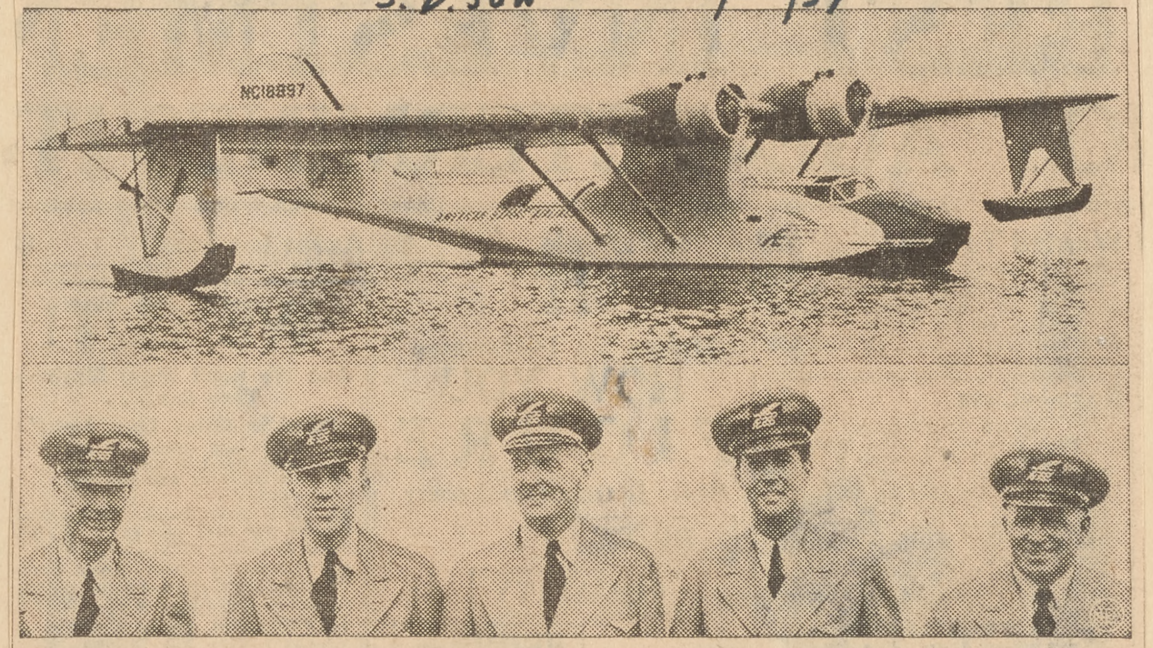
FIFTH ANNUAL DIGEST OF AIRCRAFT & ENGINE MATERIALS



Aero Revue (Berne) May 1939

PBY–1 zweimotoriges Fernaufklärungsboot der US-Navy gebaut durch die Consoledated Aircraft Corp. in San Diego/Cal. Dieses Flugboot wird auch in Russland in Lizenz gebaut. PBY–1 erhielt als erstes Flugboot an die Flügelspitzen hochziehbare Stützschwimmer. Baujahr 1937. ● Le PBY–1, avion bimoteur de reconnaissance à grand rayon d'action de la US-Navy construit par la Consoledated Aircraft Corp. à San Diego/Cal. Cet hydravion est également construit en Russie selon la licence. Le PBY–1 est le premier hydravion qui ait été équipé de flotteurs d'extrémités d'ailes repliables. Année de construction 1937.

S. D. SUN 6/20/39



A SECOND TRANSATLANTIC SERVICE . . . Transatlantic commercial flying picks up competitively. Top, new American Export Lines flying boat at Floyd Bennet Airport ready for first of three survey flights across Atlantic, one scheduled for this week. Lower, the crew, left to right: R. V. CARLSON, W. W. EHMER, CAPT. PAT J. BYRNE, T. S. TERRILL and M. C. J. DOYLE.

S.D. UNION 6/21/39

Africa Next Stop In Archbold's Flight

On the last lap of his trail-blazing flight over the Indian ocean, Richard Archbold, research director, American Museum of Natural history, was scheduled to take off in his "flying laboratory" last night from the Seychelles islands for Mombassa, Africa. He is flying a San Diego-built craft.

Barney Boyd, local radio amateur, expected to communicate with Archbold today. From Mombassa Archbold is to return to San Diego via Lake Victoria, Dakar, St. Thomas and Miami. He started his 20,000-mile flight from Sydney, Australia.

S.D. TRIBUNE 6/20/39

'Guba' Off Tonight For Kenya Colony

Richard Archbold's scientific expedition plane "Guba," after making several flights to various islands in the Seychelles island group in the Indian ocean, is expected to depart tonight for Mombasa, Kenya colony, Africa, according to a radio message received by B. F. Boyd, local radio amateur. The Guba, which is on a trail-blazing flight across the Indian ocean for the Australian government, has been in the Seychelles group for several days.

---

15 Planes To Hop For Hawaii June 28

S.D. TRIBUNE 6/20/39

Naval authorities here today announced a massed flight of navy patrol planes from San Diego to Honolulu is scheduled to start at 2 p.m. June 28. The 15-plane flight, under command of Lt. Comdr. Sam La Hache, commanding VP-1 squadron, will follow the direct route flown in previous flights by navy patrol planes.

Personnel who will be aboard the planes will be announced within the next few days by aircraft scouting force authorities.

Mariners are advised of the danger of collision between the planes and surface craft on the bay during the time of take-off, and naval authorities urged the utmost caution by surfcace craft, asking them to keep clear of the take-off area.

BOMBERS SET HAWAII HOP

15 Patrol Aircraft Takeoff In Week

S.D. SUN 6/21/39

Aviation

The crews of 15 patrol bombers — comprising approximately 90 officers and enlisted men—today were making final preparations at North Island for the takeoff on a mass flight to Hawaii one week from today, weather permitting.

Patrol Squadron One, which has been in training here for the nonstop trans-Pacific hop for several months, will make the flight to deliver the Consolidated PBY airboats for permanent duty in the Hawaiian Islands. The unit is commanded by Lt.-Comdr. Sam L. La Hache, veteran Navy seaplane pilot.

The aircraft tender Childs is en route from San Diego to new duty in Pearl Harbor with Patrol Wing Two, and is expected to serve as a plane guard for the squadron. Two other aircraft tenders, the Avocet and Pelican, will aid in guarding the flight while steaming from their former base in Pearl Harbor to San Diego. The Pelican is due here June 30 and the Avocet will arrive July 2.

S.D. UNION 6/22/39

Archbold Ship Hops For African West Coast

Richard Archbold's San Diego-built flying boat Guba, which recently surveyed a new air route over the Indian ocean from Australia to Africa, is on its way over Africa to Lagos, on Africa's south-western coast, according to a report received yesterday by Barney Boyd, local amateur radio operator. The plane left from Mombassa, Kenya colony, Africa, where it had completed in four hops the 4674-mile ocean survey flight.

Boyd said the report indicated that the ship would fly over Lake Victoria and Stanleyville, central Africa, then to Labos. The message did not state whether the flight would be non-stop.

BOMBER TAKES OFF

A Navy Consolidated patrol bomber, piloted by Lieut. George T. Mundorff Jr., and a six-man crew, took off at 4:15 a. m. today on a transcontinental nonstop flight to Pensacola, Fla., en route to Norfolk, Va., for permanent duty on the east coast. The airboat was over El Paso at 9 a. m., averaging 122 miles per hour, the Naval Air Station reported. S.D. SUN 6/22/39

S.D. Sun 6/22/39

ARCHBOLD ON WAY BACK TO SAN DIEGO

Having conquered the Indian Ocean the first time it has been traversed by an airplane, Richard Archbold's airboat Guba today was en route to San Diego to carry out orders for its crew to deliver a Consolidated patrol bomber to England early next month.

The Guba took off from Mombasa, Africa, a few hours after completing the final lap of the 5400-mile survey of a military and commercial air route from Australia, Barney Boyd, local amateur wireless operator, reported today. Its goal was Lagos, on Africa's Gold Coast, via Lake Victoria and Stanleyville, Belgian Congo, in an approximate 1800-mile hop. From Lagos the San Diego-built plane will proceed to Dakar, Senegal, extremest west point of Africa, before crossing the Atlantic to the United States via the Virgin Islands.

An attempt will be made to reach here July 1 to prepare for the flight to England in the airboat purchased by the Air Ministry. According to present plans, only one stop will be made en route to Felixstowe, marine aircraft experimental establishment on the North Sea. That will be at Botwood, Newfoundland, after a non-stop 3300-mile flight from San Diego.

In the crew will be Russell Rogers, pilot; Capt. Lewis Yancey, navigator; Gerald Brown, engineer; Ray Booth, radioman; Squadron Leader J. R. Adams of the Royal Air Force, and possibly a Consolidated representative. Whether Mr. Archbold will go is uncertain.

Aero Revue (Berne) May 1939

zahl, unabhängig von der Windgeschwindigkeit, somit die Möglichkeit, solche Windkraftwerke an die schon bestehenden Überlandsnetze anzuschliessen.

Zur Veranschaulichung der in den letzten Jahren erreichten Geschwindigkeitserhöhung durch Verbesserung der Flugzeuge und Flugmotoren sind zwei Flugzeugmodelle ausgestellt. Das eine Modell ist ein verspannter Doppeldecker mit nichteinziehbarem Fahrgestell, wie er in verschiedenen Ländern in den Jahren 1930 bis 1934 gebaut wurde. Das andere Modell ist ein Studienentwurf für einen modernen Jagdeinsitzer. Neben jedem Modell ist eine Scheibe aufgestellt, die denselben Luftwiderstand wie das zugehörige Modell hat. Die zwei Scheiben zeigen deutlich die in den letzten Jahren erreichte Herabsetzung des Luftwiderstandes. Die Widerstandsverminderung ist möglich geworden durch Vermeidung aller Streben und Verspannungen, durch Einziehen des Fahrgestelles, durch günstige Profilierung des Flügels, durch verfeinerte Rumpfform, sorgfältigen Kühlereinbau usw. Zusammen mit der gleichzeitig erreichten Leistungssteigerung der Flugmotoren, besonders für den Flug in grossen Höhen, ist eine Geschwindigkeitserhöhung von 320 km pro Stunde beim älteren Flugzeug auf 720 km pro Stunde beim modernen Flugzeug möglich geworden.

Interessant ist eine Gegenüberstellung der Widerstandsbeiträge der verschiedenen Teile an den zwei Flugzeugen im Schnellflug. Beim älteren Flugzeug bringt der sogenannte schädliche Widerstand des Fahrgestelles, der Streben und Verspannungen den Hauptanteil. Beim modernen Flugzeug dagegen besteht der Hauptanteil aus dem Profilwiderstand, dazu kommen Rumpf- und Leitwerkswiderstände. Der Kühlerwiderstand verschwindet im Schnellflug, infolge thermodynamischer Ausnützung der umgesetzten Wärme.

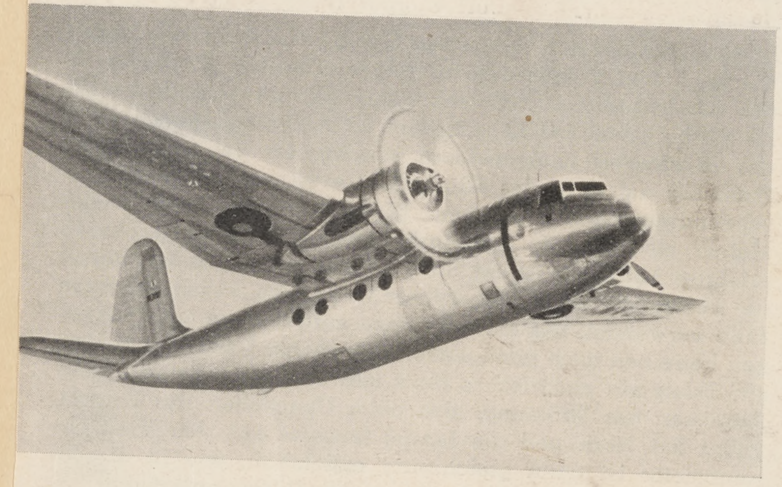
Den beiden Modellen sind die zugehörigen Polaren und die Kurve des Widerstandes in Abhängigkeit von der Fluggeschwindigkeit beigegeben, gemäss Messungen im ETH-Windkanal. Zur vollständigen Untersuchung eines Modelles gehören u. a. auch Messungen mit laufendem Propeller (Einfluss des Propellerstrahles). Dabei wird im Modellrumpf ein **Elektromotor** zum Antrieb des Propellers eingebaut. Im Institut für Aerodynamik werden kleine schnellaufende Drehstrommotoren verwendet, die durch Drehstrom mit Frequenzen bis zu 500 pro Sekunde angetrieben werden. Ein in der Institutswerkstätte hergestellter Drehstrommotor von 2,5 PS bei 15.000 Touren pro Minute ist ausgestellt.

Zu genauen Druckmessungen werden im Institut für Aerodynamik **Schwimmermanometer** Prinzip Betz verwendet. Am Schwimmer ist eine Glasskala befestigt, die auf eine Mattscheibe vergrössert projiziert wird und eine Ablesung auf $^1/_{20}$ mm Wassersäule genau gestattet. Der Messbereich beträgt 300 mm Wassersäule. Ein solches ebenfalls in eigener Werkstätte hergestelltes Manometer vervollständigt die ausgestellte Modellsammlung.

VERKEHRSFLUGWESEN · AVIATION COMMERCIALE

Der «Douglas DC-5».

Die Abteilung El Segundo der Douglas Aircraft Company in Santa Monica, Kalifornien, hat als neuestes Modell den « DC-5 » herausgebracht, der speziell für den Zubringerdienst von kleinen Flughäfen im Lande gedacht ist.



Das Flugzeug ist ein Ganzmetall-Hochdecker mit zwei Motoren und Dreirad-Landegestell, dessen drei Räder voneinander unabhängig (also ohne gemeinsame Achse) montiert und in die Tragflächen bzw. in die Rumpfspitze einklappbar sind. Als Motoren hat man für die Probeflüge G-2-Motoren eingebaut, die aber später durch G-102 A-Motoren ersetzt werden sollen.

Die Höchstgeschwindigkeit des Flugzeuges beträgt mit der augenblicklichen Motorenanlage 370 km/Std. Mit nur 50 % der höchstmöglichen Motorenleistung fliegt das Flugzeug in 3000 Meter Höhe immer noch 275 km/Std. Mit 75 % der Motorenleistung beträgt die Reisegeschwindigkeit 330 km/Std. Gipfelhöhe mit beiden Motoren ist 7400 m, mit einem Motor 3660 m. Der Anlauf ist recht kurz, nur 240 m, etwa die dreizehnfache Rumpflänge.

Die Spannweite des DC-5 ist 23,4 m, Rumpflänge einschliesslich des Leitwerkes 18,5 m und das Startgewicht 8200 kg. Der Rumpf ist mit besonders grossem Laderaum ausgestattet und hat in seiner Struktur einen regelrechten Kiel, um die Festigkeit zu vergrössern. Die drei Räder sind sehr gross gehalten und mit besonders kräftigen Bremsen versehen, um auch auf kleinen Flughäfen gut und sicher landen zu können.

Willy Ley.

Flugboot «Modell 31» der Consolidated Aircraft Corporation.

Seit Jahren schon sind die PBY-1-Flugboote der Consolidated Aircraft Corporation in San Diego in Kalifornien der besondere Stolz der U. S. Navy. Ihre ganz hervorragenden Flugeigenschaften haben naturgemäss dazu geführt, dass sowohl begüterte Privatleute als auch wissenschaftliche Gesellschaften immer wieder an die betreffenden Dienststellen mit dem Ersuchen herangetreten sind, die PBY-1-Flugboote zum Privatgebrauch freizugeben, entweder als schnelles und sicheres Beförderungsmittel für Expeditionen oder einfach als « Luftjacht ». Obwohl verschiedene Male in amerikanischen Tageszeitungen berichtet wurde, dass eine « Zivilausgabe » dieser Flugboote geplant sei, scheint man bei den zuständigen Stellen doch zu zögern.

Jetzt hat die Consolidated Aircraft Corporation aber ein neues Modell herausgebracht, welches ganz und gar dem Wunsch nach solcher Luftjacht gerecht wird. Dies « Modell 31 » wurde zwar mit Wissen der U. S. Navy, aber auf Kosten der Consolidated gebaut. Die ganze Entwicklungsperiode, von der ersten Konstruktionszeichnung bis zum fertigen Flugzeug betrug nur zehn Monate.

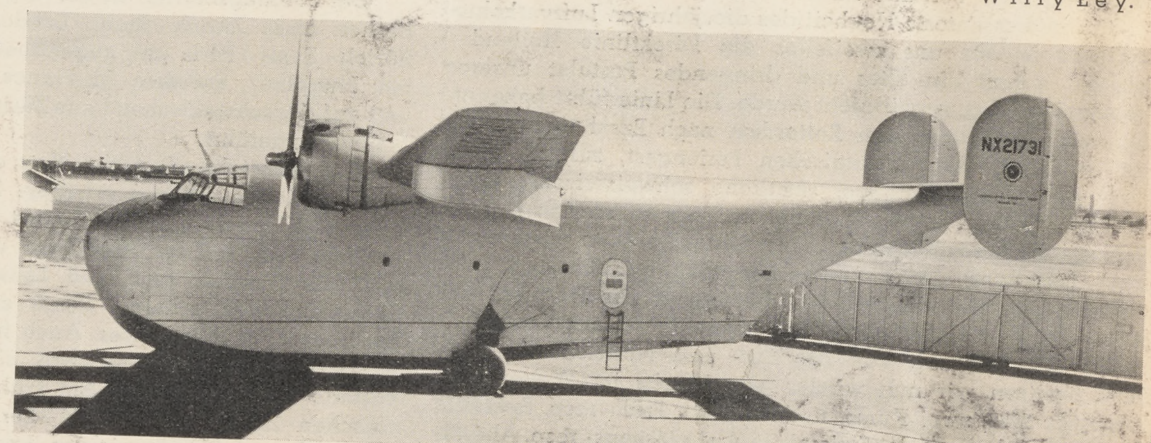
Das Modell 31 hat ein Startgewicht von etwa 22.700 kg, seine Spannweite beträgt 33,5 m, seine Höhe 6,7 m und seine Länge 22,2 m. Es hat zwei Wright-18-Zylinder-Doppelsternmotoren von je 2000 PS, die zwei dreiblättrige Hamilton-Standard-Metallpropeller von 4,8 m Durchmesser antreiben. Als Baumaterial hat durchwegs Aluminium Verwendung gefunden, nur die Verwindungsflächen und das Leitwerk sind mit Stoff bespannt. Der Rumpf ist in zwei übereinander liegende Decks unterteilt und bietet für Tagesflüge für 52 Fluggäste Raum, für Nachtflüge als Schlafflugzeug für 28 Fluggäste. Auch für transatlantische Flüge können 28 Passagiere an Bord genommen werden.

Die Brennstofftanks befinden sich in der mittleren Sektion der Tragfläche. Bei den beiden äussern Hilfsschwimmern nahe den Flügelenden ist man diesmal von der üblichen Bauweise abgewichen. Bei allen andern Consolidated-Flugbooten werden diese Hilfsschwimmer an die Enden der Tragflächen im Fluge angeklappt, so dass sie die Tragfläche etwas verlängern. Bei Modell 31 war die Tiefe der Tragfläche an ihrem Ende dafür nicht gross genug, so dass sie zum Anlegen an die Unterseite der Tragfläche eingerichtet werden mussten.

Die Flugleistungen des Modells 31 dürfen nicht bekanntgegeben werden, sie sind aber besser als die der PBY-1-Bomber, die eine normale Reisegeschwindigkeit von etwa 250 km/Std. und einen Aktionsradius von fast 6000 km haben.

Willy Ley.

Werkphoto
Archiv Aero-Revue



Consolidated 31.

Après un premier vol du 5 mars, la Consolidated Aircraft soulève, par la publication d'un rapport, un coin du voile recouvrant son nouvel hydravion bimoteur désigné par **Consolidated 31.** Groupemoteur: **deux 18-cylindres en double-étoile Wright « Duplex Cyclone »,** homologué pour une puissance de 2000 HP au décollage. Hélices tripales Hamilton Hydromatic de 4,9 m de diamètre. Entièrement métallique (revêtement en tôle d'alliage en aluminium, aluminée). Aile, empennages et surface de glissement de la coque à rivets à tête noyée; volets d'aile, ailerons, gouvernails de profondeur et de direction entoilés. Aile cantilever; partie médiane constituant les réservoirs de carburant; volets Fowler à commande hydraulique; ballonnets relevables vers l'intrados des demi-ailes. Coque avec deux ponts, grande cabine de pilotage insonorisée et huit autres compartiments. Double dérive, cantilever comme le plan fixe. Train de roulement en tricycle, escamotable, à commande hydraulique; roues latérales démontables ou relevables vers l'extérieur dans des évidements des parois latérales de la coque. **Données** approximatives : envergure 33,5 m; longueur 22,2 m; hauteur 6,7 m; profondeur maximum de l'aile 4,3 m; poids total env. 22.700 kg. (voir photographies ci-dessus). Contrairement aux hydravions Consolidated précédents, le type 31 a été construit par la société à ses propres risques, sans aucune subvention du gouvernement. L'étude et la fabrication du prototype n'auraient pris que dix mois. Missions prévues: bombardier patrouilleur; avion de transport avec 52 places assises ou, pour services de nuit et transatlantiques avec 28 places (couchettes). Cinq hommes d'équipage (2 pilotes, mécanicien, navigateur, radio). La vitesse maximum dépasserait 400 km/h.; le rayon d'action serait de 6500 km avec 28 passagers. Extérieurement, l'hydravion rappelle nettement le type que Consolidated avait proposé aux Pan American Airways lors de la mise au concours d'un Clipper transatlantique pour 100 passagers. Le type 31 servira-t-il de maquette volante à cet autre appareil plus grand? En tout cas, il ne saurait entrer en ligne de compte pour le service de passagers sur des lignes transatlantiques parce qu'il est bimoteur, ce qui est contraire aux prescriptions américaines. D'autre part, il constitue une nouvelle preuve de ce que le genre quadrimoteur n'a été recherché et adopté en grande partie que comme une solution provisoire par suite du manque de moteurs de puissances suffisamment élevées.

-itav-

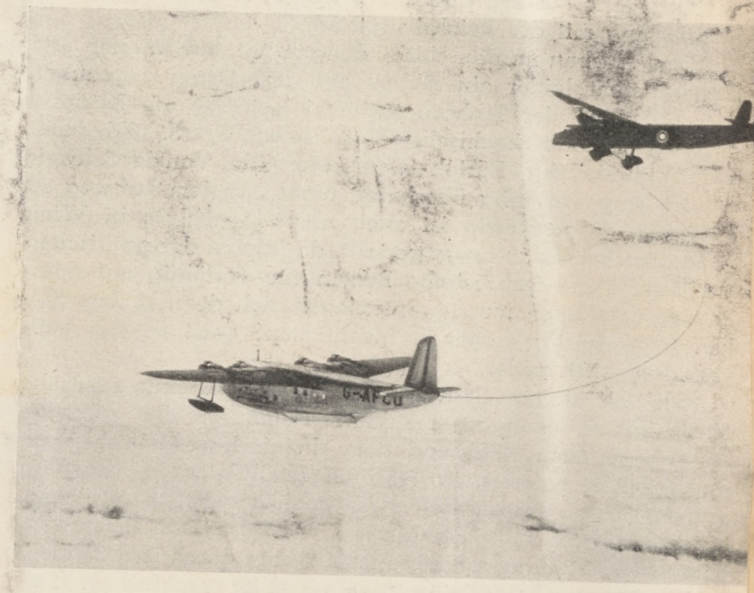
Brennstoffzufuhr in der Luft.

Die berühmte britische Luftverkehrsgesellschaft « Imperial Airways » wird diesen Sommer den regulären Luftpostverkehr über den Atlantischen Ozean mit vorläufig vier speziell für diesen Zweck konstruierten Wasserflugzeugen, aufnehmen. Diese werden jeweils beim Aufstieg von einem zweiten Flugzeug aus in der Luft mit zusätzlichem Benzin versehen.

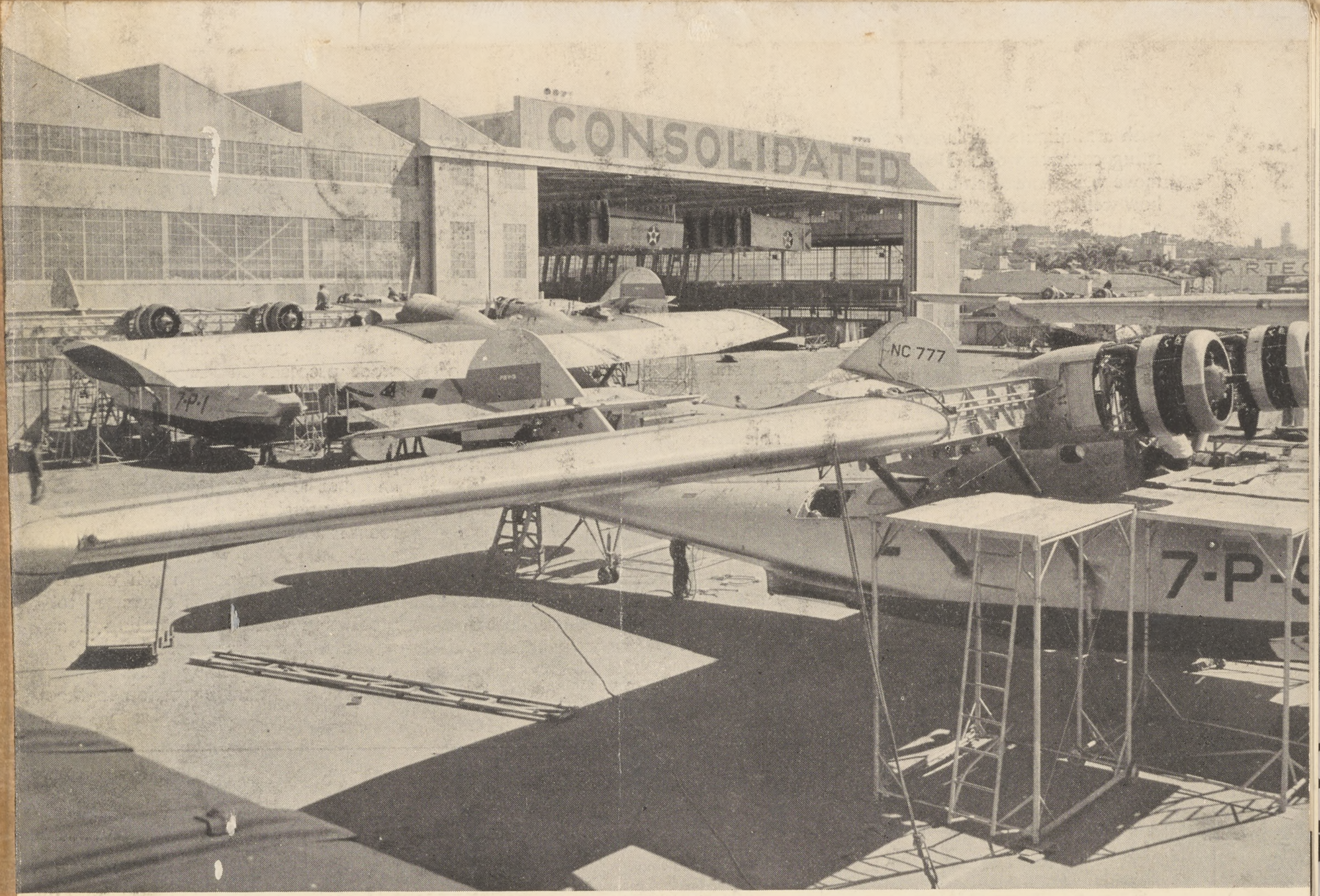
Das neue System der Luft-Brennstoffzufuhr wurde von dem berühmten Fliegerpionier Sir Alan Cobham entwickelt und vervollkommnet, und die ganze Operation nimmt nur zehn Minuten in Anspruch.

Diese Wasserflugzeuge, welche nur für den Transport von Post und Fracht bestimmt sind, wiegen bei voller Ladung je ungefähr 24 Tonnen. Sie führen 23.000 kg Benzin mit, wovon 3500 kg in der Luft zugeführt werden. Auf diese Art und Weise können sie eine bedeutend grössere Menge Brennstoff mitführen, als mit welcher sie imstande wären, sich vom Wasser zu erheben.

Die vier Flugboote, die für den transatlantischen Dienst bereitgestellt worden sind, heissen Cabot, Caribou, Connemara und Clyde. Fünf weitere Flugzeuge ähnlicher Konstruktion werden die Linien Bermuda – New York und Australien – Neuseeland bedienen. Ihre Durchschnittsgeschwindigkeit beträgt etwa 330 Stundenkilometer.



Brennstoffzufuhr in der Luft. Eines der neuen transatlantischen Imperial Airways Wasserflugzeuge, das in der Luft mit 3500 kg Benzin versehen wird. Die Brennstoffzufuhr geschieht von einem Handley Page Bomber aus und nimmt nur zehn Minuten in Anspruch. Der regelmässige Luftpostdienst über den atlantischen Ozean beginnt diesen Sommer.



Mild California climate and ample yard space make it possible to expand production greatly by performing assembly operations outdoors. Engines receive their check run-ins here

.7.
V.
L.
6.
K.
C.
aloney
4.
L
ngbook

Flying Boats That Bomb

Consolidated Aircraft had the courage to uproot an older plant in favor of a location that has many advantages in natural facilities

Most spectacular flying done by the U. S. Navy in recent years has been that involving the Consolidated PBY patrol bomber flying boats manufactured in San Diego, Calif., by the Consolidated Aircraft Corporation. Official performance of the big twin-engine PBYs remains a Navy secret, but many of the outstanding flights made by squadrons of these planes during the past two years are a matter of public record.

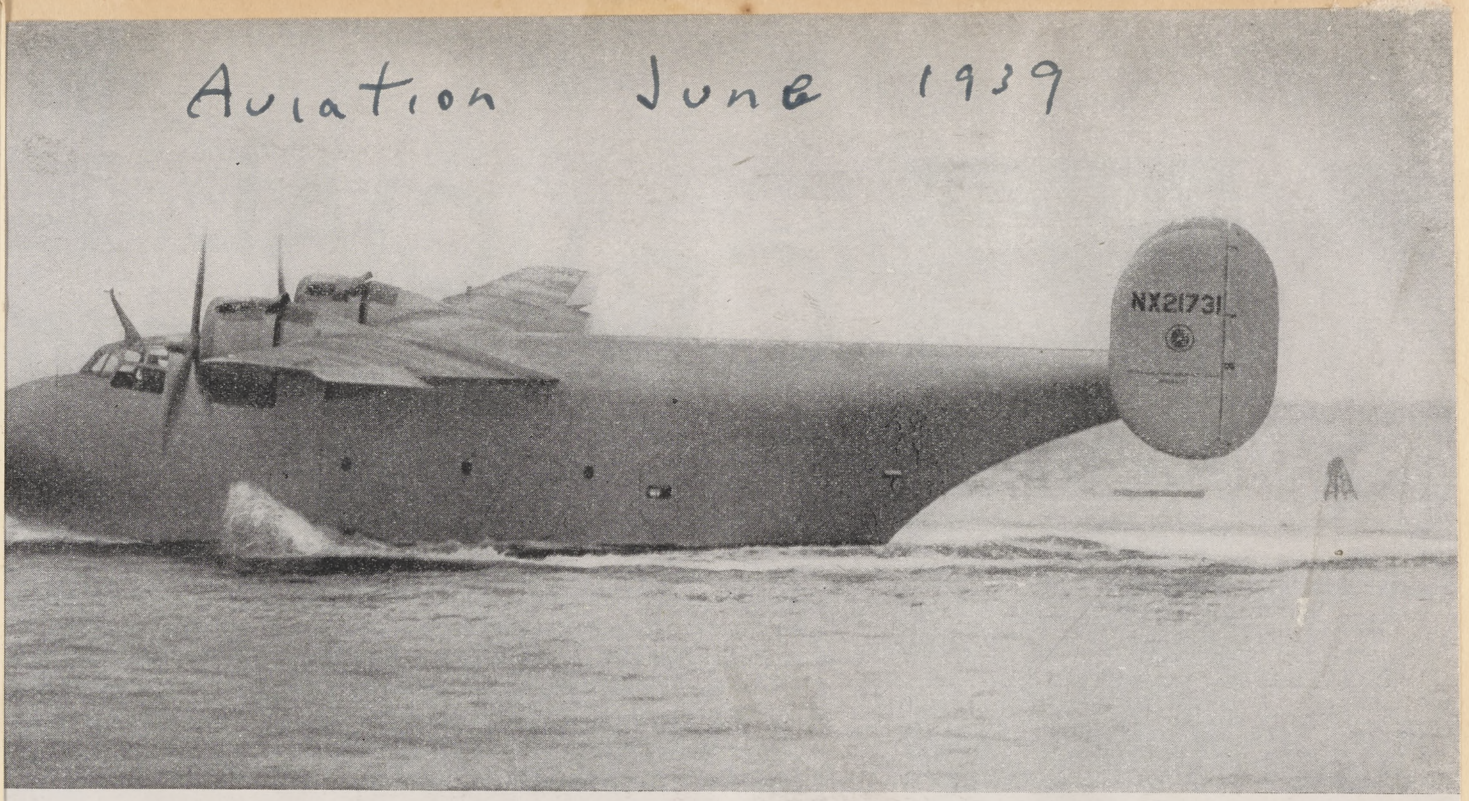
Mass flights of the PBYs have involved as many as 48 planes carrying 336 men on one transocean hop. Routine delivery flights alone have totalled almost a half million airplane miles flown in tw years, the official figures being: 4 2,283 plane miles flown by 147 planes carrying a total of 1,022 crew members. These figures cover only mass delivery flights from the Consolidated factory in San Diego, and not the actual service operations which have followed such delivery flights. Altogether, Consolidated has built and delivered to the Navy more than 200 such planes, whose chief value is their ability to scout vast areas of open ocean for a hostile fleet. And these planes can also carry thousands of pounds of bombs for attack purposes once a hostile naval force has been located.

As should be expected, the Consolidated factory is as sensational in its way as are the planes that are built there, and so are the men in the organization that built the factory to build the planes. Consolidated Aircraft Corporation is sixteen years old in May, 1939.

Best example of the daring and resiliency of the Consolidated organization is the move of the entire plant from Buffalo, N. Y. to San Diego, Calif., in 1935. For while the company is sixteen years old, the San Diego plant is little more than three years old. The move to San Diego required selection of a site, planning and erecting of a building with some 246,841 sq. ft. of floor space, at a location almost three thousand miles away. It was necessary to move supplies, tools, and machinery, and some hundreds of workers to the new plant

---

Aviation June 1939



CONSOLIDATED LONG-RANGE
52 PASSENGER FLYING BOAT
powered by
TWO DUPLEX-CYCLONES

lated Aircraft Corporation's new long-range, 52-
r Flying Boat introduced the 18-cylinder 2000 H.P.
Duplex-Cyclone aircraft engine.

commercial airliner, the Consolidated Model 31
aximum capacity of 52-passengers and a crew of
day operations and sleeping accommodations for
ngers for protracted flights or trans-oceanic service.

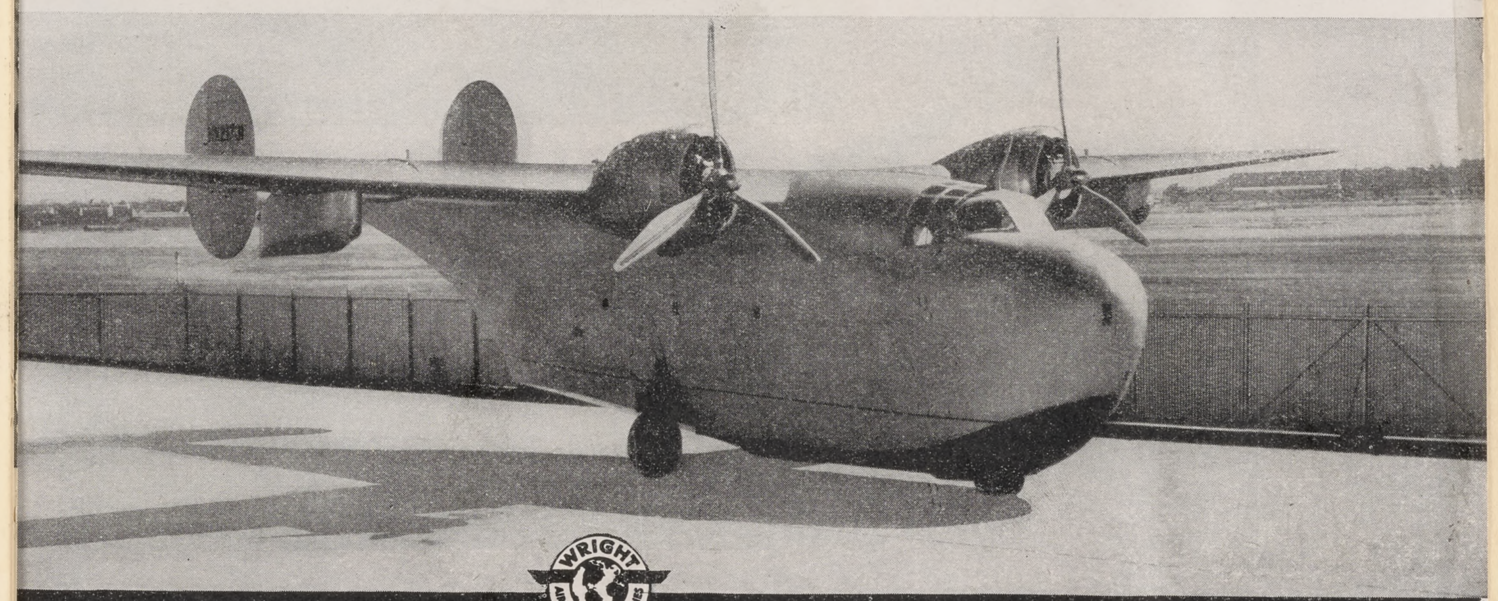
ugh no performance figures may be released, the
4000 H.P. delivered by the two Duplex-Cyclones
n the airplane an exceptionally high-speed, range
capacity.

Outstanding features of the Model 31 include two hull decks—one above the other—providing a large flight control compartment and eight additional large compartments.

The ship is equipped with a hydraulically operated, retractable tricycle beaching gear—the first application of such equipment.

"Fly With Wright The World Over"

WRIGHT AERONAUTICAL CORPORATION
Paterson New Jersey
A Division of Curtiss-Wright Corporation



WRIGHT *Aircraft* ENGINES

Archbold Due July 3 On Final Leg of Flight

S.D. Union 6/28/39

Richard Archbold, research director, American Museum of Natural history, en route to San Diego from Sydney, Australia, via Africa, the West Indies and New York, was expected to leave Dakar, West Africa, today on the final legs of his homeward bound flight. He is expected to arrive here July 3 in his San Diego built flying boat.

A New Boat with a New Wing

CHIEF FEATURE of interest in the new twin-motor Consolidated Model 31 flying-boat, which flew first early in May, is its Davis Wing. Its designer, David Richard Davis, was formerly with the Douglas Aircraft Company. His claims for his new section were confirmed by wind-tunnel tests at the California Institute of Technology (Calteck), but the authorities there were doubtful of the practical applications.

We know nothing of the section ourselves except that its designer claims for it a 20% reduction in drag compared with current designs. We assume that he has achieved this by moving the greatest depth back towards the middle from the more usual position somewhere about one-third of the chord back from the leading edge.

We also assume, in view of the doubts expressed at Calteck, that the section is very thin, or, in technical jargonese, has a low thickness-chord (t/c) ratio. This is borne out by the photographs of the new boat. Information from the United States confirms that the surface of the wing is flush-riveted.

So far there is no information about the relative efficiencies of the Davis Wing and the laminar-flow aerofoil developed by the National Advisory Committee for Aeronautics. So far there is no report that the new N.A.C.A. aerofoil has been flown.

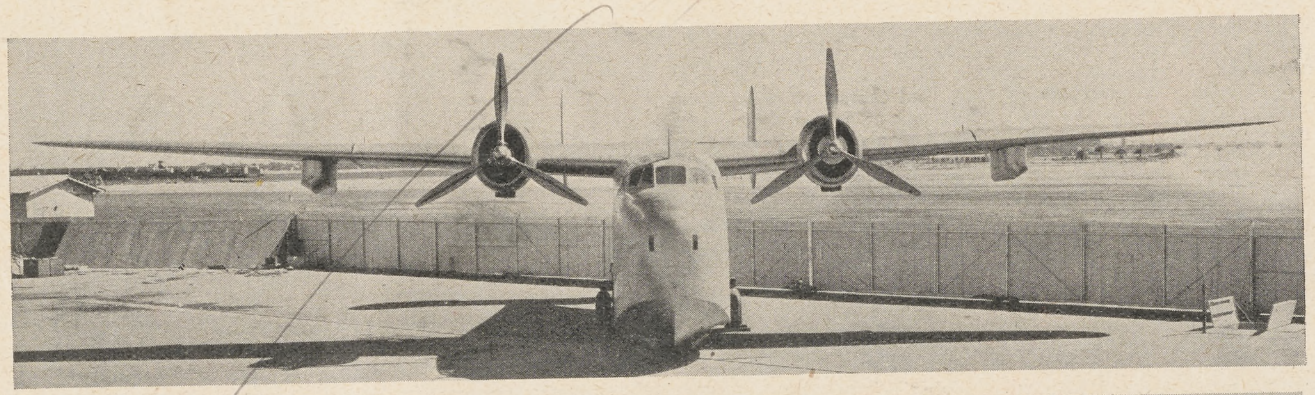
The Model 31 has been built as a Private Venture by the Consolidated Aircraft Corporation of San Diego, California, U.S.A., and, according to report, Reuben Fleet, President and General Manager of the Corporation, has contracted to pay a handsome royalty for every Davis Wing his corporation builds.

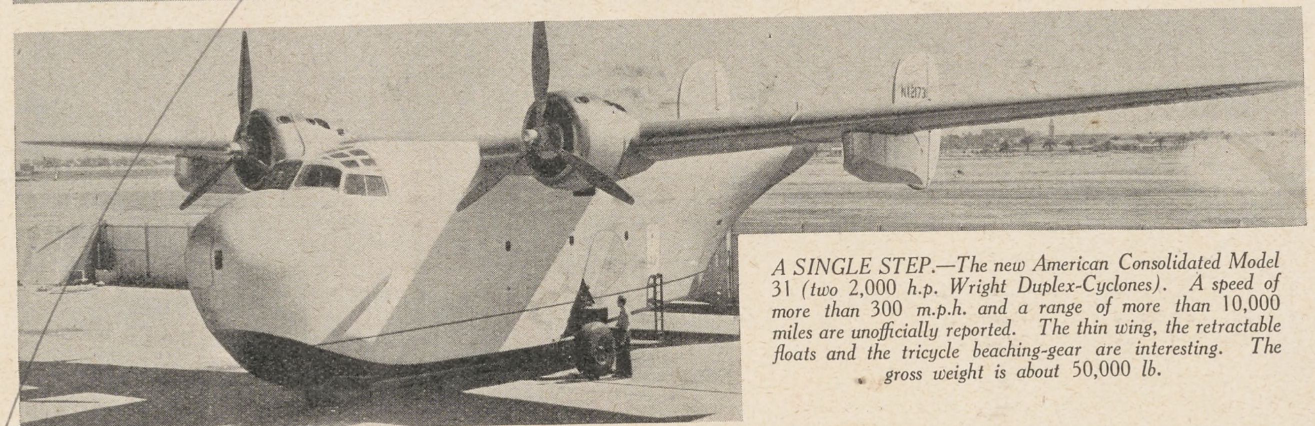
Aircraft construction in the United States seems to follow the same laws as here. We have been told that because the boat was built as a Private Venture, the design and construction, unhampered by Naval requirements, took only ten months, compared with the two or three years normally needed for an aeroplane of this size.

Although the Model 31 does not conform to any specification of the U.S. Navy, its makers believe that its extraordinary performance will probably cause its adoption for military work.

The Consolidated Model 31 high-wing cantilever monoplane has two 2,000 h.p. 18-cylinder Wright Duplex-Cyclone two-row radials. The gross weight is 50,000 lb. (22,660 kg.). The disposable load is supposed to be 1½ times the empty weight.

The maximum speed is quoted unofficially as more than 300 m.p.h. *Time* (New York) reports the "high speed" as 275 m.p.h.; this may mean the maximum cruising speed, which is the only speed of interest to commercial operators. If these figures are correct, the combination of load-carrying ability and speed is considerably better than that of any contemporary aeroplane.





A SINGLE STEP.—The new American Consolidated Model 31 (two 2,000 h.p. Wright Duplex-Cyclones). A speed of more than 300 m.p.h. and a range of more than 10,000 miles are unofficially reported. The thin wing, the retractable floats and the tricycle beaching-gear are interesting. The gross weight is about 50,000 lb.

In civil form the Model 31 can carry up to 52 passengers by day or 28 passengers in bunks at night. Twenty-eight passengers could be carried in comfort across the Atlantic.

Hydraulically operated Fowler flaps extend from the ailerons to the hull. The whole of the wing has stressed metal covering except for the ailerons and flaps which are fabric-covered.

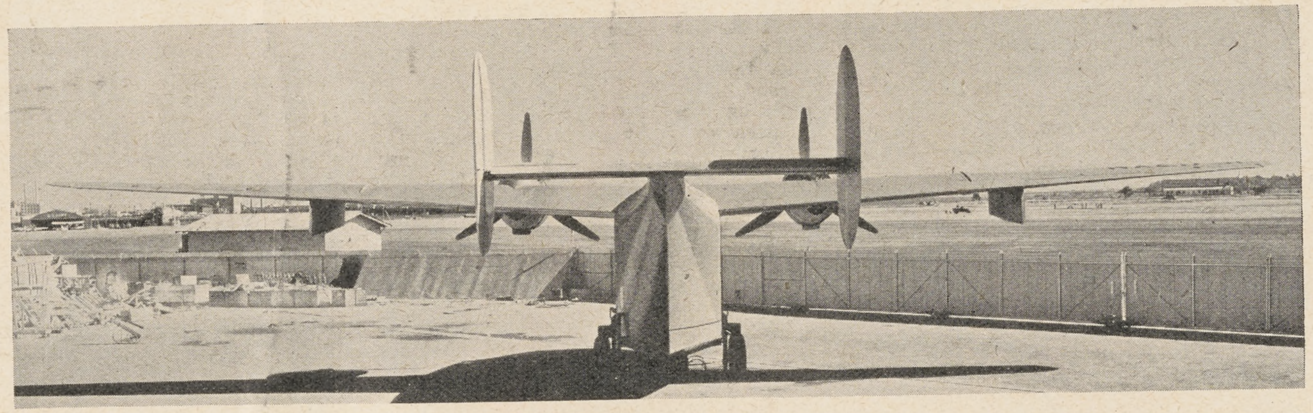
The outboard floats retract into the underside of each wing. The wing-tips of the Model 31 are too small for the sideways retraction of the floats as on the earlier Consolidated PBY.

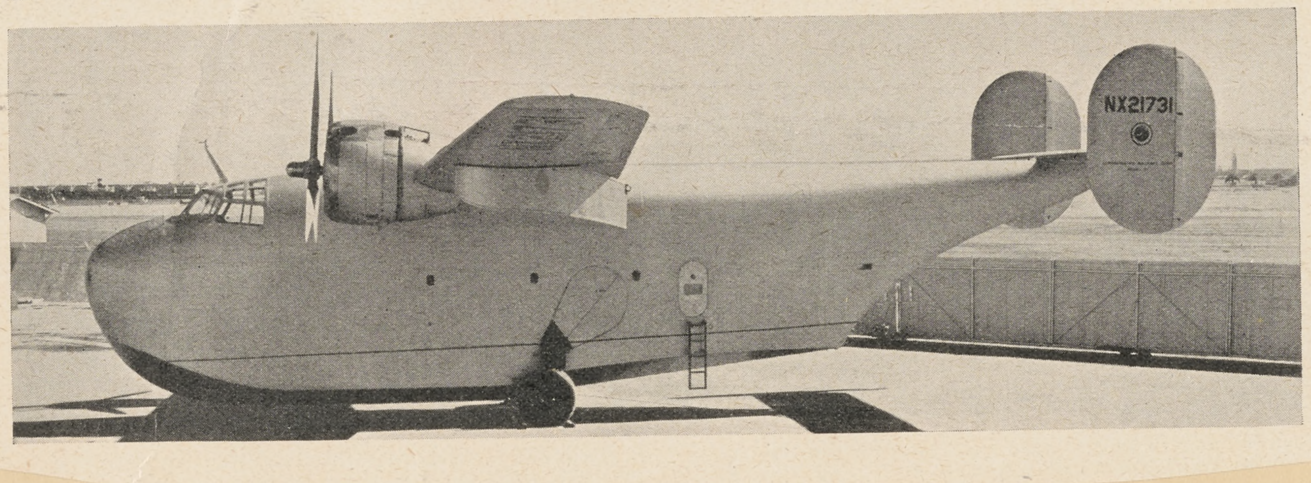
The fuel-tanks are built into the centre section in standard Consolidated fashion. The surfaces of the wing form the top and bottom of the tanks.

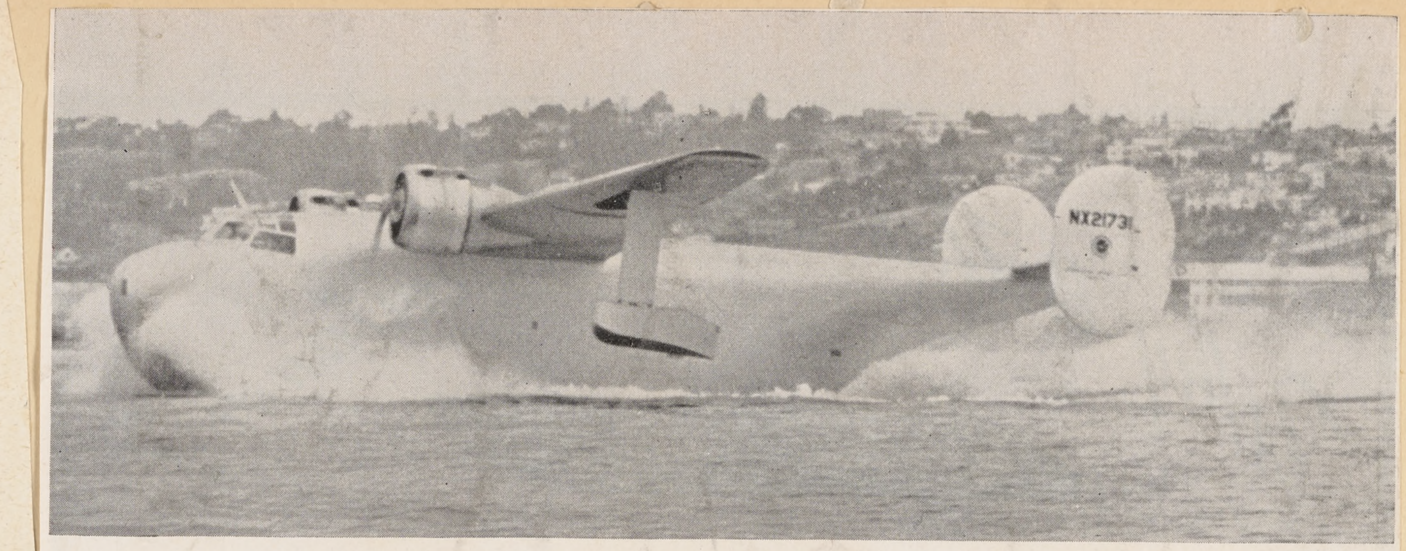
The motors are mounted on very small nacelles in front of the wing. They drive three-blade Hamilton Hydromatic constant-speed fully-feathering airscrews of 16 ft. (4.877 m.) diameter. The long-chord cowlings of the motors are oval in cross-section, perhaps because the carburetter intakes and oil coolers are encowled above and below the motors.

The existence of the new 18-cylinder Wright motors, rated at 2,000 h.p. each for take-off, had not been mentioned before.

The very deep hull of the Model 31 has two decks. The control cabin is above. Normally a crew of five is carried, two pilots, a flight engineer, a radio operator and a navigator. On the lower deck there are eight large compartments.







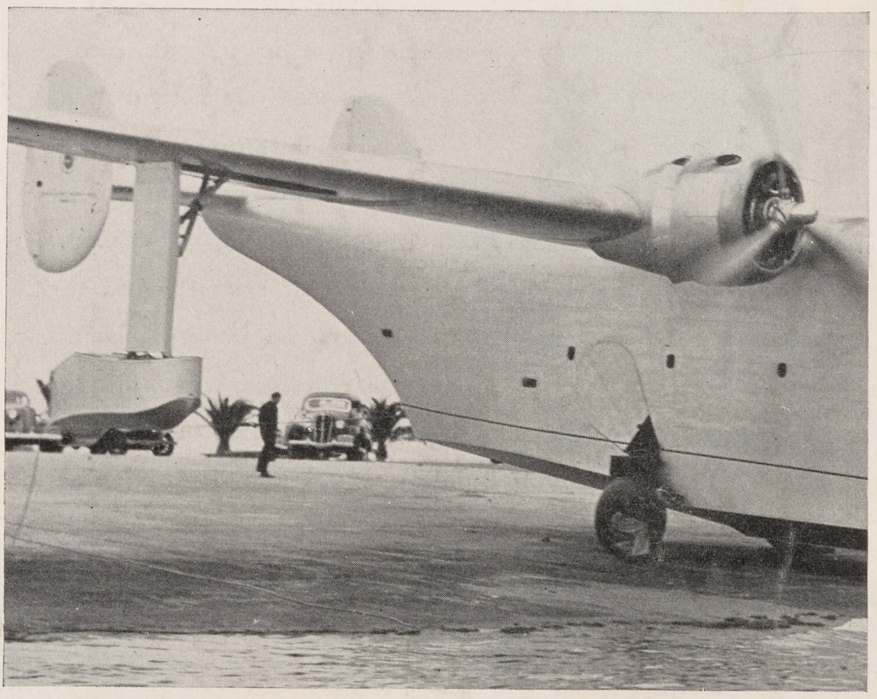
"Hush-Hush" Boat

Twin engined Consolidated combines high speed and long range

CONSOLIDATED'S "hush-hush" mystery plane, the Model 31 twin-engined flying boat, took to the air May 5th with William Wheatley at the controls. The new ship, a high-wing cantilever monoplane, of all metal construction, combines high speed, long range, and heavy striking power in a plane of relatively small size. It is powered with two Wright 18 cylinder twin-row engines rated 2,000 hp. for takeoff, driving 16′ dia. Hamilton-Standard 3 blade propellers.

Stability on the water is provided by outboard floats which retract against the under side of the wing in flight. The relatively high taper of the wing prevents tip retraction of the floats as on the PBY series. A tri-cycle beaching gear is permanently attached and is also fully retractable within hull wells. Although intended strictly as a beaching gear, it is believed rugged enough to withstand airport landings in an emergency.

Gross weight is approximately 50,000 lb., wing span 110 ft., over-all length 73 ft., height 22 ft., and maximum wing chord 14 ft. Although little detailed information is available, it is understood to have a wing with high taper ratio, an aspect ratio of approximately ten to one, and a maximum loading of more than 45 lb. per sq.ft. Gross wing area is reported at approximately 1100 sq.ft. Of particular interest is the use of a new type airfoil recently developed by David R. Davis, independent aeronautical engineer. The Davis airfoil is reported to possess a number of interesting characteristics, including low drag and low center of pressure travel. Hydraulically operated Fowler wing flaps assist landings and take-offs. Although no performance estimates have been released, engineers have estimated the plane to have a top speed ranging from 285 m.p.h. to upward of 300 m.p.h., and an all-out maximum range, if stripped for record purposes, of better than 10,000 miles.



Closeup of the Consolidated Model 31 showing the method of retracting the wing tip floats and the permanent retractable beaching gear.

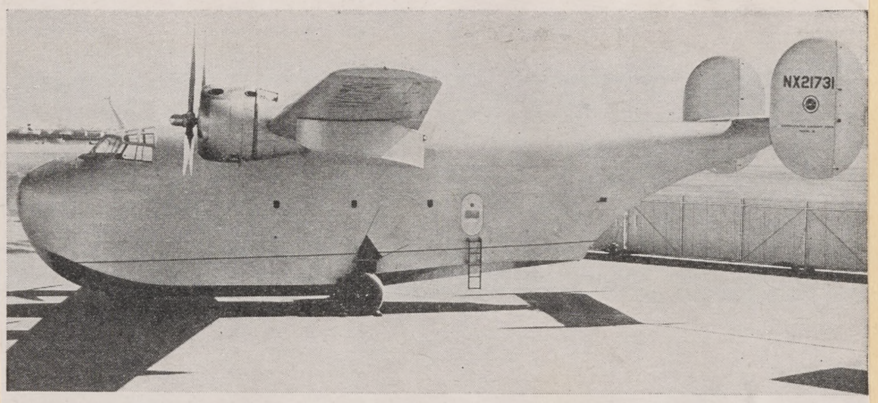
Reports of preliminary taxiing tests, and of the test flight which lasted approximately one hour, credited the plane with excellent stability on the water, quick take-off, and smooth landing. The hull is of unique design and is said to be the result of the newest testing technique in the Langley Field towing basin, where complete scale models are now being "flown" off the water instead of limiting test runs with a bare hull. The Model 31 differs materially from current hull design, having unusual depth of hull combined with a relatively narrow planing bottom, and a peculiarly stubby appearance aft.

In construction the Consolidated Model 31 is of conventional skin-stressed design. The wings, tail surfaces, and planing surface of the hull bottom are all flush riveted. Ailerons, flaps, rudders and elevators are fabric covered. The tail consists of a cantilever stabilizer with twin fins and rudders mounted at the ends.

Two flight decks are provided in the hull, one above the other, providing a large flight control compartment, and eight additional compartments for passengers and payload. As a commercial airliner the Model 31 has a day capacity of 52 passengers and a night capacity of 28 passengers, with sleeper accommodations. It is said to be capable of operating in trans-Atlantic service with a load of 28 passengers. Cruising speed on 50 per cent power has been unofficially estimater at better than 200 m.p.h. As a military airplane the Model 31 would augment the PBY series of twin-engine patrol bombers which it greatly exceeds in speed, range, and load carrying ability. However, the plane is a private venture on the part of Consolidated Aircraft Corp., not having been subject to the ordinary procurement routine which adds so materially to the cost and time for construction of prototype military aircraft. As a result the design was developed, built and test flown within a period of only ten months, instead of the two to three years required heretofore under normal procurement procedure.

Military men who have knowledge of the capabilities of the Model 31 base their high estimate of its naval effectiveness primarily on its ability to locate and destroy with relative ease all but the most heavily armed surface vessels. With its high speed, long range, and ability to carry a heavy bomb load, the Model 31 is believed capable of sweeping large areas of ocean entirely free of all enemy vessels except heavily protected fleets of heavy warships. It is pointed out that its high speed makes this plane nearly immune against attack by pursuit planes of current vintage, and materially reduces effectiveness of anti-aircraft fire against it. Yet the bomb carrying capacity is sufficient to cripple any ship afloat if hit but once by a bomb of the maximum size this plane can carry.

No further information on the plane is available as we go to press, but aviation people everywhere may well watch with interest for word of civil or military application of the Consolidated Model 31.



A distinctive feature of the Model 31 is the permanent beaching gear of the tricycle type which is fully retractable within wells in the hull. Although it is intended primarily for beaching, the gear is believed to be rugged enough to withstand airport landings in an emergency.

BOMBERS LEAVING FOR HAWAII TODAY

S.D. SUN 6/28/39

The non-stop, 2570-mile transpacific mass flight of 15 San Diego patrol bombers to Hawaii was to begin at 3 p. m. today, 24 hours ahead of the original schedule, to take advantage of favorable weather conditions en route, North Island officials announced.

A crew of 105 officers and enlisted men, commanded by Lieut.-Comdr. Sam L. La Hache, comprised the flight personnel. The Consolidated bombers will be delivered to Pearl Harbor and assigned to Patrol Squadron One in the eighth such ferry trip to distant air bases.

Nineteen hours will be required for the hop, Rear Adm. A. B. Cook, Aircraft Scouting Force commander, estimated.

Weather data has been furnished the squadron here during the past few days by the aircraft tenders Avocet, Pelican and Childs, the destroyers Dent and Waters, and Rear Adm. Cook's flagship Memphis, all stationed along the Great Circle route to Hawaii. They also will serve as guard ships during the flight.

with a minimum displacement of existing contract work. How well this move was planned and executed, and how well the new factory was planned and built, is demonstrated by the production of more than $20,000,000 worth of aircraft in San Diego since manufacturing operations commenced there in September, 1935. As a result of such planning the Consolidated factory could quadruple its normal peace-time production rate with a minimum of confusion and lost time.

In moving from the Great Lakes area to Southern California, Consolidated eliminated the problems connected with snow, ice and winter weather, which particularly plague the aircraft manufacturer. It was possible to build a factory that was "all windows and doors," of relatively light, long-span roof construction, and without a major heating problem. Weather in the San Diego area is such that planes can be tested almost every day of the year and, of equal importance, manufacturing operations can be conducted in the open yard area adjoining the plant. The area under roof at the Consolidated factory now totals 447,332 sq. ft., but there is an additional usable yard area of 212,462 sq. ft. This yard area is inclosed by a high fence and is provided with adequate facilities, such as electric power outlets and air supply.

Another advantage of the move to San Diego is the location of the factory adjacent to a protected harbor, permitting prompt launching of flying boats when completed. This proximity of water facilities aids materially in conducting extensive flight test programs where close liaison with factory personnel is necessary.

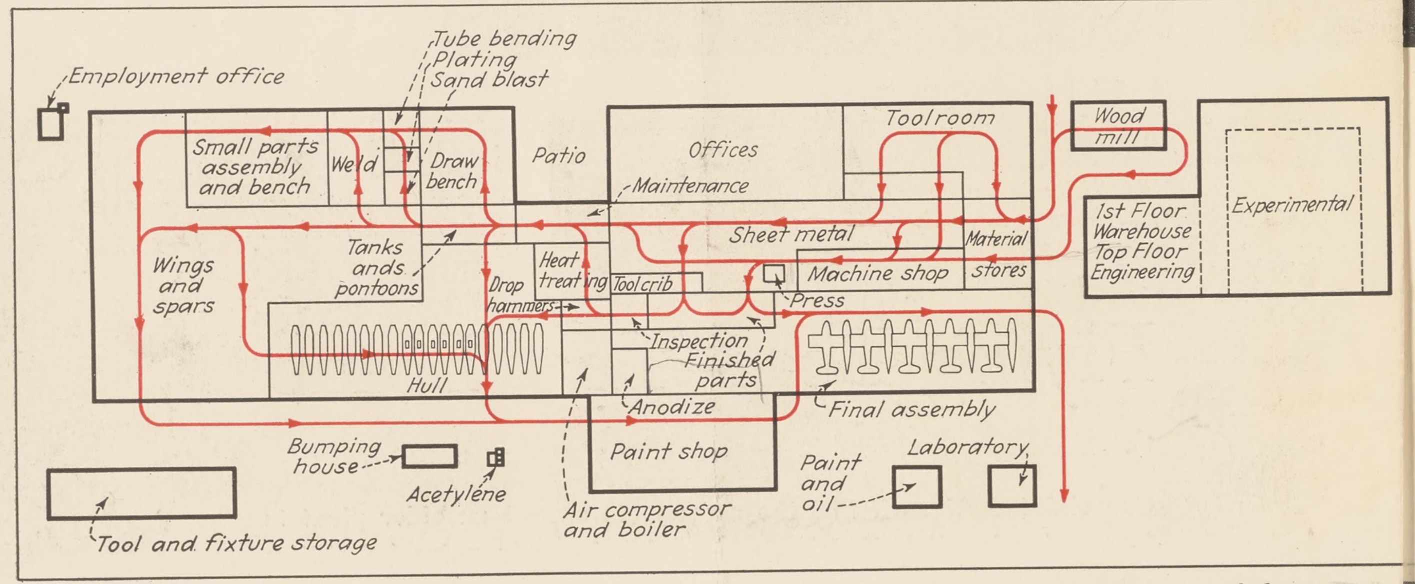
The Consolidated Aircraft factory is built on Lindbergh Field, the San Diego municipal airport which is adjacent to the business district. Although the Consolidated plant is on the land side of the airport, nearest railway and highway facilities, there is a seaplane ramp on the bay side of the field and dock facilities are close at hand. Thus the factory has available every type of transportation for the receipt of supplies and raw materials, or for the delivery of finished aircraft and parts for land or water service.

The plant is built on a 35-acre site, most of which has been reclaimed from bay tide-land. Investment in plant and equipment totals more than $2,000,000. This includes approximately $500,000 now being expended on modernizing the factory facilities in the light of aircraft production methods which have been developed since the factory was built in 1935. While it may sound fantastic to speak of "modernizing" a plant that is now less than four years old, this is exactly the case. One of the major items of new equipment is a battery of presses and drop hammers of large capacity to handle new sheet-metal production methods.

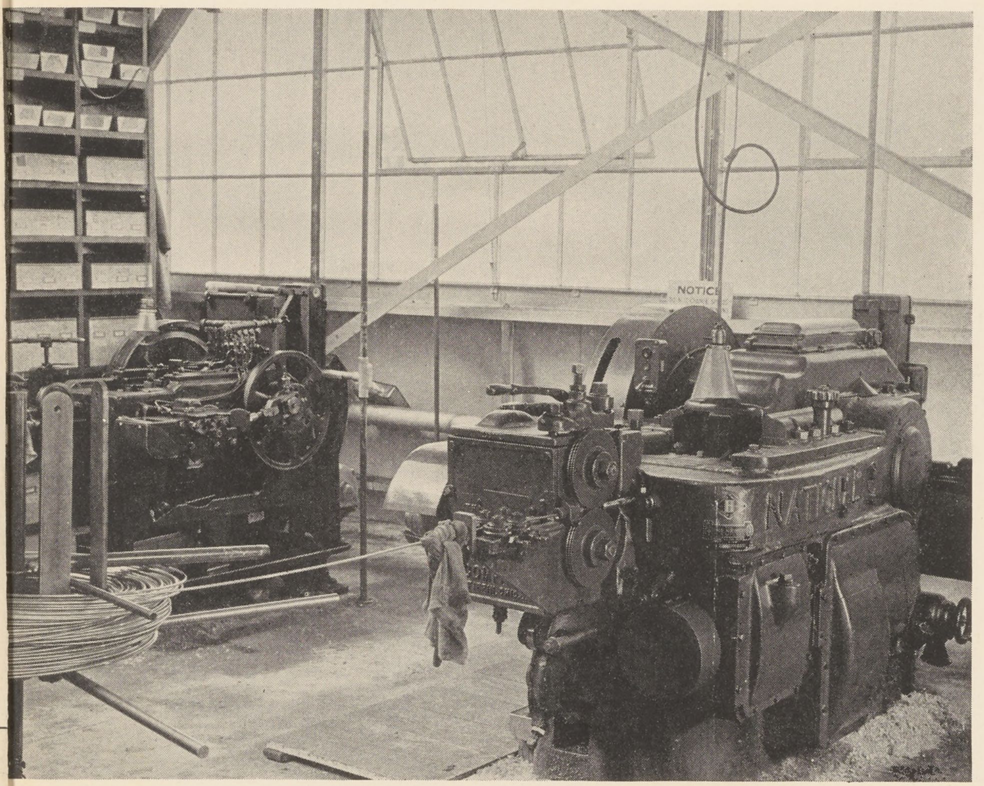
Layout within the main factory building has been planned for smooth flow of work from raw stock to final assembly. The offices are located at the center part of the front, or highway side, of the building. All production departments are arranged around and adjacent to the central office space. Production starts at the south end of the building, where raw materials flow in from the warehouse across the alley, or from the stock of purchased parts in the material store room located in the south end of the main building.

While production is necessarily broken at many points, the major work proceeds in straight-line flow progression up through the plant from raw stock and material stores, over into hull, or wing and spar departments, back into the paint shop, and then along final assembly to the yard for final fitting work. The toolroom is adjacent to both machine and sheet-metal shops, which promotes efficiency. Furthermore, much of the toolroom equipment is converted to production when initial tooling of a new model has been completed. By grouping the finishing parts stock, tool crib and final inspection in the center of the plant near the heat-treat, drop hammer, anodize tanks, paint shop, and plant maintenance shop, it is possible to reduce lost motion to a minimum on small parts handling. Parts and materials flow naturally from raw stores, material stores, and finished parts stores over in the small parts assembly and bench work department, and from that point into wing and spar, or hull assembly, which is but one step removed from final assembly. After final assembly the planes are moved out into the yard for installation of interior fittings and accessories.

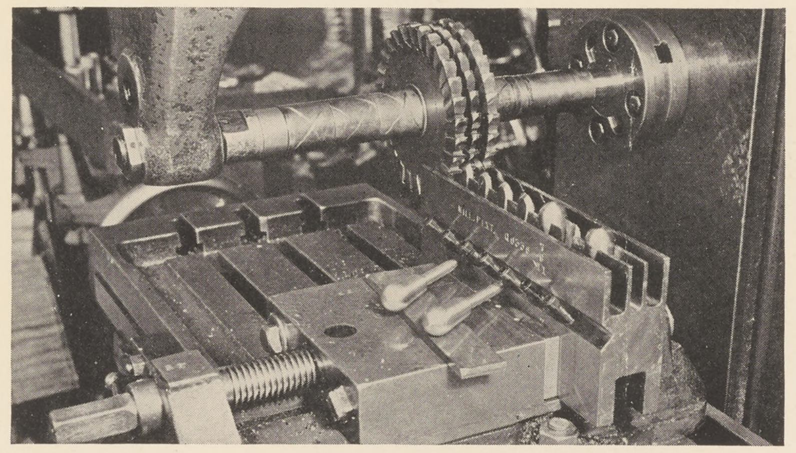
Extending through the entire plant is a complete overhead mono-



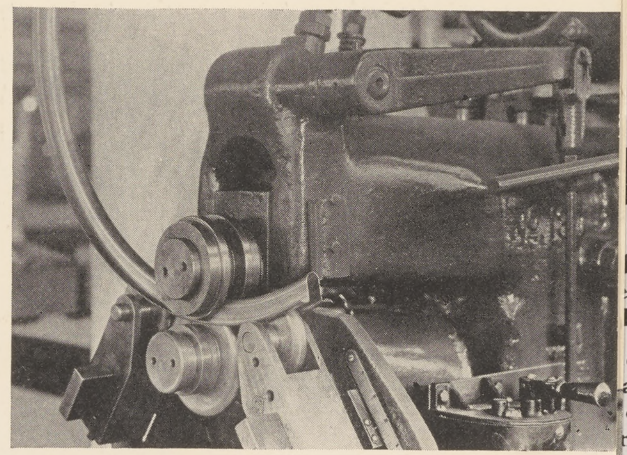
Consolidated factory layout is properly designed to arrange the various departments for efficient work flow



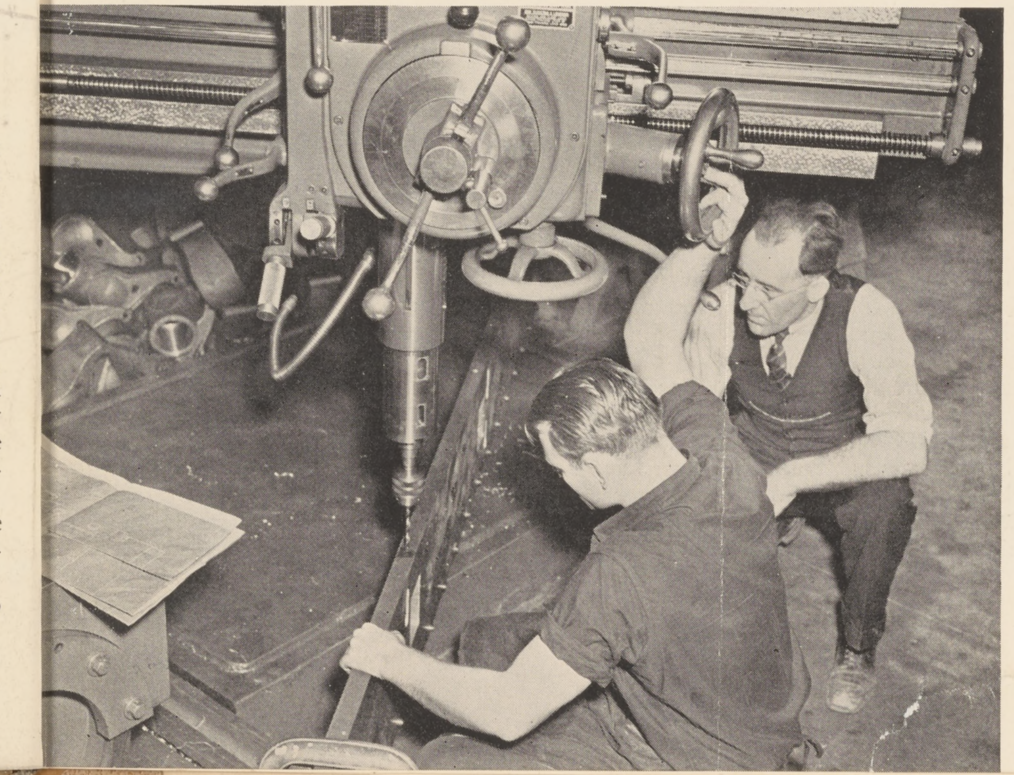
Rivets of many sizes and shapes to the tune of a million a week can be turned out on these two machines. They are then heat-treated and stored in electric refrigerators until ready for use



An airplane calls for a multitude of small machined parts. Here cable terminals are being straddle milled in a special fixture



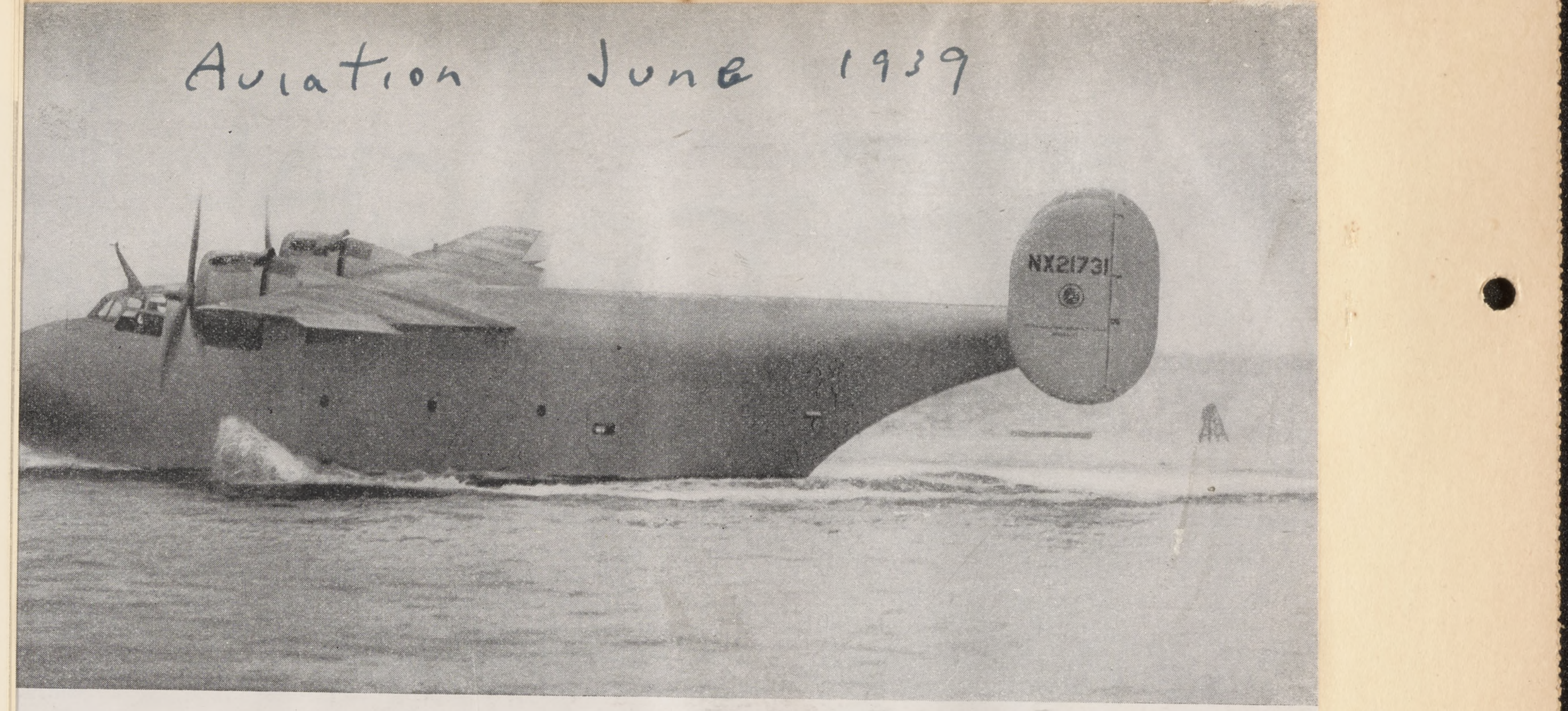
The thin sections and curved contours of duralumin parts lend themselves to roll forming. The cold working of dural increases its strength



Machine tools employed for toolwork are turned to production operations as soon as the tools are completed. Here is a large radial drill employed in making a fixture part; it is also used for machining steel tube engine mounts

---

Aviation June 1939



CONSOLIDATED LONG-RANGE
52 PASSENGER FLYING BOAT
powered by
TWO DUPLEX-CYCLONES

lated Aircraft Corporation's new long-range, 52-
r Flying Boat introduced the 18-cylinder 2000 H.P.
Duplex-Cyclone aircraft engine.

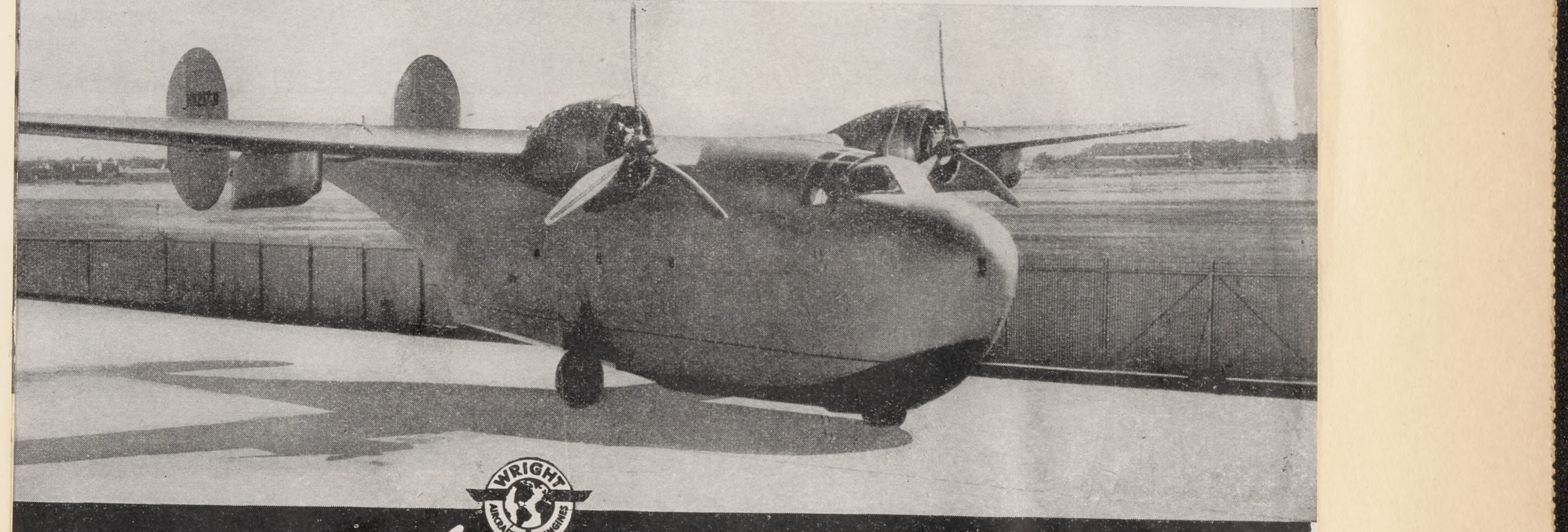
commercial airliner, the Consolidated Model 31
aximum capacity of 52-passengers and a crew of
day operations and sleeping accommodations for
ngers for protracted flights or trans-oceanic service.

ugh no performance figures may be released, the
4000 H.P. delivered by the two Duplex-Cyclones
n the airplane an exceptionally high-speed, range
capacity.

Outstanding features of the Model 31 include two hull decks—one above the other—providing a large flight control compartment and eight additional large compartments.

The ship is equipped with a hydraulically operated, retractable tricycle beaching gear—the first application of such equipment.

"Fly With Wright The World Over"
WRIGHT AERONAUTICAL CORPORATION
Paterson New Jersey
A Division of Curtiss-Wright Corporation



WRIGHT *Aircraft* ENGINES

Archbold Due July 3 On Final Leg of Flight

S.D. Union 6/28/39

Richard Archbold, research director, American Museum of Natural history, en route to San Diego from Sydney, Australia, via Africa, the West Indies and New York, was expected to leave Dakar, West Africa, today on the final legs of his homeward bound flight. He is expected to arrive here July 3 in his San Diego built flying boat.

A New Boat with a New Wing

CHIEF FEATURE of interest in the new twin-motor Consolidated Model 31 flying-boat, which flew first early in May, is its Davis Wing. Its designer, David Richard Davis, was formerly with the Douglas Aircraft Company. His claims for his new section were confirmed by wind-tunnel tests at the California Institute of Technology (Calteck), but the authorities there were doubtful of the practical applications.

We know nothing of the section ourselves except that its designer claims for it a 20% reduction in drag compared with current designs. We assume that he has achieved this by moving the greatest depth back towards the middle from the more usual position somewhere about one-third of the chord back from the leading edge.

We also assume, in view of the doubts expressed at Calteck, that the section is very thin, or, in technical jargonese, has a low thickness-chord (t/c) ratio. This is borne out by the photographs of the new boat. Information from the United States confirms that the surface of the wing is flush-riveted.

So far there is no information about the relative efficiencies of the Davis Wing and the laminar-flow aerofoil developed by the National Advisory Committee for Aeronautics. So far there is no report that the new N.A.C.A. aerofoil has been flown.

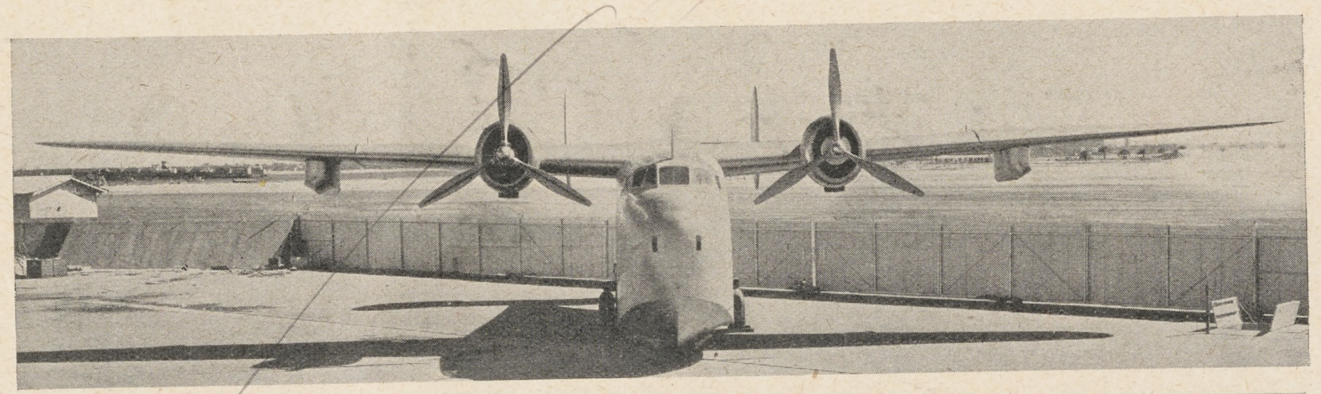
The Model 31 has been built as a Private Venture by the Consolidated Aircraft Corporation of San Diego, California, U.S.A., and, according to report, Reuben Fleet, President and General Manager of the Corporation, has contracted to pay a handsome royalty for every Davis Wing his corporation builds.

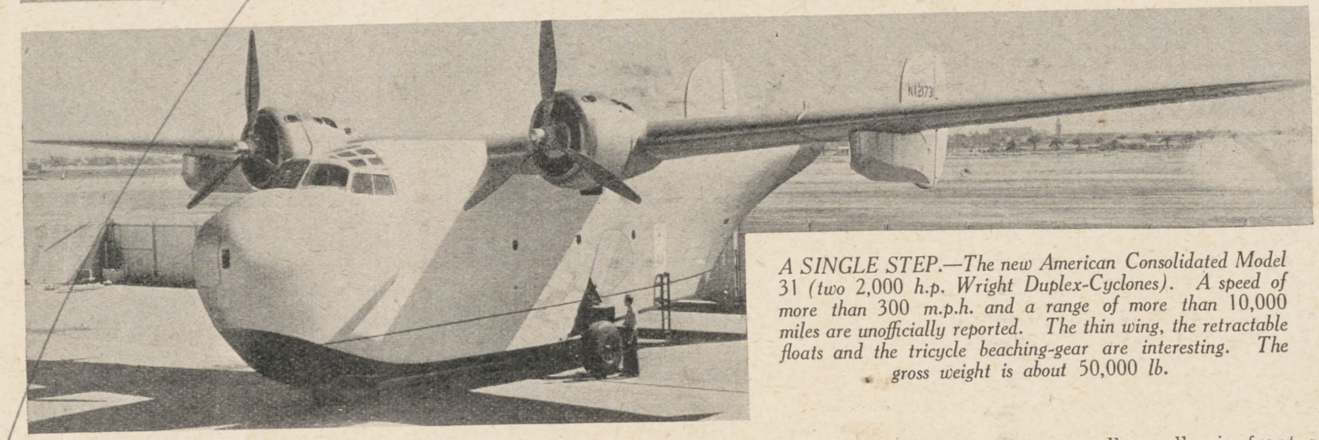
Aircraft construction in the United States seems to follow the same laws as here. We have been told that because the boat was built as a Private Venture, the design and construction, unhampered by Naval requirements, took only ten months, compared with the two or three years normally needed for an aeroplane of this size.

Although the Model 31 does not conform to any specification of the U.S. Navy, its makers believe that its extraordinary performance will probably cause its adoption for military work.

The Consolidated Model 31 high-wing cantilever monoplane has two 2,000 h.p. 18-cylinder Wright Duplex-Cyclone two-row radials. The gross weight is 50,000 lb. (22,660 kg.). The disposable load is supposed to be 1½ times the empty weight.

The maximum speed is quoted unofficially as more than 300 m.p.h. *Time* (New York) reports the "high speed" as 275 m.p.h.; this may mean the maximum cruising speed, which is the only speed of interest to commercial operators. If these figures are correct, the combination of load-carrying ability and speed is considerably better than that of any contemporary aeroplane.





A SINGLE STEP.—The new American Consolidated Model 31 (two 2,000 h.p. Wright Duplex-Cyclones). A speed of more than 300 m.p.h. and a range of more than 10,000 miles are unofficially reported. The thin wing, the retractable floats and the tricycle beaching-gear are interesting. The gross weight is about 50,000 lb.

In civil form the Model 31 can carry up to 52 passengers by day or 28 passengers in bunks at night. Twenty-eight passengers could be carried in comfort across the Atlantic.

Hydraulically operated Fowler flaps extend from the ailerons to the hull. The whole of the wing has stressed metal covering except for the ailerons and flaps which are fabric-covered.

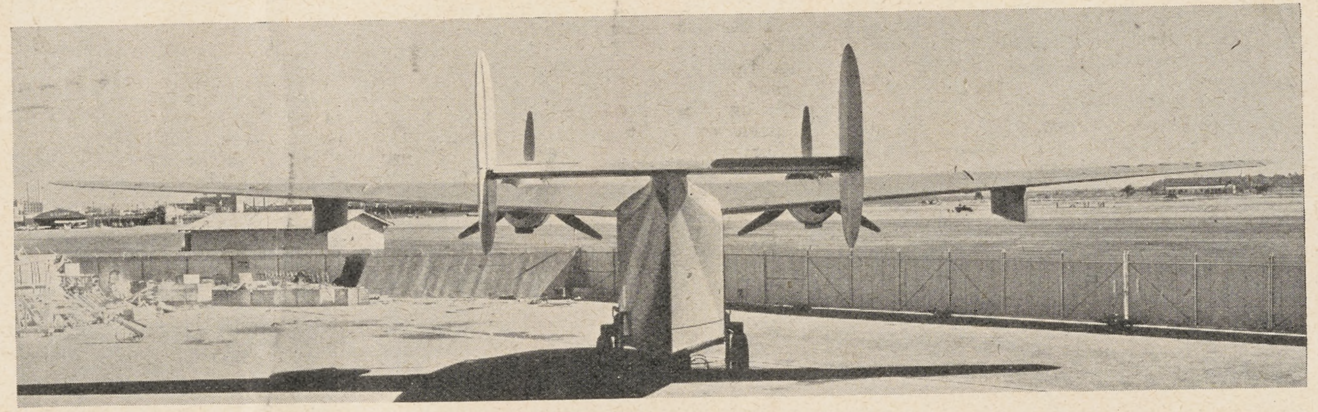
The outboard floats retract into the underside of each wing. The wing-tips of the Model 31 are too small for the sideways retraction of the floats as on the earlier Consolidated PBY.

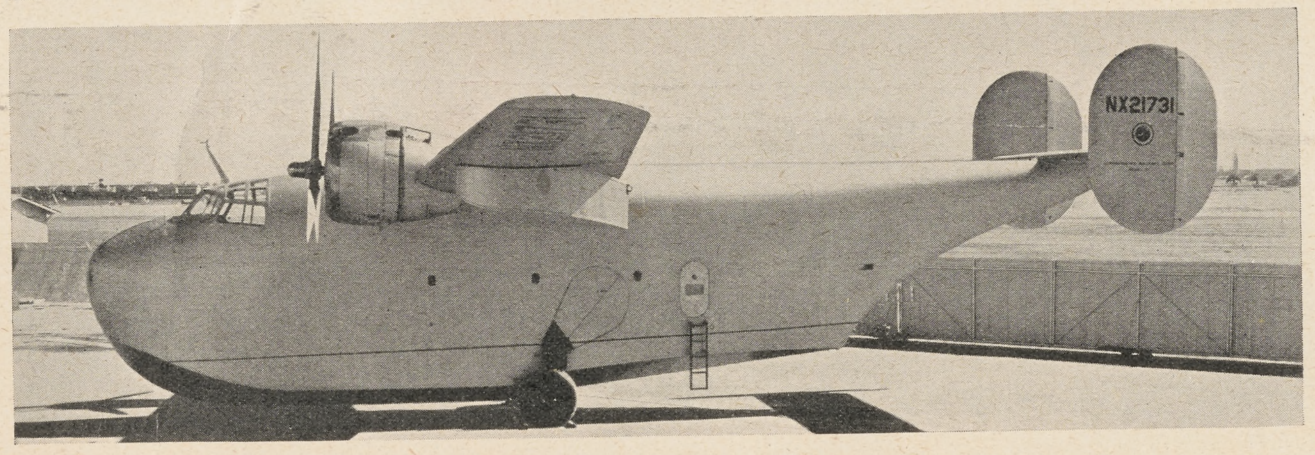
The fuel-tanks are built into the centre section in standard Consolidated fashion. The surfaces of the wing form the top and bottom of the tanks.

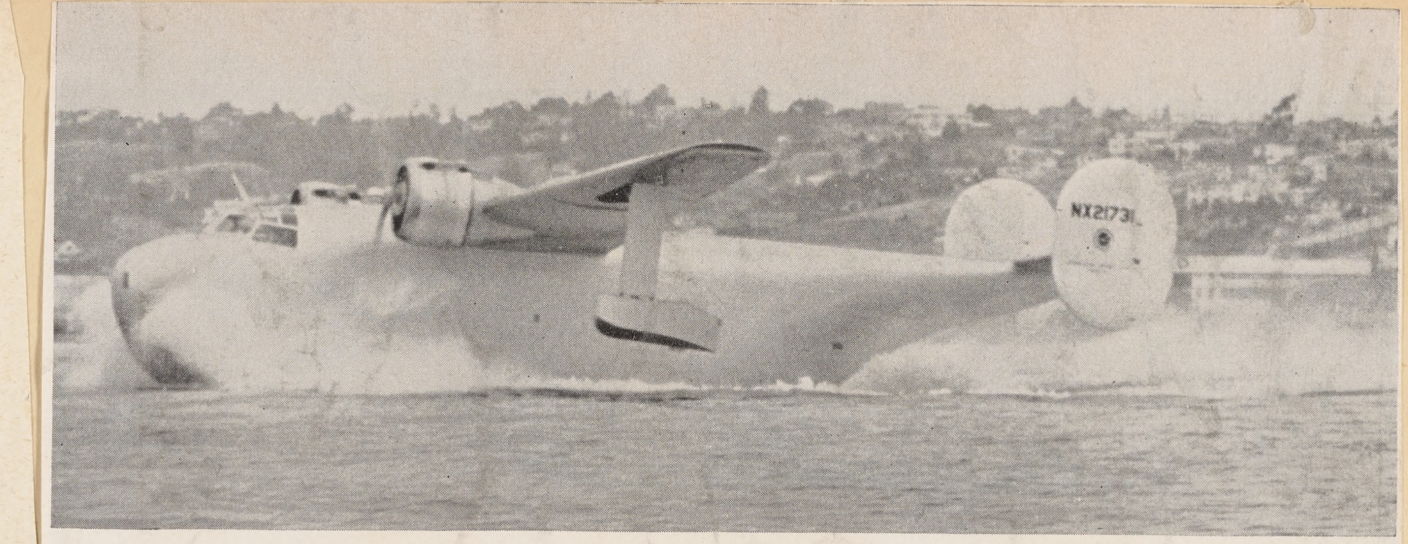
The motors are mounted on very small nacelles in front of the wing. They drive three-blade Hamilton Hydromatic constant-speed fully-feathering airscrews of 16 ft. (4.877 m.) diameter. The long-chord cowlings of the motors are oval in cross-section, perhaps because the carburetter intakes and oil coolers are encowled above and below the motors.

The existence of the new 18-cylinder Wright motors, rated at 2,000 h.p. each for take-off, had not been mentioned before.

The very deep hull of the Model 31 has two decks. The control cabin is above. Normally a crew of five is carried, two pilots, a flight engineer, a radio operator and a navigator. On the lower deck there are eight large compartments.







"Hush-Hush" Boat

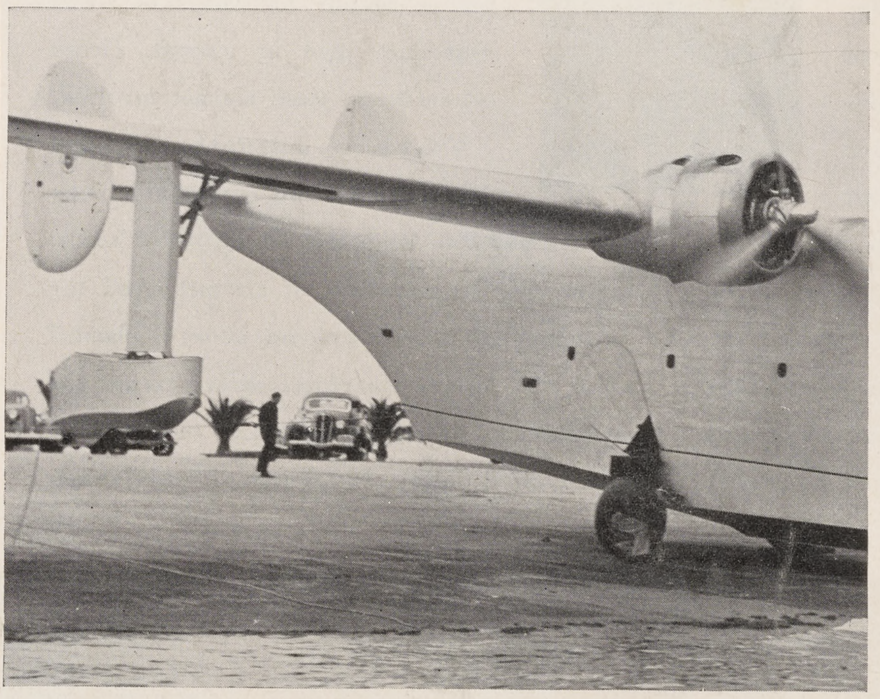
Twin engined Consolidated combines high speed and long range

CONSOLIDATED'S "hush-hush" mystery plane, the Model 31 twin-engined flying boat, took to the air May 5th with William Wheatley at the controls. The new ship, a high-wing cantilever monoplane, of all metal construction, combines high speed, long range, and heavy striking power in a plane of relatively small size. It is powered with two Wright 18 cylinder twin-row engines rated 2,000 hp. for takeoff, driving 16′ dia. Hamilton-Standard 3 blade propellers.

Stability on the water is provided by outboard floats which retract against the under side of the wing in flight. The relatively high taper of the wing prevents tip retraction of the floats as on the PBY series. A tri-cycle beaching gear is permanently attached and is also fully retractable within hull wells. Although intended strictly as a beaching gear, it is believed rugged enough to withstand airport landings in an emergency.

Gross weight is approximately 50,000 lb., wing span 110 ft., over-all length 73 ft., height 22 ft., and maximum wing chord 14 ft. Although little detailed information is available, it is understood to have a wing with high taper ratio, an aspect ratio of approximately ten to one, and a maximum loading of more than 45 lb. per sq.ft. Gross wing area is reported at approximately 1100 sq.ft. Of particular interest is the use of a new type airfoil recently developed by David R. Davis, independent aeronautical engineer. The Davis airfoil is reported to possess a number of interesting characteristics, including low drag and low center of pressure travel. Hydraulically operated Fowler wing flaps assist landings and take-offs. Although no performance estimates have been released, engineers have estimated the plane to have a top speed ranging from 285 m.p.h. to upward of 300 m.p.h., and an all-out maximum range, if stripped for record purposes, of better than 10,000 miles.

Reports of preliminary taxiing tests, and of the test flight which lasted approximately one hour, credited the plane with excellent stability on the water, quick take-off, and smooth landing. The hull is of unique design and is said to be the result of the newest testing technique in the Langley Field towing basin, where complete scale models are now being "flown" off the water instead of limiting test runs with a bare hull. The Model 31 differs materially from current hull design, having unusual depth of hull combined with a relatively narrow planing bottom, and a peculiarly stubby appearance aft.



Closeup of the Consolidated Model 31 showing the method of retracting the wing tip floats and the permanent retractable beaching gear.

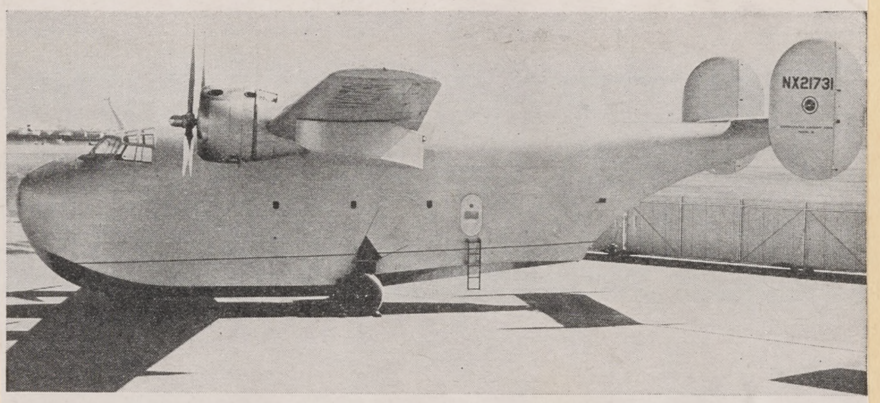
AVIATION
June, 1939

In construction the Consolidated Model 31 is of conventional skin-stressed design. The wings, tail surfaces, and planing surface of the hull bottom are all flush riveted. Ailerons, flaps, rudders and elevators are fabric covered. The tail consists of a cantilever stabilizer with twin fins and rudders mounted at the ends.

Two flight decks are provided in the hull, one above the other, providing a large flight control compartment, and eight additional compartments for passengers and payload. As a commercial airliner the Model 31 has a day capacity of 52 passengers and a night capacity of 28 passengers, with sleeper accommodations. It is said to be capable of operating in trans-Atlantic service with a load of 28 passengers. Cruising speed on 50 per cent power has been unofficially estimater at better than 200 m.p.h. As a military airplane the Model 31 would augment the PBY series of twin-engine patrol bombers which it greatly exceeds in speed, range, and load carrying ability. However, the plane is a private venture on the part of Consolidated Aircraft Corp., not having been subject to the ordinary procurement routine which adds so materially to the cost and time for construction of prototype military aircraft. As a result the design was developed, built and test flown within a period of only ten months, instead of the two to three years required heretofore under normal procurement procedure.

Military men who have knowledge of the capabilities of the Model 31 base their high estimate of its naval effectiveness primarily on its ability to locate and destroy with relative ease all but the most heavily armed surface vessels. With its high speed, long range, and ability to carry a heavy bomb load, the Model 31 is believed capable of sweeping large areas of ocean entirely free of all enemy vessels except heavily protected fleets of heavy warships. It is pointed out that its high speed makes this plane nearly immune against attack by pursuit planes of current vintage, and materially reduces effectiveness of anti-aircraft fire against it. Yet the bomb carrying capacity is sufficient to cripple any ship afloat if hit but once by a bomb of the maximum size this plane can carry.

No further information on the plane is available as we go to press, but aviation people everywhere may well watch with interest for word of civil or military application of the Consolidated Model 31.



A distinctive feature of the Model 31 is the permanent beaching gear of the tricycle type which is fully retractable within wells in the hull. Although it is intended primarily for beaching, the gear is believed to be rugged enough to withstand airport landings in an emergency.

BOMBERS LEAVING FOR HAWAII TODAY

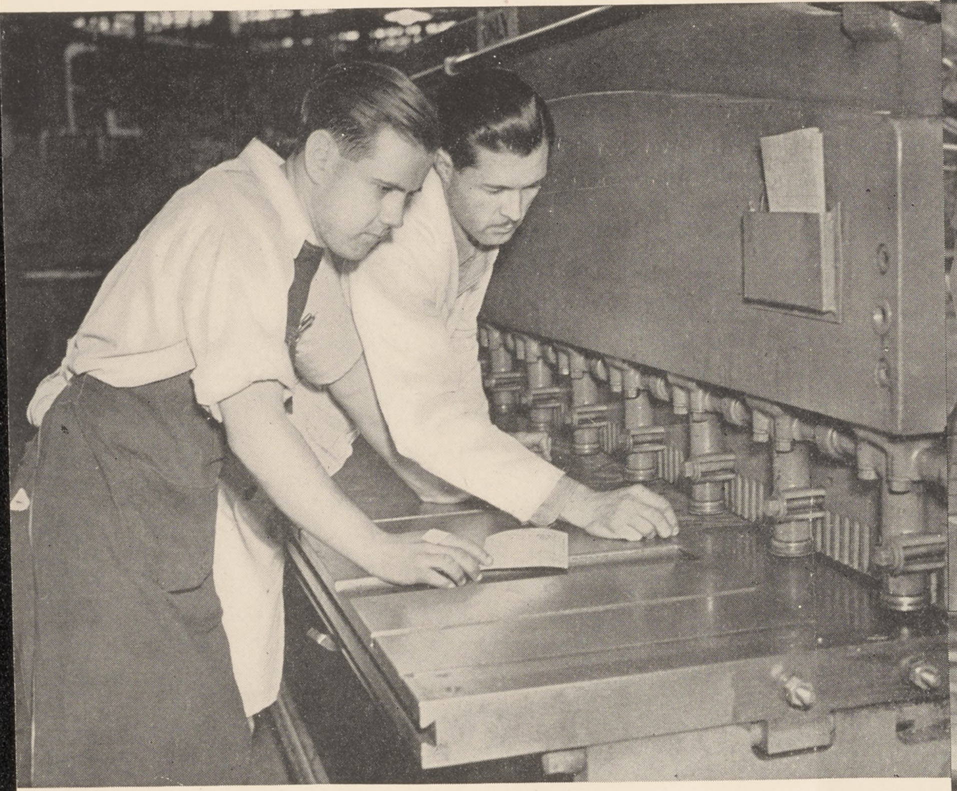
S.D. SUN 6/28/39

The non-stop, 2570-mile transpacific mass flight of 15 San Diego patrol bombers to Hawaii was to begin at 3 p. m. today, 24 hours ahead of the original schedule, to take advantage of favorable weather conditions en route, North Island officials announced.

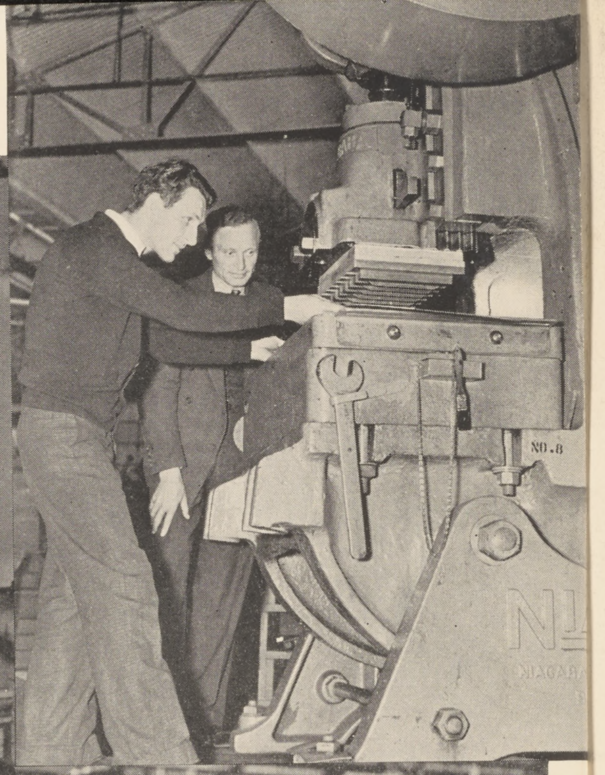
A crew of 105 officers and enlisted men, commanded by Lieut.-Comdr. Sam L. La Hache, comprised the flight personnel. The Consolidated bombers will be delivered to Pearl Harbor and assigned to Patrol Squadron One in the eighth such ferry trip to distant air bases.

Nineteen hours will be required for the hop, Rear Adm. A. B. Cook, Aircraft Scouting Force commander, estimated.

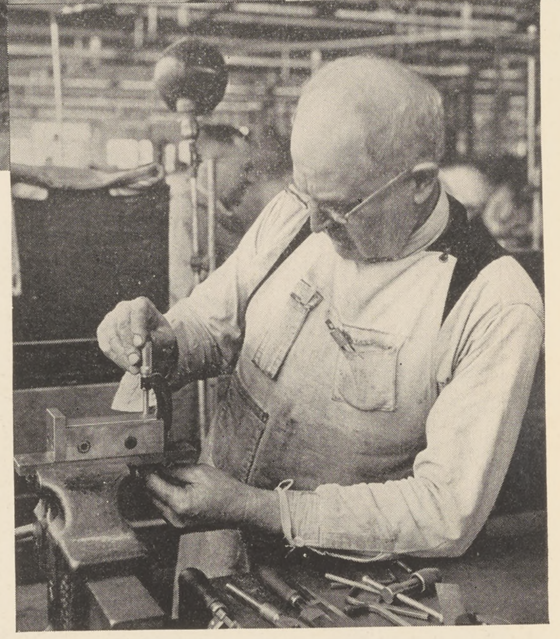
Weather data has been furnished the squadron here during the past few days by the aircraft tenders Avocet, Pelican and Childs, the destroyers Dent and Waters, and Rear Adm. Cook's flagship Memphis, all stationed along the Great Circle route to Hawaii. They also will serve as guard ships during the flight.



Sheet metal operations play an important part. A 14-ft. Cincinnati shear is shown being set up in the department devoted to this work



The initial set-up of a special louver die calls for special care. Other punch presses handle a multitude of blanking, forming, drawing, notching, perforating, crimping, slotting and burnishing operations, and even some small shear work



Skilled toolmakers play an important part in aircraft production; they build the foundation work for the accuracy that must go into the finished product

rail system with a total length exceeding 7500 ft. The monorail system is most complete in the paint shop, where parts are routed along a dozen different parallel tracks, with hundreds of ropes used to suspend parts ranging from small pieces of sheet metal to entire wing panels. Almost the entire back of the factory building, and both ends of the paint shop, is made up of doors. These can be opened at any point. In conjunction with the monorail system this makes it practicable to shift hulls, wing or semi-finished planes from point to point without disturbing the balance of the production line.

Emergency expansion of production can be accomplished quickly by moving all final assembly out into the open yard, and by erecting temporary buildings just east of the main plant, across the boulevard, to house small parts assembly. Further plant facilities could then be provided, if needed, on land available to the north of the present main building. None of this would materially affect the smooth flow of production in the existing plant.

As the company neared the end of its current production contract on the PBY type planes recently, a major program of maintenance work and new equipment installation was undertaken in connection with heavier production requirements of work to be undertaken in the near future. A $500,000 equipment program included three Brown & Sharp automatic screw machines, two Cleveland screw machines, a Cincinnati centerless grinder and a LeBlond gap lathe to swing 50 in.

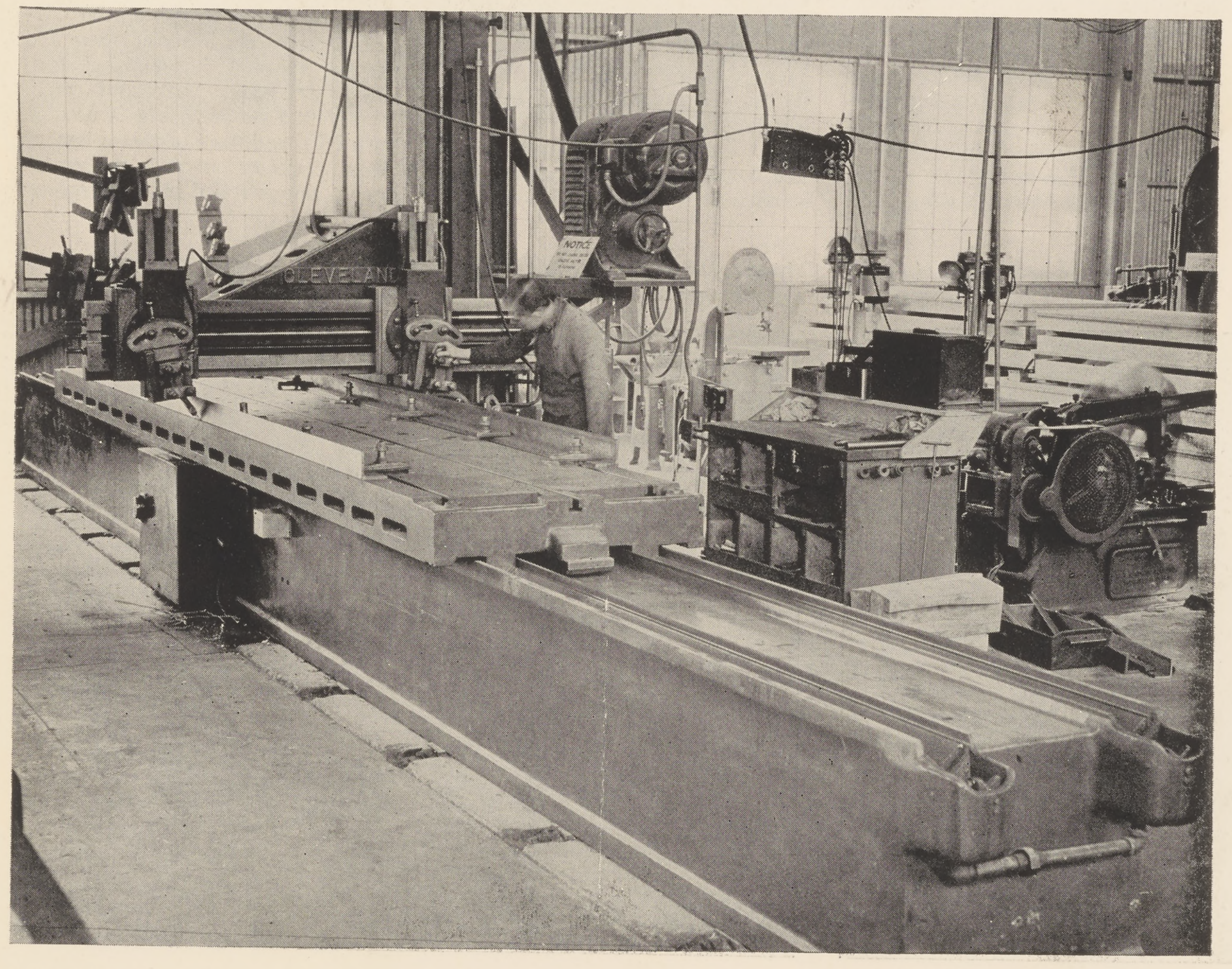
For the drop hammer die foundry two James H. Knapp gas-fired tilting type melting furnaces were installed, each with a capacity of 8,300 lb. of zinc alloy, or 12,000 lb. of lead. To supply the power for the new air operated drop hammers a new Worthington 20 x 12 x 14-in. horizontal two-stage compressor was added. It is of interest to note than a standby system is provided to supply butane gas to the boilers, heat-treating equipment and furnaces in the event of failure of the natural gas supply, piped from Los Angeles. Some 10,000 gals. of butane fuel are stored at the plant, enough to meet normal needs for a a full ten-day period.

Included in the machinery purchases have been a 4500-ton hydraulic press, a Hamilton double-crank 1000-ton press, four Chambersburg air-operated drop hammers, and four new rope lift type drop hammers designed and manufactured in the Consolidated shops. The 4500-ton hydraulic press is built by the Birdsboro Steel Foundry and Machinery Company in conjunction with the Hydraulic Press Manufacturing Company. The double-crank Hamilton press is a single-action blanking press of 1000-ton capacity, manufactured by the Hooven-Owens-Rentschler Division of General Machine Corporation. The two presses are being installed in the center of the sheet-metal department. The four air-operated drop hammers are all of Chambersburg manufacture. Two smaller Chambersburg hammers are also being installed, each with a stroke of 42 in., and a platen area 41 by 36 in.

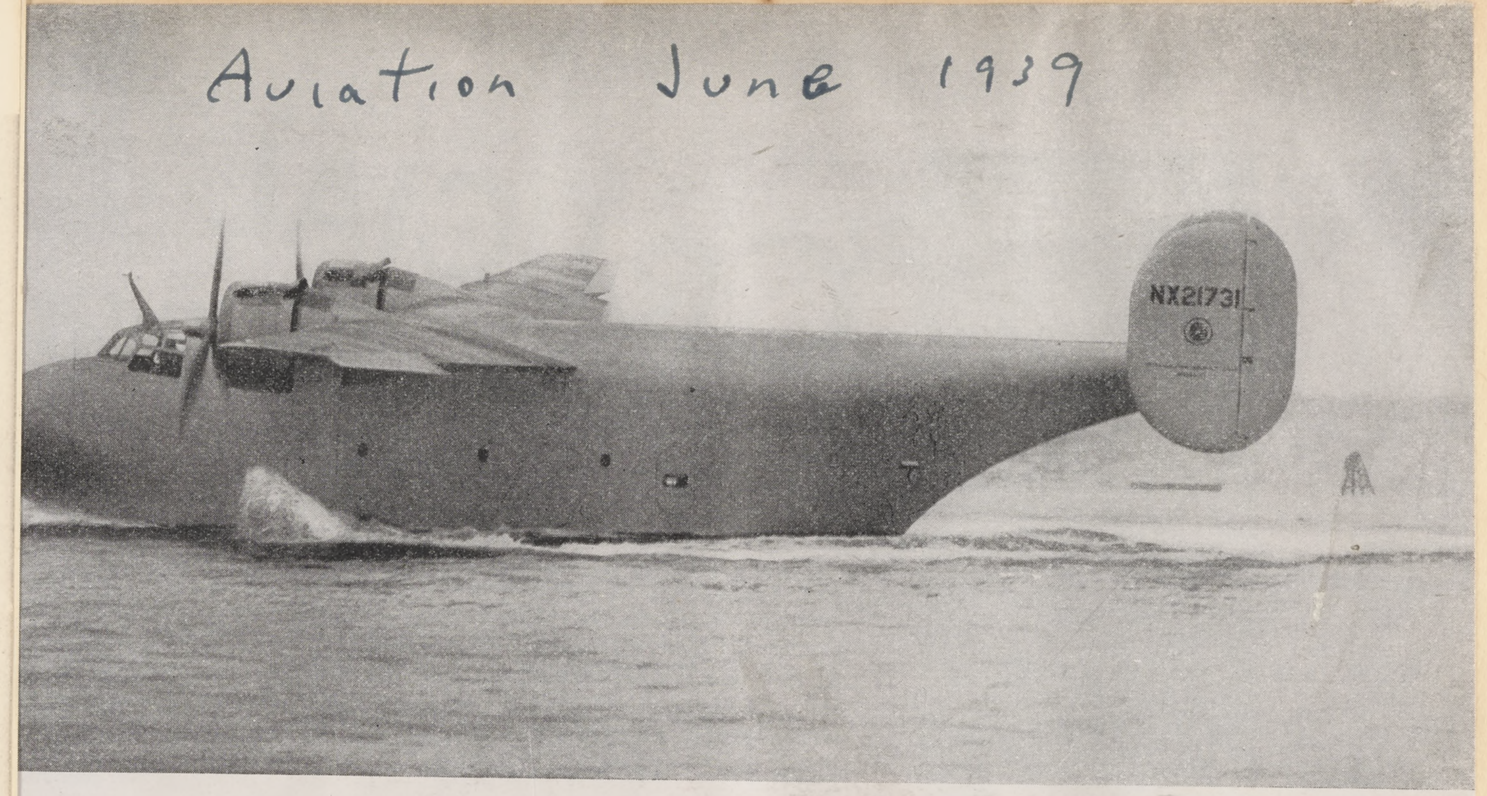
The drop hammer installations are new, such work having formerly been contracted to outside manufacturers. It is notable that the drop hammers are being installed in the center of the main factory, immediately adjacent to the machine shop and close to the offices. Drop hammer installations have always been a source of concern due to the heavy vibrations imparted to their foundations, and through the soil to buildings and equipment in the vicinity. It is of interest then, to note the installation of unusually large hammers right in the heart of the plant; and the installation has been further complicatetd by the fact that the entire factory is built on reclaimed soil filled over tidelands, with a bearing value of only 1,250 lb. per sq. ft. So it was necessary for the engineers to solve simultaneously load bearing and vibration transmission problems. The load bearing problem was solved by driving H-type steel piles to a depth of 60 ft. to serve as a sub-foundation. As the roof clearance was only 30 ft. it was necessary to drive the piles in short sections, welding additional increments in place as the driving progressed. Shocks have been kept within the foundations (subject to working demonstration) by mounting the drop hammers each on a heavy inertia block which is, in turn, suspended in a foundation box by means of heavy coil springs. The heavy concrete foundation box rests directly on the steel piles driven in the sub-soil. The inertia block is floated in this box from steel beams at the top resting on Korfund coil springs supported on the foundation proper. It is estimated that the maximum deflection of these springs on the largest of the Chambersburg hammers will not exceed ½ in. In order to save foundation space it was found necessary to make the inertia blocks of something with a specific gravity heavier than concrete. This was done by using steel punchings and scrap as aggregate in mixing the concrete for each of the inertia blocks. The inertia block is heavily reinforced with steel to keep it from disintegrating under the pounding of the hammer.

An aircraft design has called for metal construction to a constantly greater degree, the importance of the machine shop to airplane production has increased. But many metal-work-

Construction of large production fixtures requires some good sized machine tools in the toolroom as exemplified by this open-side planer



Aviation June 1939



CONSOLIDATED LONG-RANGE 52 PASSENGER FLYING BOAT

powered by

TWO DUPLEX-CYCLONES

lated Aircraft Corporation's new long-range, 52-
r Flying Boat introduced the 18-cylinder 2000 H.P.
Duplex-Cyclone aircraft engine.

commercial airliner, the Consolidated Model 31
aximum capacity of 52-passengers and a crew of
day operations and sleeping accommodations for
ngers for protracted flights or trans-oceanic service.

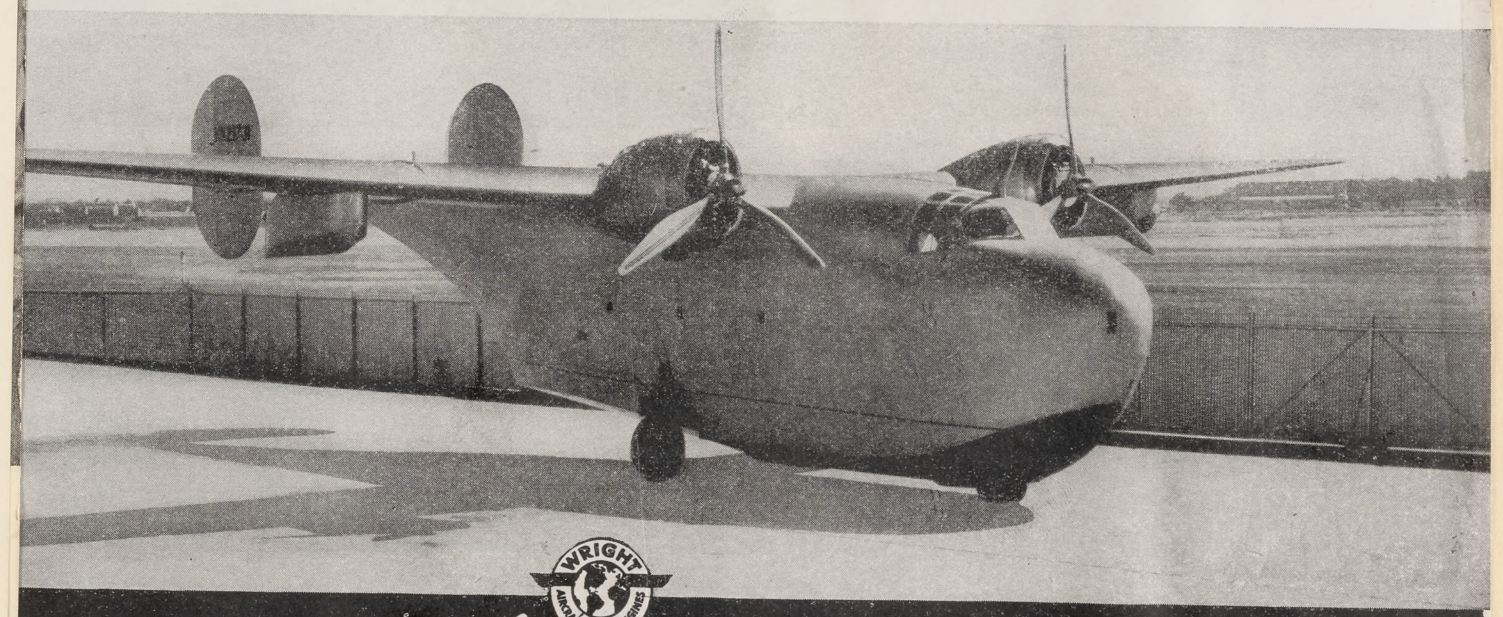
ugh no performance figures may be released, the
4000 H.P. delivered by the two Duplex-Cyclones
n the airplane an exceptionally high-speed, range
capacity.

Outstanding features of the Model 31 include two hull decks—one above the other—providing a large flight control compartment and eight additional large compartments.

The ship is equipped with a hydraulically operated, retractable tricycle beaching gear—the first application of such equipment.

"Fly With Wright The World Over"

WRIGHT AERONAUTICAL CORPORATION
Paterson New Jersey
A Division of Curtiss-Wright Corporation



WRIGHT *Aircraft* ENGINES

Archbold Due July 3 On Final Leg of Flight

S.D. Union 6/28/39

Richard Archbold, research director, American Museum of Natural history, en route to San Diego from Sydney, Australia, via Africa, the West Indies and New York, was expected to leave Dakar, West Africa, today on the final legs of his homeward bound flight. He is expected to arrive here July 3 in his San Diego built flying boat.

A New Boat with a New Wing

Chief FEATURE of interest in the new twin-motor Consolidated Model 31 flying-boat, which flew first early in May, is its Davis Wing. Its designer, David Richard Davis, was formerly with the Douglas Aircraft Company. His claims for his new section were confirmed by wind-tunnel tests at the California Institute of Technology (Calteck), but the authorities there were doubtful of the practical applications.

We know nothing of the section ourselves except that its designer claims for it a 20% reduction in drag compared with current designs. We assume that he has achieved this by moving the greatest depth back towards the middle from the more usual position somewhere about one-third of the chord back from the leading edge.

We also assume, in view of the doubts expressed at Calteck, that the section is very thin, or, in technical jargonese, has a low thickness-chord (t/c) ratio. This is borne out by the photographs of the new boat. Information from the United States confirms that the surface of the wing is flush-riveted.

So far there is no information about the relative efficiencies of the Davis Wing and the laminar-flow aerofoil developed by the National Advisory Committee for Aeronautics. So far there is no report that the new N.A.C.A. aerofoil has been flown.

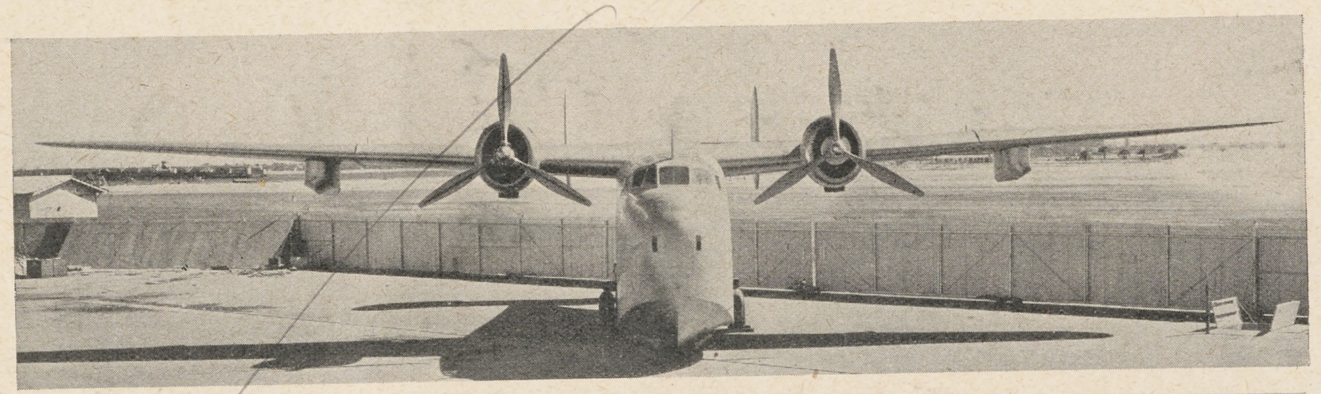
The Model 31 has been built as a Private Venture by the Consolidated Aircraft Corporation of San Diego, California, U.S.A., and, according to report, Reuben Fleet, President and General Manager of the Corporation, has contracted to pay a handsome royalty for every Davis Wing his corporation builds.

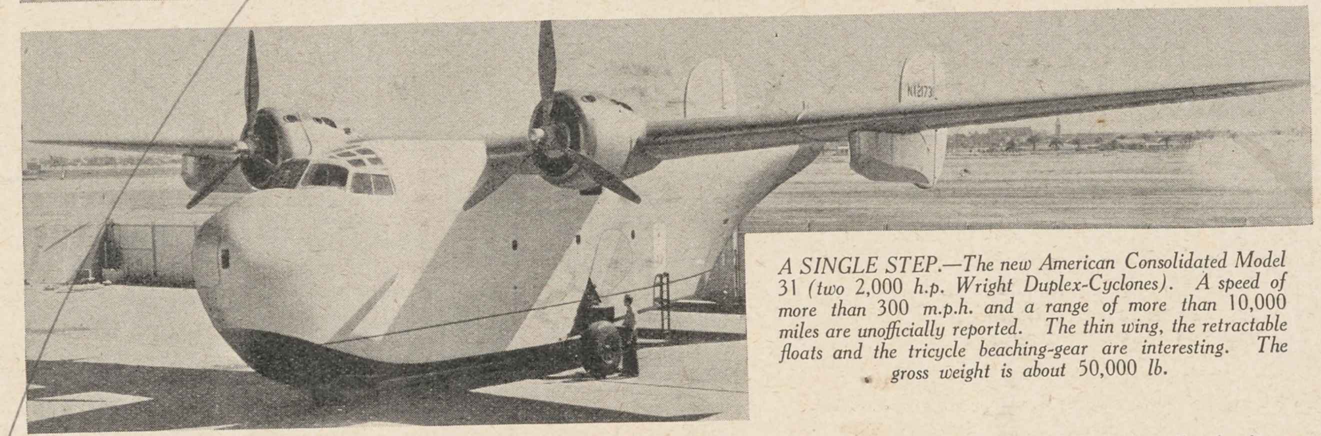
Aircraft construction in the United States seems to follow the same laws as here. We have been told that because the boat was built as a Private Venture, the design and construction, unhampered by Naval requirements, took only ten months, compared with the two or three years normally needed for an aeroplane of this size.

Although the Model 31 does not conform to any specification of the U.S. Navy, its makers believe that its extraordinary performance will probably cause its adoption for military work.

The Consolidated Model 31 high-wing cantilever monoplane has two 2,000 h.p. 18-cylinder Wright Duplex-Cyclone two-row radials. The gross weight is 50,000 lb. (22,660 kg.). The disposable load is supposed to be 1½ times the empty weight.

The maximum speed is quoted unofficially as more than 300 m.p.h. *Time* (New York) reports the "high speed" as 275 m.p.h.; this may mean the maximum cruising speed, which is the only speed of interest to commercial operators. If these figures are correct, the combination of load-carrying ability and speed is considerably better than that of any contemporary aeroplane.





A SINGLE STEP.—The new American Consolidated Model 31 (two 2,000 h.p. Wright Duplex-Cyclones). A speed of more than 300 m.p.h. and a range of more than 10,000 miles are unofficially reported. The thin wing, the retractable floats and the tricycle beaching-gear are interesting. The gross weight is about 50,000 lb.

In civil form the Model 31 can carry up to 52 passengers by day or 28 passengers in bunks at night. Twenty-eight passengers could be carried in comfort across the Atlantic.

Hydraulically operated Fowler flaps extend from the ailerons to the hull. The whole of the wing has stressed metal covering except for the ailerons and flaps which are fabric-covered.

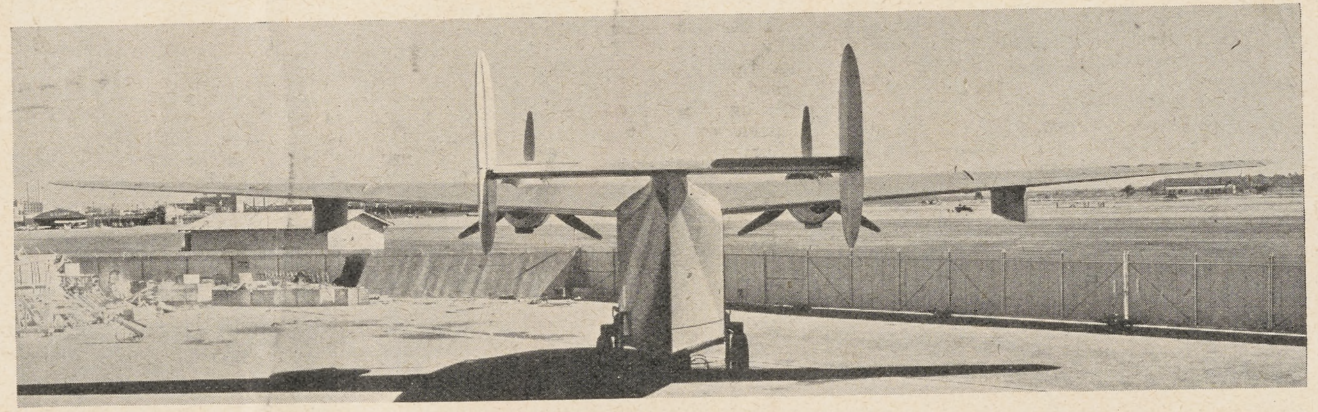
The outboard floats retract into the underside of each wing. The wing-tips of the Model 31 are too small for the sideways retraction of the floats as on the earlier Consolidated PBY.

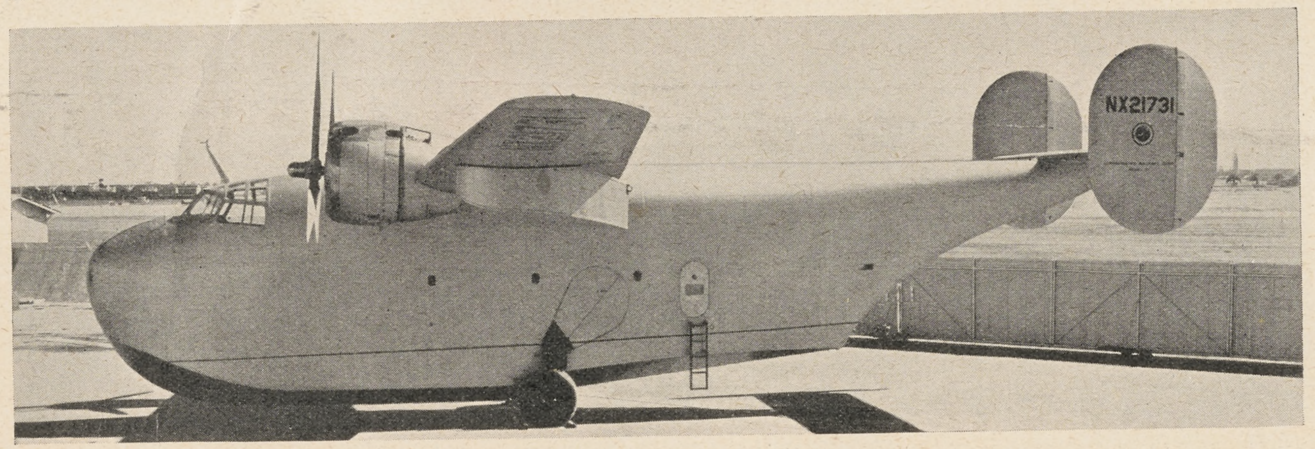
The fuel-tanks are built into the centre section in standard Consolidated fashion. The surfaces of the wing form the top and bottom of the tanks.

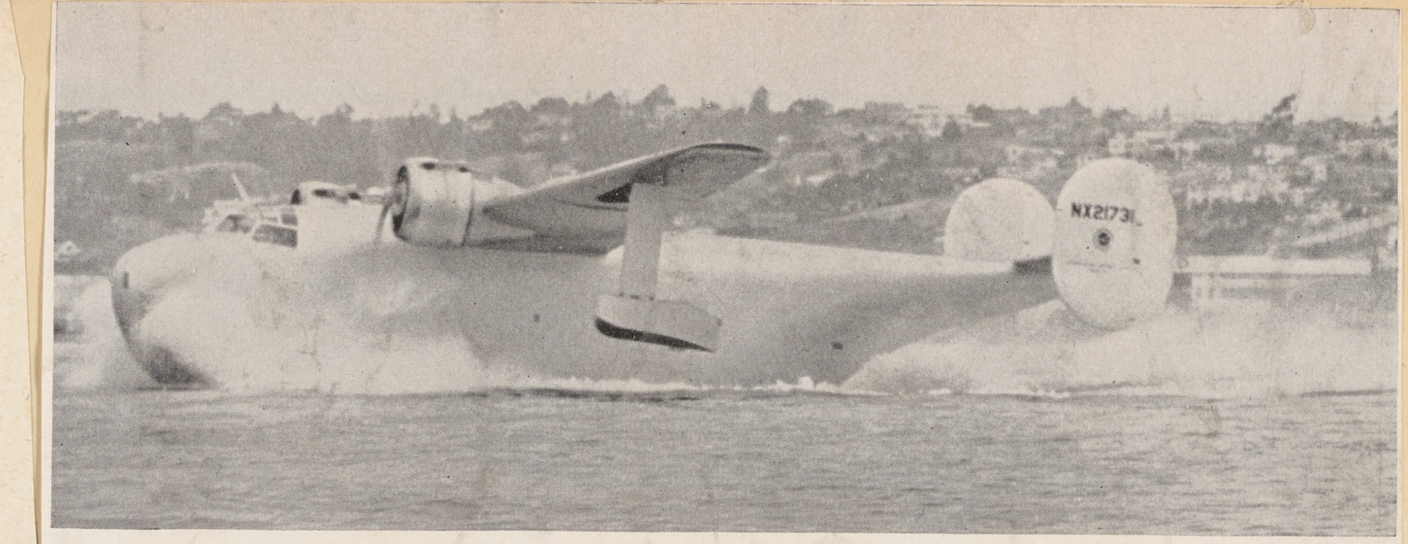
The motors are mounted on very small nacelles in front of the wing. They drive three-blade Hamilton Hydromatic constant-speed fully-feathering airscrews of 16 ft. (4.877 m.) diameter. The long-chord cowlings of the motors are oval in cross-section, perhaps because the carburetter intakes and oil coolers are encowled above and below the motors.

The existence of the new 18-cylinder Wright motors, rated at 2,000 h.p. each for take-off, had not been mentioned before.

The very deep hull of the Model 31 has two decks. The control cabin is above. Normally a crew of five is carried, two pilots, a flight engineer, a radio operator and a navigator. On the lower deck there are eight large compartments.







"Hush-Hush" Boat

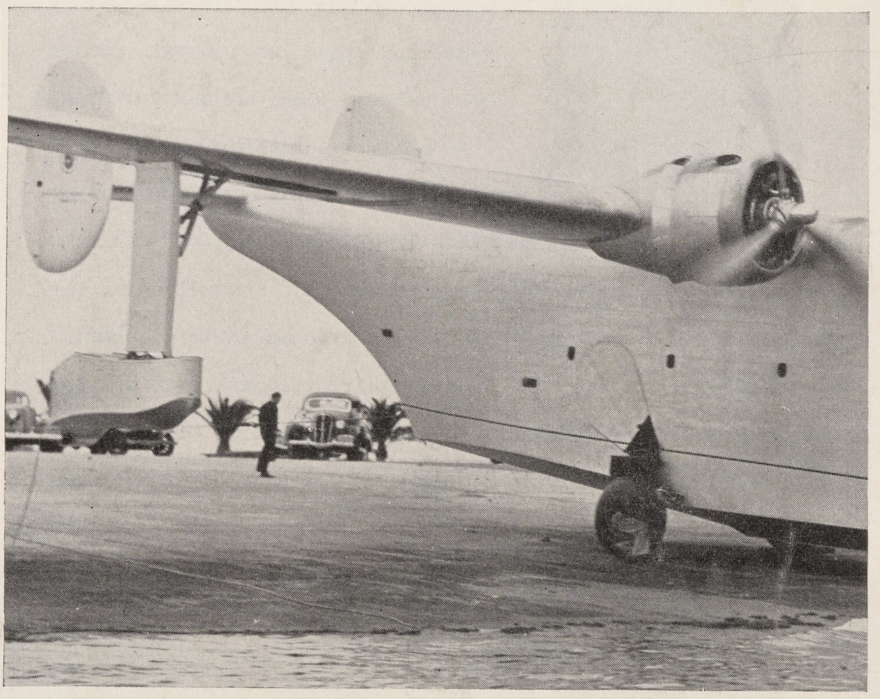
Twin engined Consolidated combines high speed and long range

Consolidated's "hush-hush" mystery plane, the Model 31 twin-engined flying boat, took to the air May 5th with William Wheatley at the controls. The new ship, a high-wing cantilever monoplane, of all metal construction, combines high speed, long range, and heavy striking power in a plane of relatively small size. It is powered with two Wright 18 cylinder twin-row engines rated 2,000 hp. for takeoff, driving 16′ dia. Hamilton-Standard 3 blade propellers.

Stability on the water is provided by outboard floats which retract against the under side of the wing in flight. The relatively high taper of the wing prevents tip retraction of the floats as on the PBY series. A tri-cycle beaching gear is permanently attached and is also fully retractable within hull wells. Although intended strictly as a beaching gear, it is believed rugged enough to withstand airport landings in an emergency.

Gross weight is approximately 50,000 lb., wing span 110 ft., over-all length 73 ft., height 22 ft., and maximum wing chord 14 ft. Although little detailed information is available, it is understood to have a wing with high taper ratio, an aspect ratio of approximately ten to one, and a maximum loading of more than 45 lb. per sq.ft. Gross wing area is reported at approximately 1100 sq.ft. Of particular interest is the use of a new type airfoil recently developed by David R. Davis, independent aeronautical engineer. The Davis airfoil is reported to possess a number of interesting characteristics, including low drag and low center of pressure travel. Hydraulically operated Fowler wing flaps assist landings and take-offs. Although no performance estimates have been released, engineers have estimated the plane to have a top speed ranging from 285 m.p.h. to upward of 300 m.p.h., and an all-out maximum range, if stripped for record purposes, of better than 10,000 miles.

Reports of preliminary taxiing tests, and of the test flight which lasted approximately one hour, credited the plane with excellent stability on the water, quick take-off, and smooth landing. The hull is of unique design and is said to be the result of the newest testing technique in the Langley Field towing basin, where complete scale models are now being "flown" off the water instead of limiting test runs with a bare hull. The Model 31 differs materially from current hull design, having unusual depth of hull combined with a relatively narrow planing bottom, and a peculiarly stubby appearance aft.



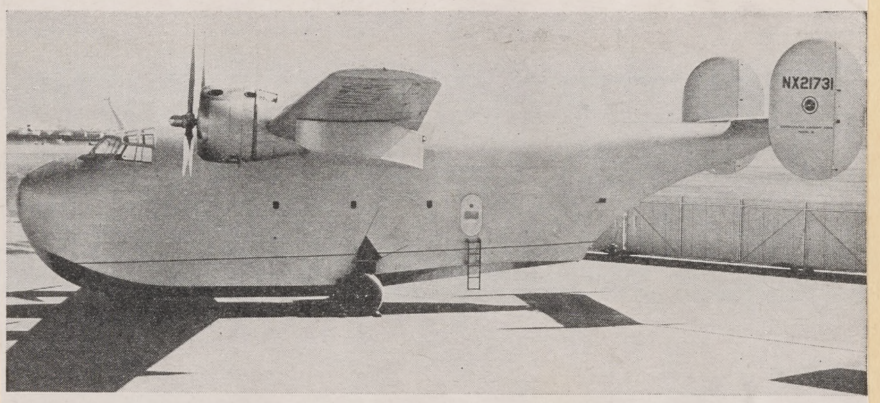
Closeup of the Consolidated Model 31 showing the method of retracting the wing tip floats and the permanent retractable beaching gear.

In construction the Consolidated Model 31 is of conventional skin-stressed design. The wings, tail surfaces, and planing surface of the hull bottom are all flush riveted. Ailerons, flaps, rudders and elevators are fabric covered. The tail consists of a cantilever stabilizer with twin fins and rudders mounted at the ends.

Two flight decks are provided in the hull, one above the other, providing a large flight control compartment, and eight additional compartments for passengers and payload. As a commercial airliner the Model 31 has a day capacity of 52 passengers and a night capacity of 28 passengers, with sleeper accommodations. It is said to be capable of operating in trans-Atlantic service with a load of 28 passengers. Cruising speed on 50 per cent power has been unofficially estimater at better than 200 m.p.h. As a military airplane the Model 31 would augment the PBY series of twin-engine patrol bombers which it greatly exceeds in speed, range, and load carrying ability. However, the plane is a private venture on the part of Consolidated Aircraft Corp., not having been subject to the ordinary procurement routine which adds so materially to the cost and time for construction of prototype military aircraft. As a result the design was developed, built and test flown within a period of only ten months, instead of the two to three years required heretofore under normal procurement procedure.

Military men who have knowledge of the capabilities of the Model 31 base their high estimate of its naval effectiveness primarily on its ability to locate and destroy with relative ease all but the most heavily armed surface vessels. With its high speed, long range, and ability to carry a heavy bomb load, the Model 31 is believed capable of sweeping large areas of ocean entirely free of all enemy vessels except heavily protected fleets of heavy warships. It is pointed out that its high speed makes this plane nearly immune against attack by pursuit planes of current vintage, and materially reduces effectiveness of anti-aircraft fire against it. Yet the bomb carrying capacity is sufficient to cripple any ship afloat if hit but once by a bomb of the maximum size this plane can carry.

No further information on the plane is available as we go to press, but aviation people everywhere may well watch with interest for word of civil or military application of the Consolidated Model 31.



A distinctive feature of the Model 31 is the permanent beaching gear of the tricycle type which is fully retractable within wells in the hull. Although it is intended primarily for beaching, the gear is believed to be rugged enough to withstand airport landings in an emergency.

BOMBERS LEAVING FOR HAWAII TODAY

S.D. SUN 6/28/39

The non-stop, 2570-mile transpacific mass flight of 15 San Diego patrol bombers to Hawaii was to begin at 3 p. m. today, 24 hours ahead of the original schedule, to take advantage of favorable weather conditions en route, North Island officials announced.

A crew of 105 officers and enlisted men, commanded by Lieut.-Comdr. Sam L. La Hache, comprised the flight personnel. The Consolidated bombers will be delivered to Pearl Harbor and assigned to Patrol Squadron One in the eighth such ferry trip to distant air bases.

Nineteen hours will be required for the hop, Rear Adm. A. B. Cook, Aircraft Scouting Force commander, estimated.

Weather data has been furnished the squadron here during the past few days by the aircraft tenders Avocet, Pelican and Childs, the destroyers Dent and Waters, and Rear Adm. Cook's flagship Memphis, all stationed along the Great Circle route to Hawaii. They also will serve as guard ships during the flight.

ing processes not a part of the machine shop proper have also been required increasingly. Wood has been eliminated so completely from the PBY type that the only place it is used is for the top of the navigator's table, and small pieces in the pilot's seat arm rests. Future designs will probably continue this reliance on metal and will call for more efficient metal-working equipment. Nor is the metal all of a kind, for many different alloys, and structural forms, go to make up the completed PBY. There is extensive use of riveted sheet aluminum alloy in the skin of hull and wing. Welded steel tubing is used in the engine mount. Liberal use of forged dural parts is made throughout the plane, and these must all be machined. Spot-welded dural and stainless steel sheet parts are also employed. And dural tubes and extruded sections are used at many points.

This means that metal-working methods have had to be applied and developed to fit the particular needs of PYB production. Outside the machine shop there are the metal shears and brakes, the heat-treating furnaces, the plating and anodizing equipment, welding shops, tube bending, cable terminal, swaging machine, presses, drop hammers, draw bench, hand and machine riveters, and miscellaneous other such equipment. To keep all this metal-working machinery going a highly efficient tool-crib system has been worked out by which one master tool-crib distributes supplies to eight cribs located in or near eight separate departments.

Some conception of the bulk of metal parts handled in the manufacture of large aircraft is provided by the size of the anodizing pits, which are 20 ft. long and 15 ft. deep. Here aluminum alloy parts or assemblies are given a protective coating of aluminum oxide prior to painting. The same emphasis on size is found in the paint shop. Here facilities have been completely revamped through installation of new spray booths of the water wash type to take the paint residue out of the exhaust air.

To keep pace with the ever increasing size of parts a new salt bath furnace is being installed in the heat-treating department, with a capacity to heat-treat 2,000 lbs. of aluminum alloy parts per hour in a salt pot 21 ft. long, and requiring approximately 18,000 lbs. of potassium nitrate and the same quantity of sodium nitrate for its initial charge.

In the sheet-metal shop we note a Cincinnati brake with a 10 ft. throat which is extended to 15 ft. by end brackets for light aluminum alloy work. And a Cincinnati shear with a 14 ft. throat is used for trimming large sheet metal parts. A battery of Niagara punch presses handles a multitude of blanking, forming, drawing, joggling, notching, perforating, nipping, dimpling, crimping, slotting and burnishing operations, and even some small shear work. As with all metal-working machinery in an aircraft plant, each machine is required to handle a wide range of work, and every operator must be versatile in handling a number of operations satisfactorily.

In order to get the maximum use from the punch presses a complete system of dies has been worked out, including spring die sets, magnetic die holders, notching and slotting dies held in special die sets, and a fascinating technique in handling joggling dies. Joggling, off-setting, or crimping, is of special importance as it is frequently necessary to joggle a plate, or extruded or drawn section, in order to assemble a complex fitting properly in the airplane structure. A clever system of joggle dies, using a sliding shoe and return springs, serves to convert the vertical motion of the press into a desired transverse and angular motion to achieve the various degrees of joggle required.

A separate phase of sheet-metal work is the draw bench, where strip stock is drawn through dies to produce various channel forms. These are then heat-treated and pulled in a stretcher to just beyond their yield point in order to straighten them. A great deal of tube bending is required in connection with plumbing, conduits, and some structural parts. Nearly 900 ft. of tubing is used in each PBY and most of this is bent at some place or other. The motor mount ring is rolled in a ring-rolling machine. The beaching gear strut is bent in a die on a press. But most of the bending is done on a set of tube bending machines instead of by the old hand bending methods. On control cable ends the old method of hand splicing a loop is eliminated through use of a Standard Machine Company swager with which the terminal ends are swaged to the cables. Cold working of the stainless steel terminals during swaging improves their strength also. A "cable-proofing" machine built in the Consolidated shops takes initial stretch out of all cables prior to their installation.

All rivets used in the plant are produced on two rivet headers, one National and one Manville, which turn out as many as a million rivets a week of varying sizes and types. As there are a great many different rivet sizes required in the construction of such a large plane it has been found more satisfactory to manufacture the rivets as needed rather than to carry them in stock. Another factor is the close control that must be maintained on rivet heat treat. After heat-treat the rivets are stored immediately in a large electric refrigerator to keep them from aging prior to driving. This refrigerator serves as supply headquarters for some 37 small electric refrigerators throughout the plant. The small refrigerators are on wheels and may be moved about to suit the convenience of the various rivet driving crews.

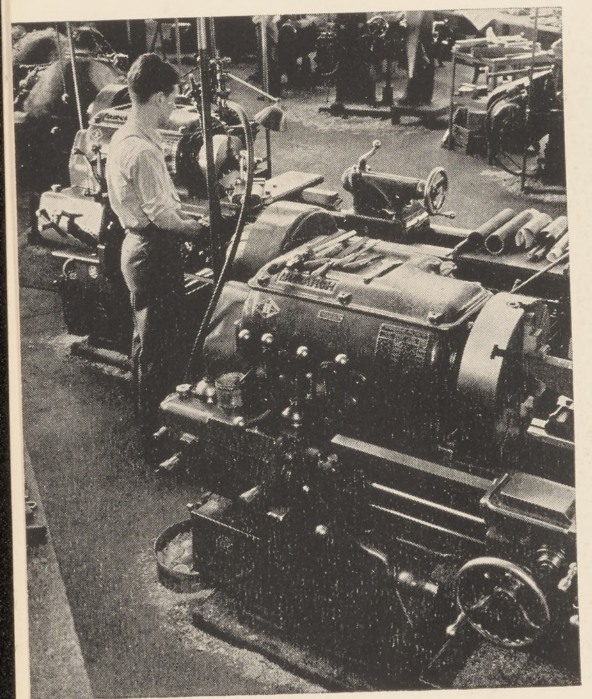
Machines methods of a portable kind have been applied to many of the sub-assemblies built up in the welding shop. These bulky assemblies do not lend themselves to handling in the machine shop and are faced, drilled, and reamed at attachment points, or where accessories mount, through use of special fixtures and jigs, with boring bars, spot facers, reamers, etc., all operated by hand electric or pneumatic motors.

But the heart of the PBY production program, or any other metal plane that may be produced in the Consolidated plant, is in the machine shop and toolroom. All production starts in the toolroom with the manufacture of jigs, fixtures and special tools. But so important is elimination of lost time between final design and finished product, because of rapid design obsolescence, especially in the

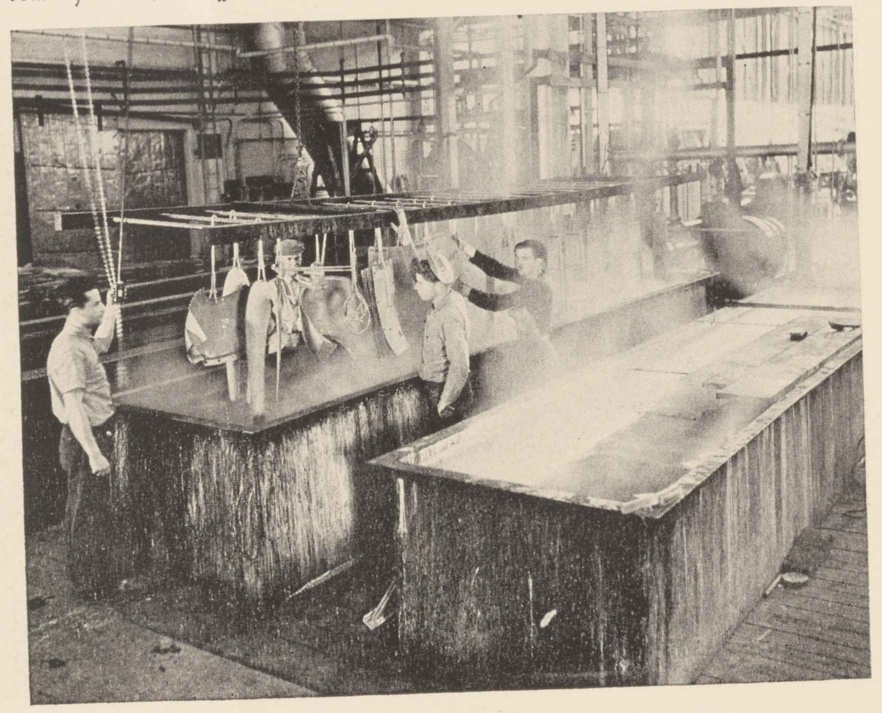
Pneumatic tube-bending machines are now coming into play. The Model 28 Consolidated twin engined flying boats use approximately 900 ft. of tubing per plane. It finds a place in extinguisher lines, fuel oil lines and for conduit

pcs

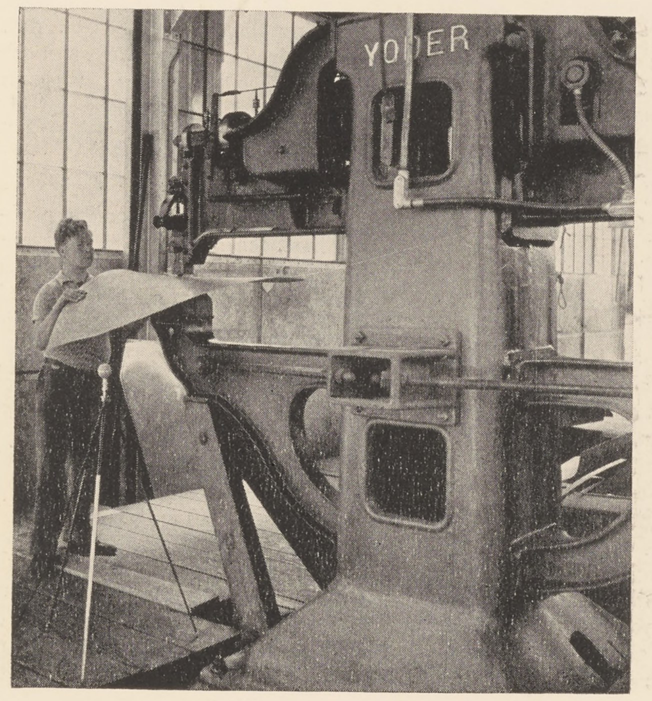
These engine lathes are typical of the modern machine equipment employed



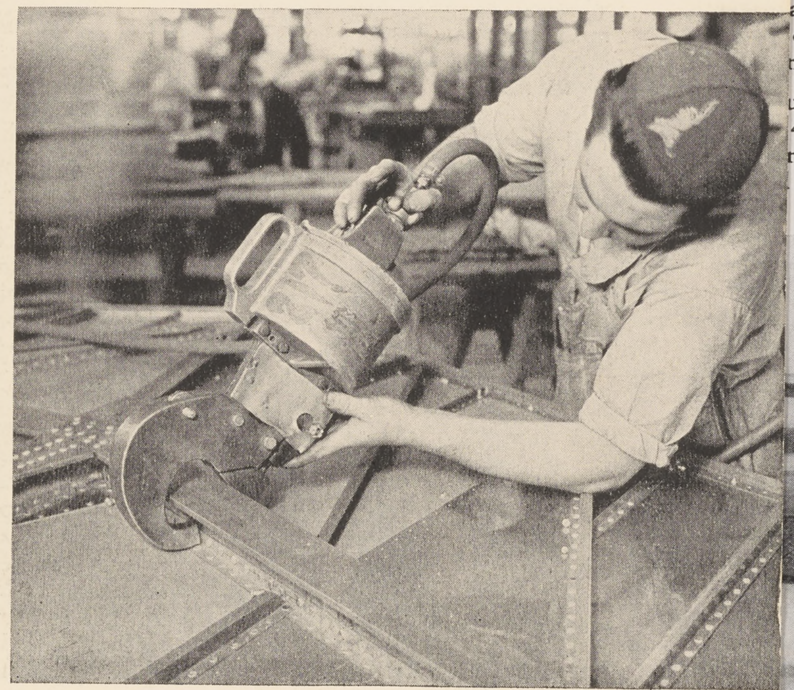
Anodizing follows the machining of all duralumin parts; it adds a protective coat of oxide, an effective means of inhibiting corrosion



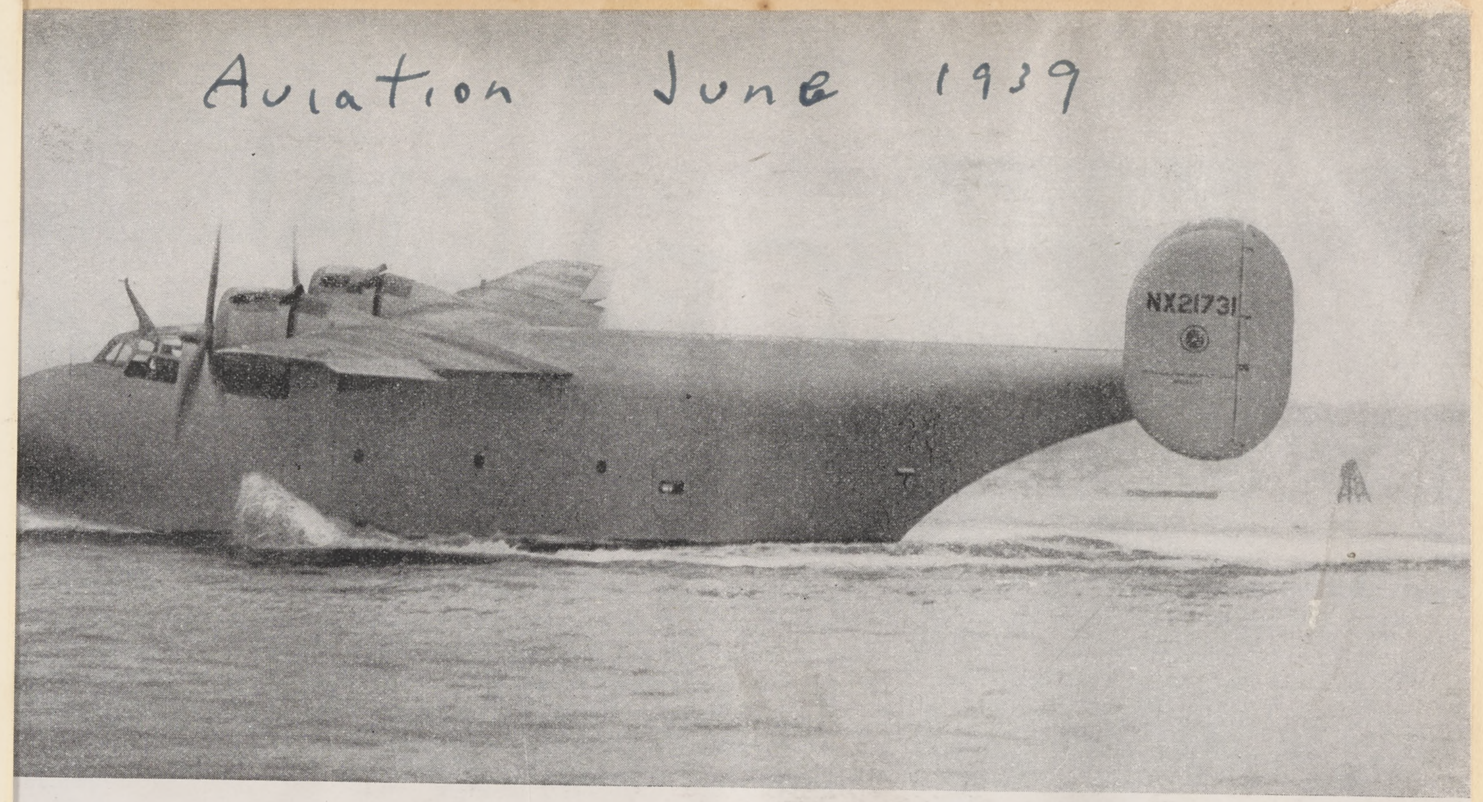
For experimental work power hammers, such as this, give gentle curves to large aluminum sheets



A squeezer upsets the rivets in a large bulkhead for one of the Consolidated planes



Aviation June 1939



CONSOLIDATED LONG-RANGE
52 PASSENGER FLYING BOAT
powered by
TWO DUPLEX-CYCLONES

lated Aircraft Corporation's new long-range, 52-
r Flying Boat introduced the 18-cylinder 2000 H.P.
Duplex-Cyclone aircraft engine.

commercial airliner, the Consolidated Model 31
aximum capacity of 52-passengers and a crew of
day operations and sleeping accommodations for
ngers for protracted flights or trans-oceanic service.

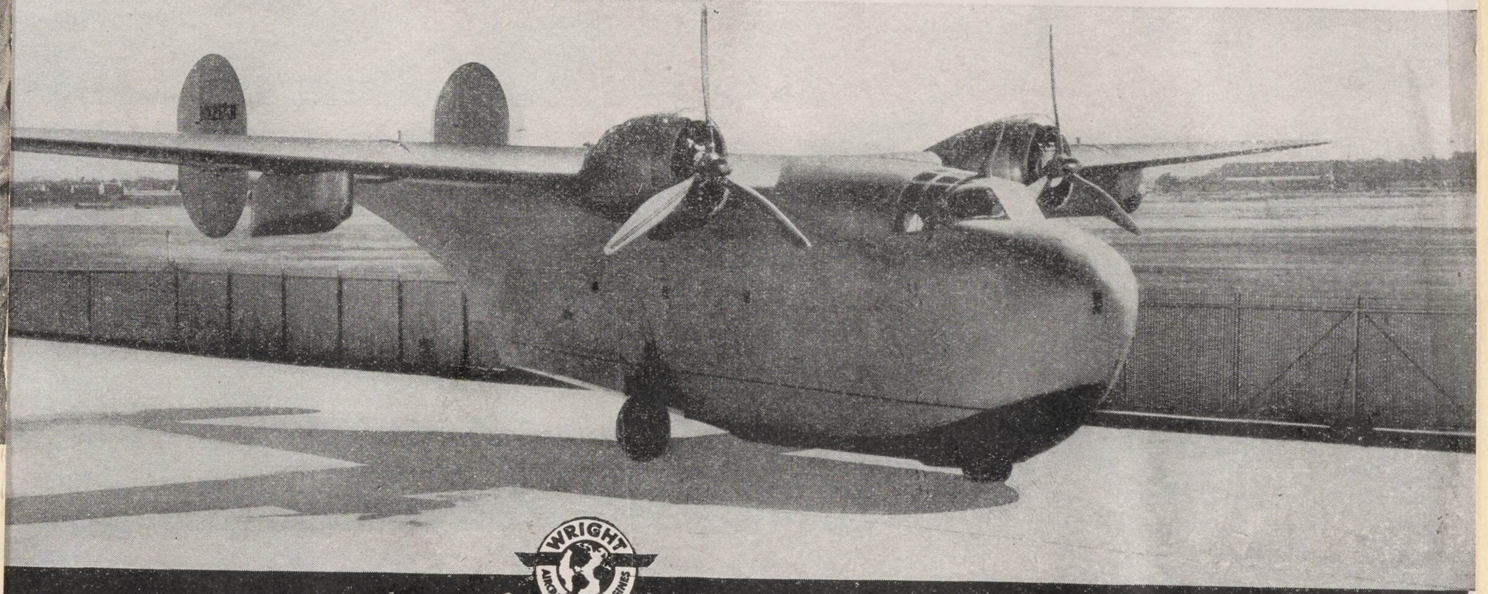
ugh no performance figures may be released, the
4000 H.P. delivered by the two Duplex-Cyclones
n the airplane an exceptionally high-speed, range
capacity.

Outstanding features of the Model 31 include two hull decks—one above the other—providing a large flight control compartment and eight additional large compartments.

The ship is equipped with a hydraulically operated, retractable tricycle beaching gear—the first application of such equipment.

"Fly With Wright The World Over"

WRIGHT AERONAUTICAL CORPORATION
Paterson New Jersey
A Division of Curtiss-Wright Corporation



WRIGHT *Aircraft* ENGINES

Archbold Due July 3 On Final Leg of Flight

S.D. Union 6/28/39

Richard Archbold, research director, American Museum of Natural history, en route to San Diego from Sydney, Australia, via Africa, the West Indies and New York, was expected to leave Dakar, West Africa, today on the final legs of his homeward bound flight. He is expected to arrive here July 3 in his San Diego built flying boat.

A New Boat with a New Wing

CHIEF FEATURE of interest in the new twin-motor Consolidated Model 31 flying-boat, which flew first early in May, is its Davis Wing. Its designer, David Richard Davis, was formerly with the Douglas Aircraft Company. His claims for his new section were confirmed by wind-tunnel tests at the California Institute of Technology (Calteck), but the authorities there were doubtful of the practical applications.

We know nothing of the section ourselves except that its designer claims for it a 20% reduction in drag compared with current designs. We assume that he has achieved this by moving the greatest depth back towards the middle from the more usual position somewhere about one-third of the chord back from the leading edge.

We also assume, in view of the doubts expressed at Calteck, that the section is very thin, or, in technical jargonese, has a low thickness-chord (t/c) ratio. This is borne out by the photographs of the new boat. Information from the United States confirms that the surface of the wing is flush-riveted.

So far there is no information about the relative efficiencies of the Davis Wing and the laminar-flow aerofoil developed by the National Advisory Committee for Aeronautics. So far there is no report that the new N.A.C.A. aerofoil has been flown.

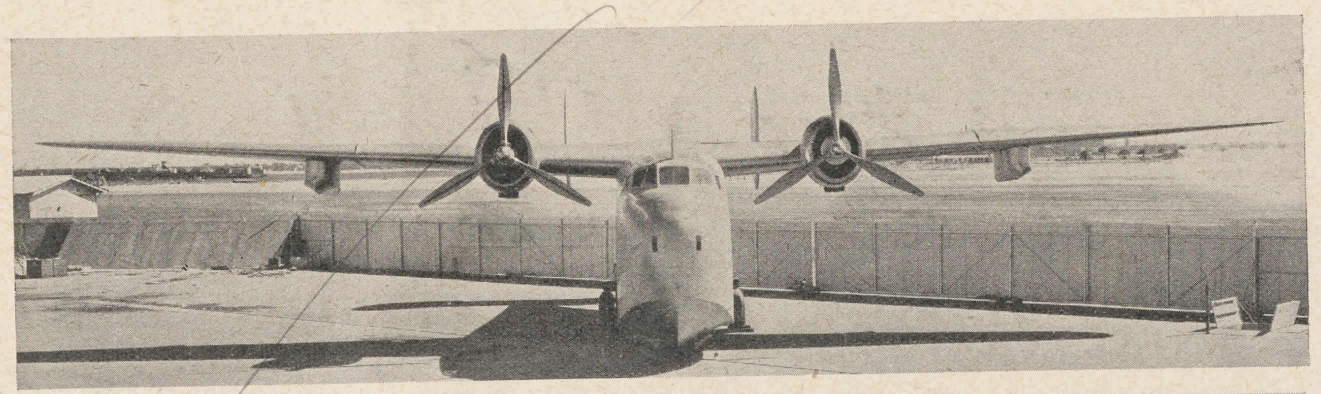
The Model 31 has been built as a Private Venture by the Consolidated Aircraft Corporation of San Diego, California, U.S.A., and, according to report, Reuben Fleet, President and General Manager of the Corporation, has contracted to pay a handsome royalty for every Davis Wing his corporation builds.

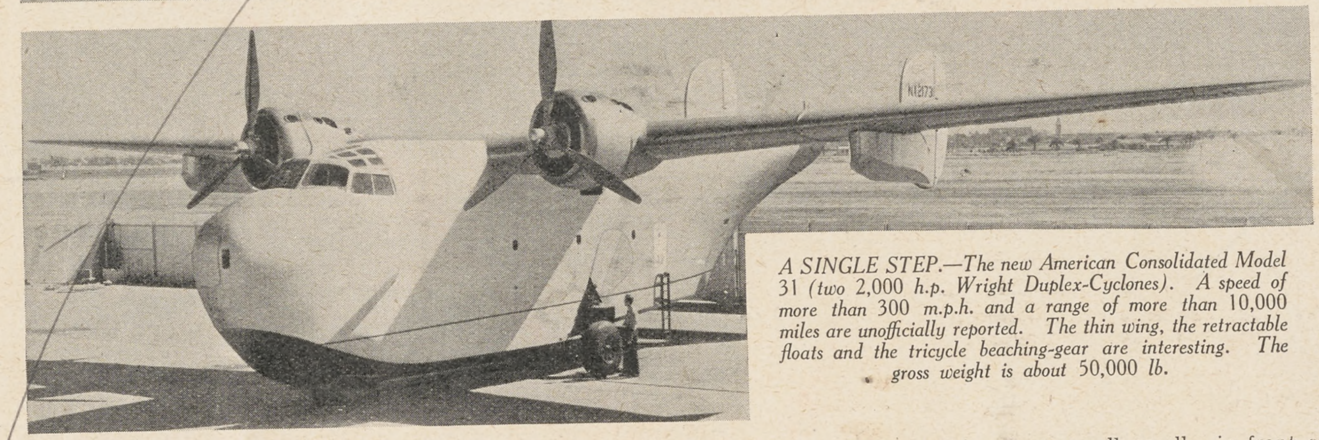
Aircraft construction in the United States seems to follow the same laws as here. We have been told that because the boat was built as a Private Venture, the design and construction, unhampered by Naval requirements, took only ten months, compared with the two or three years normally needed for an aeroplane of this size.

Although the Model 31 does not conform to any specification of the U.S. Navy, its makers believe that its extraordinary performance will probably cause its adoption for military work.

The Consolidated Model 31 high-wing cantilever monoplane has two 2,000 h.p. 18-cylinder Wright Duplex-Cyclone two-row radials. The gross weight is 50,000 lb. (22,660 kg.). The disposable load is supposed to be 1½ times the empty weight.

The maximum speed is quoted unofficially as more than 300 m.p.h. *Time* (New York) reports the "high speed" as 275 m.p.h.; this may mean the maximum cruising speed, which is the only speed of interest to commercial operators. If these figures are correct, the combination of load-carrying ability and speed is considerably better than that of any contemporary aeroplane.





A SINGLE STEP.—The new American Consolidated Model 31 (two 2,000 h.p. Wright Duplex-Cyclones). A speed of more than 300 m.p.h. and a range of more than 10,000 miles are unofficially reported. The thin wing, the retractable floats and the tricycle beaching-gear are interesting. The gross weight is about 50,000 lb.

In civil form the Model 31 can carry up to 52 passengers by day or 28 passengers in bunks at night. Twenty-eight passengers could be carried in comfort across the Atlantic.

Hydraulically operated Fowler flaps extend from the ailerons to the hull. The whole of the wing has stressed metal covering except for the ailerons and flaps which are fabric-covered.

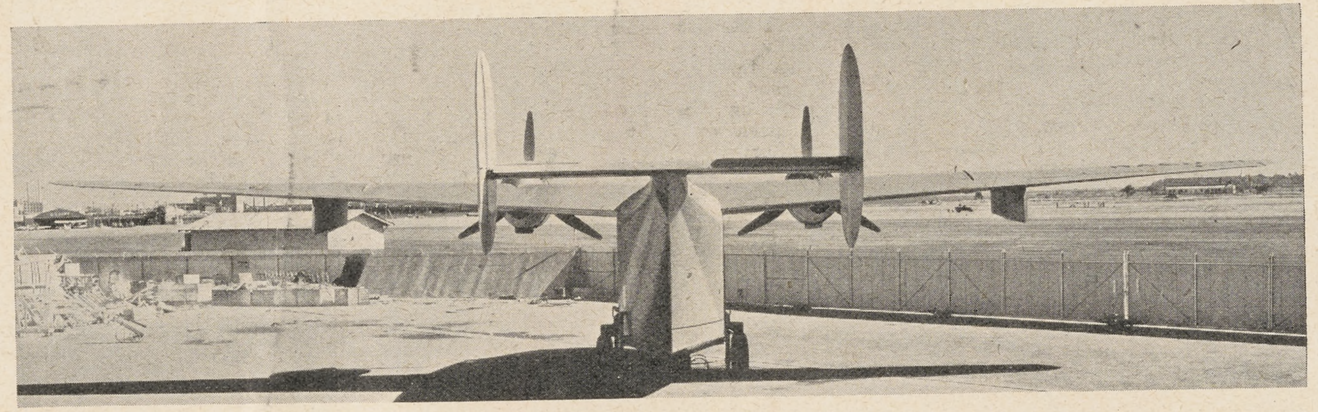
The outboard floats retract into the underside of each wing. The wing-tips of the Model 31 are too small for the sideways retraction of the floats as on the earlier Consolidated PBY.

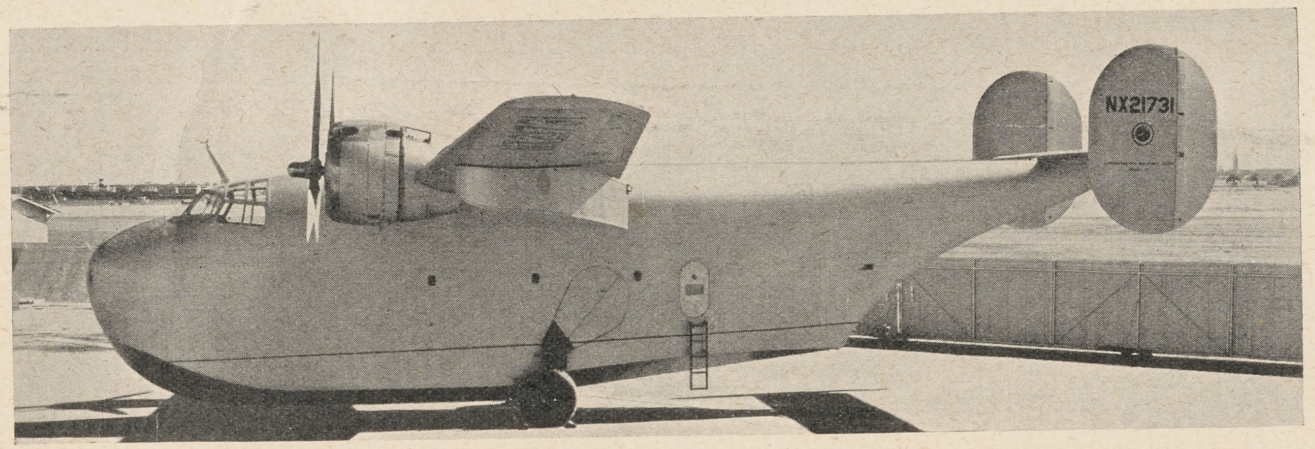
The fuel-tanks are built into the centre section in standard Consolidated fashion. The surfaces of the wing form the top and bottom of the tanks.

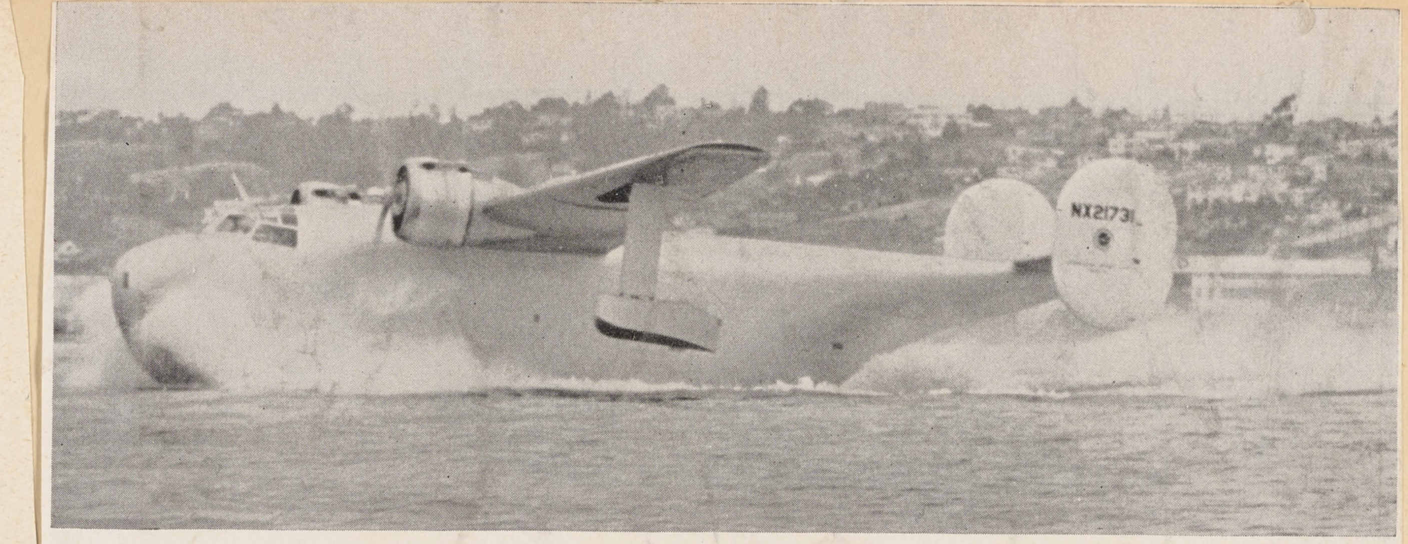
The motors are mounted on very small nacelles in front of the wing. They drive three-blade Hamilton Hydromatic constant-speed fully-feathering airscrews of 16 ft. (4.877 m.) diameter. The long-chord cowlings of the motors are oval in cross-section, perhaps because the carburetter intakes and oil coolers are encowled above and below the motors.

The existence of the new 18-cylinder Wright motors, rated at 2,000 h.p. each for take-off, had not been mentioned before.

The very deep hull of the Model 31 has two decks. The control cabin is above. Normally a crew of five is carried, two pilots, a flight engineer, a radio operator and a navigator. On the lower deck there are eight large compartments.







"Hush-Hush" Boat

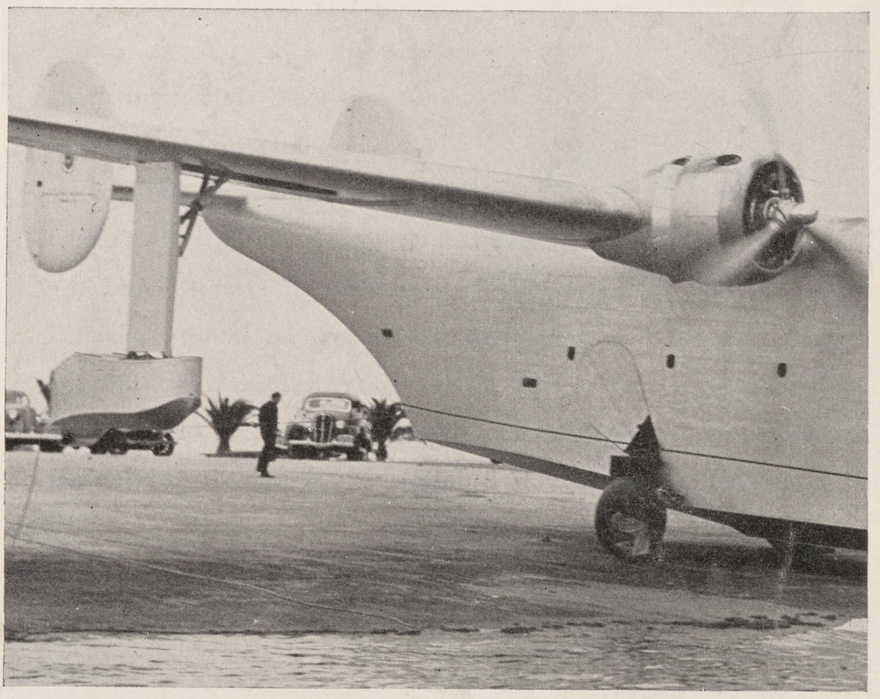
Twin engined Consolidated combines high speed and long range

CONSOLIDATED'S "hush-hush" mystery plane, the Model 31 twin-engined flying boat, took to the air May 5th with William Wheatley at the controls. The new ship, a high-wing cantilever monoplane, of all metal construction, combines high speed, long range, and heavy striking power in a plane of relatively small size. It is powered with two Wright 18 cylinder twin-row engines rated 2,000 hp. for takeoff, driving 16′ dia. Hamilton-Standard 3 blade propellers.

Stability on the water is provided by outboard floats which retract against the under side of the wing in flight. The relatively high taper of the wing prevents tip retraction of the floats as on the PBY series. A tri-cycle beaching gear is permanently attached and is also fully retractable within hull wells. Although intended strictly as a beaching gear, it is believed rugged enough to withstand airport landings in an emergency.

Gross weight is approximately 50,000 lb., wing span 110 ft., over-all length 73 ft., height 22 ft., and maximum wing chord 14 ft. Although little detailed information is available, it is understood to have a wing with high taper ratio, an aspect ratio of approximately ten to one, and a maximum loading of more than 45 lb. per sq.ft. Gross wing area is reported at approximately 1100 sq.ft. Of particular interest is the use of a new type airfoil recently developed by David R. Davis, independent aeronautical engineer. The Davis airfoil is reported to possess a number of interesting characteristics, including low drag and low center of pressure travel. Hydraulically operated Fowler wing flaps assist landings and take-offs. Although no performance estimates have been released, engineers have estimated the plane to have a top speed ranging from 285 m.p.h. to upward of 300 m.p.h., and an all-out maximum range, if stripped for record purposes, of better than 10,000 miles.

Reports of preliminary taxiing tests, and of the test flight which lasted approximately one hour, credited the plane with excellent stability on the water, quick take-off, and smooth landing. The hull is of unique design and is said to be the result of the newest testing technique in the Langley Field towing basin, where complete scale models are now being "flown" off the water instead of limiting test runs with a bare hull. The Model 31 differs materially from current hull design, having unusual depth of hull combined with a relatively narrow planing bottom, and a peculiarly stubby appearance aft.



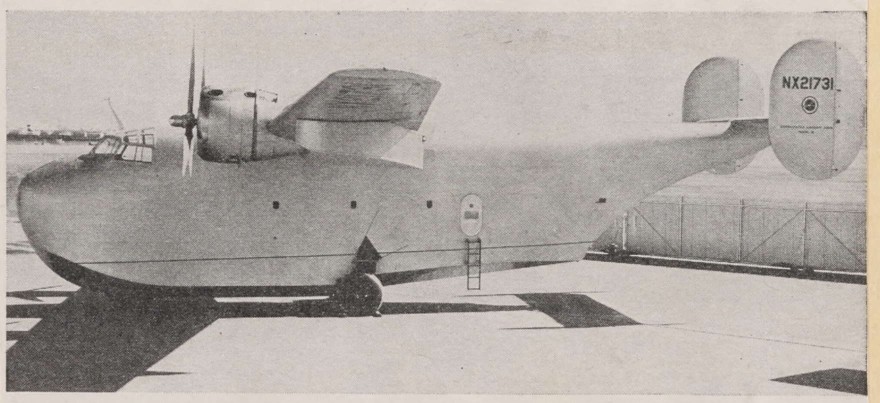
Closeup of the Consolidated Model 31 showing the method of retracting the wing tip floats and the permanent retractable beaching gear.

In construction the Consolidated Model 31 is of conventional skin-stressed design. The wings, tail surfaces, and planing surface of the hull bottom are all flush riveted. Ailerons, flaps, rudders and elevators are fabric covered. The tail consists of a cantilever stabilizer with twin fins and rudders mounted at the ends.

Two flight decks are provided in the hull, one above the other, providing a large flight control compartment, and eight additional compartments for passengers and payload. As a commercial airliner the Model 31 has a day capacity of 52 passengers and a night capacity of 28 passengers, with sleeper accommodations. It is said to be capable of operating in trans-Atlantic service with a load of 28 passengers. Cruising speed on 50 per cent power has been unofficially estimater at better than 200 m.p.h. As a military airplane the Model 31 would augment the PBY series of twin-engine patrol bombers which it greatly exceeds in speed, range, and load carrying ability. However, the plane is a private venture on the part of Consolidated Aircraft Corp., not having been subject to the ordinary procurement routine which adds so materially to the cost and time for construction of prototype military aircraft. As a result the design was developed, built and test flown within a period of only ten months, instead of the two to three years required heretofore under normal procurement procedure.

Military men who have knowledge of the capabilities of the Model 31 base their high estimate of its naval effectiveness primarily on its ability to locate and destroy with relative ease all but the most heavily armed surface vessels. With its high speed, long range, and ability to carry a heavy bomb load, the Model 31 is believed capable of sweeping large areas of ocean entirely free of all enemy vessels except heavily protected fleets of heavy warships. It is pointed out that its high speed makes this plane nearly immune against attack by pursuit planes of current vintage, and materially reduces effectiveness of anti-aircraft fire against it. Yet the bomb carrying capacity is sufficient to cripple any ship afloat if hit but once by a bomb of the maximum size this plane can carry.

No further information on the plane is available as we go to press, but aviation people everywhere may well watch with interest for word of civil or military application of the Consolidated Model 31.



A distinctive feature of the Model 31 is the permanent beaching gear of the tricycle type which is fully retractable within wells in the hull. Although it is intended primarily for beaching, the gear is believed to be rugged enough to withstand airport landings in an emergency.

BOMBERS LEAVING FOR HAWAII TODAY

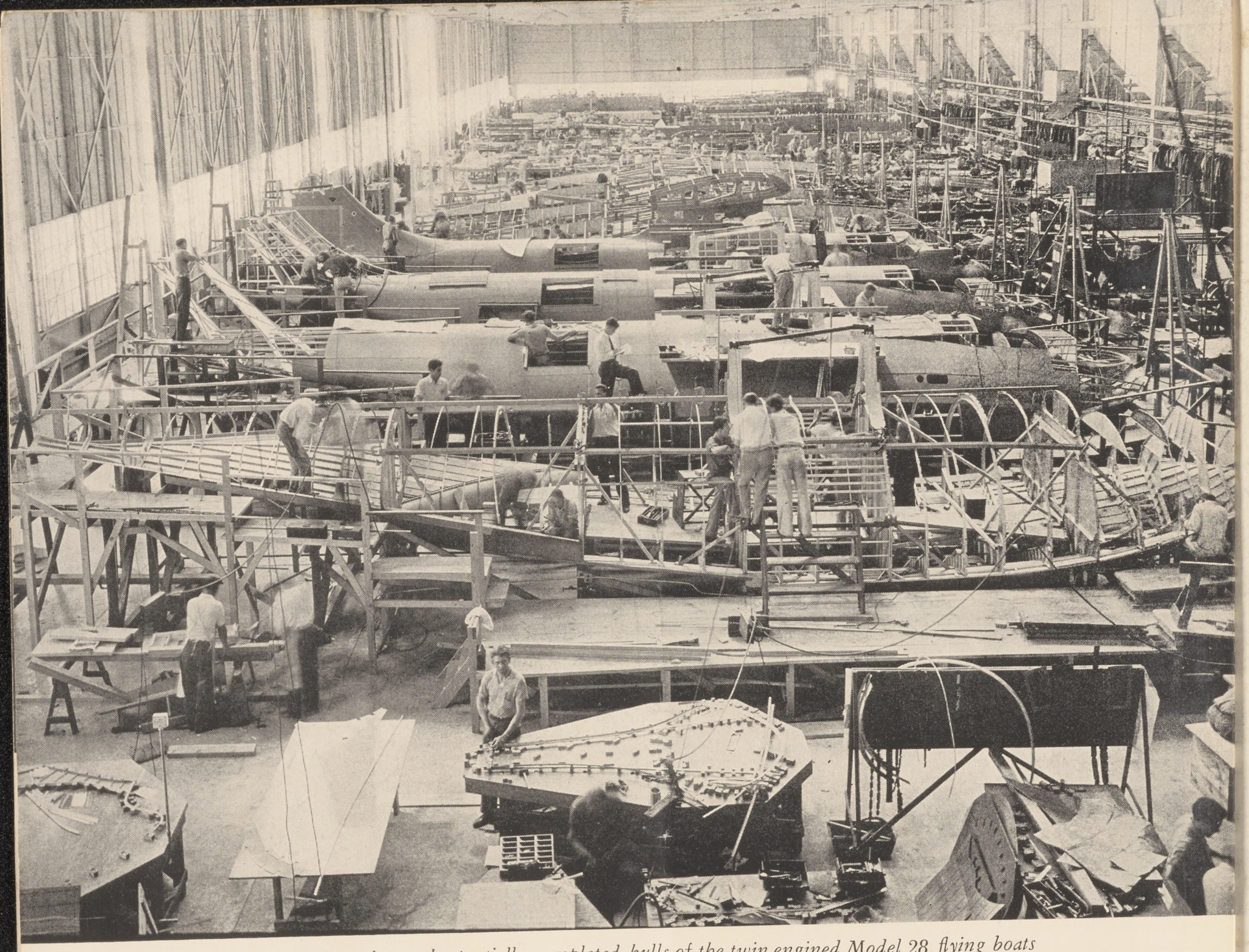
S.D. SUN 6/28/39

The non-stop, 2570-mile trans-pacific mass flight of 15 San Diego patrol bombers to Hawaii was to begin at 3 p. m. today, 24 hours ahead of the original schedule, to take advantage of favorable weather conditions en route, North Island officials announced.

A crew of 105 officers and enlisted men, commanded by Lieut.-Comdr. Sam L. La Hache, comprised the flight personnel. The Consolidated bombers will be delivered to Pearl Harbor and assigned to Patrol Squadron One in the eighth such ferry trip to distant air bases.

Nineteen hours will be required for the hop, Rear Adm. A. B. Cook, Aircraft Scouting Force commander, estimated.

Weather data has been furnished the squadron here during the past few days by the aircraft tenders Avocet, Pelican and Childs, the destroyers Dent and Waters, and Rear Adm. Cook's flagship Memphis, all stationed along the Great Circle route to Hawaii. They also will serve as guard ships during the flight.



The hull assembly line shows the partially completed hulls of the twin engined Model 28 flying boats

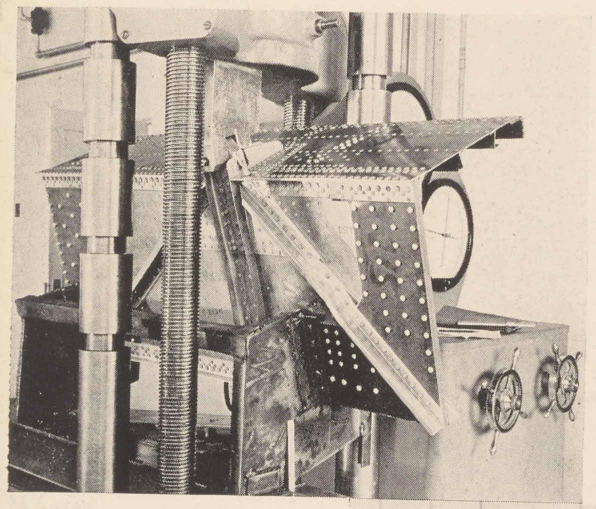
military field, that production of a new type is usually started through the machine shop simultaneously with tool and fixture orders that go to the tool shop. As special fixtures become available they are placed in the production line, but production does not wait for them.

Consolidated performs 85 per cent of all machine work in its own shops and is well equipped for the full range of work required in turning out a plane of such size as the PBY. Toolroom equipment ranges from the huge Cleveland planer with 30-ft. bed to the Swiss jig borer used on precision jig work. Most blanking dies now are made on the DoAll Metal-Master from $\frac{1}{8}$-in. crucible steel sheet, with a hardened punch $\frac{1}{8}$ in. thick, at a cost of a third that of the conventional blanking die. The operation with such dies is a little slower, but the work is entirely satisfactory and it is economically possible to make a die for production lots as small as 30 where previously at least 180 parts were required in a run to pay the die cost. Other special toolroom equipment includes a Pratt & Whitney surface grinder, and a Fosdick radial for large jig and fixture work; in addition to the usual battery of lathes, mills and shapers.

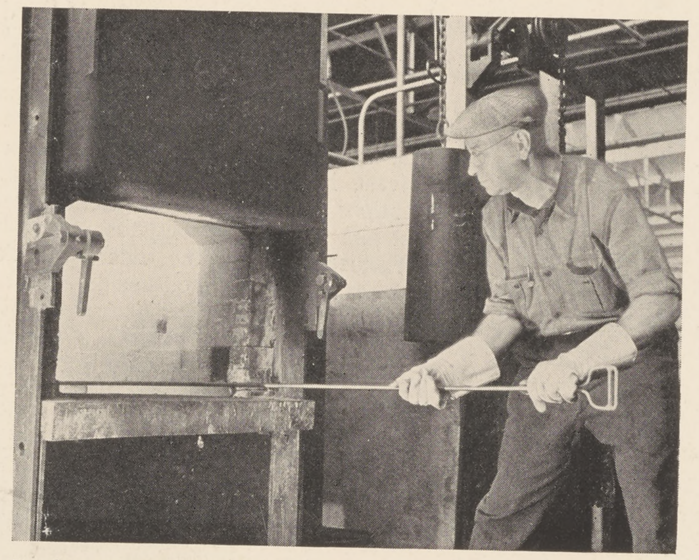
Another development that keeps the toolroom busy is the use of metal-forming blocks in place of the customary wood blocks for miscellaneous assembly jigs. Wood blocks have the advantage of cheapness, but the disadvantages of being subject to warping, cracking and weather changes which produce inaccuracies in the work. The wood blocks also wear rapidly and become unsatisfactory for precision assembly. Such blocks are widely used for all flat-plate assembly layouts such as for ribs, bulkheads and spars. Making such blocks and formers of cast iron or steel is prohibitively expensive. But at the Consolidatetd plant, they have hit on the happy idea of having a local foundry melt up all the aluminum and duralumin scrap and cast it into standard slabs, rods, channels, and other shapes lending themselves to jig and former work, and forming blocks. The light alloy material works up easily into the desired shape, but it makes added work for the toolroom and is another example of the use of metal in aircraft production. Much less expensive than steel or cast iron, the alloy blocks hold their shape throughout a production run, do not chip or wear, and so more than pay for themselves through speeding assembly operations and insuring greater accuracy of assembled parts.

Since each new aircraft design represents an entirely new tooling problem it has been necessary to work out tooling methods that will cause a minimum of delay in production, and still produce satisfactory tools. All frills are eliminated as tools are usually for short runs of a few hundred parts at the most. Relative importance of tooling work is shown by the fact that the toolroom is about equal in size and equipment to the production machine shop. An interesting result is that when tooling is completed on a new model, the toolroom goes into production on aircraft parts just like the rest of the machine shop.

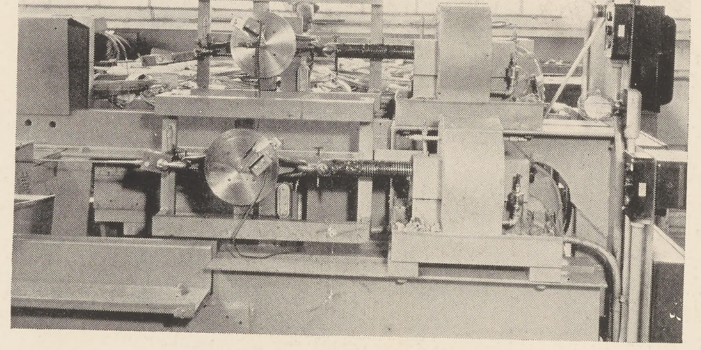
Much of the aircraft work is bulky, or light and springy, and special set-



Engineering advances are checked and developed in the physical testing laboratory. Here is a sample wing fitting set up in a 200,000 lb. Southwark-Emery testing machine



Steel parts are heat-treated in furnaces such as this



The power end of the cable stretching machine is shown. Having a capacity of 20,000 lbs., it was designed and built by Consolidated Aircraft for prestretching all control cables that go into its ships

ups are required in practically every case. Some production machine work is done, as in the case of rollers, bushings and collars produced on the automatic screw machines or on turret lathes. However, a much more typical operation is the machining of an odd-shapped strut of welded chrome-molybdenum steel, on which the attachment end requires a facing operation held to close tolerances. This requires a set-up in a Cincinnati vertical mill so that the strut leg can extend out over the table. Another particular problem involves back spot-facing of an odd shaped bulky alloy casting; or the machining of a long thin taper on a duralumin fitting.

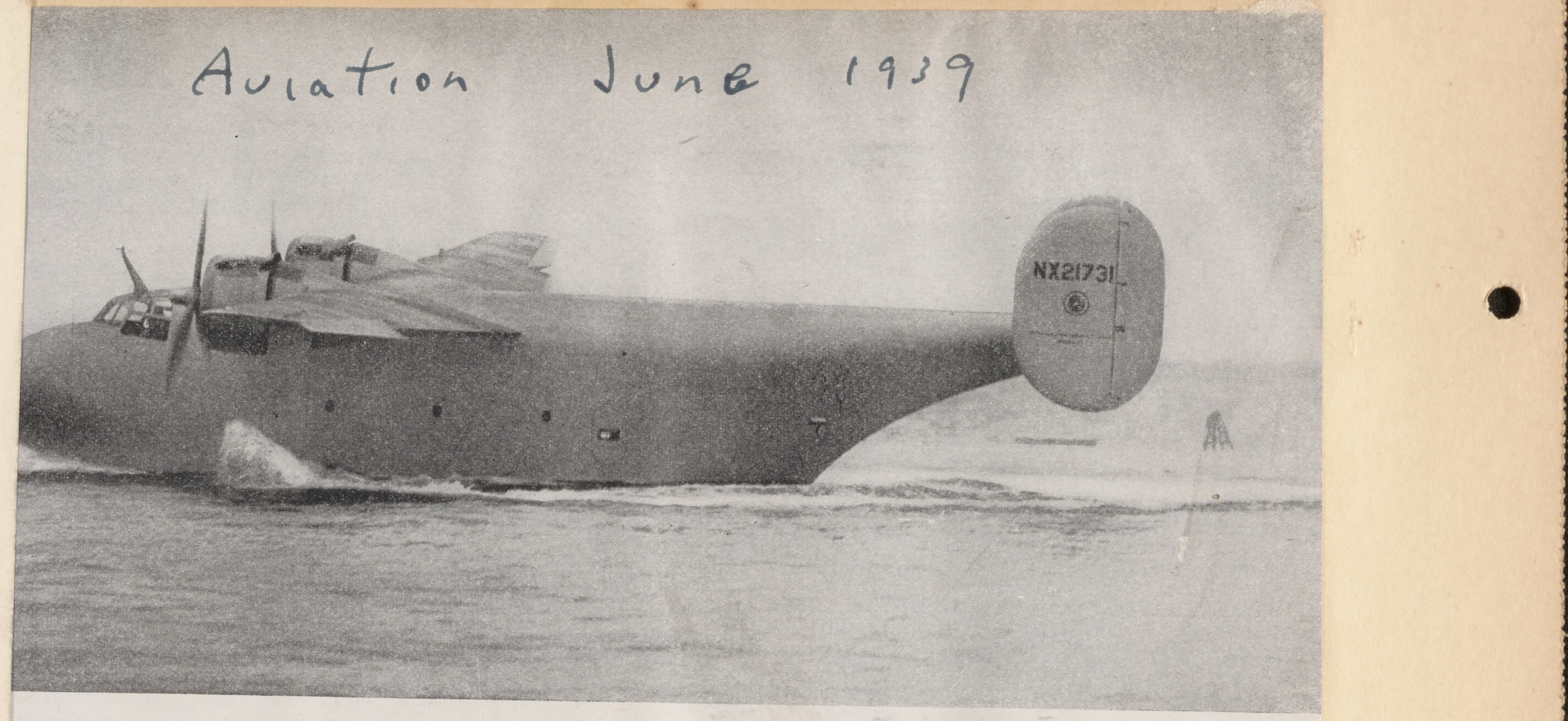
A special set-up has been developed for such scarfing, or taper work, as there is a considerable amount of it. A multitude of odd-shaped small machined parts are used throughout the airplane and many special set-ups have been developed to handle them. One such is a channel block fixture in which cable terminals are held by means of setscrews while a triple straddle mill job is done on a horizontal mill to machine out the terminal slot and simultaneously face both outside surfaces of the fitting. This fixture accommodates six terminal ends per operation. Much precision grinding is done in connection with bushings and rollers required for the control system. This work has become so important that a new cenerless grinder was recently installed.

Another example of the difficult machine work required is the spot facing of the engine mount attachment points which are built integral with the center-section oil tank. This tank serves the three-fold purpose of a tank, a part of the wing nacelle truss and the base for the engine mount. After the tank has been built and tested it is sent to the machine shop for spot facing of the attachment points. In order to do this job at all, and to do it accurately, set-up was worked out on a Dreses radial drill through use of a floor segment arc track which carries a strut to support the swing drill arm. The purpose of the track and strut is to prevent any tendency of the long overhang of the drill to cause spring, resulting in chatter, or spotfacing out of an accurate plane. The strut is carried over the track on rollers so that it is practicable to swing the arm past the work with the spotfacer mounted in the drill head. A special jig is required to hold the tank during this operation, to insure accuracy, as the tank is quite bulky, measuring $1\frac{1}{2}$ x $2\frac{1}{2}$ x 4 ft. in size.

Matching the four spotfaces on the oil tank are the four faces of the engine mount. The engine mount structure is bulky and awkward from a machining standpoint, yet the mounting faces must match those of the tank. To accomplish this the entire engine mount, which is a welded steel tube structure, is placed in a large jig and the four attachment points spotfaced in a radial drill. Then, using these four spots as the set-up face, the work is mounted in a special fixture while the engine attachment lugs on the opposite end of the mount are straddle milled in parallel with the spotface plane. Because of the open nature of the engine mount structure the danger of springing the work has to be carefully guarded against. A small allowance

---

Aviation June 1939



CONSOLIDATED LONG-RANGE
52 PASSENGER FLYING BOAT
powered by
TWO DUPLEX-CYCLONES

idated Aircraft Corporation's new long-range, 52-ger Flying Boat introduced the 18-cylinder 2000 H.P. Duplex-Cyclone aircraft engine.

a commercial airliner, the Consolidated Model 31 maximum capacity of 52-passengers and a crew of r day operations and sleeping accommodations for sengers for protracted flights or trans-oceanic service.

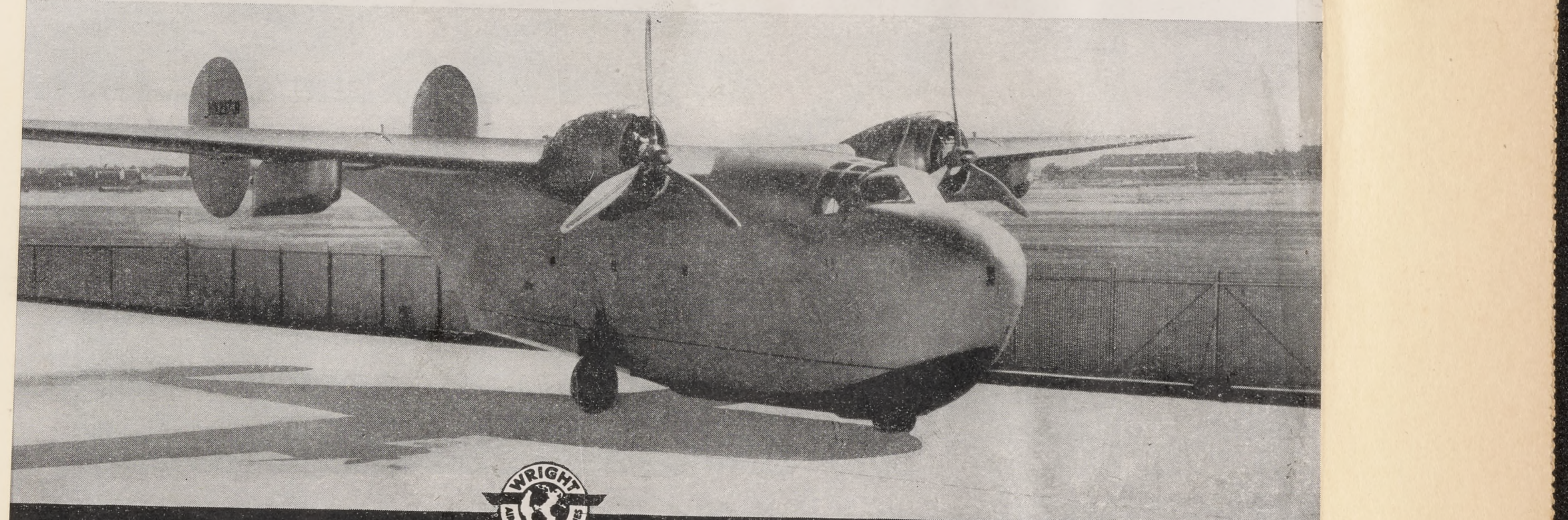
ough no performance figures may be released, the f 4000 H.P. delivered by the two Duplex-Cyclones ven the airplane an exceptionally high-speed, range ad capacity.

Outstanding features of the Model 31 include two hull decks—one above the other—providing a large flight control compartment and eight additional large compartments.

The ship is equipped with a hydraulically operated, retractable tricycle beaching gear—the first application of such equipment.

"Fly With Wright The World Over"

WRIGHT AERONAUTICAL CORPORATION
Paterson New Jersey
A Division of Curtiss-Wright Corporation



WRIGHT *Aircraft* ENGINES

Archbold Due July 3 On Final Leg of Flight

S.D. Union 6/28/39

Richard Archbold, research director, American Museum of Natural history, en route to San Diego from Sydney, Australia, via Africa, the West Indies and New York, was expected to leave Dakar, West Africa, today on the final legs of his homeward bound flight. He is expected to arrive here July 3 in his San Diego built flying boat.

A New Boat with a New Wing

CHIEF FEATURE of interest in the new twin-motor Consolidated Model 31 flying-boat, which flew first early in May, is its Davis Wing. Its designer, David Richard Davis, was formerly with the Douglas Aircraft Company. His claims for his new section were confirmed by wind-tunnel tests at the California Institute of Technology (Calteck), but the authorities there were doubtful of the practical applications.

We know nothing of the section ourselves except that its designer claims for it a 20% reduction in drag compared with current designs. We assume that he has achieved this by moving the greatest depth back towards the middle from the more usual position somewhere about one-third of the chord back from the leading edge.

We also assume, in view of the doubts expressed at Calteck, that the section is very thin, or, in technical jargonese, has a low thickness-chord (t/c) ratio. This is borne out by the photographs of the new boat. Information from the United States confirms that the surface of the wing is flush-riveted.

So far there is no information about the relative efficiencies of the Davis Wing and the laminar-flow aerofoil developed by the National Advisory Committee for Aeronautics. So far there is no report that the new N.A.C.A. aerofoil has been flown.

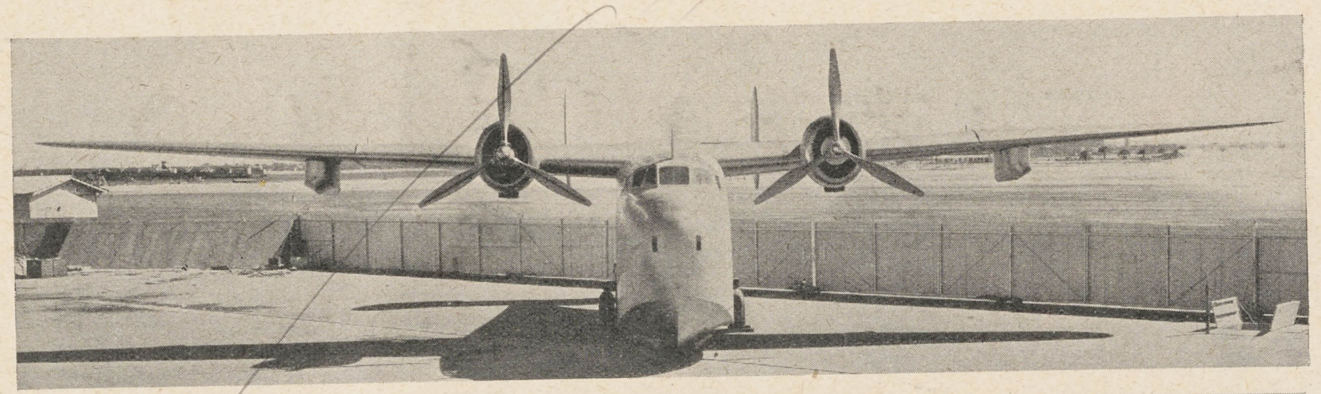
The Model 31 has been built as a Private Venture by the Consolidated Aircraft Corporation of San Diego, California, U.S.A., and, according to report, Reuben Fleet, President and General Manager of the Corporation, has contracted to pay a handsome royalty for every Davis Wing his corporation builds.

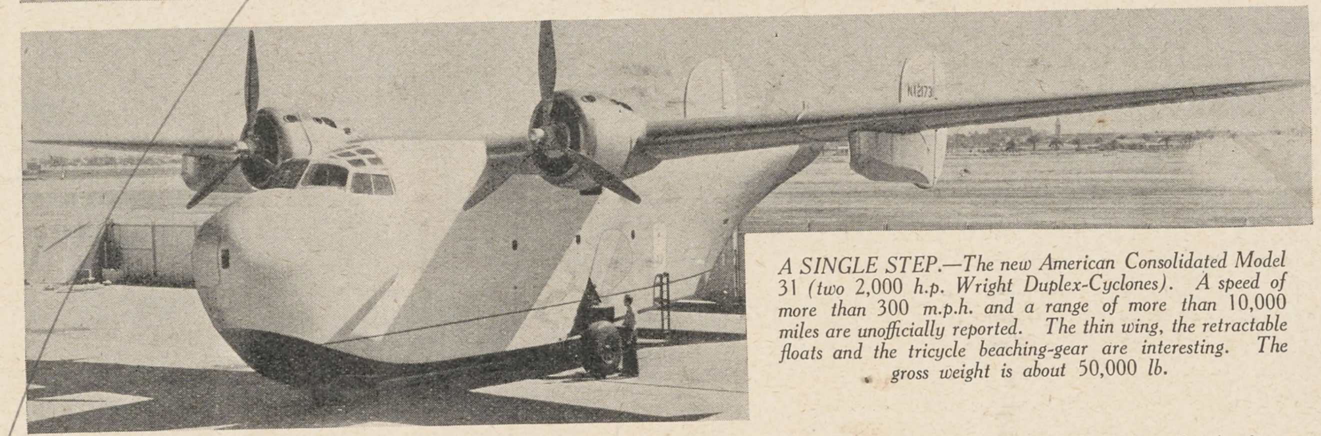
Aircraft construction in the United States seems to follow the same laws as here. We have been told that because the boat was built as a Private Venture, the design and construction, unhampered by Naval requirements, took only ten months, compared with the two or three years normally needed for an aeroplane of this size.

Although the Model 31 does not conform to any specification of the U.S. Navy, its makers believe that its extraordinary performance will probably cause its adoption for military work.

The Consolidated Model 31 high-wing cantilever monoplane has two 2,000 h.p. 18-cylinder Wright Duplex-Cyclone two-row radials. The gross weight is 50,000 lb. (22,660 kg.). The disposable load is supposed to be 1½ times the empty weight.

The maximum speed is quoted unofficially as more than 300 m.p.h. *Time* (New York) reports the "high speed" as 275 m.p.h.; this may mean the maximum cruising speed, which is the only speed of interest to commercial operators. If these figures are correct, the combination of load-carrying ability and speed is considerably better than that of any contemporary aeroplane.





A SINGLE STEP.—The new American Consolidated Model 31 (two 2,000 h.p. Wright Duplex-Cyclones). A speed of more than 300 m.p.h. and a range of more than 10,000 miles are unofficially reported. The thin wing, the retractable floats and the tricycle beaching-gear are interesting. The gross weight is about 50,000 lb.

In civil form the Model 31 can carry up to 52 passengers by day or 28 passengers in bunks at night. Twenty-eight passengers could be carried in comfort across the Atlantic.

Hydraulically operated Fowler flaps extend from the ailerons to the hull. The whole of the wing has stressed metal covering except for the ailerons and flaps which are fabric-covered.

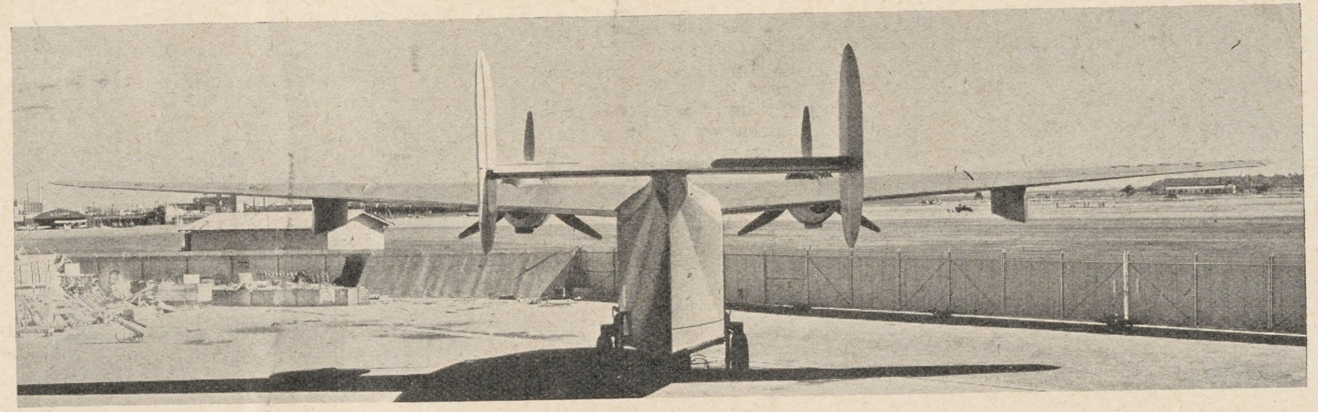
The outboard floats retract into the underside of each wing. The wing-tips of the Model 31 are too small for the sideways retraction of the floats as on the earlier Consolidated PBY.

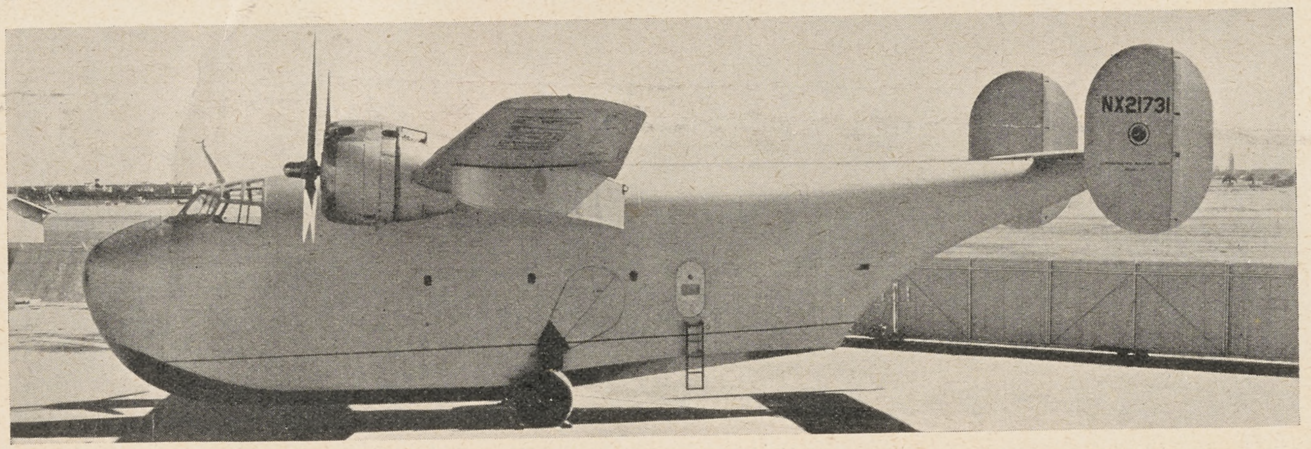
The fuel-tanks are built into the centre section in standard Consolidated fashion. The surfaces of the wing form the top and bottom of the tanks.

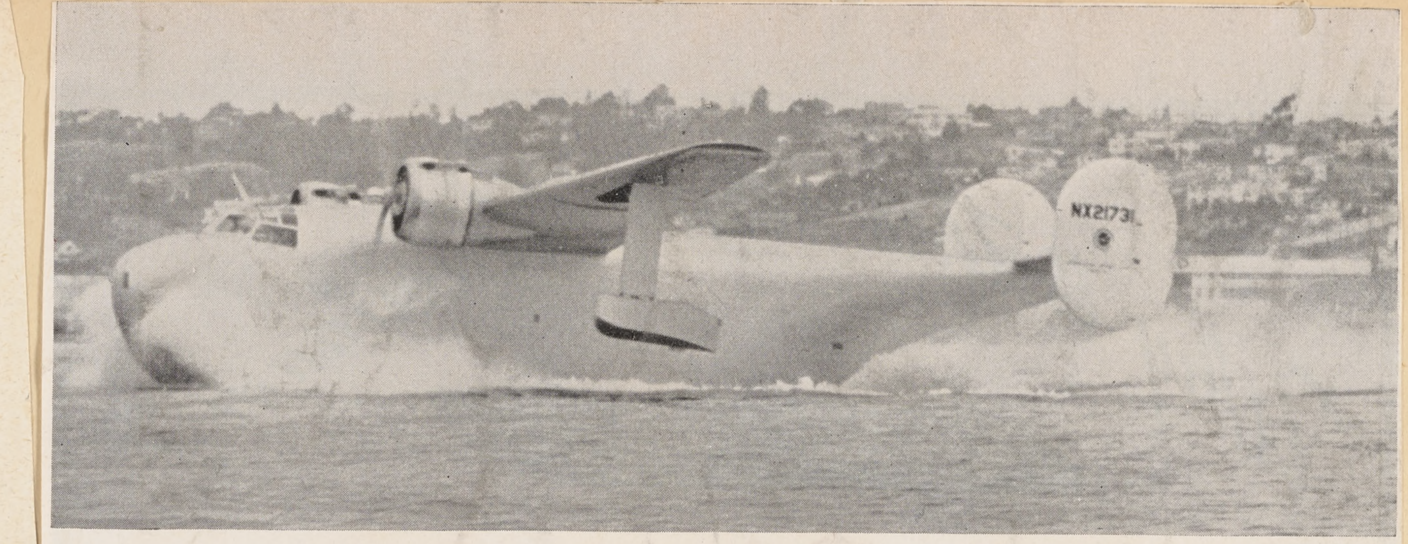
The motors are mounted on very small nacelles in front of the wing. They drive three-blade Hamilton Hydromatic constant-speed fully-feathering airscrews of 16 ft. (4.877 m.) diameter. The long-chord cowlings of the motors are oval in cross-section, perhaps because the carburetter intakes and oil coolers are encowled above and below the motors.

The existence of the new 18-cylinder Wright motors, rated at 2,000 h.p. each for take-off, had not been mentioned before.

The very deep hull of the Model 31 has two decks. The control cabin is above. Normally a crew of five is carried, two pilots, a flight engineer, a radio operator and a navigator. On the lower deck there are eight large compartments.







"Hush-Hush" Boat

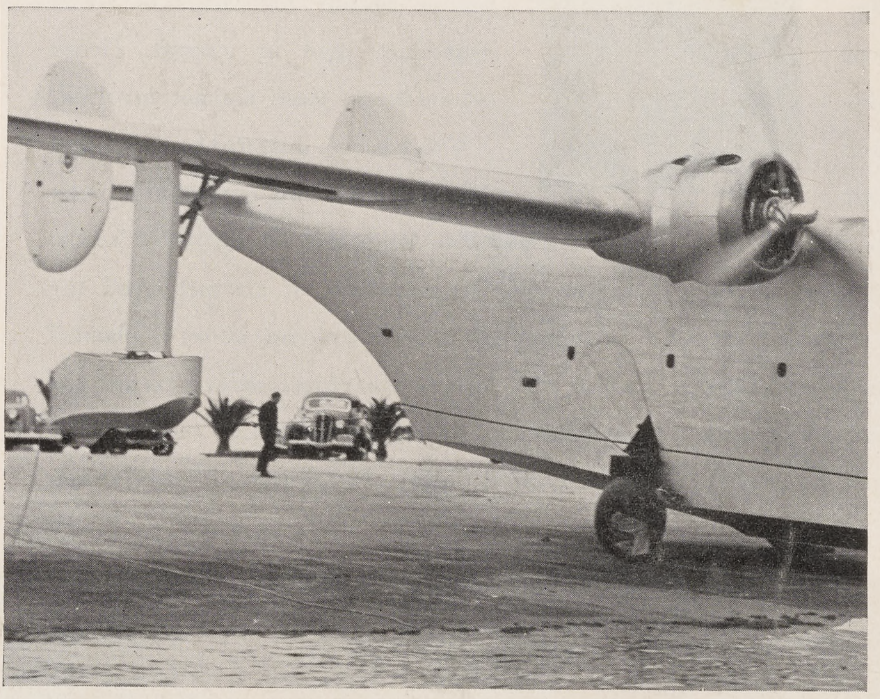
Twin engined Consolidated combines high speed and long range

CONSOLIDATED'S "hush-hush" mystery plane, the Model 31 twin-engined flying boat, took to the air May 5th with William Wheatley at the controls. The new ship, a high-wing cantilever monoplane, of all metal construction, combines high speed, long range, and heavy striking power in a plane of relatively small size. It is powered with two Wright 18 cylinder twin-row engines rated 2,000 hp. for takeoff, driving 16′ dia. Hamilton-Standard 3 blade propellers.

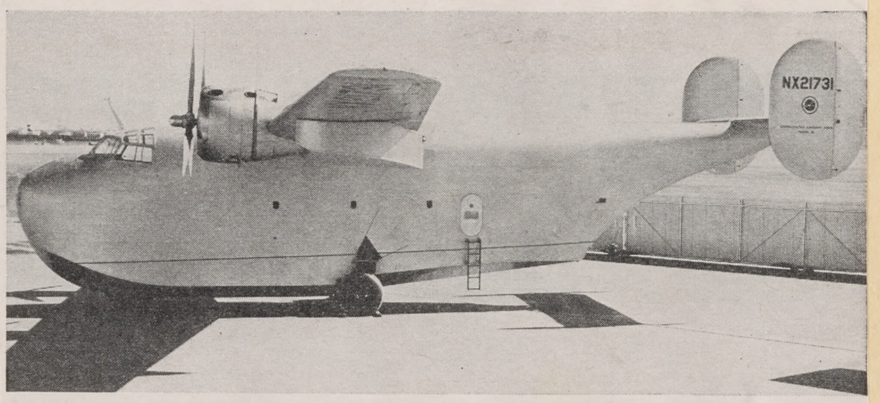
Stability on the water is provided by outboard floats which retract against the under side of the wing in flight. The relatively high taper of the wing prevents tip retraction of the floats as on the PBY series. A tri-cycle beaching gear is permanently attached and is also fully retractable within hull wells. Although intended strictly as a beaching gear, it is believed rugged enough to withstand airport landings in an emergency.

Gross weight is approximately 50,000 lb., wing span 110 ft., over-all length 73 ft., height 22 ft., and maximum wing chord 14 ft. Although little detailed information is available, it is understood to have a wing with high taper ratio, an aspect ratio of approximately ten to one, and a maximum loading of more than 45 lb. per sq.ft. Gross wing area is reported at approximately 1100 sq.ft. Of particular interest is the use of a new type airfoil recently developed by David R. Davis, independent aeronautical engineer. The Davis airfoil is reported to possess a number of interesting characteristics, including low drag and low center of pressure travel. Hydraulically operated Fowler wing flaps assist landings and take-offs. Although no performance estimates have been released, engineers have estimated the plane to have a top speed ranging from 285 m.p.h. to upward of 300 m.p.h., and an all-out maximum range, if stripped for record purposes, of better than 10,000 miles.

Reports of preliminary taxiing tests, and of the test flight which lasted approximately one hour, credited the plane with excellent stability on the water, quick take-off, and smooth landing. The hull is of unique design and is said to be the result of the newest testing technique in the Langley Field towing basin, where complete scale models are now being "flown" off the water instead of limiting test runs with a bare hull. The Model 31 differs materially from current hull design, having unusual depth of hull combined with a relatively narrow planing bottom, and a peculiarly stubby appearance aft.



Closeup of the Consolidated Model 31 showing the method of retracting the wing tip floats and the permanent retractable beaching gear.



A distinctive feature of the Model 31 is the permanent beaching gear of the tricycle type which is fully retractable within wells in the hull. Although it is intended primarily for beaching, the gear is believed to be rugged enough to withstand airport landings in an emergency.

In construction the Consolidated Model 31 is of conventional skin-stressed design. The wings, tail surfaces, and planing surface of the hull bottom are all flush riveted. Ailerons, flaps, rudders and elevators are fabric covered. The tail consists of a cantilever stabilizer with twin fins and rudders mounted at the ends.

Two flight decks are provided in the hull, one above the other, providing a large flight control compartment, and eight additional compartments for passengers and payload. As a commercial airliner the Model 31 has a day capacity of 52 passengers and a night capacity of 28 passengers, with sleeper accommodations. It is said to be capable of operating in trans-Atlantic service with a load of 28 passengers. Cruising speed on 50 per cent power has been unofficially estimater at better than 200 m.p.h. As a military airplane the Model 31 would augment the PBY series of twin-engine patrol bombers which it greatly exceeds in speed, range, and load carrying ability. However, the plane is a private venture on the part of Consolidated Aircraft Corp., not having been subject to the ordinary procurement routine which adds so materially to the cost and time for construction of prototype military aircraft. As a result the design was developed, built and test flown within a period of only ten months, instead of the two to three years required heretofore under normal procurement procedure.

Military men who have knowledge of the capabilities of the Model 31 base their high estimate of its naval effectiveness primarily on its ability to locate and destroy with relative ease all but the most heavily armed surface vessels. With its high speed, long range, and ability to carry a heavy bomb load, the Model 31 is believed capable of sweeping large areas of ocean entirely free of all enemy vessels except heavily protected fleets of heavy warships. It is pointed out that its high speed makes this plane nearly immune against attack by pursuit planes of current vintage, and materially reduces effectiveness of anti-aircraft fire against it. Yet the bomb carrying capacity is sufficient to cripple any ship afloat if hit but once by a bomb of the maximum size this plane can carry.

No further information on the plane is available as we go to press, but aviation people everywhere may well watch with interest for word of civil or military application of the Consolidated Model 31.

BOMBERS LEAVING FOR HAWAII TODAY

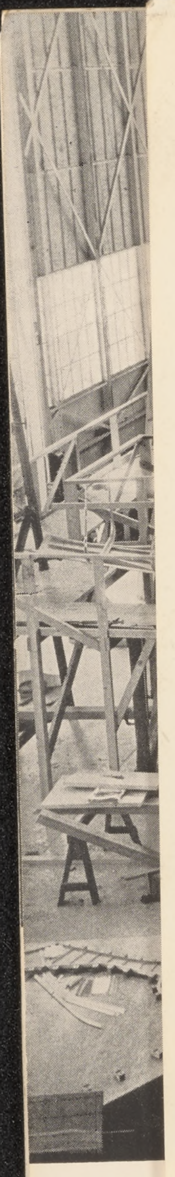
S.D. SUN 6/28/39

The non-stop, 2570-mile transpacific mass flight of 15 San Diego patrol bombers to Hawaii was to begin at 3 p. m. today, 24 hours ahead of the original schedule, to take advantage of favorable weather conditions en route, North Island officials announced.

A crew of 105 officers and enlisted men, commanded by Lieut.-Comdr. Sam L. La Hache, comprised the flight personnel. The Consolidated bombers will be delivered to Pearl Harbor and assigned to Patrol Squadron One in the eighth such ferry trip to distant air bases.

Nineteen hours will be required for the hop, Rear Adm. A. B. Cook, Aircraft Scouting Force commander, estimated.

Weather data has been furnished the squadron here during the past few days by the aircraft tenders Avocet, Pelican and Childs, the destroyers Dent and Waters, and Rear Adm. Cook's flagship Memphis, all stationed along the Great Circle route to Hawaii. They also will serve as guard ships during the flight.



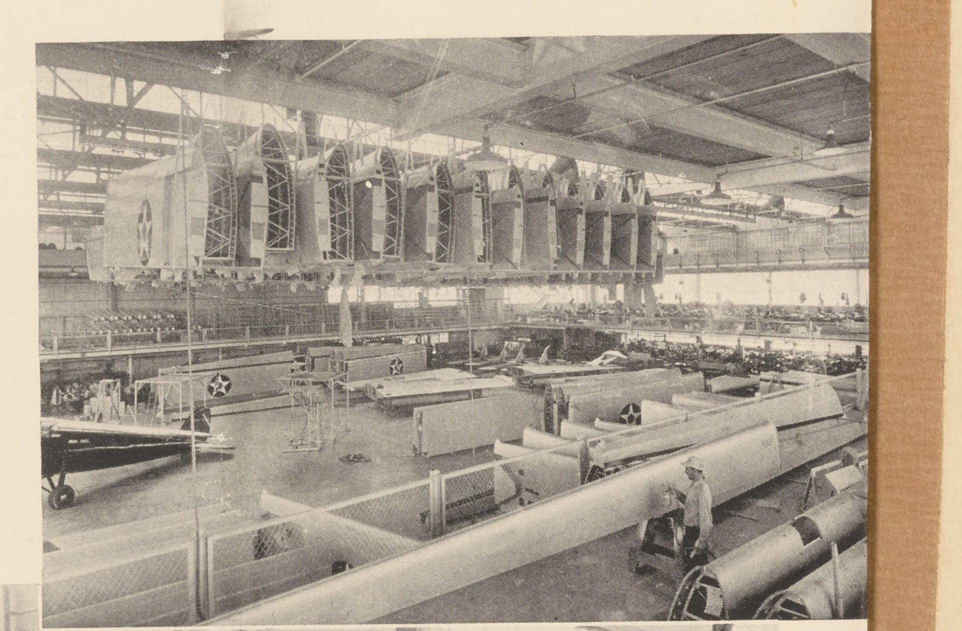
in the welded structure is provided for machining.

Throughout assembly work one particular tool plays an important part. This is the riveter, which is used in many forms. There are hand rivet guns for driving rivets, hand squeezers for one-shot operations, machine riveters, special rivet jigs with side throat yokes for rivet squeezing on large assemblies such as spars.

Almost innumerable devices have been developed to speed final assembly. These range all the way from the simple expedient of filling the hull with water to see if it leaks, to the roll-over rings by which the hulls are hoisted and turned when the bottom has been skinned and it is time to start on the top. Final attachment of the outer wing panels to the center section is done out in the open yard with a hoist rack actuated by automobile differential drives operated by a drum and cable system which takes the wing from a low loading level up to the attaching position. The rack is mounted on rubber tired wheels to permit maneuvering the wing panels into position with minimum effort.

The final airplane truly represents a machine-made product from nose to tail. In wings, hull, and tail hundreds of machined fittings, struts, and structural or control parts take thei place in a flying boat that is literall born in the machine shop.

Some of the work back of the pro duction line is not apparent, even t the close observer. For example, th physical and chemical laboratory i constantly testing parts and material to destruction; and the photo labora tory makes 7,000 negatives and mor than 20,000 prints yearly to serve a a detailed guide for engineering an production departments. These pho tographs aid in maintaining an un failing standard, so that each com pleted PBY will be identical with he sisters.

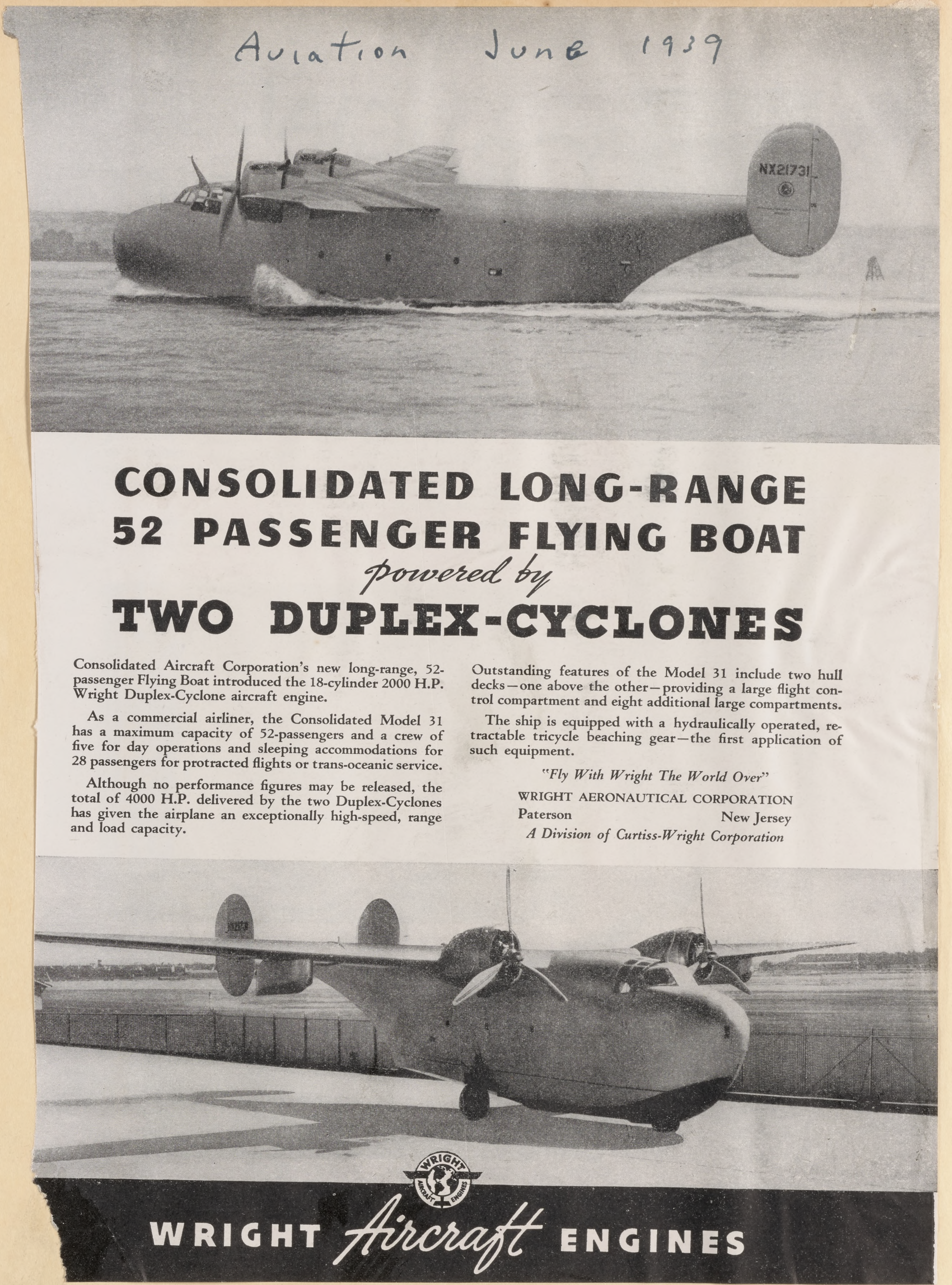


In the experimental building, all new projects of plane design are conducted. If necessary this area could be turned over to production

Assembly devices range from wood boards, similar to those shown in the foreground, to the big hull assembly fixtures in the background. For the large fixtures steel is employed

---

Aviation June 1939



CONSOLIDATED LONG-RANGE 52 PASSENGER FLYING BOAT

powered by

TWO DUPLEX-CYCLONES

Consolidated Aircraft Corporation's new long-range, 52-passenger Flying Boat introduced the 18-cylinder 2000 H.P. Wright Duplex-Cyclone aircraft engine.

As a commercial airliner, the Consolidated Model 31 has a maximum capacity of 52-passengers and a crew of five for day operations and sleeping accommodations for 28 passengers for protracted flights or trans-oceanic service.

Although no performance figures may be released, the total of 4000 H.P. delivered by the two Duplex-Cyclones has given the airplane an exceptionally high-speed, range and load capacity.

Outstanding features of the Model 31 include two hull decks—one above the other—providing a large flight control compartment and eight additional large compartments.

The ship is equipped with a hydraulically operated, retractable tricycle beaching gear—the first application of such equipment.

"Fly With Wright The World Over"

WRIGHT AERONAUTICAL CORPORATION
Paterson New Jersey
A Division of Curtiss-Wright Corporation

Archbold Due July 3 On Final Leg of Flight

S.D. Union 6/28/39

Richard Archbold, research director, American Museum of Natural history, en route to San Diego from Sydney, Australia, via Africa, the West Indies and New York, was expected to leave Dakar, West Africa, today on the final legs of his homeward bound flight. He is expected to arrive here July 3 in his San Diego built flying boat.

A New Boat with a New Wing

CHIEF FEATURE of interest in the new twin-motor Consolidated Model 31 flying-boat, which flew first early in May, is its Davis Wing. Its designer, David Richard Davis, was formerly with the Douglas Aircraft Company. His claims for his new section were confirmed by wind-tunnel tests at the California Institute of Technology (Calteck), but the authorities there were doubtful of the practical applications.

We know nothing of the section ourselves except that its designer claims for it a 20% reduction in drag compared with current designs. We assume that he has achieved this by moving the greatest depth back towards the middle from the more usual position somewhere about one-third of the chord back from the leading edge.

We also assume, in view of the doubts expressed at Calteck, that the section is very thin, or, in technical jargonese, has a low thickness-chord (t/c) ratio. This is borne out by the photographs of the new boat. Information from the United States confirms that the surface of the wing is flush-riveted.

So far there is no information about the relative efficiencies of the Davis Wing and the laminar-flow aerofoil developed by the National Advisory Committee for Aeronautics. So far there is no report that the new N.A.C.A. aerofoil has been flown.

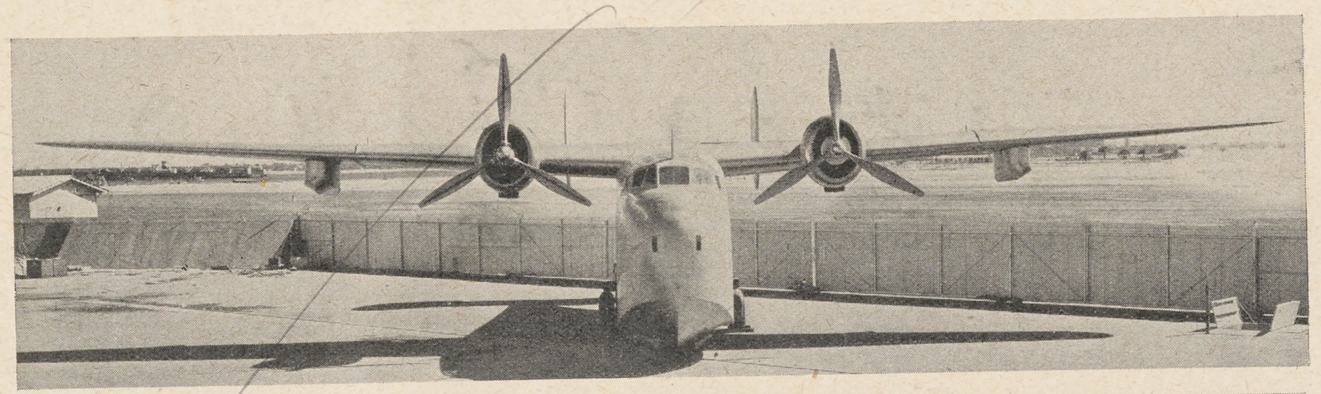
The Model 31 has been built as a Private Venture by the Consolidated Aircraft Corporation of San Diego, California, U.S.A., and, according to report, Reuben Fleet, President and General Manager of the Corporation, has contracted to pay a handsome royalty for every Davis Wing his corporation builds.

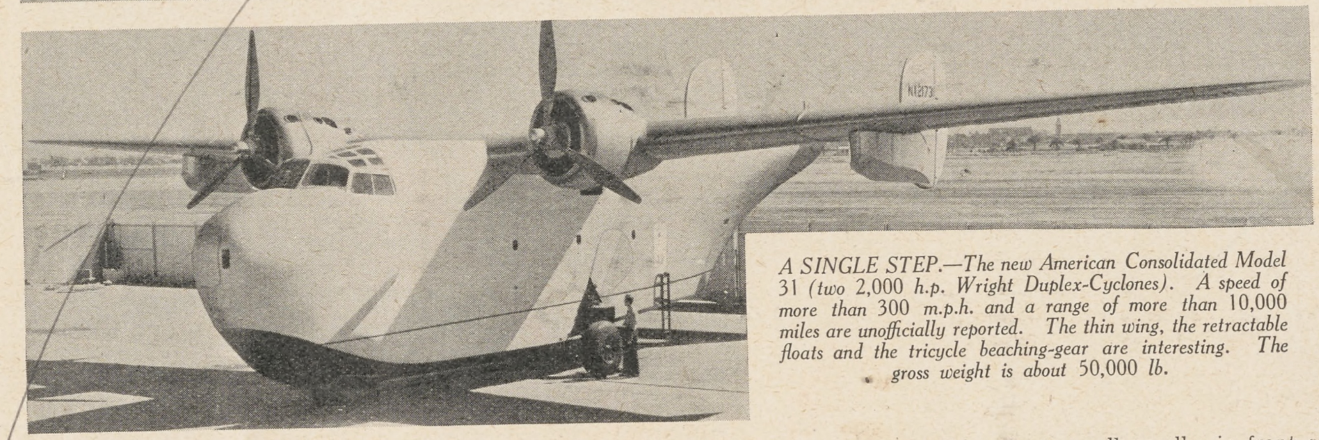
Aircraft construction in the United States seems to follow the same laws as here. We have been told that because the boat was built as a Private Venture, the design and construction, unhampered by Naval requirements, took only ten months, compared with the two or three years normally needed for an aeroplane of this size.

Although the Model 31 does not conform to any specification of the U.S. Navy, its makers believe that its extraordinary performance will probably cause its adoption for military work.

The Consolidated Model 31 high-wing cantilever monoplane has two 2,000 h.p. 18-cylinder Wright Duplex-Cyclone two-row radials. The gross weight is 50,000 lb. (22,660 kg.). The disposable load is supposed to be 1½ times the empty weight.

The maximum speed is quoted unofficially as more than 300 m.p.h. *Time* (New York) reports the "high speed" as 275 m.p.h.; this may mean the maximum cruising speed, which is the only speed of interest to commercial operators. If these figures are correct, the combination of load-carrying ability and speed is considerably better than that of any contemporary aeroplane.





A SINGLE STEP.—The new American Consolidated Model 31 (two 2,000 h.p. Wright Duplex-Cyclones). A speed of more than 300 m.p.h. and a range of more than 10,000 miles are unofficially reported. The thin wing, the retractable floats and the tricycle beaching-gear are interesting. The gross weight is about 50,000 lb.

In civil form the Model 31 can carry up to 52 passengers by day or 28 passengers in bunks at night. Twenty-eight passengers could be carried in comfort across the Atlantic.

Hydraulically operated Fowler flaps extend from the ailerons to the hull. The whole of the wing has stressed metal covering except for the ailerons and flaps which are fabric-covered.

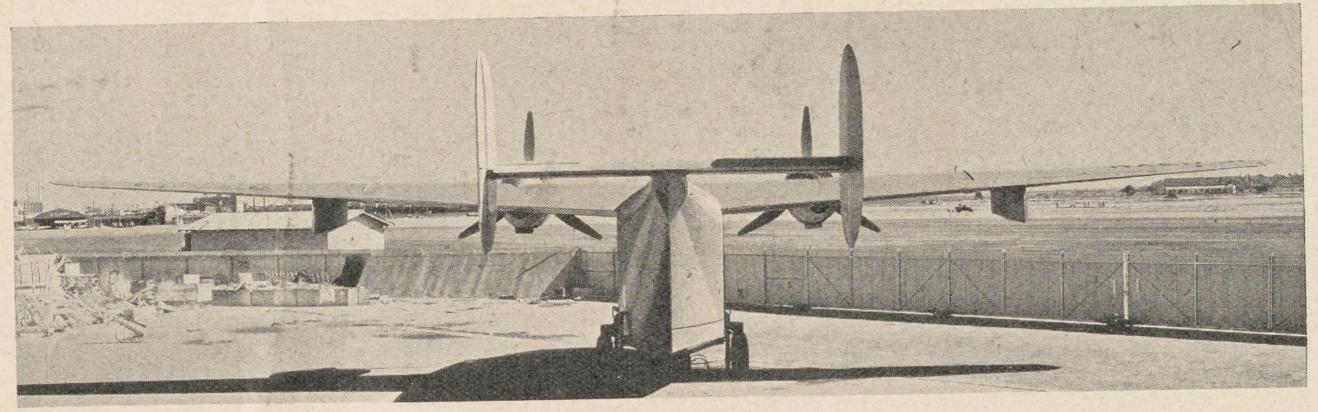
The outboard floats retract into the underside of each wing. The wing-tips of the Model 31 are too small for the sideways retraction of the floats as on the earlier Consolidated PBY.

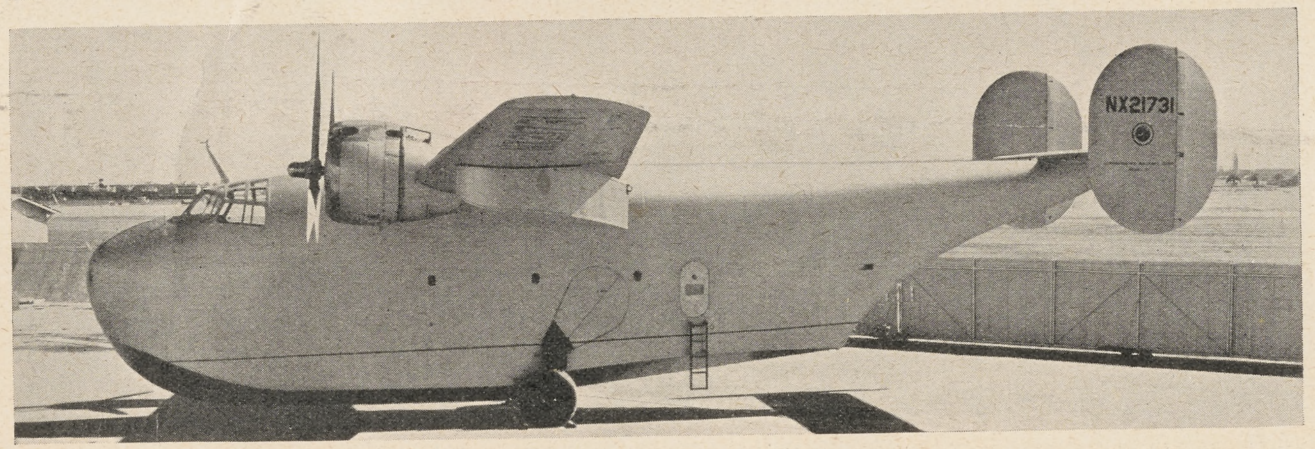
The fuel-tanks are built into the centre section in standard Consolidated fashion. The surfaces of the wing form the top and bottom of the tanks.

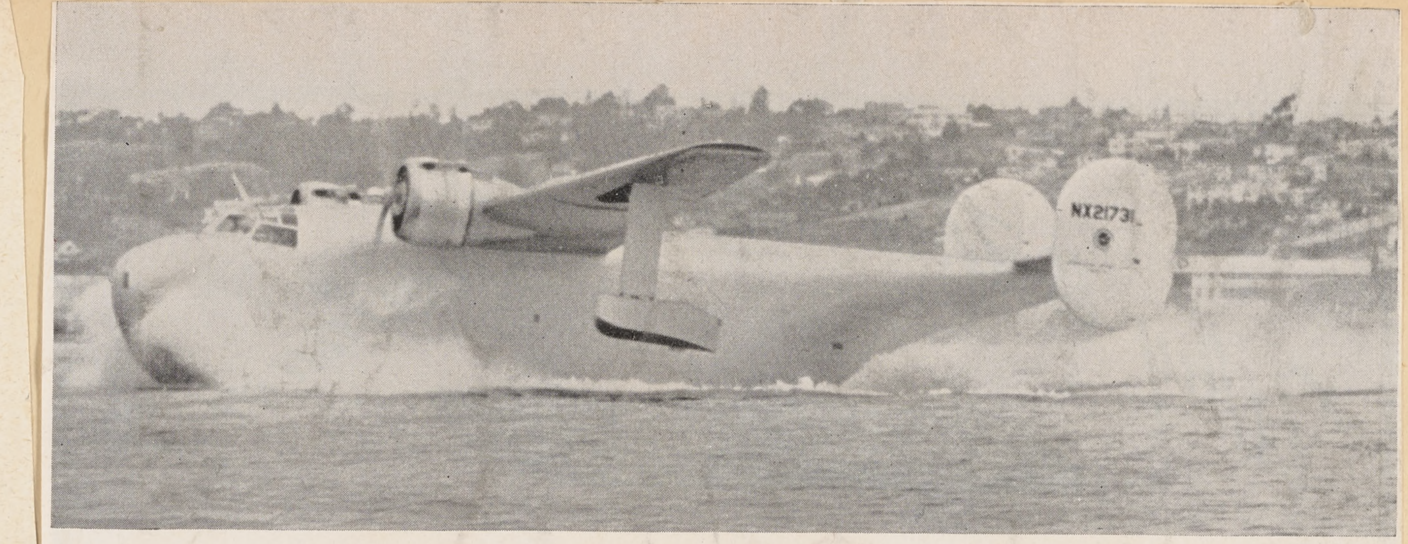
The motors are mounted on very small nacelles in front of the wing. They drive three-blade Hamilton Hydromatic constant-speed fully-feathering airscrews of 16 ft. (4.877 m.) diameter. The long-chord cowlings of the motors are oval in cross-section, perhaps because the carburetter intakes and oil coolers are encowled above and below the motors.

The existence of the new 18-cylinder Wright motors, rated at 2,000 h.p. each for take-off, had not been mentioned before.

The very deep hull of the Model 31 has two decks. The control cabin is above. Normally a crew of five is carried, two pilots, a flight engineer, a radio operator and a navigator. On the lower deck there are eight large compartments.





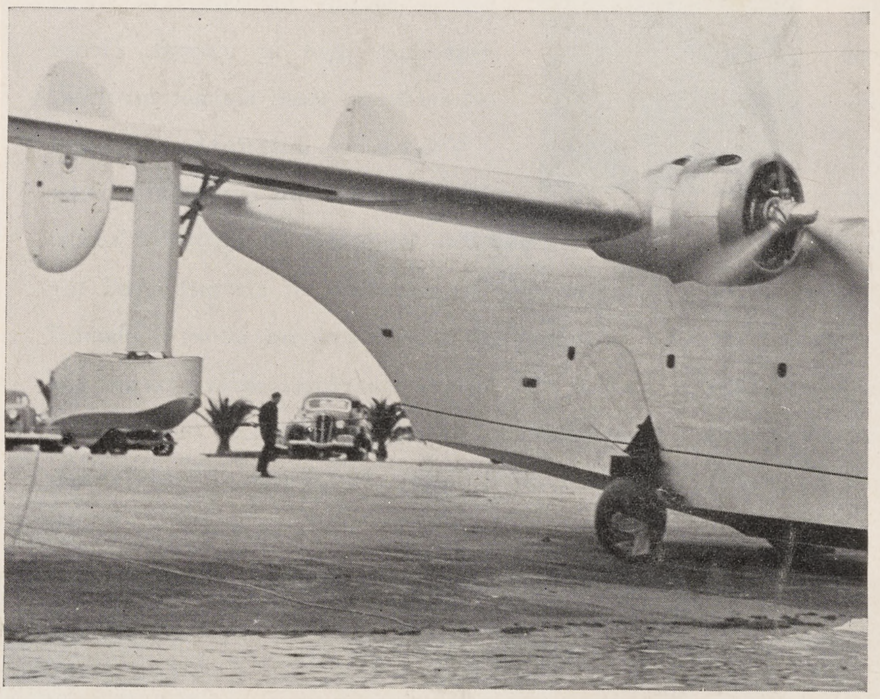


"Hush-Hush" Boat

Twin engined Consolidated combines high speed and long range

CONSOLIDATED'S "hush-hush" mystery plane, the Model 31 twin-engined flying boat, took to the air May 5th with William Wheatley at the controls. The new ship, a high-wing cantilever monoplane, of all metal construction, combines high speed, long range, and heavy striking power in a plane of relatively small size. It is powered with two Wright 18 cylinder twin-row engines rated 2,000 hp. for takeoff, driving 16′ dia. Hamilton-Standard 3 blade propellers.

Stability on the water is provided by outboard floats which retract against the under side of the wing in flight. The relatively high taper of the wing prevents tip retraction of the floats as on the PBY series. A tri-cycle beaching gear is permanently attached and is also fully retractable within hull wells. Although intended strictly as a beaching gear, it is believed rugged enough to withstand airport landings in an emergency.



Closeup of the Consolidated Model 31 showing the method of retracting the wing tip floats and the permanent retractable beaching gear.

Gross weight is approximately 50,000 lb., wing span 110 ft., over-all length 73 ft., height 22 ft., and maximum wing chord 14 ft. Although little detailed information is available, it is understood to have a wing with high taper ratio, an aspect ratio of approximately ten to one, and a maximum loading of more than 45 lb. per sq.ft. Gross wing area is reported at approximately 1100 sq.ft. Of particular interest is the use of a new type airfoil recently developed by David R. Davis, independent aeronautical engineer. The Davis airfoil is reported to possess a number of interesting characteristics, including low drag and low center of pressure travel. Hydraulically operated Fowler wing flaps assist landings and take-offs. Although no performance estimates have been released, engineers have estimated the plane to have a top speed ranging from 285 m.p.h. to upward of 300 m.p.h., and an all-out maximum range, if stripped for record purposes, of better than 10,000 miles.

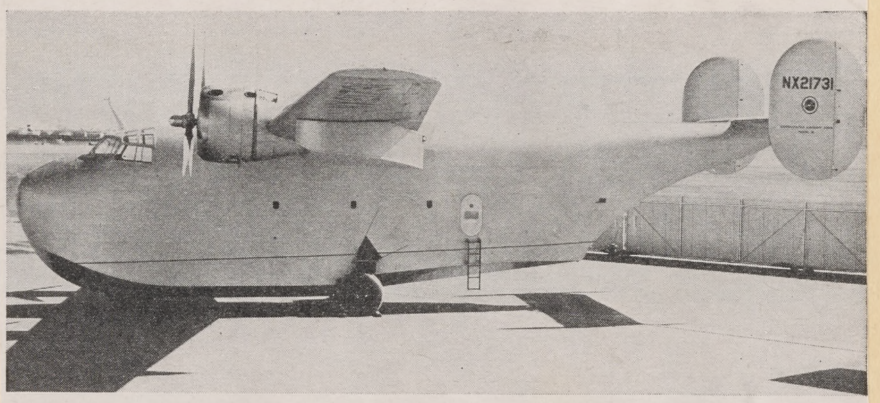
Reports of preliminary taxiing tests, and of the test flight which lasted approximately one hour, credited the plane with excellent stability on the water, quick take-off, and smooth landing. The hull is of unique design and is said to be the result of the newest testing technique in the Langley Field towing basin, where complete scale models are now being "flown" off the water instead of limiting test runs with a bare hull. The Model 31 differs materially from current hull design, having unusual depth of hull combined with a relatively narrow planing bottom, and a peculiarly stubby appearance aft.

In construction the Consolidated Model 31 is of conventional skin-stressed design. The wings, tail surfaces, and planing surface of the hull bottom are all flush riveted. Ailerons, flaps, rudders and elevators are fabric covered. The tail consists of a cantilever stabilizer with twin fins and rudders mounted at the ends.

Two flight decks are provided in the hull, one above the other, providing a large flight control compartment, and eight additional compartments for passengers and payload. As a commercial airliner the Model 31 has a day capacity of 52 passengers and a night capacity of 28 passengers, with sleeper accommodations. It is said to be capable of operating in trans-Atlantic service with a load of 28 passengers. Cruising speed on 50 per cent power has been unofficially estimater at better than 200 m.p.h. As a military airplane the Model 31 would augment the PBY series of twin-engine patrol bombers which it greatly exceeds in speed, range, and load carrying ability. However, the plane is a private venture on the part of Consolidated Aircraft Corp., not having been subject to the ordinary procurement routine which adds so materially to the cost and time for construction of prototype military aircraft. As a result the design was developed, built and test flown within a period of only ten months, instead of the two to three years required heretofore under normal procurement procedure.

Military men who have knowledge of the capabilities of the Model 31 base their high estimate of its naval effectiveness primarily on its ability to locate and destroy with relative ease all but the most heavily armed surface vessels. With its high speed, long range, and ability to carry a heavy bomb load, the Model 31 is believed capable of sweeping large areas of ocean entirely free of all enemy vessels except heavily protected fleets of heavy warships. It is pointed out that its high speed makes this plane nearly immune against attack by pursuit planes of current vintage, and materially reduces effectiveness of anti-aircraft fire against it. Yet the bomb carrying capacity is sufficient to cripple any ship afloat if hit but once by a bomb of the maximum size this plane can carry.

No further information on the plane is available as we go to press, but aviation people everywhere may well watch with interest for word of civil or military application of the Consolidated Model 31.



A distinctive feature of the Model 31 is the permanent beaching gear of the tricycle type which is fully retractable within wells in the hull. Although it is intended primarily for beaching, the gear is believed to be rugged enough to withstand airport landings in an emergency.

BOMBERS LEAVING FOR HAWAII TODAY

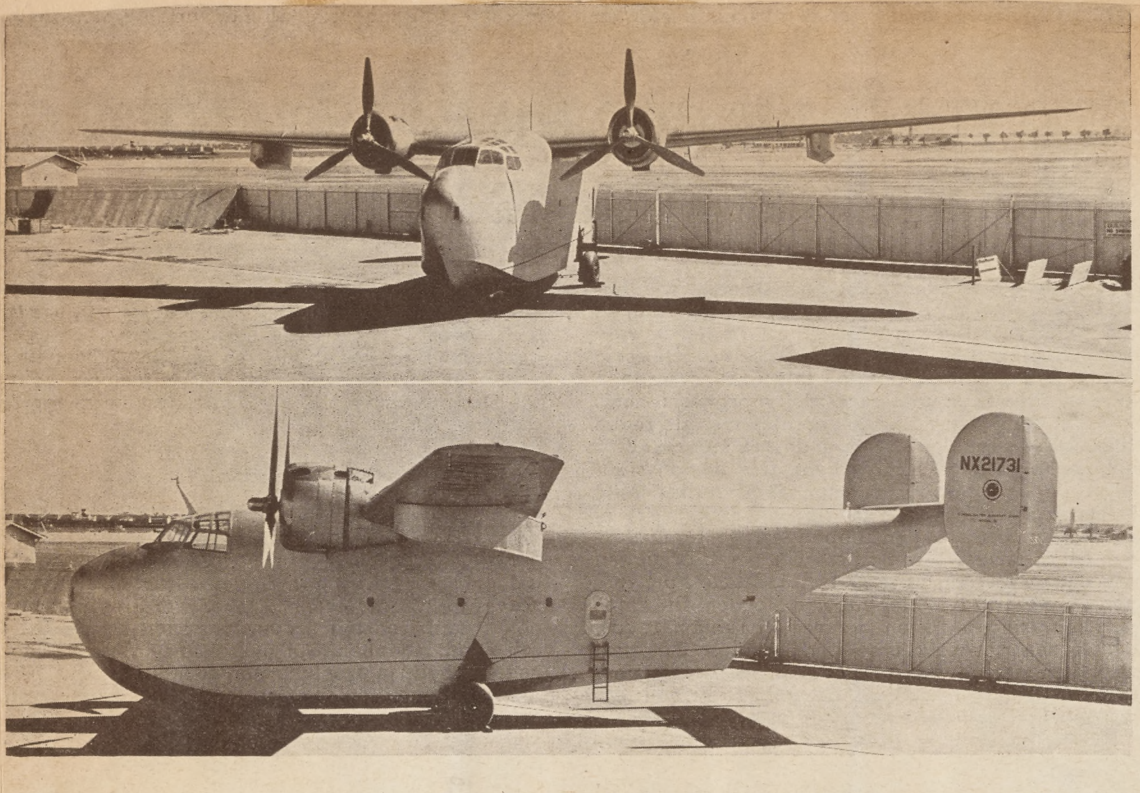
S.D. SUN 6/28/39

The non-stop, 2570-mile trans-pacific mass flight of 15 San Diego patrol bombers to Hawaii was to begin at 3 p. m. today, 24 hours ahead of the original schedule, to take advantage of favorable weather conditions en route, North Island officials announced.

A crew of 105 officers and enlisted men, commanded by Lieut.-Comdr. Sam L. La Hache, comprised the flight personnel. The Consolidated bombers will be delivered to Pearl Harbor and assigned to Patrol Squadron One in the eighth such ferry trip to distant air bases.

Nineteen hours will be required for the hop, Rear Adm. A. B. Cook, Aircraft Scouting Force commander, estimated.

Weather data has been furnished the squadron here during the past few days by the aircraft tenders Avocet, Pelican and Childs, the destroyers Dent and Waters, and Rear Adm. Cook's flagship Memphis, all stationed along the Great Circle route to Hawaii. They also will serve as guard ships during the flight.



De nieuwste civiele vliegboot van Consolidated. Het interieur is verdeeld in twee dekken. De zijdrijvers zijn intrekbaar.

Vliegwereld 8 June 1939

329

Een nieuwe vliegboot van Consolidated. Zoowel voor civiel als militair gebruik.

CONSOLIDATED is wel het meest bekend geworden door haar militaire vliegbooten, waarvan de PBY's wel zéér sterk de aandacht door opvallende vliegprestaties tot zich hebben getrokken.

De nieuwe vliegboot van deze firma, die dezer dagen te San Diego te water gelaten werd, wordt aangekondigd als een waardige opvolger van de PBY vliegbooten, doordat zij dezen nog belangrijk in snelheid, vliegbereik en vervoerscapaciteit moet overtreffen. Uiteraard worden echter de prestaties van Model 31, zooals Consolidated's nieuwe constructie heet, nog geheim gehouden.

De Consolidated 31 is een tweemotorige boot, uitgerust met Wright 18-cylinder motoren, die ieder ca. 2000 pk in den start leveren. Het totale gewicht van de vliegboot bedraagt niet minder dan 22630 kg. Er kunnen dan ook 52 passagiers worden meegenomen wanneer dagcomfort wordt vereischt, terwijl 28 passagiers vervoerd kunnen worden, wanneer slaapgelegenheden noodzakelijk zijn. Laatstgenoemd passagiersaantal komt dan ook voor eventueele transatlantische vluchten in aanmerking.

Onwillekeurig gaan bij het noemen van transatlantische vluchten de gedachten naar de plannen van American Export Airlines, die bereids maanden geleden een Consolidated vliegboot aanschafte, waarbij werd aangekondigd, dat binnenkort over belangrijk grootere en snellere vliegbooten kon worden beschikt. Alhoewel thans de fabriek, bij de te water lating van dit nieuwe product, de Export Airlines niet heeft genoemd, mag men toch aannemen, dat het in de bedoeling ligt deze vliegbooten Model-31 aan de American Export Airlines te leveren.

Wat de ontwikkeling en den bouw van dit nieuwe type betreft, deelt de Consolidated-fabriek zèlf

---

15 LONG-RANGE PATROL PLANES WILL LEAVE S. D. WEDNESDAY FOR HAWAII; EIGHTH MASSED FERRY HOP

S.D.UNION 6/23/39

Fifteen long-range patrol planes of Patrol Squadron 1, manned by 105 officers and men, and commanded by Comdr. Sam La Hache, will take off from San Diego harbor, flight conditions permitting, at 2 p.m. Wednesday for Pearl Harbor, Hawaii.

The planes will follow the great circle route over the 2570-mile airway, according to Rear Adm. Arthur B. Cook, commander, scouting force aircraft. The flight is expected to be completed in 19 hours.

GUARD SHIPS START

Plane guard ships already have started moving to their stations. They will be strung out at about 200-mile intervals. Ships will include the tender Pelican; destroyers Dent, Waters and Childs, cruiser Memphis and the tender Avocet.

The Memphis, flagship of Adm. Cook, will leave the harbor tomorrow afternoon for her station 600 miles west of Pt. Loma.

This will be the eighth massed ferry flight by the navy's patrol bombers to Hawaii, the Canal Zone and the Caribbean. As usual naval authorities characterize it as "of a routine nature."

WILL RETURN HERE

Adm. Cook will return aboard the Memphis as soon as the flight is completed. He announced aboard the flagship yesterday he will cruise to north Pacific ports and probably inspect fleet air bases at Sand Point and Sitka some time this fall.

Adm. Cook, who but a few days ago assumed command of the navy's patrol wings after serving two years as chief of the bureau of aeronautics, has the following officers on his staff:

Comdr. Ralph E. Davison, chief of staff; Lt. Comdr. Spencer H. Warner, operations; Lt. Comdr. Boynton L. Braun, who commanded one of the navy's massed flights to Hawaii, gunnery and tactics officer; Lt. Comdr. James V. Carney, engineering; Lt. Comdr. Alden R. Sanborn, material; Lt. Comdr. Hugh H. Goodwin, flag secretary; Lt. Robert S. Purvis, flag lieutenant; Lt. Andrew H. Bergerson, communications; Lt. Lester E. McDonald, medical officer; Comdr. Edwin D. Foster, supply officer; Lt. Donald W. Twiggs, officer in charge of aircraft stores; Fred Traxler, chief pay clerk, assistant to supply officer.

FLIGHT PERSONNEL

Following is the personnel of Patrol Squadron 1:

Plane 1—Lt. Comdr. Sam La Hache, first pilot; W. Mercer, aviation cadet, second pilot; L. G. Lehrer, ACMM; G. C. Sorensen, ACMM; C. G. Parks, CRM; R. L. Smyth, RM3C; R. C. Smith, M. Att-2c.

Plane 2—Lt. H. A. House; B. M. Murray, aviation cadet; J. B. Gaines, RM2c; F. G. Wohlhuter, ACMM; W. F. Orr, ACMM; R. Moore, AMM3C; J. C. Sitherwood, RM2C.

Plane 3—Lt. D. H. McDonald; L. S. Boeck, aviation cadet; D. D. Lurvey, AMM1C; A. S. Haynes, AMM1C; K. Walters, AMM3C; O. A. Carlock, RM2C; E. J. Schmitt, AOM3C.

Plane 4—Lt. A. D. Schwarz; A. H. Perry, aviation cadet; P. M. Bryant, AMM1C; S. W. Jarboe, ACMM; L. D. Clark, AMM2C; J. T. Hubbard, AMM2C; R. A. Palenga, RM1C.

IN PLANE 5

Plane 5—Lt. D. S. Crowley; L. C. Deede, aviation cadet; J. T. McGroarty, AMM1C; W. Gannott, AMM2C; L. E. Parsons, RM2C; W. J. Anderson, AOM1C.

Plane 6—Lt. J. B. Burks; D. A. Campbell, aviation cadet; C. H. Evans, AMM2C; C. O. Roper, AMM1C; J. A. Nelson, AMM2C; N. T. Whitford, RM2C; P. W. Sparks, RM2C.

Plane 7—Lt. J. O. Lambrecht; Lt. R. E. Stanley; J. H. Russell, aviation cadet; J. H. Davies, AMM2C; M. A. Larson, AMM1C; A. J. Holder, AMM2C; R. L. Pettit, RM1C.

Plane 8—Lt. P. G. Bunce; W. W. Hester jr., aviation cadet; T. Moreland, RM2C; C. E. Pierce, AMM1C; F. L. Rosemund, AMM3C; M. G. Irano, RM1C; A. M. Volpe, ACCM.

Plane 9—Lt. R. L. Poor; C. M. Brower, aviation cadet; T. S. Gay, ACM; L. R. Erreca, ACMM; N. Phinney, AMM3C; A. D. Forrest, RM1C; R. Pratt, Sea1C.

WILL FLY No. 10

Plane 10—Lt. H. P. Burden; M. U. Beebe, aviation cadet; W. D. Eddy, AMM1C; L. J. Corning, AMM1C; W. J. Baker, AMM3C; J. F. Donnell, RM1C; J. E. Cowart, RM3C.

Plane 11—Lt. G. S. James jr.; O. O. Dean, aviation cadet; D. C. Westfall, RM2C; J. Z. Walker, AMM1C; W. R. Lee, AMM3C; F. N. Vanderhoef, RM1C; J. J. Smies, Y3C.

Plane 12—Lt. J. A. Smith; E. W. Bishop, aviation cadet; H. T. Blanchard, AMM2C; A. W. Cartee, ACMM; J. J. Hecker, AMM3C; A. W. Capron, RM3C; P. G. Krings, RM3C.

Plane 13—R. J. H. Conn; M. J. Berg, aviation cadet; R. C. Christian, ACMM; C. S. Dutcher, AMM2C; J. P. Tate, RM1C; V. M. Standiford, AM1C; C. I. Cundiff, Sea1C.

Plane 14—Lt. G. R. Luker; E. O. Laakso, aviation cadet; L. H. Mantooth, aviation cadet; W. Schauer, AMM2C; J. F. Christleit, AMM2C; F. R. Pollard, RM2C; J. C. Hasenfuss, Sea1C.

Plane 15—Lt. C. H. Clark; E. L. Christman, aviation cadet; C. D. Bray, AMM3C; S. P. Rutledge, ACMM; J. A. Benfante, AMM2C; R. W. Preece, RM2C; O. E. Blair, PTR1C.

—THE SAN DIEGO SUN June 23, 1939

S F.R.'S
VAR
trality
ay

ep. Edith .), former called on ubmit to mpatible tever in- him to is im- ne was equest- mit to on as n the ment war oun- pe." nove tion the ar- oes ay. he ce e d

15 Bombers Head For Hawaii Next Month

The 2570-mile aerial "bridge" which San Diego Navy airboat squadrons have built across the Pacific to Hawaii will be traversed once again next week in a nonstop flight of 15 bombers from North Island to Pearl Harbor.

Rear Adm. Arthur B. Cook, chief of the Bureau of Aeronautics today made formal announcement of the scheduled takeoff at about 3:30 p. m. Wednesday, weather permitting, of the planes, piloted by 105 officers and men of Patrol Squadron One. Nineteen hours will be required for the hop, Rear Adm. Cook estimated.

SHIPS STATIONED

Six ships will be stationed along the Great Circle route to be followed by the planes, furnishing weather information and serving as guards in case any are forced down. In order of their position from the mainland, they will be the aircraft tender Pelican, the destroyers Dent and Waters, the Memphis, Rear Adm. Cook's flagship; the aircraft tenders Avocet and Childs.

This will be the eighth long-distance "ferry flight," which the Aircraft Scouting Force has found to be the "most simple and economical" method of delivering the giant airboats to distant bases, according to Rear Adm. Cook.

BEST TIME

Best time ever made in the San Diego-Hawaii flight was that of 17 bombers which, by coincidence, flew the route in 17 hours, 17 minutes Sept. 7, 1938.

Not included in the list of eight delivery hops is the most spectacular non-stop flight ever made by the U. S. Navy—48 planes from San Diego to the Canal Zone Jan. 11, 1939—to join the Fleet in winter war games in the Caribbean.

Following is the crew list by plane:

1st pilot Lt.-Cdr. S. L. La Hache, 2nd pilot Av. Cadet W. Mercer, Ard pilot L. G. Lehrer, ACMM*; flt. eng. G. C. Sorensen, ACMM; 1st radioman C. G. Parks, CRM; 2nd radioman R. L. Smyth, RM3c; passenger R. C. Smith, M.Att2c.

1-P-2

1st pilot Lt. H. A. House, 2nd pilot Av. Cadet P. M. Murray, 3rd pilot Av. Cadet L. H. Mantooth; flt. eng. F. G. Wohlhuter, ACMM; 1st mech. W. F. Orr, ACMM; 2nd mech. R. Moore, AMM3c; radioman J. C. Sitherwood, RM2c.

1-P-3

1st pilot Lt. (jg) D. H. McDonald, 2nd pilot Av. Cadet L. S. Boeck, 3rd pilot D. D. Lurvey, AMM1c*; flt. eng. A. S. Haynes, AMM1c; 1st mech. W. Walters, AMM3c; radioman, O. A. Carlock, RM2c; passenger, E. J. Schmitt, AOM3c.

1-P-4

1st pilot Lt. A. D. Schwarz, 2nd pilot Av. Cadet A. H. Perry, 3rd pilot P. M. Bryant, AMM1c* flt. eng. S. W. Jarboe, ACMM; 1st mech. L. D. Clark, AMM2c; 2nd mech. J. T. Hubbard, AMM2c; radioman R. A. Palenga, RM1c.

1-P-5

1st pilot Lt. (jg) D. S. Crowley, 2nd pilot Av. Cadet L. C. Deede, 3rd pilot J. T. McGroarty, AMM1c* flt. eng. L. McIntyre, ACMM; 1st mech. W. Gannott, AMM2c; radioman L. E. Parsons, RM2c; passenger W. J. Anderson, AOM1c.

1-P-6

1st pilot Lt. (jg) J. B. Burks, 2nd pilot Av. Cdt. D. A. Campbell, 3rd pilot C. H. Evans, AMM2c*; flt. eng. C. O. Roper, AMM1c; 1st mech. J. A. Nelson, AMM2c; 1st radioman N. T. Whitford, RM2c; 2nd radioman P. W. Sparks, RM3c.

1-P-7

1st pilot Lt. J. O. Lambrecht, 2nd pilot Lt. (jg) R. E. Stanley, 3rd pilot Av. Cadet J. H. Russell, 4th pilot, J. H. Davies, AMM2c; flt. eng. M. A. Larson, AMM1c; 1st mech. A. J. Holder, AMM2c; radioman, R. L. Pettit, RM1c.

1-P-8

1st pilot Lt. (jg) P. G. Bunce, 2nd pilot Av. Cadet W. W. Hester Jr., Ard pilot T. Moreland, RM2c* flt. eng. C. E. Pierce, AMM1c; 1st mech. F. L. Rosenmund, AMM3c; radioman M. G. Irano PM1c; passenger A. M. Volpe, ACCM.

1-P-9

1st pilot Lt. (jg) R. L. Poor, 2nd pilot Av. Cadet C. M. Brower, 3rd pilot, T. S. Gay Jr., ACM*flt. eng. L. R. Erreca, ACMM; 1st mech. N. Phinney, AMM3c; radioman H. V. Heidemann, RM2c; passenger F. Pratt, Sea1c.

1-P-10

1st pilot Lt. H. P. Burden, 2nd pilot Av. Cadet M. U. Beebe, 3rd pilot, W. D. Eddy, AMM1c* flt. eng. L. J. Corning, AMM1c; 1st mech. W. J. Baker, AMM3c; 1st radioman J. F. Donnell, RM1c; 2nd radioman J. E. Cowart, RM3c.

1-P-11

1st pilot Lt. (jg) G. S. James Jr., 2nd pilot Av. Cadet E. O. Lookso, 3rd pilot D. C. Westfall, RM2c*, flt. eng. J. Z. Walker, AMM1c; 1st mech. W. R. Lee, AMM3c; radioman F. N. Vanderhoef, RM1c, passenger J. J. Smies Y3c.

1-P-12

1st pilot Lt. (jg) J. A. Smith, 2nd pilot Av. Cadet E. W. Bishop, 3rd pilot, H. T. Blanchard, AMM2c*, flt. eng. A. W. Cartee ACMM; 1st mech. J. J. Hecker, AMM3c; 1st radioman A. W. Capron, RM3c; 2nd radioman P. G. Krings, RM3c.

1-P-13

1st pilot Lt. R. J. H. Conn (VP-7), 2nd pilot Av. Cadet M. J. Berg; 3rd pilot J. W. Moreno, ACOM* flt. eng. C. S. Dutcher, AMM2c, radioman J. P. Tate, RM1c; passenger, V. M. Standiford, AM1c; passenger C. I. Cundiff, Sea1c

1-P-14

1st pilot Lt. (jg) G. R. Luker (VP-9), 2nd pilot Av. Cadet O. O. Dean, 3rd pilot W. Schauer, AMM2c* flt. eng. J. F. C. Christeleit Jr., AMM2c; 1st mech. R. E. Butterbaugh, AMM3c; radioman F. R. Pollard, RM2c; passenger J. D. Hasenfuss, Sea1c.

1-P-15

1st pilot Lt. (jg) C. H. Clark (VP-7), 2nd pilot Av. Cadet E. L. Christman, 3rd pilot C. D. Bray, AMM3c*; flt. eng. S. P. Rutledge, ACMM; 1st mech. F. B. Pollard, AMM1c; radioman R. W. Preece, RM2c; passenger. O. E. Blair, Ptr1c.

(*) Indicates Naval Aviation pilot.

Enjoy GREEN
Last-Sunday of
CONCERT PRO
Make Your Pla
Attend the J

Sydney Flying Boat Alights at Mahe On Way to Africa

SYDNEY, New South Wales, June 16 (AP)—The flying boat Guba blazing a new air route of almost 5,000 miles over the Indian Ocean from Western Australia to East Africa, alighted at 8:45 a. m., G. M. T. (3:45 a. m., E. S. T.) today at Mahe in a flight of eight hours and seven minutes from Diego Garcia, in the Chagos Archipelago. Its destination is Mombasa, Kenya Colony.

The flying boat, lent for the survey flight by Richard Archbold, a wealthy young American, left Port Hedland, Australia, on June 4. Russell Rogers, the pilot, and Lewis Yancey, the Navigator, are Americans. Capt. Percy G. Taylor of Sydney is the sponsor of the flight.

Archbold Alters Route Home

S.D.UNION 6/26/39

BULLETIN

Richard Archbold and his crew in the Guba took off early today from Lagos for Dakar on the west coast of Africa, Barney Boyd, San Diego radio contact man reported. Boyd received a message from the Guba relayed by a Florida amateur.

* * *

Change in the itinerary of the 20,000-mile homeward bound flight from Australia via Africa of Richard Archbold, research director, American Museum of Natural History, was reported in radio advices received here yesterday.

According to a relayed message received by Barney Boyd, local radio amateur, Archbold, flying his San Diego-built seaplane Guba, will fly from Dakar, Africa, to New York instead of to Miami, Fla., and thence overland to San Diego. He is due to arrive at New York July 1. Whether he will attempt to fly direct from New York to San Diego or come here via Miami and the southern airway is not known. He is due here July 3.

The last radio advices from Archbold placed the Guba in the latitude of Dakar on the west African coast.

Archbold's homeward-bound flight started from Sydney, Australia.

---

15 Navy Bombers May Hop Today

S.D.UNION 6/27/39

Fifteen of the navy's big patrol bombers are in readiness for the take-off of a massed flight to Hawaii, with a possibility that the flight, scheduled for tomorrow, may begin today.

The flight, a routine affair, will be under command of Lt. Comdr. Sam LaHache, U.S.N. Scheduled time of takeoff is 2 p.m. tomorrow; it was intimated yesterday, however, that changing weather conditions may make departure today more advisable.

Meanwhile, orders were issued to district naval craft to keep clear of the take-off course at the time when the heavily-loaded planes get under way; a request also was made for fishing and other commercial craft to keep out of the way of the planes. At the time of the flight flag "U" of the International code—four squares, alternately red and white—will be flown from hangar No. 69 on the north beach at North Island; if take-off is after dark, two vertical red lights will be shown. Navy boats will be on hand to patrol the course, and will warn approaching vessels by the display of a red flag by day or a red lantern by night.

ARCHBOLD ON WAY TO DAKAR, AFRICA

S.D.SUN 6/26/39

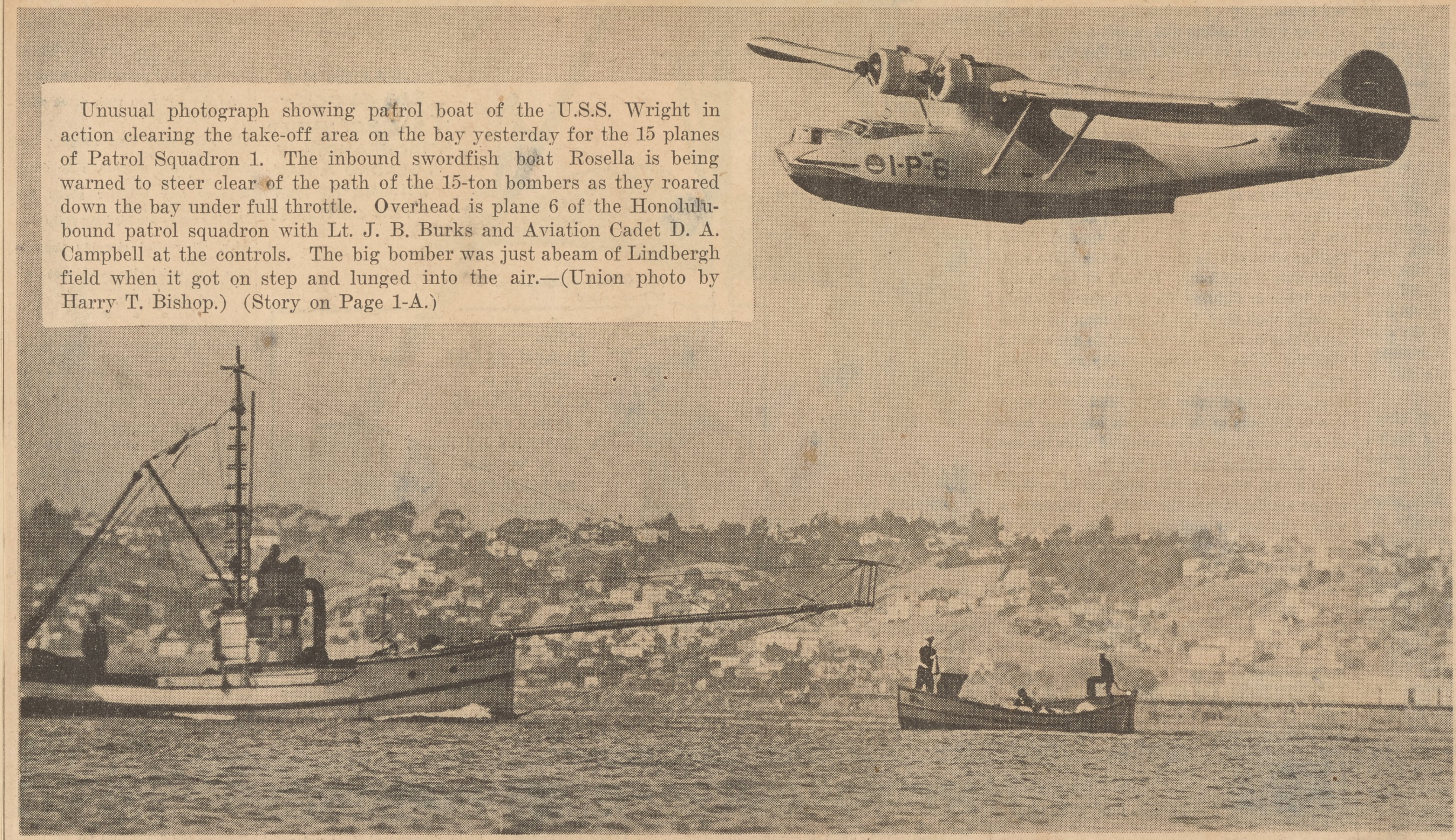
Homeward bound after more than a year's adventures that took them into the jungles of Netherlands New Guinea, across Australia, the Indian ocean and Africa, the six-man flight crew of the Consolidated airboat Guba, led by Richard Archbold, millionaire scientist-aviator, was due in Dakar, Africa, today, ready to span the Atlantic to the United States.

The Guba took off from Lagos, on the Gold Coast, in a 1000-mile flight to Dakar, on the extreme western tip of Africa, at 10:16 p. m. Sunday (PST), Barney F. Boyd, local amateur wireless operator, reported.

Mr. Archbold announced the Guba will attempt to reach New York City via the Virgin Islands, July 1, en route to San Diego. The fliers have been commissioned by the British air ministry to pilot a Consolidated bomber to England early next month.

SAN DIEGO, CALIFORNIA, WEDNESDAY MORNING, JUNE 28, 1939 S.D. UNION

PATROL FLAGS DOWN FISHING BOAT AS 15-TON NAVY BOMBERS TAKE OFF FOR HONOLULU



Unusual photograph showing patrol boat of the U.S.S. Wright in action clearing the take-off area on the bay yesterday for the 15 planes of Patrol Squadron 1. The inbound swordfish boat Rosella is being warned to steer clear of the path of the 15-ton bombers as they roared down the bay under full throttle. Overhead is plane 6 of the Honolulu-bound patrol squadron with Lt. J. B. Burks and Aviation Cadet D. A. Campbell at the controls. The big bomber was just abeam of Lindbergh field when it got on step and lunged into the air.—(Union photo by Harry T. Bishop.) (Story on Page 1-A.)

---

15 S. D. Bombers On Hawaii Flight

S.D. UNION 6/28/39

Nearly Half Way; Weather Good

BULLETIN

(North Island naval officials reported at 9:30 last night that the Honolulu-bound naval flying boats had just passed over the destroyer Watters, third flight guard ship, 750 miles west of San Diego. The ships were making 135 miles an hour and weather conditions were "good," officials said.

With the trade winds behind them, 15 of the navy's huge patrol-bomber planes last night were roaring toward Hawaii, where they are scheduled to end their flight from San Diego by noon today.

Following the great circle course on their hop of 2278 nautical miles, the planes and their personnel of 105 officers and men are expected to reach the Hawaiian islands in 19

(Picture on Page 1-B)

hours; they left here around 4 yesterday afternoon, the flight having been stepped up nearly 24 hours after a consultation of weather maps, which showed that more favorable conditions might be expected today than tomorrow; originally it was planned for the flight to begin at 2 o'clock this afternoon.

Lt. Comdr. Sam LaHache, commanding Patrol Squadron VP-1, is pilot of the leading plane, as well as in command of the entire group of 14.

ADM. COOK AT SEA

Meanwhile Rear Adm. Arthur B. Cook, commanding the scouting force aircraft, is at sea, in the center of the operations of his long-range planes; Adm. Cook's flagship, the U.S.S. Memphis, sailed Saturday to become a "plane guard" ship for the flight. Other surface craft, strung out between here and Pearl Harbor, are the U. S. S. Dent and Waters, destroyers; the U. S. S. Childs, destroyer now attached to the patrol wing at Pearl Harbor, and the U. S. S. Pelican and Avocet, minesweepers operating as aircraft tenders for the same organization. The Dent and Waters, of Destroyer Division 19, left Pearl Harbor for San Diego a week or more ago, accompanied by two other destroyers and four submarines; the submarines and the other two surface craft, the U. S. S. Rathburne and Talbot, entered port yesterday morning, leaving the other two for station duty.

The flight, like others which have preceeded it in the past few years, is considered a routine transfer of the San Diego-built Consolidated planes from here to Pearl Harbor, and there was little of the unusual to mark the departure of the 15 heavily-loaded planes yesterday. Navy small craft patrolled the bay around the take-off area, removing a few bits of drifting wood, and warning other harbor craft away from the zone of flight; the only unusual feature was the stopping of the North Island ferries, normally at their busiest time around that hour, for a few minutes while the planes taxied up into the wind and got away.

PLANES LISTED

Following are the first and second pilots of the 15 planes:

Plane 1—Lt. Cmdr. Sam LaHache, Avn. Cdt. W. Mercer.

Plane 2—Lt. H. A. House, Avn. Cdt. J. B. Gaines.

Plane 3—Lt. D. H. McDonald, Avn. Cdt. L. S. Boeck.

Plane 4—Lt. A. D. Schwartz, Avn. Cdt. A. H. Perry.

Plane 5—Lt. D. S. Crowley, Avn. Cdt. L. C. Deede.

Plane 6—Lt. J. B. Burks, Avn. Cdt. D. A. Campbell.

Plane 7—Lt. J. O. Lambrecht, Avn. Cdt. R. E. Stanley.

Plane 8—Lt. P. G. Bunce, Avn. Cdt. W. W. Hester jr.

Plane 9—Lt. R. L. Poor, Avn. Cdt. C. M. Brower.

Plane 10—Lt. H. P. Burden, Avn. Cdt. M. U. Beebe.

Plane 11—Lt. G. S. James jr., Avn. Cdt. O. O. Dean.

Plane 12—Lt. J. A. Smith, Avn. Cdt. E. W. Bishop.

Plane 13—Lt. R. J. H. Conn, Avn. Cdt. M. J. Berg.

Plane 14—Lt. G. R. Lasker, Avn. Cdt. E. O. Laakso.

Plane 15—Lt. C. H. Clark, Avn. Cdt. E. L. Christman.

Flights such as the one under way have become relatively commonplace with the navy. Early in 1937, 12 of the big planes flew from here to Honolulu in 21 hours 43 minutes; that was on Jan. 28. On April 3 of the same year, 12 more went to Hawaii in 21 hours 21 minutes. On Jan. 19, 1938, 18 planes made it in 20 hours 30 minutes, and on Sept. 6, 17 of the planes left here, crossing in 17 hours 17 minutes.

S.D. TRIBUNE

DELIVERY BY AIR; ENGLAND GOAL OF CONSAIR CRAFT

6/27/39

Delivery by air of a military plane from San Diego to England is planned next month in a one-stop flight of a new Consolidated 28-5 military export flying boat leaving here July 15, The Associated Press reported from Burbank. The office of the British air ministry at Lockheed Aircraft Corp. announced that the craft will be flown to Britain with a stop at Botwood, N. F., 3300 miles distant.

The total distance of the flight from here to Felizstone, Suffolk, England, will be 5750 miles. Squadron Leader James R. Addams, British air ministry representative in California, said the flight will be the longest delivery flight on record. It marks the first delivery by air of a military plane from the United States to England.

Rogers Captain

Addams said the huge craft, which made its initial "shakedown flight" here June 14 with William B. Wheatley, Consolidated test pilot at the controls, will be flown to England by Russell Rogers and the crew of the Richard Archbold scientific exploration plane Guba, due here early next month from New Guinea, via the Indian ocean, Africa and the Atlantic. Rogers will be captain and pilot; Lewis Yancey, navigator and co-pilot; Ray Booth, radio engineer, and Gerald Brown, flight engineer. Addams and Wing Comdr. Phil Mackworth of the Royal Air Force also will be aboard, it was reported.

Model 28-5 was developed from the Consolidated PBY-type plane built for the American navy. The craft bears the military markings of the Royal Air Force, and was ordered from the Consolidated Aircraft Corp. during a visit here of air ministry officials.

ARCHBOLD HOPS FOR VIRGIN ISLANDS EN ROUTE TO S. D.

SD. TRIBUNE 6/29/39

The San Diego-built flying boat Guba, which recently completed a crossing of the Indian ocean, today hopped off from Daka, Senegal, French Africa, for Charlotte Amalie (St. Thomas), Virgin islands, en route to the United States, The Associated Press reported. The big plane left Dakar at 3:10 a.m. (Pacific time) and is expected at the Virgin islands tomorrow.

San Diego is the ultimate goal of the Guba, with the flying boat tentatively expected to arrive here next Monday. The Guba was built at the Consolidated Aircraft Corp. plant for Richard Archbold, research associate of the American Museum for Natural History. Archbold spent most of the last year in New Guinea on a scientific expedition. He left San Diego June 2, 1938, and crossed the Pacific to New Guinea. The Guba left Australia June 3 this year for a survey flight across the Indian ocean for the Australian government, arriving at Mombasa, East Africa, June 21, and then flying across Africa to Dakar.

S.D. UNION 6/30/39

Fliers Will Be Guests Of Ice Rink Star

Navy and civilian aviation officials will be guests of Vivi-Anne Hulten, headliner in the Hollywood all-star ice revue, tonight at Glacier Garden. In their honor she will present a new number with an aerial theme.

Before the performance, Miss Hulten will greet her guests at a reception and cocktail party in Hotel San Diego. The party will include Capt. and Mrs. J. C. Horton, Capt. and Mrs. Walter Gross, Lt. and Mrs. L. J. Hopwood, Mr. and Mrs. T. Claude Ryan, Mr. and Mrs. Paul Wilcox, Mr. and Mrs. Harvey Moonert, Earl Prudden, Sam Breder, Mr. and Mrs. Don Fry, Mr. and Mrs. Frank Learman.

Reduced prices are announced for the final performances tonight and tomorrow night.

Bombers Break S. D.-Hawaii Flight Record

S.D. UNION 6/29/39

Establishing a new flying record of 16 hours and 17 minutes from San Diego to Hawaii, 15 long-range bombers of Patrol Squadron 1 landed at 8:57 a.m. at Pearl Harbor yesterday, 16 hours and 17 minutes after they took off from San Diego Tuesday afternoon.

Naval air officers at Pearl Harbor reported the first plane passed over the harbor at 8:04 but it was 53 minutes later before the last of the squadron had landed safely.

Of the five navy massed flights to the crossroads of the Pacific from San Diego, the fastest time heretofore was achieved last Sept. 6 when 17 bombers flew the 2500-mile airway in 17 hours 17 minutes.

Patrol Squadron 1, commanded by Lt. Comdr. Sam La Hache, is to become a unit of Patrol Wing 2 which next month will be placed in command of Rear Adm. Arthur L. Bristol with the U.S.S. Langley as flagship.

Crew of the plane tender Pelican, arriving yesterday, reported the planes flew at such altitude they were unable to sight them.

Comdr. La Hache said that favorable winds were helpful in creating the new flight record, according to an Associated Press dispatch from Pearl Harbor.

---

15 S. D. BOMBERS LAND IN HAWAII

S.D. SUN 6/28/39

Favored by strong tailwinds, 15 Consolidated Navy airboats landed in Pearl Harbor at 8:40 a. m. (PST) today, establishing a new transpacific mass flight record of 16 hours, 39 minutes, the United Press reported from Honolulu.

The bombers, attached to Patrol Squadron 1, commanded by Lieut.-Comdr. Sam L. La Hache, took off from San Diego harbor at intervals from 3:47 p. m. yesterday, and joined formation at 4:01 p. m., official starting time of the 2570-mile hop. Flight personnel totaled 105 officers and enlisted men.

Averaging approximately 155 miles per hour, the squadron eclipsed the previous best mark of 17 hours, 17 minutes made by 17 similar planes Sept. 7, 1938.

Patrol Squadron 1 will remain on permanent duty in Pearl Harbor, rapidly being developed into the United States' largest Navy seaplane base.

Archbold Hops For New York; Due Tomorrow

S.D. UNION 6/30/39

MIAMI, Fla., June 29 (A.P.)—Richard Archbold's expeditionary seaplane Guba pursued her course across the Atlantic toward St. Thomas, Virgin islands, tonight and reported plans to arrive Saturday in New York.

Throughout the late afternoon, the flying laboratory was in short-wave contact with W. S. Burkhart, amateur operator, whose station near Miami relayed a series of messages from New York to Archbold.

The plane is returning from a year's expedition for the American Museum of Natural History. Most recent hops were from Australia across the Indian ocean to Mombasa, Kenya colony, on the African east coast, thence across the continent to Lagos and to Dakar, Senegal, in French Africa.

The big plane left Dakar at 12:10 p.m. today (7:10 a.m. E.S.T.) for St. Thomas.

ARCHBOLD TO HOP FOR SAN DIEGO TOMORROW

With Richard Archbold, owner of the $250,000 Consolidated airboat Guba, expected to remain behind, the big plane will take off from New York late tomorrow on a non-stop transcontinental flight to San Diego, it was reported here today. With between 18 and 20 hours required for the 2700-mile journey, the craft is due here about 1 a. m. Wednesday.

After a short rest in San Diego, four men of the Archbold crew—Chief Pilot Russell Rogers, Navigator Lewis Yancey, Engineer Gerald Brown and Radioman Ray Booth, will leave here, probably about Saturday, in a similar Consolidated airboat for delivery to the English Royal Air Force. The fifth member of the Guba crew, Stephen Barrinka, assistant engineer, is not slated to make the trip.

S.D. SUN 7/3/39

BOMBERS SLASH S. D.-HAWAII TIME

S.D.TRIBUNE

Fifteen Land On 16¼-Hour Pacific Flight

6/28/39

Fifteen giant patrol bombers of Patrol Squadron 1 arrived over Pearl Harbor, T. H., at 8:04 a.m. today, 16 hours, 17 minutes after taking off here yesterday, to establish a new navy record for the flight.

Weather, Wind Favorable

The previous record was 17 hours, 17 minutes, established last September by 17 planes of the same type.

First to land was the lead plane piloted by Lt. Comdr. Sam La Hache, flight commander, at 8:51 a.m., Pacific time. La Hache credited the record-shattering achievement to clear weather, favorable winds and the excellent performance of the giant planes.

Other planes landed in quick succession, without incident, to complete another in the series of navy mass flights.

The take-off from the calm waters of the bay yesterday was marked by that precision which is the navy's pride. The matter-of-fact handling of the heavily loaded seaplanes concealed from the layman's uncritical eye details of the masterful airmanship involved in getting the big bombers into the air.

Six Ships on Course

Plane 1, piloted by La Hache, was first to roar down the take-off area and into the air at 3:47 p.m. The other ships followed at one-minute intervals and headed for a running rendezvous over Pt. Loma.

At sea, strung out along the 2278 nautical miles of the route, were six naval vessels acting as station ships, prepared to rush to the scene in case of emergency. The station ships were led by the cruiser Memphis, flagship of Rear Adm. Arthur B. Cook, scouting force aircraft commander, who was aboard.

Other guard ships were the U.S.S. Dent, Waters and Childs, destroyers, and the U.S.S. Pelican and Avocet, minesweepers. The guard ships were stationed at intervals of about 300 miles.

105 Officers, Men on Hop

Before the take-off, navy small craft patrolled the take-off area, removing drifting wood and warning other harbor craft away. The North Island ferries were halted.

Regarded officially as another in the series of "routine transfers" of men and materials which have blazed a spectacular trail of naval air achievement, the planes carried 105 officers and men, seven to each plane.

The squadron is joining other air units at the Pearl Harbor base, the United States' biggest and most important Pacific outpost.

Other Hawaii flights have included: 12 planes on Jan. 28, 1937; 12 planes on April 3, 1937, and 18 planes on Jan. 19, 1938.

Archbold Plane Due Wednesday From New York

S.D.UNION 7/3/39

Ending one of the most dramatic flights in history, the $250,000 "flying laboratory," built by Consolidated Aircraft Corp. for American Museum of Natural History, is due here from New York at 11 a.m. Wednesday.

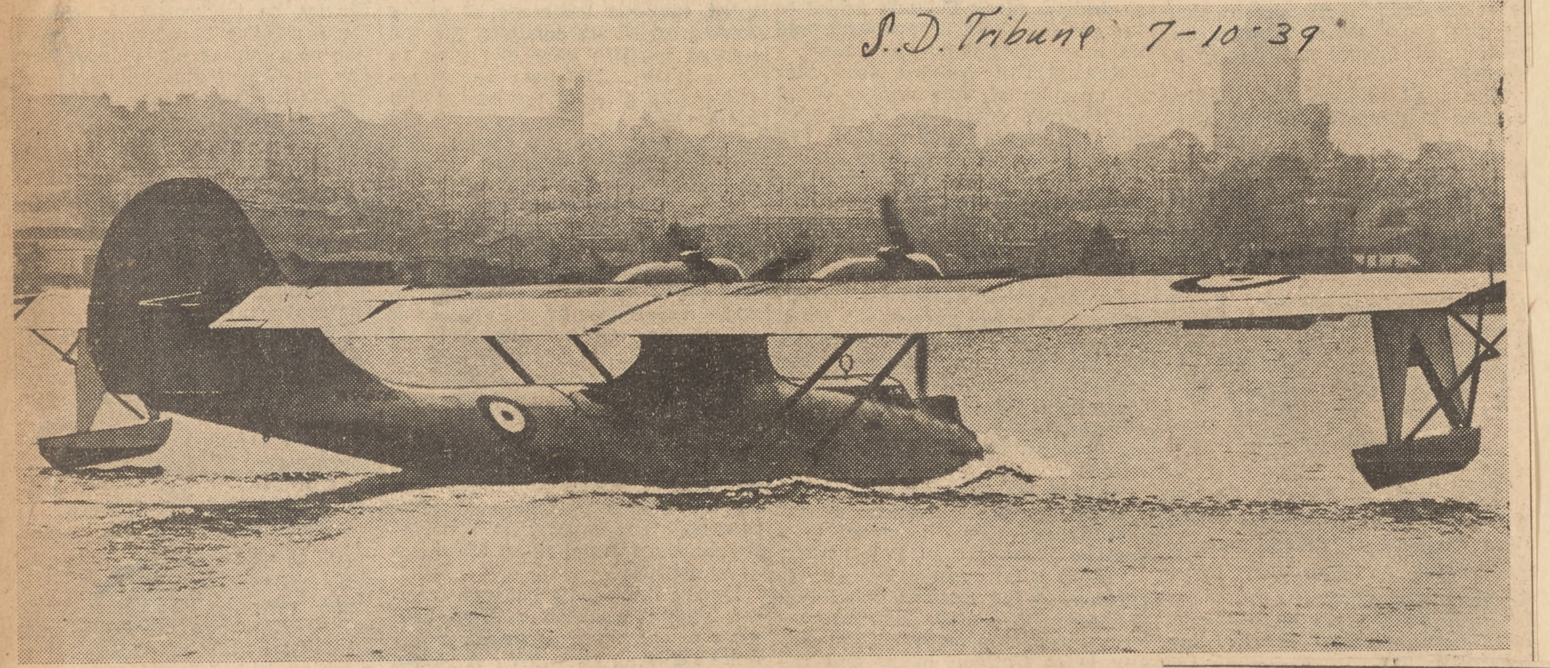
According to word received from Richard Archbold, expedition leader, the big flying boat will take off from Jamaica bay, New York, tomorrow afternoon on a non-stop flight across the continent.

Since the flying boat left San Diego June 3, 1938, it flew across the Pacific to Hollandia, Netherlands New Guinea, engaged in exploratory flights for several months in the vicinity of Lake Habbema, flew to Australia, then blazed an airway from Sydney over the Indian ocean to Africa. From Dakar on the east African coast, the plane winged its way to St. Thomas in the West Indies and then to Jamaica bay.

Russell B. Rogers, pilot, and Lewis A. Yancey, navigator, will remain in San Diego less than 48 hours before they again take to the air in another San Diego-built seaplane, this time for Felixstowe, England, via Botwood, Newfoundland. This ship was built for the British government. It is scheduled to take off on the transcontinental-transoceanic flight Friday.

Consair Airboat Speeding East on Delivery Hop to Britain; 'All Well,' Radio Message

S.D. Tribune 7-10-39



Consolidated's Model 28-5 as it made its second take-off for England today.

TAKES OFF AGAIN AFTER RETURN HERE AS DEFECT FOUND

Consolidated's Model 28-5, twin-engined flying boat built for the British government, made its second take-off for England at 8:23 a.m. today after returning here yesterday morning because of trouble with the craft's automatic pilot when the plane was over Salton sea. It is expected to land at Botwood, N. F., tomorrow for refueling, and depart immediately for the flight across the north Atlantic to Felixtowe, Eng., 5750 miles from San Diego.

At 10:30 a.m. the plane was 230 miles east of San Diego, according to a message received from the craft by Barney Boyd, local radio amateur. Those on the plane reported "everything going nicely." Noon contact with the plane was not made, but by mid-afternoon Boyd said he expected to have another report on the airboat's position.

Gyro Fails To Function

The delivery flight began yesterday under auspicious circumstances, with the plane functioning perfectly and excellent weather forecast for the 3300-mile flight to Botwood. Over the Salton sea the Sperry gyro failed to function, and rather than deliver the craft to British authorities with a broken piece of equipment, Russell Rogers, captain and chief pilot, brought the plane back to San Diego, landing here at 9:15 a.m.

Repairs to the automatic pilot were made by an expert from the naval air station, and Rogers took the plane aloft shortly before dusk yesterday for a short trial flight. Weather conditions for the flight today were declared equally as good as those yesterday, and the flight across the continent is expected to be made without incident, Consolidated officials reported. They pointed out the craft could have been flown to England without the use of the automatic pilot, but wished it to be delivered with all parts in good condition.

Like Archbold's Guba

Model 28-5, a commercial development of the navy PBY planes and similar to Richard Archbold's Guba, which returned here last week from New Guinea, is being flown by the crew of the Guba. With Rogers are Lewis A. Yancey, co-pilot and navigator; Raymond Booth, radio operator, and Gerald Brown, flight engineer.

From San Diego to Newfoundland the plane is scheduled to fly over Phoenix, Albuquerque, Amarillo, Wichita and Kansas City, near Chicago and Detroit, and over Lake St. Clair, Toronto, Ottawa and Montreal. Had yesterday's flight been completed, Rogers said he and the other crew members expected to make only a two-hour stop-over

(Continued on Next Page, Col. 6)

Tribune 7-10-39

Consair Plane Off For Britain Delivery

CONTINUED FROM PAGE ONE

this morning at Botwood before continuing to Felixtowe. After the plane is delivered, the crew members will return to this country on the liner Washington July 27, coming to San Diego for further flight duty with the Guba.

"The purpose of the flight is to deliver Model 28-5 to the British Air Ministry," states a Consolidated announcement. "The plane is owned by Consolidated Aircraft Corp. until completion of the delivery flight."

Totes Full Equipment

Unlike the many over-water "routine delivery flights" which the navy has made with Consolidated PBY planes, Model 28-5 will cross the Atlantic without benefit of surface ships stationed over the route of the flight. The craft, however, carries complete navigational equipment, a seven-man life raft, life jackets, parachute flares, signal equipment, water supply, a still, and emergency rations, the equipment in general being similar to that used by the navy department for long distance flights. In the navy's over-water delivery flights, made from San Diego to Honolulu and from ere to Panama, 12 planes or more ave been flown at a time, and to ate no forced landings on the high eas during the delivery flights have een necessary.

Model 28-5 is powered with two ratt and Whitney twin-row Wasp ngines, and two Hamilton standard onstant speed propellers. It is quipped with Sperry gyro and lind flying instruments. It has merican registration No. NRP9630 nd British No. P9630, as well as ritish insignia on the wing and ull. Radio installtion includes two endix transmitters, operating on requencies selected for transcon- nental and north Atlantic route peration; two Bendix all-wave re- eivers, having a tuning range of om 150 to 1500 kc. and 1800 to ,000 kc., capable of receiving tele- hone and c.w. signals, and one Ben- ix radio direction finder.

Union 7-5-39

Guba Leaves N. Y.; Due Here Tomorrow

On the final lap of the 20,000-mile flight from Sydney, Australia, via Africa, the West Indies and New York, the San Diego-built flying boat Guba left New York for New Orleans at 7 o'clock last night, according to word received by Consolidated Aircraft Corp. officials.

The plane is to take off from New Orleans at midnight tonight, arriving here at 10 a.m. tomorrow.

Richard Archbold, research associate of American Museum of Natural History, will remain in New York. Archbold has been with the plane since it left here in June, 1938, for Netherlands New Guinea on a scientific mission for the New York museum.

AVIATION

"NEWSWEEK" JULY 3, 1939

Atlantic Flight Competition Promised by Export Airlines

While the start of its transatlantic passenger service this week (NEWSWEEK, June 26) will probably allow Pan American Airways to rule the North Atlantic almost unchallenged for perhaps a full year—no potential rivals have airplanes to match Pan American's four 82,500-pound Boeing Clippers—it faces stiff competition eventually.

The British Imperial Airways have ordered a fleet of 64,000-pound flying boats from Short Bros., Ltd., and since these will not likely be ready until 1940 it is planning to use ships of the Cavalier class by refueling them in the air shortly after take-off. But the boats are not yet completely adapted to this service and may not be ready for Atlantic crossings—even for mail only—until late this year.

Germany is rushing work on a big six-engined flying boat at the Blohm & Voss factory at Hamburg. It will have a gross weight of between 80,000 and 90,000 pounds. But, as in the case of the British, there is a catch for the Germans: the plane can hardly be ready for service this year. In addition, the United States has refused the German Air League permission to operate here until an American carrier is ready to run an air line to Germany.

France, after a slow start, is making good headway. Until recently it had only the nine-year-old flying boat Lt. de Vaisseau Paris for its survey flights. Last week, however, it completed a transatlantic round-trip test flight of a new six-engined, 80,000-pound Latécoère flying boat, the Ville de St. Pierre. Forerunner of several large planes under construction for Air France Transatlantique, it promises to put France definitely in the running by next year.

But the most aggressive challenge to Pan American dominance is home-grown—a challenge that took shape last week in New York, where American Export Airlines held christening ceremonies for a survey flying boat now bearing the name "Transatlantic." A commercial version of the Navy's standard Consolidated patrol bombers, this plane has a gross weight of only 27,000 pounds. Despite its lightness, it is large enough to carry out a program of survey flights to begin late in July.

Moreover, the company which owns it, a subsidiary of the successful American Export Lines, seems fully determined to establish a complete transatlantic service. It has gathered a well-qualified nucleus of officials and executives. It has organized the parent company's fleet of eighteen vessels, which ply largely between New York and Mediterranean ports, into a floating weather-reporting system, and made plans to use its European and African offices to handle air-line business.

Finally, American Export has applied to the Civil Aeronautics Authority for route certificates by both the Northern and Southern Atlantic routes, and has formed an operating agreement with Italy's state air line. It also is reported to be negotiating for a fleet of Consolidated Model 31 flying boats of 50,000 pounds gross weight, powered with two of the new 2,000 horsepower Wright engines. Reported to have a cruising speed of "well over 200 miles an hour" these planes would be at least 50 miles an hour faster than the Clippers and make American Export a formidable Pan American competitor -- perhaps by the summer of 1940.

Christian Science Monitor

The World's Day

Its News at a Glance

June 30, 1939

Dixie Clipper Ends Atlantic Hop With Passengers

MARSEILLE, France (AP)—The Dixie Clipper today completed the first scheduled trans-Atlantic flight with paying passengers when she arrived here from Port Washington, N. Y., via Horta, the Azores, and Lisbon, Portugal, at 1:20 p. m. (8:20 a. m. E. S. T.).

SOUTHAMPTON, England (AP)—The Yankee Clipper, Pan American Airways flying boat, which this week made an inaugural scheduled air-mail flight across the North Atlantic, started her return trip today with a cargo of mail and 15 guests.

CHARLOTTE AMALIE (St. Thomas), Virgin Islands (AP)—The flying boat Guba, which recently crossed the Indian Ocean, alighted here today after a 3,200-mile trans-Atlantic flight from Dakar, French West Africa.

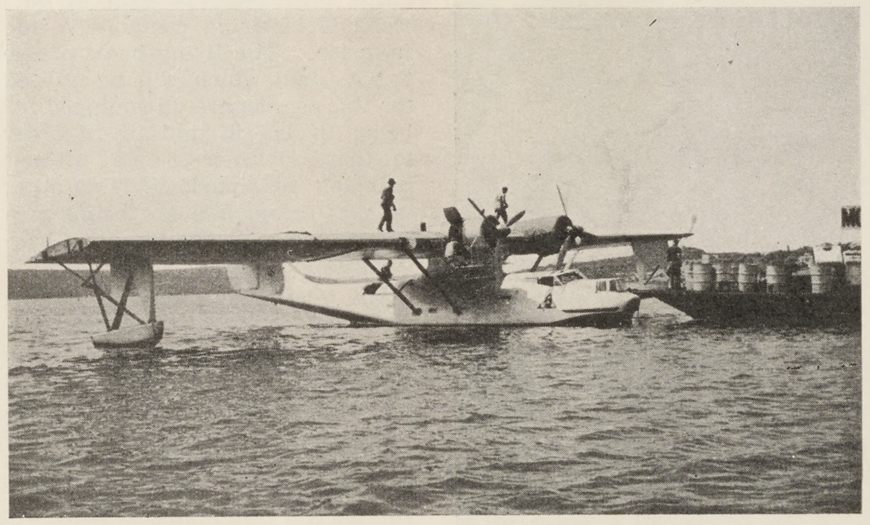
The plane, commanded by Richard Archbold of the American Museum of Natural History, is expected to leave for New York at daylight, July 1. The big "flying laboratory" first flew to New Guinea for research work.

NEW YORK (AP)—The American Export Airlines, 15-ton "Trans-Atlantic" took off today on the first of a series of survey flights for a new air service to Europe. First scheduled stop was Horta, the Azores, with other stops at Lisbon, Portugal, Viscarosse and Marseille, France.

Indian Ocean Survey Flight

Most Important Project. Australia's Vital Interest

Of supreme importance to Australia is the survey flight, which is planned to commence about the middle of next month, from West Australia to Africa.



Richard Archbold's Consolidated PBY-2 Flying-Boat, "Guba," which will carry the trans-Indian Ocean survey party from West Australia to Africa, via the Cocos Islands, Chagos Islands and Seychelles Islands, in June. It is seen refuelling in Rose Bay, Sydney. *("Air-Log" photo.)*

Variously referred to as "The Reserve Route" and in other fashions, it might well become, under exigencies of circumstance, the ONLY aerial route open between England and Australia for link communication by aircraft, so it should be regarded as a much more important piece of work than the "Reserve" title suggests. Though it is not the only possible All-Red aerial route (we could travel via Canada) seasonal severity in the North Atlantic make that crossing a definitely inferior one from the ease-of-operations point of view to that which could link England with Australia via the west coast of Africa—trans-Africa—trans-Indian Ocean route.

By arrangement with the Commonwealth Government, the well-known American millionaire, Mr. Richard Archbold, research associate of the American Museum of National History, has made his Consolidated PBY-2 flying-boat, "Guba," available for the survey.

This very fine product of aircraftsmanship received its name from a type of tropical storm common to New Guinea, where Mr. Archbold's first expedition, about three years ago, lost the Fairchild Amphibian with which they were preparing to make exploratory excursions as the result of one of these tropical willy-willies turning up at an inappropriate moment.

Ordinarily, the Consolidated PBY-2 is a twin-engined 14-place flying boat, with a wing span of 104 feet, length of 67 feet 1 inch, gross weight of 27,000 lbs., and a maximum payload of 9,250 lbs. Its engines are twin-row Pratt and Whitney radials of 900 h.p. each, and it has a cruising range of 4,000 miles and a cruising speed of 170 m.p.h. The "Guba" is, indeed, a most luxurious craft.

On the projected flight the personnel will be:—

Mr. Richard Archbold, owner of the "Guba," reputedly one of the wealthiest of citizens of the U.S.A.;

Captain P. G. Taylor, who will be in charge of the survey. Mr. Taylor holds one of the only two first-class aircraft navigators' licences in force in Australia;

Captain Lewis A. Yancey, navigator to the Archbold Expedition and also on this flight;

Mr. R. Rogers, Chief Pilot;

Mr. R. Boothold, Radio Operator;

Mr. G. Brown, Chief Engineer;

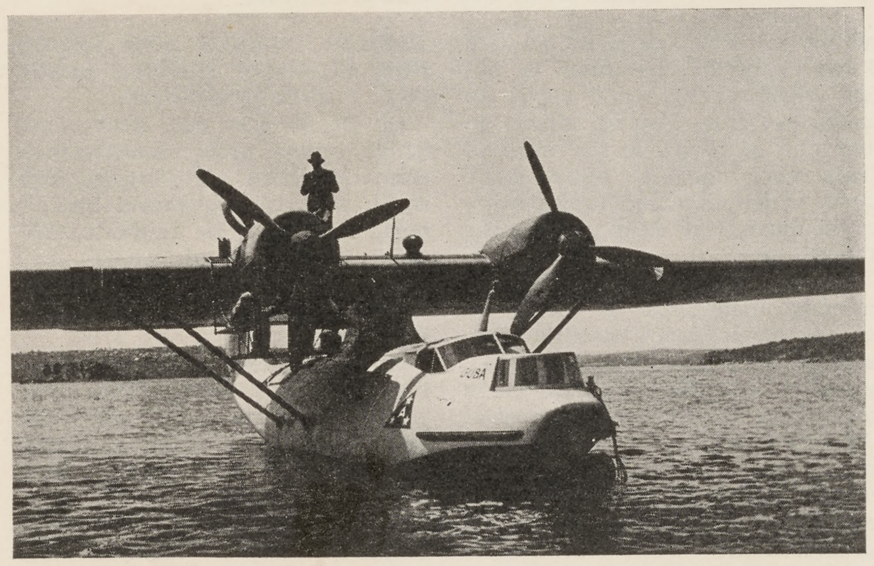
Mr. S. Berrinka, Second Engineer; and

Mr. J. Percival, in charge of mail.

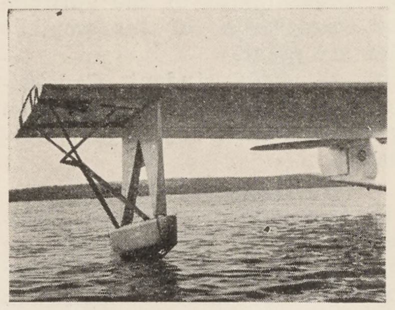
The route to be flown will be from the West Australian coast (probable point of departure, Port Hedland) to Cocos Islands, about 1,230 nautical miles (1,416 statute miles); Cocos Island to Diego Garcia, Chagos Islands, 1,472 nautical miles (1,680 statute miles); Chagos Island to Seychelles Is., 1,022 nautical miles (1,184 statute miles), and Seychelles Is. to Mombasa (Kenya) 950 nautical miles (1,083 statute miles)—a total of 4,674 nautical (or 5,363 statute) miles. (The nautical mile in British usage is 6,080 feet).

A special Air-mail stamp with a face value of 5/- is to be printed.

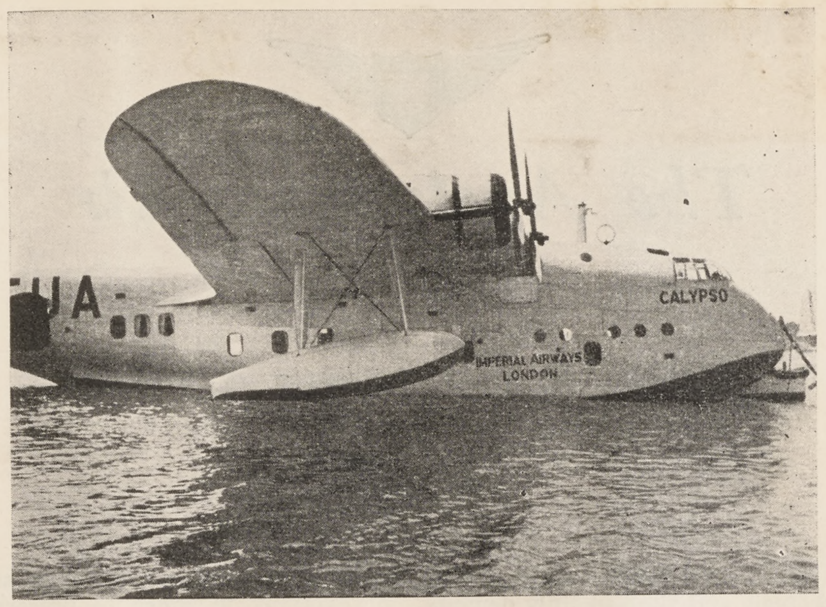
(Continued on next page.)



Close-up of the "Guba". Note engineers sitting in frame seats working on starboard engine. Everything on the "Guba" "breathes" comfort. *("Air-Log" photo)*



The unusual and efficient wing-tip float of a Consolidated PBY-2 Flying-Boat. It folds into and forms the wing-tip in flight. *("Air-Log" photo.)*



In contrast to the low-lying sleekness of the Consolidated PBY-2 Flying-Boat, "Guba," we show here the Imperial Airways' Empire "C" Class Flying-Boat, "Calypso" (G-AEUA). Notice the difference in wing types and wing-tip floats. Through the fourth round "port-hole" from the nose may be seen the figure of a man standing on top of the Flying-Boat "Guba," which was lying about 100 yards on the port side of the "Calypso" at the time this photo was taken.

Aluminium Industry

To be Developed in Australia.

The recent visit of the British Air Mission to Australia, has brought before the public, for perhaps the first time, the increasing importance of Aluminium and its alloys in the construction of both military and civil aircraft.

Frequent references have been made in the press, to the fact that Australia is not a producer of Aluminium and that this condition may result in delays in local aircraft production and also that in the event of a national emergency, serious difficulties might arise in regard to securing Aluminium supplies from overseas.

It is admitted that Australia is not a producer of Aluminium, but this is not as important from a defence point of view as it would at first appear, for it is the availability of adequate Aluminium fabrication resources which is the most important first consideration.

Bauxite—the ore of Aluminium—is available in Australia, but in very limited quantities and at present only of very low grade quality, which situation makes it impossible to produce satisfactorily, the necessary Bauxite concentrates, or Alumina, from which Aluminium ingot is electrolytically smelted.

Unless high grade Bauxite can be eventually obtained in Australia, the costly production of Bauxite concentrates, which is entirely a chemical process, must be carried out with imported Bauxite and the ingot smelted from these concentrates.

Aluminium smelting operations require abundant supplies of very cheap electrical power and of all electro-metallurgical operations, the smelting of Aluminium consumes the most electricity.

Raw materials, other than Bauxite and unobtainable in Australia, such as Cryolite, Petroleum Coke, Fluorspar, etc., are necessary to obtain finally the smelter Aluminium ingot and after this is produced costly fabrication operations are necessary before Aluminium is in a useful form for aircraft and general engineering purposes.

Adequate facilities for the fabrication of Aluminium and its alloys are thus the first essential operations, as far as Australia is concerned at the present time, so that plates, sheet, strip, bar, rod, wire, tubing and shapes can be made available for local aircraft construction—these being produced from imported ingot.

Up to the present time the rolling of Aluminium and the rolling and heat treatment of strong Aluminium alloy sheets—the principal aircraft requirement—has not been carried out in Australia. However, this condition is about to be changed for a company has recently been formed in Australia to provide the complete fabrication of Aluminium and its alloys at Sydney, N.S.W.

This company—Australian Aluminium Company Pty., Ltd.—is preparing plans for the erection of Aluminium sheet rolling mills and extrusion equipment for the production of bar, rod and shapes. All grades of Aluminium alloys, including Duralumin, will be fabricated to meet British and American aircraft material specifications.

The new plant to be erected will produce a wide range of Aluminium alloys for foundry purposes, so that Aluminium castings can be made in Australia in all branches of industry from locally manufactured Aluminium alloys.

In addition to provision being made for foundry alloys the extrusion equipment to be installed will be capable of producing Aluminium alloy forging billets from which forged aero engine pistons, crank cases, air screws, etc., can be manufactured by aero engine builders in Australia.

The site of the plant is to be at Granville, near Sydney, where forty-seven acres of land have been acquired and an immediate start is to be made with building operations.

Large stocks of imported Alum-

(Continued on page 23.)

Navy Busy, Sends 15 Planes To Islands, Orders Maneuvers

S.D. CLUB NEWS

All in the day's work, the Navy sent another batch of big Consair planes on a mass flight to Hawaii last week. In record time of 16 hours, 17 minutes, Patrol Squadron 1, Lt. Comdr. Sam La Hache commanding, took off from the bay Tuesday, landed early Wednesday morning at Pearl Harbor. "Routine transfer," the Navy called it.

Five times before the Navy sent mass flights across the 2,500-mile waterway to Hawaii, all without mishap. And it was only about 12 years ago that an air race to Hawaii resulted disasterously for several entrants!

In other specialties, the Navy was busy last week. Ships began standing out to sea for maneuvers in Hawaii and the north Pacific. The new submarine, Seal, sistership of the Squalus, is due in today (Wednesday).

Capt. John S. McCain, former commander of the Ranger, reported in from Norfolk to succeed Capt. Arthur L. Bristol as commanding officer of Naval Air Station. Comdr. H. M. Mullinix, formerly aviation officer on Adm. E. C. Kalbfus' staff, will become exec at the air station July 8, succeeding Comdr. A. E. Armstrong who goes to the aeronautics bureau in Washington.

Finish Survey Flight

Union 7-10-39

NEW YORK, July 9 (A.P.)—The American Export Airlines' twin-motored plane Transatlantic completed its first round-trip survey flight to Europe today, setting down at Floyd Bennett field 22 hours and 50 minutes after leaving Horta, The Azores.

Union 7-10-39

Britain-Bound Airboat Returns

(Continued From Page 1)

41 hours over the 5750-mile course to Felixstowe. Obviously the physical handicaps were too great and the only sensible decision was to turn back. Furthermore, I did not want to turn the ship over to the British government with anything wrong with the equipment."

YANCEY DISAPPOINTED

For a brief period yesterday morning it was feared the big air boat had made a forced landing when radio signals abruptly were halted while Ray Booth, radioman, was conversing with Barney Boyd, local radio amateur. Rogers explained the flying boat radio suddenly was switched to the department of commerce radio station at Lindbergh field, where a report of the mishap to the plane was made for transmittal to Washington.

Lewis A. Yancey, co-pilot and navigator, was disappointed over the minor incident which caused the plane to return after a perfect take-off and with virtually perfect flying conditions for the voyage to Newfoundland.

Yancey asserted it is as safe to fly across the continent in a flying boat as in a huge transport land plane.

LAND ROUTE SAFE

"Flying at an altitude of 12,000 feet there are many places to land on water safely whereas flying fields capable of accommodating land planes of the size of the army's flying fortresses are few and far between," he said.

"On the air route between San Diego and Chicago there are numerous rivers and lakes where we could make a forced landing safely. From Chicago to Botwood we will be flying over water virtually the entire distance, including a section of the Great Lakes, the Great Lakes waterway and the St. Lawrence river.

"Our weather reports indicated we would have reached Botwood without encountering a heavy storm had we been able to continue. We were about ready to pick up a strong tail wind over Imperial valley when the automatic pilot went haywire. We intended to refuel without delay at Botswood and continue the 2125 miles to Felixstowe, which would have brought us into the British naval air base by Tuesday morning."

GUBA CREW IN CHARGE

Yancey said brilliant sunshine greeted the plane when it topped the clouds over the mountains. It was raining slightly when the ship slipped out of the clouds on its return to the airport.

Flying with Rogers, Yancey and Booth is Gerald Brown, flight engineer. All are members of the crew of Richard Archbold's air boat, the Guba, which completed a 13-month tour over three continents and oceans last Thursday. They are to return to the U. S. from England on the liner Washington July 27, coming here for further flight duty with the Guba, probably on another scientific expedition to Netherlands' New Guinea.

TO FOLLOW LAKES

The flight from San Diego to Botwood will be via Phoenix, Albuquerque, Wichita, Kansas City, Chicago, Detroit, Lake St. Clair, Toronto, Ottawa, Montreal and Quebec. The Great Circle route will be followed over the North Atlantic to Ireland and England.

The plane is fitted with complete navigational equipment, including a seven-man life raft, life jackets, parachute flares, water supply and emergency rations.

Although the air boat was built to the order of the British government the craft is owned by Consolidated Aircraft Corp. until it is formally turned over to the royal air force at Felixstowe. This was one of the chief reasons why Rogers refused to take any unnecessary chances when the robot pilot failed to perform.

Union 7-10-39

Britain-Bound Airboat Returns

Robot Pilot Fails Over Salton Sea

The 15-ton Consolidated flying boat, destined for delivery to the British royal air force at Felixstowe, England, which left San Diego at 7:27 a.m. yesterday on a 3300-mile nonstop flight to Botwood, Newfoundland, returned to the harbor at 9:15 a.m.

Russell Rogers, captain and chief pilot, reported the automatic pilot failed to function. At the time he air boat was 10,000 feet above the Salton sea.

Soon after 10 a.m. the plane was taken out of the water and towed back to the Consolidated plant. The defective apparatus was adjuted by an expert from Naval Air station and soon before dusk Rogers took the plane aloft for a short trial flight. He plans to leave at 8 this morning.

WEATHER IDEAL

Rogers said he turned back with reluctance, as weather conditions were ideal for a successful flight across the continent and Atlantic.

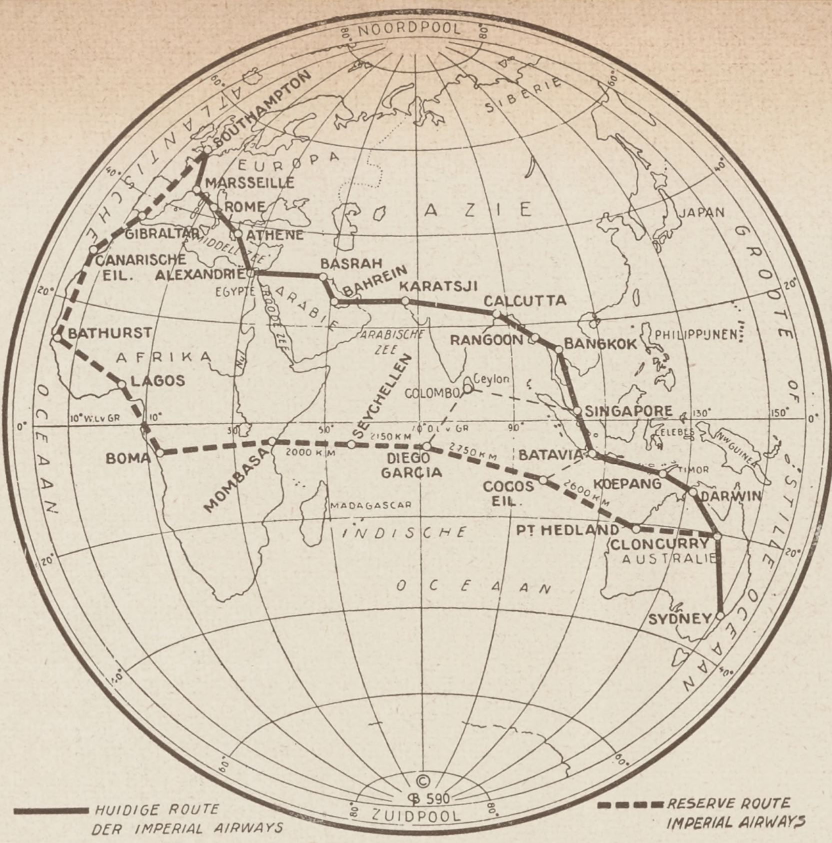
"We had intended to refuel immediately on landing at Botwood Monday morning and to continue the flight to England with less than two hours rest," Rogers said.

"With the automatic pilot out of commission, this would have required steering the plane by hand

(Continued on Page 2, Col. 2)

DE INDISCHE OCEAAN DOOR DE LUCHT VEROVERD!

Een uiterst belangrijke vlucht voor de Britsche Imperiale verbindingen. • De eerste directe luchtverbinding tusschen Australië en Afrika.



De tocht van de vliegboot Guba over den Indischen Oceaan heeft ten doel de mogelijkheid te onderzoeken van een nieuwe route voor de Britsche Imperiale luchtlijnen. Deze route zal in tijd van oorlog dienen ter handhaving van de luchtverbinding met Singapore en Australië. Is de huidige route circa 21.000 km lang, de nieuwe route heeft een lengte van 26.000 km en is dus 5.000 km langer.

De taal van de groote internationale persbureaux is kort maar krachtig. De woorden, die dikwijls over duizenden kilometers geseind moeten worden, zijn duur en daarom moeten wij genoegen nemen met telegrammen als: ,,Vanmorgen is de Australische vliegboot Guba wegens ongunstige weersomstandigheden naar Batavia teruggekeerd''. Of: ,,De Guba is hedenmiddag om vier uur op Mombasa aangekomen.''

Dikwijls is het heel moeilijk dergelijke simplistische berichten tot hun ware beteekenis te herleiden, maar voor de jongste vlucht van de Consolidated vliegboot kunnen wij instaan als voor een der belangrijkste gebeurtenissen in de luchtvaart van den laatsten tijd.

Het Engelsche Ministerie van Luchtvaart had zelfs een speciale berichtgeving over de vorderingen van de boot in het leven geroepen, terwijl de heele vlucht toch een zuiver Australische onderneming heet te zijn. Dat is ook de dekmantel, waaronder het werkelijke belang van de vlucht niet zoozeer in het oog loopt.

Waarom deze vlucht zoo belangrijk was? Wel, in het kader van de internationale moeilijkheden, welke voor het Britsche wereldrijk epidemisch schijnen te zijn, zoeken de autoriteiten van Whitehall dagelijks naar veilige verbindingswegen tusschen de verschillende gebiedsdeelen van het Imperium. Dat dit een noodzakelijkheid is, zal een ieder inzien. Een luchtweg als Londen—Calcutta, zooals deze thans wordt uitgevoerd door de Short-booten, is uiterst kwetsbaar. Hij leidt over heel Zuid-Europa, met inbegrip van Italië, over Arabië en Perzië, waar het Engelsche gezag nog wel zóó in eere wordt gehouden, dat de vliegdienst niet het minste gevaar loopt, maar 't kan verkeeren, om met Brederode te spreken. Vandaag strijken wij elkaar onder de kin en morgen slaan wij elkanders hoofd in. Italië mocht eens in verwikkelingen een vliegverbod uitvaardigen, er zou zelfs eens oorlog kunnen komen. Mogelijk, nietwaar? Tegenwoordig zijn dat factoren, waar zelfs kleine, vredelievende mogendheidjes terdege rekening mee moeten houden. Laat staan de groote machten, die vitale levensbronnen over den heelen aardbol verspreid hebben zooals de Engelschen.

Daarom zoeken de satellieten van Sir Kingsley Wood naar een luchtweg, die onder alle omstandigheden als een veilige bevlogen kan worden.

Dit is uiteraard geen zonderlinge gedachte, want in den wereldoorlog schakelden de Engelschen stante pede hun ,,safety-road'' om de Kaap in. En dat zelfde, veilige Afrika is weer gekozen om de ,,safety road in the air'' onder zijn hoede te nemen. De Engelschen kunnen, van Londen over Fransch gebied vliegend, ongehinderd Noord-Afrika bereiken en het kustgebied is nog steeds in Fransche handen. In het Afrikaansche werelddeel zijn slechts enkele deelen niet in Fransch-Engelsche handen. Die behooren tot Italiaansch of Portugeesch territorium. Deze strooken kunnen gemakkelijk en zonder eenig gevaar omzeild, in casu omvlogen, worden. De weg door de lucht van Engeland naar Zuid-Afrika is dus vrij. Mombasa, een belangrijke havenplaats aan de Oostkust, met ontzaglijk omvangrijke handelsbetrekkingen en een rijk achterland, werd als uitgangspunt voor den nieuwen weg, dien veiligen ,,highroad of the air'', gekozen. Van hieruit moesten luchtwegen gezocht worden, zoowel naar Voor-Indië als naar Australië.

De Amerikaansche Clipperdienst ten voorbeeld.

Nu deed men heel verstandig, door den vermaarden clipperdienst van Pan American Airways ten voorbeeld te stellen. Wie de kaart goed voor oogen heeft, kan zich de situatie voorstellen: Amerika door die paar kleine plukjes land in zee als steunpunten over den oceaan met de Philippijnen verbonden en verderop nog met Hongkong, terwijl er van een dezer ,,pollen'' in de zee een aftakking naar Australië leidde.

Deze skybridge is wellicht nog verbazingwekkender dan de brug over de Golden Gate, omdat de luchtbrug een synthese en een apotheose is van vliegtuigbouw en navigatiekunst. Pan American vliegt dezen dienst tegenwoordig met het gemak van een tripje Amsterdam—Londen, met Guam, Wake en Honolulu als steunpunten. De Atlantische Oceaan, die veel kleiner is dan zijn ,,Stille'' broeder, heeft twee steunpunten: de Bermuda's en de Azoren, en de Indische Oceaan weer drie: de Cocoseilanden, de Chagos Archipel en de Seychellen, zooals men op bijgaand schetskaartje kan zien. De Australische regeering besloot daarom eens langs deze route vliegend den weg naar Afrika te onderzoeken, zooals enkele jaren geleden Pan American den weg naar Manila verkende. Dat wil zeggen: lukt zoo'n vlucht en zijn de rapporten gunstig, dan kan men gerust wedden op de totstandkoming binnen afzienbaren tijd van een geregelden luchtdienst. Want tegenwoordig laat men er in de luchtvaart geen gras over groeien. Dat hebben wij nu weer met den Atlantic Clipper gezien, waarmee de Amerikanen een dienst hebben geopend, zonder over een in onze solide Hollandsche oogen voldoende ervaring in deze regionen te beschikken.

Wie is Guba?

Guba is een oude naam uit het land der Maori's, als wij het wel hebben. Maar zeker is Guba een Consolidated vliegboot met een bijzondere inrichting. Oorspronkelijk een civiele versie van de bekende PBY van de Amerikaansche marine — ook American Export heeft zoo'n uitvoering besteld voor haar oceaan-vrachtdienst — heeft men in den neus een draaibaren koepel aangebracht (wij kunnen hier beter van een ,,boeg'' dan van een ,,neus'' spreken) met een graadverdeeling, waardoor het geheel als zonnekompas gebruikt wordt. De bestuurder heeft er van zijn zitplaats een kijkje op, zoodat hij, de standswisselingen van de zon er bij berekenend, een goed kompas heeft in deze regionen, waar bijna altijd de zon schijnt.

Willen wij de doopceel van dit type nog verder lichten, dan dienen wij te vermelden, dat de Amerikaansche marine er kort geleden nog massale vluchten mee heeft gemaakt, van de basis San Diego naar Honolulu en naar het Panamakanaal, zonder tusschenlanding, welke vluchten van groot belang waren voor de Amerikaansche defensie.

Met de Guba heeft de vermaarde Amerikaansche Archbold-expeditie een vlucht naar Nieuw-Guinea gemaakt, waar het toestel voor een expeditie werd gebruikt. De Australische regeering charterde de boot nu voor een onderzoeking van de ,,emergency'' route, zooals de Engelschen den nieuwen weg noemen.

Dit traject, dat vele duizenden kilometers lang is, werd nog nimmer in de geschiedenis van de luchtvaart vermeld. Niemand heeft zich er tot dusver aan gewaagd, zelfs niet een Kingsford Smith. En zelfs niet in die periode van Smith, Lindbergh, Johnson, Mollison, Sir Allan Cobham e.a., waarin bijna alle mogelijke en onmogelijke luchtwegen werden verkend.

De gezagvoerder van de Guba is kapitein Taylor, een oud zeeman, die dan ook meer om zijn voortreffelijke navigatorische kennis dan om zijn bestuurderskunsten voor dezen tocht werd aangesteld. Taylor is de man, van wien men zegt, dat hij meer met zijn sextant doet dan met den stuurknuppel. Kingsford Smith, met wien hij in de grijze dagen van de luchtvaart met een Fokker F-7 een beetje de Zuidzee en tweemaal de Tasmanzee werkelijk ,,overkachelde'', zei eens van Taylor: ,,Wat hij niet met zijn sextant kan, is waarlijk de moeite niet waard.''

Men had vertrouwen in good old Taylor, zooals de passagier aan boord van een grooten stoomer vertrouwen in zijn kapitein heeft. En Taylor heeft het ook gedaan, rustig aan, geen risico nemend, wijkend voor gevaarlijke depressies en met...... zijn sextant.

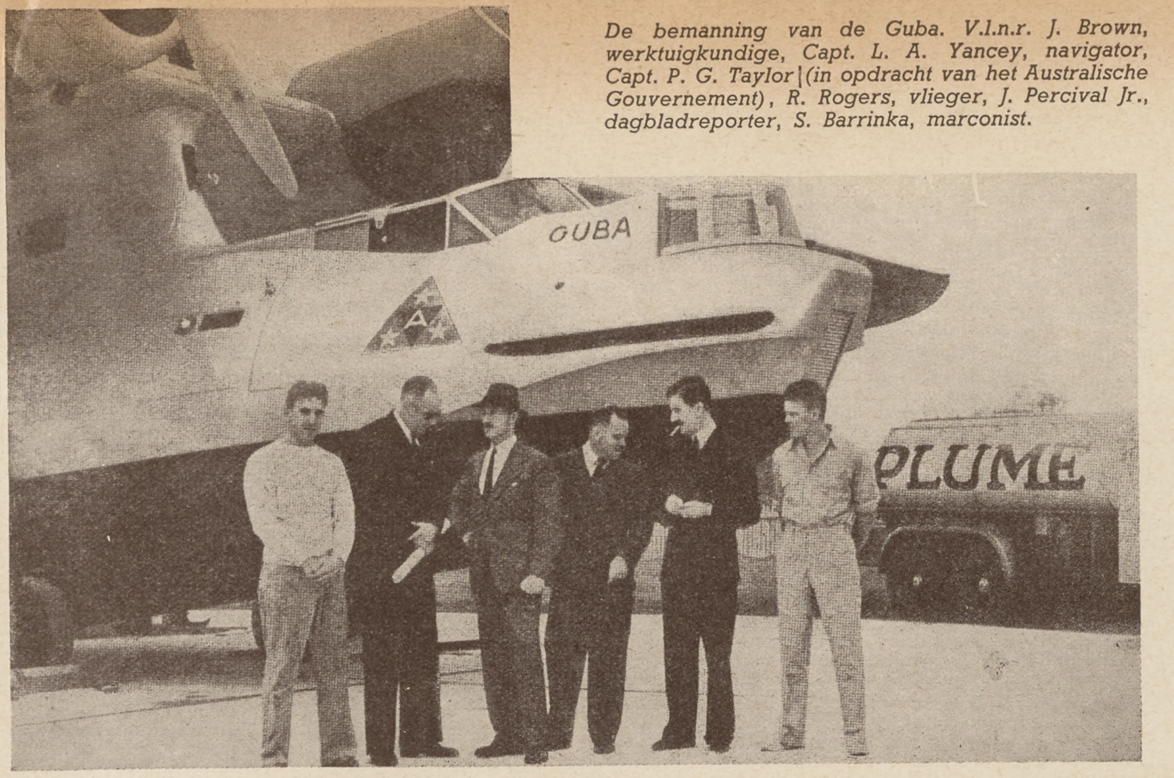
Een goede navigator is in den Indische Oceaan ook een conditio sine qua non. Nergens in de omgeving is een peilstation, ja men is practisch op zijn eigen weerberichtendienst aangewezen.

Taylor verzamelt een schat aan gegevens.

In tegenstelling met de op ons kaartje geprojecteerde route, is de reis niet in Port Hedland op Australië begonnen. In Batavia startte Taylor, maar keerde uren later weer terug, omdat hij te slecht weer had ondervonden. De Cocos-eilanden, het doel van de eerste étappe, werden dus niet bereikt. Nog eens geprobeerd en toen ging het goed. De paar blanken op deze eilandengroep konden hun oogen niet gelooven, toen daar zoo'n snelle, groote vogel op het water neerstreek en een paar dagen later waren het hun broeders op den Chagos-archipel, hun buren van ,,eventjes'' 2800 kilometer verderop'', die de oogen uitwreven. Voor het eerst in de historie daalde een vliegtuig bij deze eilanden.

En bij al die sensaties voor de inwoners heeft Taylor een schat van waardevolle gegevens verzameld. Overal bleef hij een tijdje om zich te oriënteeren. Hij maakte tochten over de eilanden, vloog er over heen, fotografeerde en verzamelde rapporten over de weersomstandigheden. Zoodat de autoriteiten in Australië hun vreugde nu niet op kunnen, nu zij dien heelen dienst, dien zij zich al zoolang gedroomd hadden, hier zoo maar op papier voor hun zagen.

Want het gàát, zegt Taylor, die geen enkele reden ziet, waardoor de dienst langs deze route niet terstond geopend zou kunnen worden. Taylor heeft voorts op verschillende punten op de drie eilandengroepen geschikt terrein gevonden voor den aanleg van velden voor *land*vliegtuigen. Verder zijn er tal



De bemanning van de Guba. V.l.n.r. J. Brown, werktuigkundige, Capt. L. A. Yancey, navigator, Capt. P. G. Taylor (in opdracht van het Australische Gouvernement), R. Rogers, vlieger, J. Percival Jr., dagbladreporter, S. Barrinka, marconist.

29 Juni 1939

van schitterende baaien voor bases voor een dienst met vlieg*booten*.

De resultaten.

DE resultaten van deze merkwaardige vlucht kan men nu in enkele punten neerleggen.

1e. De „emergency" route blijkt niet moeilijk te bevliegen te zijn en met haar drie steunpunten binnen de actie-radius van de moderne vliegbooten en tevens van de vier-motorige landvliegtuigen te liggen.

2e. Door deze route kan de snelste verbinding van Afrika met Australië tot stand worden gebracht.

3e. Zij kan tevens gebruikt worden, wanneer het vliegveld op Ceylon klaar is, om via de Seychellen en Ceylon Britsch Indië met West- en Zuid Afrika te verbinden.

4e. Er kan nu een „sky bridge" tusschen Zuid-Afrika en Singapore geslagen worden, wat economisch en militair van belang is, omdat men hierdoor de zoozeer gewenschte „beweeglijkheid" in het vervoer bereikt.

5e. Nederlandsch Indië kan langs dezen weg een goeden en snellen commercieelen dienst op Zuid-Afrika beginnen, waardoor de toch reeds belangrijke handelsbetrekkingen tusschen beide gebieden nog aanzienlijk kunnen toenemen.

6e. De uit moreel oogpunt zoo belangrijke schakel tusschen Oost en West in het systeem der Britsche Empire verdediging is gevonden. De Short Sunderland vliegbooten — om maar een enkel voorbeeld te noemen — zouden in enkele dagen, over de drie eilandengroepen vliegend, van Engeland naar Singapore of naar Britsch Indië kunnen vliegen zonder over vijandelijk gebied te komen.

7e. De drie eilanden kunnen worden ingericht voor militaire bases, waardoor in geval van oorlog, met vliegtuigen hier gestationneerd, aan zwerftochten als uit den wereldoorlog met de Embden — die door den Australischen kruiser Sydney bij de Cocos-eilanden in den grond is geboord — gemakkelijk een eind kan worden gemaakt.

De Guba trekt verder……

INMIDDELS trekt de Guba verder. Eerst over het Victoriameer naar Lagos en Dakar. Dan gaat het van de Afrikaansche Westkust naar Guyana en van West-Indië weer naar Florida. Wat er dan met de Guba gebeurt, die op het oogenblik geschiedenis schrijft, is nog niet bekend, maar kapitein Taylor maakt er zich voorloopig nog geen zorgen over.

Er staat hem nog wat voor den boeg……

(SEE ALSO ADV. BACK of THIS PAGE)

Eerste Wereldcongres der Luchtvaartpers

Luchtvaartjournalisten uit verschillende landen treffen elkaar in Rome. ● Terugblik op 10 dagen luchtvaartcongres. ● Een perfecte organisatie kenmerkte deze wereldpremière.

AL degenen, die met de luchtvaartwereld min of meer in verbinding staan en zeker de pioniers onder hen, weten dat er tusschen pers en luchtvaart een nauw contact bestaat. Een ontwikkeling, zooals we die in een kwarteeuw tijds aan het luchttransport hebben zien voltrekken, ware niet denkbaar geweest zonder de belangrijke satelliet, welke altijd en overal aanwezig is waar luchtvaart bedreven wordt.

Naarmate de luchtvaart zich technisch ontwikkelde, voltrok zich in de pers, welke de vliegerij als haar object van beschouwing koos, een splitsing. Er was een groot deel, dat het gebied der luchtvaart bleef exploiteeren als een welkom jachtterrein van sensationeel nieuws, maar er was ook een deel, dat de noodzakelijkheid inzag van serieuze studie dezer technische uiting. Slechts wat dit laatste deel betreft, kan er ook voor de toekomst van vruchtbare samenwerking met de luchtvaart sprake zijn.

Over luchtvaartpers sprekende, kan men slechts doelen op die laatste categorie. En het wil ons voorkomen, dat men bij de keuze der deelnemers aan het „Eerste Wereldcongres der Luchtvaartpers" wel iets meer schiftend had te werk kunnen gaan. Waar het hier echter een debuut van een dergelijk internationaal evenement betreft, laat zich dat verklaren. Het is immers wel uiterst moeilijk vanuit één land de onderlinge verhoudingen tusschen persorganen in alle landen der wereld precies te kunnen beoordeelen.

Interessant is in dit verband op te merken, dat bij één der korte lezingen, die gedurende het congres in de Villa Aldobrandini werden gehouden door Nobre de Almeida, een vertegenwoordiger der Braziliaansche luchtvaartpers, verklaard werd, dat in Brazilië de journalistenkring had besloten een speciale school voor de luchtvaartpers in het leven te roepen, waarmede men een nauwere samenwerking tusschen luchtvaart en pers beoogde.

Klassieke entourage.

ROME biedt wel bijzonder gunstige voorwaarden voor het organiseeren van een congres. Immers, buiten den zuiver zakelijken kant is het wel gewenscht, dat den deelnemers ook eenige verpoozing kan worden geboden. En in dat opzicht kan men in deze stad met haar eeuwen oude cultuurhistorie te kust en te keur gaan.

Zelfs de congresvergaderingen zelf werden gehouden in een bezienswaardigheid van Rome, een oude villa in de buurt van het prachtige, imponeerende monument Victor Emmanuel, de Villa Aldobrandini in de Via Mazzarino.

Een goed functionneerende organisatie in samenwerking met de C.I.T., zorgde voor rondritten door de stad en voor trips naar belangrijke punten in de omgeving van Rome. Zoo werden o.a. de Italiaansche filmstad Cinécitta en de bekende luchtvaartstad Guidonia bezocht. Over laatstgenoemde stad werd in *Vliegwereld*, niet zoo lang geleden, reeds een uitvoerige reportage gebracht, zoodat we hier meenen te mogen volstaan met het voortreffelijke programma kunstvliegen, dat door Italiaansche jachtvliegers werd uitgevoerd.

Een programma, zooals hier werd uitgevoerd, zagen wij alleen door Engeland geëvenaard. Ongelooflijk waren de stoute staaltjes, die door deze luchtvirtuoozen werden uitgevoerd. In ruim een half uur was dit uiterst attractieve programma, dat door den Duce — die per auto uit Rome was gekomen — persoonlijk werd bijgewoond, afgewikkeld. Direct daarna nam Mussolini aan de volant van zijn privé vliegtuig (een Savoia Marchetti) plaats, nadat hij de oudsten der aanwezige luchtvaartjournalisten van de verschillende landen voor een trip van ca. 20 minuten boven Rome en Ostia had uitgenoodigd.

Het bezoek aan Guidonia, dat op het einde van het Congres plaats vond, viel bij alle journalisten bijzonder in den smaak en hier en daar informeerende, kreeg men wel den indruk, dat men meer van dergelijke bezoeken, welke direct met de luchtvaart in verband staan, op prijs zou hebben gesteld. Een visite bijv. aan enkele Italiaansche militaire vliegbases zou zéér zeker bij allen in den smaak zijn gevallen. Wij zijn ervan overtuigd, dat de meeste deelnemers daarvoor gaarne een bezoek aan het Lido van Ostia of de filmstad zouden hebben opgeofferd.

Alhoewel wat het aantal deelnemers betreft Italië en Duitschland sterk in de meerderheid waren, kon men toch van een zéér behoorlijke internationale bezetting spreken. Er waren achtereenvolgens buiten Italië vertegenwoordigd: Engeland, Frankrijk, Duitschland, Nederland, België, Zwitserland, Bohemen, Griekenland, Lithauen, Finland, Hongarije, Roemenië, Polen, Portugal, Marokko, Spanje, Joegoslavië, Ver. Staten en Argentinië.

Wat de werkzaamheden van het Congres zelf betreft, kan men onderscheid maken tusschen het georganiseerde gedeelte, dat zich dagelijks op vastgestelde uren in de Villa Aldobrandini afspeelde en dat hoofdzakelijk bestond uit het voordragen der referaten en de gedachtenwisseling à l'improviste, welke zich overal afspeelde waar congresleden elkaar troffen, hetzij op de zonnige boulevards in Rome, aan de gala-diners of op het Lido in Ostia. Deze laatste gedachtenwisseling, die uiteraard het meest natuurlijke verloop neemt, lijkt ons altijd nog het meest belangrijke kernpunt van ieder internationaal congres.

Hiermede willen we vanzelfsprekend geenszins het belang van de vergaderingen onderschatten. Ook hierbij werd menig interessant probleem aangesneden en door gedachtenwisseling met behulp van tolken van verschillende zijden bezien. De lezingen, welke door de deelnemers werden gehouden, omvatten acht groepen en wel:

1. Het luchtvaartjournalisme en de dagbladpers in dienst van vredes- en oorlogscorrespondentie.
2. Wetenschap en techniek op het gebied van luchtvaartjournalisme.
3. De luchtvaartpers en de jongeren.
4. De luchtfotografie en de luchtvaartpers.
5. De luchtvaart en de radio-omroep.
6. De luchtvaart als inspiratiebron voor kunst en literatuur.
7. De film en de luchtvaart.
8. Selectie en opleiding van luchtvaartjournalisten.

In het algemeen hebben wij den indruk gekregen, dat voor een vruchtbare gedachtenwisseling de onderwerpen meer zullen dienen te worden beperkt. Door de moeilijkheid van het taalverschil gaat toch reeds veel van de aandacht der toehoorders en het juiste begrijpen verloren. Zal men daarentegen zich op een congres tot één, hoogstens drie onderwerpen beperken, dan zal de aandacht zich meer kunnen concentreeren en de vrucht der gedachtenwisseling véél grooter zijn.

We zullen t.z.t., wanneer de tekst der lezingen nauwkeurig is te boek gesteld, op enkele onderwerpen nog nader terug komen, daar thans bij een definitieve bespreking er van mogelijkheden van misverstand, door het snelle tempo van het vertalingswerk, niet denkbeeldig zijn.

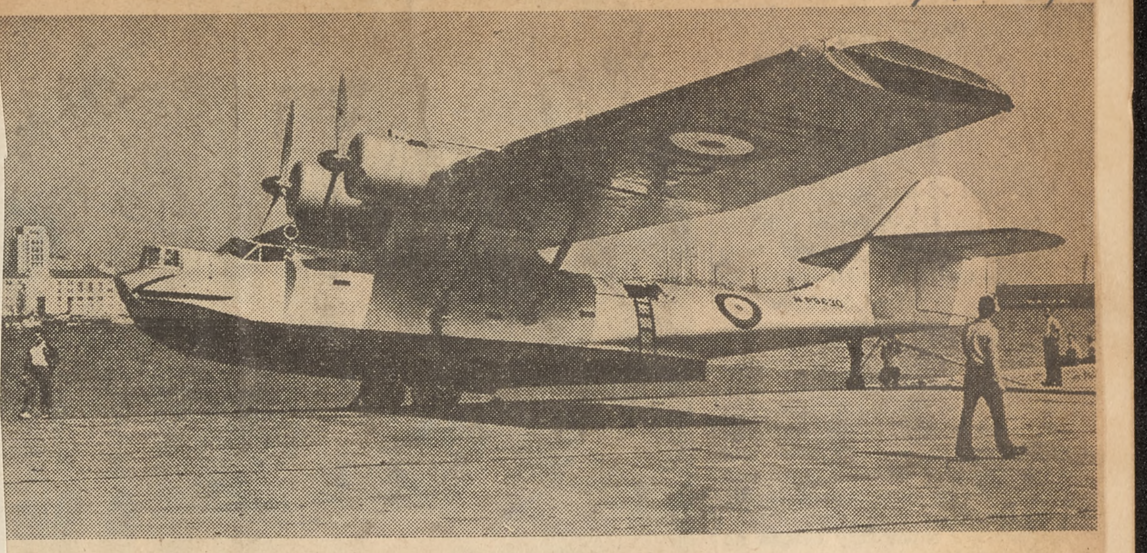
Reeds zijn er aanwijzingen, dat het wereldcongres voor de luchtvaartpers een traditioneel evenement gaat worden en daarmede zal ongetwijfeld het belang en het nut van een dergelijk congres toenemen. Voor 1940 zal Berlijn gastheer van de luchtvaartjournalisten zijn, terwijl in 1942 Rome bij gelegenheid van de groote wereldtentoonstelling wederom haar gastvrijheid heeft toegezegd.

Ons land zal dan in 1941, dank zij het initiatief van den heer Rusman, de luchtvaartjournalisten van alle landen ontvangen. Reeds werd van officieele zijde goedkeuring aan dit plan gehecht, zoodat ons land zich overeenkomstig zijn reputatie op luchtvaartgebied op een juist moment in een nieuw geboren traditie heeft ingeschakeld.

Domyn Keller.

READY FOR 2ND TAKEOFF TO ENGLAND

Union 7-10-39



sfortune overtook this Consolidated air boat designed for delivery to the British Royal air force Felixstowe, England, yesterday when the craft was forced to return to San Diego due to failure the automatic pilot. It will make another try today.

---

lors
tion
ial

OM PAGE ONE

e her a bottle of
witness. At this
presented by Dep.
m Mahedy and
asked if the girl
good health pre-
the office. The
"yes," but her an-

of Pains

f May 3 the girl,
mplained of pains
d got up at about
t morning and
Later on the day
Parchen came to
Mrs. Scott.
said she accom-
the office where
scene took place.
, she went on,
ffice, stood in a
collapsed while
fusely, the blood
and shoes and the
as alleged to have
es later.
he trial the state
a giant diagram,
George Parchen's
itness was John
the dead girl, who
dentified her body
where she lies in
of her sweetheart,
l's association with
followed a separa-
husband, William
ngeles.

Theft Suspect

28 years old who
William Anderson
d said he was the
a Wilma Anderson
n who gave his
Scott today were
Riverside county
of stealing an auto,
nnedy, of the sher-
nced.
orris Cope, of Fall-
the two for San
suspicion that the
belonging to Wil-
of La Jolla, Ken-
uoted Anderson as
get to San Diego
y."

tate Witness

brought back from
urder charges, but
smissed on motion
ttorney. He is ex-
of the state's chief
st the Parchens,
omate, Clifford Rat

---

of the

Army Opens Bids In Plane Program

CONTINUED FROM PAGE ONE

for construction of two and four-engine bombers were first on the list of bid openings, which will continue through Saturday.

Consolidated, which recently was awarded a new contract for navy planes, built the PBY series of patrol bombers, which have figured notably in long-distance mass flights to Hawaii, the Canal Zone and Alaska and participated in the recent Caribbean war games. Consair authorities said today the firm had entered bids on several types of planes for the army.

Ryan spokesmen did not reveal the extent of their participation in the new bidding but indicated the company was vitally interested in the awards. The firm, which recently moved into new and elaborate quarters at Lindbergh field, has furnished the army with planes of its famed ST series for training purposes.

Meanwhile, two developments have grown out of the army's plans to utilize as many as possible of the nation's aircraft producing facilities.

Procedure Changed

Gearing its defense machinery to the limit, the air corps today asked tentative warplane bids on a plant-capacity basis, The Associated Press reported from Dayton, O. This was a departure from the corps' previous procedure for bids on specific allotments and Wright field procurement officers said the accelerated program was the first of its kind.

Meanwhile, the war department is considering asking congress for emergency authority to negotiate contracts on a "cost-plus" basis, rather than on the usual low-bid basis, The Associated Press reported from Washington, D. C.

This would revive the World war procedure of placing orders on the basis of cost, plus a limited profit. This would alleviate the fear that the 34 largest American plane manufacturers would be swamped with orders, while other factories would remain virtually idle at a time when all facilities were needed.

The program as contemplated by congress and the air corps would assure an air force of at least 5500 planes by 1941. In voting funds for the program, congress provided for recapture of all profits in excess of 12 percent.

Primary instruction for 396 cadets, who later will be placed at army fields for advanced work, is under way at nine scattered civilian schools. The program in the next two years calls for 2100 additional fliers and approximately 18,000 mechanics to man the equipment.

CONSOLIDATED EYES ARMY BIDS

Opening Of Estimates To Start Tomorrow

Sun 7-4-39

Aviation

Consolidated Aircraft Corp. officials this week will learn whether their bids on Army planes, to be opened in Wright Field, Dayton, O., beginning tomorrow, may net the concern large production orders for one or more types of war craft.

Estimates from manufacturers throughout the United States will be compared at Wright Field from tomorrow through Saturday on eight different kinds of planes.

TYPES KEPT SECRET

Although company officials have refused to reveal the specific types for which local bids have been submitted, it is believed that Consolidated will compete for contracts for twin-engined bombers to replace the now obsolete Douglas B-18, and for four-motored bombers, improvements over the Boeing "flying fortress."

Work has started at the local factory on a $2,880,000 contract for an experimental prototype and a small number of service test craft of the four-motored Army bombardment type. Also under way at the plant is a $4,700,000 order for six four-motored Navy patrol bombers.

BID SCHEDULE

The schedule of opening of bids at Wright Field follows:

July 5—Four-engined bombers, with estimates to be received on lots up to 250; twin-engined bombers, lots up to 700.

July 6—Advanced training planes, lots up to 500.

July 7—Primary training planes, lots up to 1000; basic training planes, lots up to 1000.

July 8—Multiplace fighter planes, lots up to 100; observation planes, lots up to 400; twin-engined pursuit planes, lots up to 200.

AMERICAN EXPORT'S CURRENT ACTIVITIES. American Export Airlines is "negotiating with U.S.aircraft manufacturers to produce non-stop trans-Atlantic luxury airliners which will carry a minimum of 40 passengers,and plans to inaugurate passenger service in addition to its mail and express service within the next 2½ years,the period required for development and construction of such aircraft," the company reveals in its latest house organ. The Consolidated PBY survey plane is now based at Floyd Bennett field. The Coast Guard,City of New York and other agencies are making possible use of ramp, hangar, machine shop, office and operations space. Communications systems,including Weather Bureau teletype,radio and telephones,are now in operation. A 24-hour weather observation bureau is operating at the company's base.

Navy Busy, Sends 15 Planes To Islands, Orders Maneuvers

S.D. CLUB NEWS

All in the day's work, the Navy sent another batch of big Consair planes on a mass flight to Hawaii last week. In record time of 16 hours, 17 minutes, Patrol Squadron 1, Lt. Comdr. Sam La Hache commanding, took off from the bay Tuesday, landed early Wednesday morning at Pearl Harbor. "Routine transfer," the Navy called it.

Five times before the Navy sent mass flights across the 2,500-mile waterway to Hawaii, all without mishap. And it was only about 12 years ago that an air race to Hawaii resulted disasterously for several entrants!

In other specialties, the Navy was busy last week. Ships began standing out to sea for maneuvers in Hawaii and the north Pacific. The new submarine, Seal, sistership of the Squalus, is due in today (Wednesday).

Capt. John S. McCain, former commander of the Ranger, reported in from Norfolk to succeed Capt. Arthur L. Bristol as commanding officer of Naval Air Station. Comdr. H. M. Mullinix, formerly aviation officer on Adm. E. C. Kalbfus' staff, will become exec at the air station July 8, succeeding Comdr. A. E. Armstrong who goes to the aeronautics bureau in Washington.

Finish Survey Flight

Union 7-10-39

NEW YORK, July 9 (A.P.)—The American Export Airlines' twin-motored plane Transatlantic completed its first round-trip survey flight to Europe today, setting down at Floyd Bennett field 22 hours and 50 minutes after leaving Horta, The Azores.

Union 7-10-39

Britain-Bound Airboat Returns

(Continued From Page 1)

41 hours over the 5750-mile course to Felixstowe. Obviously the physical handicaps were too great and the only sensible decision was to turn back. Furthermore, I did not want to turn the ship over to the British government with anything wrong with the equipment."

YANCEY DISAPPOINTED

For a brief period yesterday morning it was feared the big air boat had made a forced landing when radio signals abruptly were halted while Ray Booth, radioman, was conversing with Barney Boyd, local radio amateur. Rogers explained the flying boat radio suddenly was switched to the department of commerce radio station at Lindbergh field, where a report of the mishap to the plane was made for transmittal to Washington.

Lewis A. Yancey, co-pilot and navigator, was disappointed over the minor incident which caused the plane to return after a perfect take-off and with virtually perfect flying conditions for the voyage to Newfoundland.

Yancey asserted it is as safe to fly across the continent in a flying boat as in a huge transport land plane.

LAND ROUTE SAFE

"Flying at an altitude of 12,000 feet there are many places to land on water safely whereas flying fields capable of accommodating land planes of the size of the army's flying fortresses are few and far between," he said.

"On the air route between San Diego and Chicago there are numerous rivers and lakes where we could make a forced landing safely. From Chicago to Botwood we will be flying over water virtually the entire distance, including a section of the Great Lakes, the Great Lakes waterway and the St. Lawrence river.

"Our weather reports indicated we would have reached Botwood without encountering a heavy storm had we been able to continue. We were about ready to pick up a strong tail wind over Imperial valley when the automatic pilot went haywire. We intended to refuel without delay at Botswood and continue the 2125 miles to Felixstowe, which would have brought us into the British naval air base by Tuesday morning."

GUBA CREW IN CHARGE

Yancey said brilliant sunshine greeted the plane when it topped the clouds over the mountains. It was raining slightly when the ship slipped out of the clouds on its return to the airport.

Flying with Rogers, Yancey and Booth is Gerald Brown, flight engineer. All are members of the crew of Richard Archbold's air boat, the Guba, which completed a 13-month tour over three continents and oceans last Thursday. They are to return to the U. S. from England on the liner Washington July 27, coming here for further flight duty with the Guba, probably on another scientific expedition to Netherlands' New Guinea.

TO FOLLOW LAKES

The flight from San Diego to Botwood will be via Phoenix, Albuquerque, Wichita, Kansas City, Chicago, Detroit, Lake St. Clair, Toronto, Ottawa, Montreal and Quebec. The Great Circle route will be followed over the North Atlantic to Ireland and England.

The plane is fitted with complete navigational equipment, including a seven-man life raft, life jackets, parachute flares, water supply and emergency rations.

Although the air boat was built to the order of the British government the craft is owned by Consolidated Aircraft Corp. until it is formally turned over to the royal air force at Felixstowe. This was one of the chief reasons why Rogers refused to take any unnecessary chances when the robot pilot failed to perform.

Union 7-10-39

Britain-Bound Airboat Returns

Robot Pilot Fails Over Salton Sea

The 15-ton Consolidated flying boat, destined for delivery to the British royal air force at Felixstowe, England, which left San Diego at 7:27 a.m. yesterday on a 3300-mile nonstop flight to Botwood, Newfoundland, returned to the harbor at 9:15 a.m.

Russell Rogers, captain and chief pilot, reported the automatic piot failed to function. At the time the air boat was 10,000 feet above the Salton sea.

Soon after 10 a.m. the plane was taken out of the water and towed back to the Consolidated plant. The defective apparatus was adjuted by an expert from Naval Air station and soon before dusk Rogers took the plane aloft for a short trial flight. He plans to leave at 8 this morning.

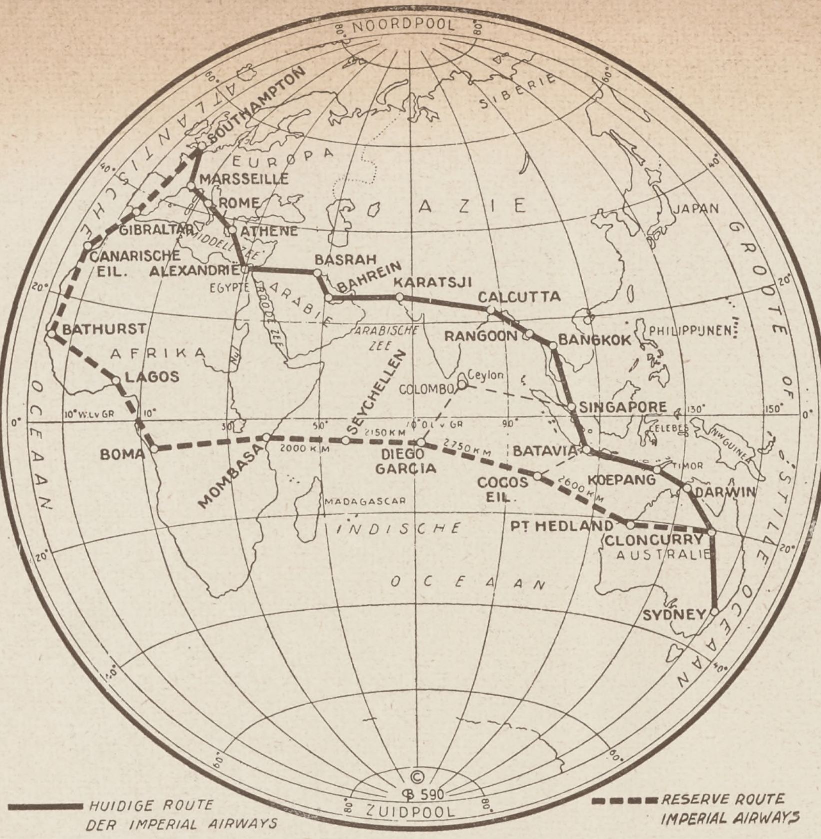
WEATHER IDEAL

Rogers said he turned back with reluctance, as weather conditions were ideal for a successful flight across the continent and Atlantic.

"We had intended to refuel immediately on landing at Botwood Monday morning and to continue the flight to England with less than two hours rest," Rogers said.

"With the automatic pilot out of commission, this would have required steering the plane by hand

(Continued on Page 2, Col. 2)



DE INDISCHE OCEAAN DOOR DE LUCHT VEROVERD!

Een uiterst belangrijke vlucht voor de Britsche Imperiale verbindingen. ● De eerste directe luchtverbinding tusschen Australië en Afrika.

De tocht van de vliegboot Guba over den Indischen Oceaan heeft ten doel de mogelijkheid te onderzoeken van een nieuwe route voor de Britsche Imperiale luchtlijnen. Deze route zal in tijd van oorlog dienen ter handhaving van de luchtverbinding met Singapore en Australië. Is de huidige route circa 21.000 km lang, de nieuwe route heeft een lengte van 26.000 km en is dus 5.000 km langer.

De taal van de groote internationale persbureaux is kort maar krachtig. De woorden, die dikwijls over duizenden kilometers geseind moeten worden, zijn duur en daarom moeten wij genoegen nemen met telegrammen als: ,,Vanmorgen is de Australische vliegboot Guba wegens ongunstige weersomstandigheden naar Batavia teruggekeerd''. Of: ,,De Guba is hedenmiddag om vier uur op Mombasa aangekomen.''

Dikwijls is het heel moeilijk dergelijke simplistische berichten tot hun ware beteekenis te herleiden, maar voor de jongste vlucht van de Consolidated vliegboot kunnen wij instaan als voor een der belangrijkste gebeurtenissen in de luchtvaart van den laatsten tijd.

Het Engelsche Ministerie van Luchtvaart had zelfs een speciale berichtgeving over de vorderingen van de boot in het leven geroepen, terwijl de heele vlucht toch een zuiver Australische onderneming heet te zijn. Dat is ook de dekmantel, waaronder het werkelijke belang van de vlucht niet zoozeer in het oog loopt.

Waarom deze vlucht zoo belangrijk was? Wel, in het kader van de internationale moeilijkheden, welke voor het Britsche wereldrijk epidemisch schijnen te zijn, zoeken de autoriteiten van Whitehall dagelijks naar veilige verbindingswegen tusschen de verschillende gebiedsdeelen van het Imperium. Dat dit een noodzakelijkheid is, zal een ieder inzien. Een luchtweg als Londen—Calcutta, zooals deze thans wordt uitgevoerd door de Short-booten, is uiterst kwetsbaar. Hij leidt over heel Zuid-Europa, met inbegrip van Italië, over Arabië en Perzië, waar het Engelsche gezag nog wel zóó in eere wordt gehouden, dat de vliegdienst niet het minste gevaar loopt, maar 't kan verkeeren, om met Brederode te spreken. Vandaag strijken wij elkaar onder de kin en morgen slaan wij elkanders hoofd in. Italië mocht eens in verwikkelingen een vliegverbod uitvaardigen, er zou zelfs eens oorlog kunnen komen. Mogelijk, nietwaar? Tegenwoordig zijn dat factoren, waar zelfs kleine, vredelievende mogendheidjes terdege rekening mee moeten houden. Laat staan de groote machten, die vitale levensbronnen over den heelen aardbol verspreid hebben zooals de Engelschen.

Daarom zoeken de satellieten van Sir Kingsley Wood naar een luchtweg, die onder alle omstandigheden als een veilige bevlogen kan worden.

Dit is uiteraard geen zonderlinge gedachte, want in den wereldoorlog schakelden de Engelschen stante pede hun ,,safety-road'' om de Kaap in. En dat zelfde, veilige Afrika is weer gekozen om de ,,safety road in the air'' onder zijn hoede te nemen. De Engelschen kunnen, van Londen over Fransch gebied vliegend, ongehinderd Noord-Afrika bereiken en het kustgebied is nog steeds in Fransche handen. In het Afrikaansche werelddeel zijn slechts enkele deelen niet in Fransch-Engelsche handen. Die behooren tot Italiaansch of Portugeesch territorium. Deze strooken kunnen gemakkelijk en zonder eenig gevaar omzeild, in casu omvlogen, worden. De weg door de lucht van Engeland naar Zuid-Afrika is dus vrij. Mombasa, een belangrijke havenplaats aan de Oostkust, met ontzaglijk omvangrijke handelsbetrekkingen en een rijk achterland, werd als uitgangspunt voor den nieuwen weg, dien veiligen ,,highroad of the air'', gekozen. Van hieruit moesten luchtwegen gezocht worden, zoowel naar Voor-Indië als naar Australië.

De Amerikaansche Clipperdienst ten voorbeeld.

Nu deed men heel verstandig, door den vermaarden clipperdienst van Pan American Airways ten voorbeeld te stellen. Wie de kaart goed voor oogen heeft, kan zich de situatie voorstellen: Amerika door die paar kleine plukjes land in zee als steunpunten over den oceaan met de Philippijnen verbonden en verderop nog met Hongkong, terwijl er van een dezer ,,pollen'' in de zee een aftakking naar Australië leidde.

Deze skybridge is wellicht nog verbazingwekkender dan de brug over de Golden Gate, omdat de luchtbrug een synthese en een apotheose is van vliegtuigbouw en navigatiekunst. Pan American vliegt dezen dienst tegenwoordig met het gemak van een tripje Amsterdam—Londen, met Guam, Wake en Honolulu als steunpunten. De Atlantische Oceaan, die veel kleiner is dan zijn ,,Stille'' broeder, heeft twee steunpunten: de Bermuda's en de Azoren, en de Indische Oceaan weer drie: de Cocoseilanden, de Chagos Archipel en de Seychellen, zooals men op bijgaand schetskaartje kan zien. De Australische regeering besloot daarom eens langs deze route vliegend den weg naar Afrika te onderzoeken, zooals enkele jaren geleden Pan American den weg naar Manila verkende. Dat wil zeggen: lukt zoo'n vlucht en zijn de rapporten gunstig, dan kan men gerust wedden op de totstandkoming binnen afzienbaren tijd van een geregelden luchtdienst. Want tegenwoordig laat men er in de luchtvaart geen gras over groeien. Dat hebben wij nu weer met den Atlantic Clipper gezien, waarmee de Amerikanen een dienst hebben geopend, zonder over een in onze solide Hollandsche oogen voldoende ervaring in deze regionen te beschikken.

Wie is Guba?

Guba is een oude naam uit het land der Maori's, als wij het wel hebben. Maar zeker is Guba een Consolidated vliegboot met een bijzondere inrichting. Oorspronkelijk een civiele versie van de bekende PBY van de Amerikaansche marine — ook American Export heeft zoo'n uitvoering besteld voor haar oceaan-vrachtdienst — heeft men in den neus een draaibaren koepel aangebracht (wij kunnen hier beter van een ,,boeg'' dan van een ,,neus'' spreken) met een graadverdeeling, waardoor het geheel als zonnekompas gebruikt wordt. De bestuurder heeft er van zijn zitplaats een kijkje op, zoodat hij, de standswisselingen van de zon er bij berekenend, een goed kompas heeft in deze regionen, waar bijna altijd de zon schijnt.

Willen wij de doopceel van dit type nog verder lichten, dan dienen wij te vermelden, dat de Amerikaansche marine er kort geleden nog massale vluchten mee heeft gemaakt, van de basis San Diego naar Honolulu en naar het Panamakanaal, zonder tusschenlanding, welke vluchten van groot belang waren voor de Amerikaansche defensie.

Met de Guba heeft de vermaarde Amerikaansche Archbold-expeditie een vlucht naar Nieuw-Guinea gemaakt, waar het toestel voor een expeditie werd gebruikt. De Australische regeering charterde de boot nu voor een onderzoeking van de ,,emergency'' route, zooals de Engelschen den nieuwen weg noemen.

Dit traject, dat vele duizenden kilometers lang is, werd nog nimmer in de geschiedenis van de luchtvaart vermeld. Niemand heeft zich er tot dusver aan gewaagd, zelfs niet een Kingsford Smith. En zelfs niet in die periode van Smith, Lindbergh, Johnson, Mollison, Sir Allan Cobham e.a., waarin bijna alle mogelijke en onmogelijke luchtwegen werden verkend.

De gezagvoerder van de Guba is kapitein Taylor, een oud zeeman, die dan ook meer om zijn voortreffelijke navigatorische kennis dan om zijn bestuurderskunsten voor dezen tocht werd aangesteld. Taylor is de man, van wien men zegt, dat hij meer met zijn sextant doet dan met den stuurknuppel. Kingsford Smith, met wien hij in de grijze dagen van de luchtvaart met een Fokker F-7 een beetje de Zuidzee en tweemaal de Tasmanzee werkelijk ,,overkachelde'', zei eens van Taylor: ,,Wat hij niet met zijn sextant kan, is waarlijk de moeite niet waard.''

Men had vertrouwen in good old Taylor, zooals de passagier aan boord van een grooten stoomer vertrouwen in zijn kapitein heeft. En Taylor heeft het ook gedaan, rustig aan, geen risico nemend, wijkend voor gevaarlijke depressies en met...... zijn sextant.

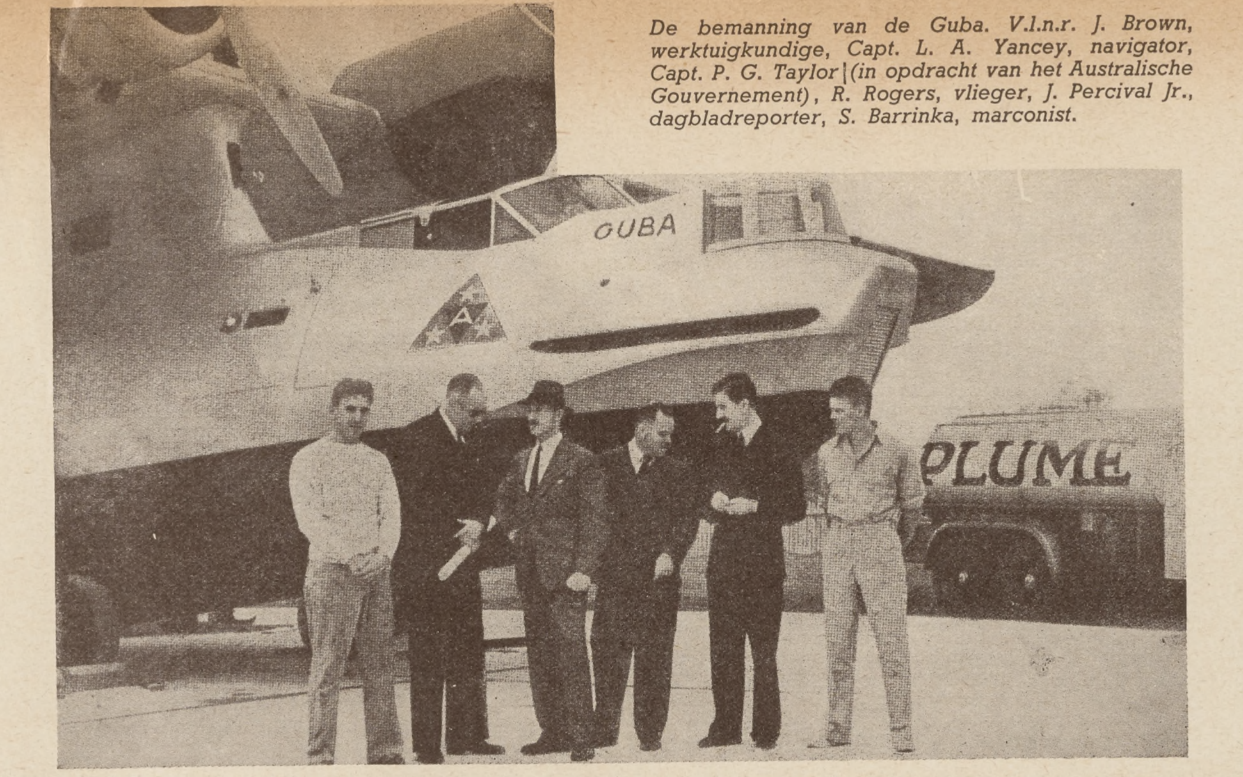
Een goede navigator is in den Indische Oceaan ook een conditio sine qua non. Nergens in de omgeving is een peilstation, ja men is practisch op zijn eigen weerberichtendienst aangewezen.

Taylor verzamelt een schat aan gegevens.

In tegenstelling met de op ons kaartje geprojecteerde route, is de reis niet in Port Hedland op Australië begonnen. In Batavia startte Taylor, maar keerde uren later weer terug, omdat hij te slecht weer had ondervonden. De Cocos-eilanden, het doel van de eerste étappe, werden dus niet bereikt. Nog eens geprobeerd en toen ging het goed. De paar blanken op deze eilandengroep konden hun oogen niet gelooven, toen daar zoo'n snelle, groote vogel op het water neerstreek en een paar dagen later waren het hun broeders op den Chagos-archipel, hun buren van ,,eventjes'' 2800 kilometer verderop'', die de oogen uitwreven. Voor het eerst in de historie daalde een vliegtuig bij deze eilanden.

En bij al die sensaties voor de inwoners heeft Taylor een schat van waardevolle gegevens verzameld. Overal bleef hij een tijdje om zich te oriënteeren. Hij maakte tochten over de eilanden, vloog er over heen, fotografeerde en verzamelde rapporten over de weersomstandigheden. Zoodat de autoriteiten in Australië hun vreugde nu niet op kunnen, nu zij dien heelen dienst, dien zij zich al zoolang gedroomd hadden, hier zoo maar op papier voor hun zagen.

Want het gàat, zegt Taylor, die geen enkele reden ziet, waardoor de dienst langs deze route niet terstond geopend zou kunnen worden. Taylor heeft voorts op verschillende punten op de drie eilandengroepen geschikt terrein gevonden voor den aanleg van velden voor *land*vliegtuigen. Verder zijn er tal



De bemanning van de Guba. V.l.n.r. J. Brown, werktuigkundige, Capt. L. A. Yancey, navigator, Capt. P. G. Taylor (in opdracht van het Australische Gouvernement), R. Rogers, vlieger, J. Percival Jr., dagbladreporter, S. Barrinka, marconist.

van schitterende baaien voor bases voor een dienst met vlieg*booten*.

De resultaten.

De resultaten van deze merkwaardige vlucht kan men nu in enkele punten neerleggen.

1e. De „emergency" route blijkt niet moeilijk te bevliegen te zijn en met haar drie steunpunten binnen de actie-radius van de moderne vliegbooten en tevens van de vier-motorige landvliegtuigen te liggen.

2e. Door deze route kan de snelste verbinding van Afrika met Australië tot stand worden gebracht.

3e. Zij kan tevens gebruikt worden, wanneer het vliegveld op Ceylon klaar is, om via de Seychellen en Ceylon Britsch Indië met West- en Zuid Afrika te verbinden.

4e. Er kan nu een „sky bridge" tusschen Zuid-Afrika en Singapore geslagen worden, wat economisch en militair van belang is, omdat men hierdoor de zoozeer gewenschte „beweeglijkheid" in het vervoer bereikt.

5e. Nederlandsch Indië kan langs dezen weg een goeden en snellen commercieelen dienst op Zuid-Afrika beginnen, waardoor de toch reeds belangrijke handelsbetrekkingen tusschen beide gebieden nog aanzienlijk kunnen toenemen.

6e. De uit moreel oogpunt zoo belangrijke schakel tusschen Oost en West in het systeem der Britsche Empire verdediging is gevonden. De Short Sunderland vliegbooten — om maar een enkel voorbeeld te noemen — zouden in enkele dagen, over de drie eilandengroepen vliegend, van Engeland naar Singapore of naar Britsch Indië kunnen vliegen zonder over vijandelijk gebied te komen.

7e. De drie eilanden kunnen worden ingericht voor militaire bases, waardoor in geval van oorlog, met vliegtuigen hier gestationneerd, aan zwerftochten als uit den wereldoorlog met de Embden — die door den Australischen kruiser Sydney bij de Cocos-eilanden in den grond is geboord — gemakkelijk een eind kan worden gemaakt.

De Guba trekt verder......

Inmiddels trekt de Guba verder. Eerst over het Victoriameer naar Lagos en Dakar. Dan gaat het van de Afrikaansche Westkust naar Guyana en van West-Indië weer naar Florida. Wat er dan met de Guba gebeurt, die op het oogenblik geschiedenis schrijft, is nog niet bekend, maar kapitein Taylor maakt er zich voorloopig nog geen zorgen over

Er staat hem nog wat voor den boeg......

(SEE ALSO ADV. BACK of THIS PAGE)

Eerste Wereldcongres der Luchtvaartpers

Luchtvaartjournalisten uit verschillende landen treffen elkaar in Rome. • Terugblik op 10 dagen luchtvaartcongres. • Een perfecte organisatie kenmerkte deze wereldpremière.

Al degenen, die met de luchtvaartwereld min of meer in verbinding staan en zeker de pioniers onder hen, weten dat er tusschen pers en luchtvaart een nauw contact bestaat. Een ontwikkeling, zooals we die in een kwarteeuw tijds aan het luchttransport hebben zien voltrekken, ware niet denkbaar geweest zonder de belangrijke satelliet, welke altijd en overal aanwezig is waar luchtvaart bedreven wordt.

Naarmate de luchtvaart zich technisch ontwikkelde, voltrok zich in de pers, welke de vliegerij als haar object van beschouwing koos, een splitsing. Er was een groot deel, dat het gebied der luchtvaart bleef exploiteeren als een welkom jachtterrein van sensationeel nieuws, maar er was ook een deel, dat de noodzakelijkheid inzag van serieuze studie dezer technische uiting. Slechts wat dit laatste deel betreft, kan er ook voor de toekomst van vruchtbare samenwerking met de luchtvaart sprake zijn.

Over luchtvaartpers sprekende, kan men slechts doelen op die laatste categorie. En het wil ons voorkomen, dat men bij de keuze der deelnemers aan het „Eerste Wereldcongres der Luchtvaartpers" wel iets meer schiftend had te werk kunnen gaan. Waar het hier echter een debuut van een dergelijk internationaal evenement betreft, laat zich dat verklaren. Het is immers wel uiterst moeilijk vanuit één land de onderlinge verhoudingen tusschen persorganen in alle landen der wereld precies te kunnen beoordeelen.

Interessant is in dit verband op te merken, dat bij één der korte lezingen, die gedurende het congres in de Villa Aldobrandini werden gehouden door Nobre de Almeida, een vertegenwoordiger der Braziliaansche luchtvaartpers, verklaard werd, dat in Brazilië de journalistenkring had besloten een speciale school voor de luchtvaartpers in het leven te roepen, waarmede men een nauwere samenwerking tusschen luchtvaart en pers beoogde.

Klassieke entourage.

Rome biedt wel bijzonder gunstige voorwaarden voor het organiseeren van een congres. Immers, buiten den zuiver zakelijken kant is het wel gewenscht, dat den deelnemers ook eenige verpoozing kan worden geboden. En in dat opzicht kan men in deze stad met haar eeuwen oude cultuurhistorie te kust en te keur gaan.

Zelfs de congresvergaderingen zelf werden gehouden in een bezienswaardigheid van Rome, een oude villa in de buurt van het prachtige, imponeerende monument Victor Emmanuel, de Villa Aldobrandini in de Via Mazzarino.

Een goed functionneerende organisatie in samenwerking met de C.I.T., zorgde voor rondritten door de stad en voor trips naar belangrijke punten in de omgeving van Rome. Zoo werden o.a. de Italiaansche filmstad Cinécitta en de bekende luchtvaartstad Guidonia bezocht. Over laatstgenoemde stad werd in *Vliegwereld*, niet zoo lang geleden, reeds een uitvoerige reportage gebracht, zoodat we hier meenen te mogen volstaan met het voortreffelijke programma kunstvliegen, dat door Italiaansche jachtvliegers werd uitgevoerd.

Een programma, zooals hier werd uitgevoerd, zagen wij alleen door Engeland geëvenaard. Ongeloofelijk waren de stoute staaltjes, die door deze luchtvirtuoozen werden uitgevoerd. In ruim een half uur was dit uiterst attractieve programma, dat door den Duce — die per auto uit Rome was gekomen — persoonlijk werd bijgewoond, afgewikkeld. Direct daarna nam Mussolini aan de volant van zijn privé vliegtuig (een Savoia Marchetti) plaats, nadat hij de oudsten der aanwezige luchtvaartjournalisten van de verschillende landen voor een trip van ca. 20 minuten boven Rome en Ostia had uitgenoodigd.

Het bezoek aan Guidonia, dat op het einde van het Congres plaats vond, viel bij alle journalisten bijzonder in den smaak en hier en daar informeerende, kreeg men wel den indruk, dat men meer van dergelijke bezoeken, welke direct met de luchtvaart in verband staan, op prijs zou hebben gesteld. Een visite bijv. aan enkele Italiaansche militaire vliegbases zou zéér zeker bij allen in den smaak zijn gevallen. Wij zijn ervan overtuigd, dat de meeste deelnemers daarvoor gaarne een bezoek aan het Lido van Ostia of de filmstad zouden hebben opgeofferd.

Alhoewel wat het aantal deelnemers betreft Italië en Duitschland sterk in de meerderheid waren, kon men toch van een zéér behoorlijke internationale bezetting spreken. Er waren achtereenvolgens buiten Italië vertegenwoordigd: Engeland, Frankrijk, Duitschland, Nederland, België, Zwitserland, Bohemen, Griekenland, Lithauen, Finland, Hongarije, Roemenië, Polen, Portugal, Marokko, Spanje, Joegoslavië, Ver. Staten en Argentinië.

Wat de werkzaamheden van het Congres zelf betreft, kan men onderscheid maken tusschen het georganiseerde gedeelte, dat zich dagelijks op vastgestelde uren in de Villa Aldobrandini afspeelde en dat hoofdzakelijk bestond uit het voordragen der referaten en de gedachtenwisseling à l'improviste, welke zich overal afspeelde waar congresleden elkaar troffen, hetzij op de zonnige boulevards in Rome, aan de gala-diners of op het Lido in Ostia. Deze laatste gedachtenwisseling, die uiteraard het meest natuurlijke verloop neemt, lijkt ons altijd nog het meest belangrijke kernpunt van ieder internationaal congres.

Hiermede willen we vanzelfsprekend geenszins het belang van de vergaderingen onderschatten. Ook hierbij werd menig interessant probleem aangesneden en door gedachtenwisseling met behulp van tolken van verschillende zijden bezien. De lezingen, welke door de deelnemers werden gehouden, omvatten acht groepen en wel:

1. Het luchtvaartjournalisme en de dagbladpers in dienst van vredes- en oorlogscorrespondentie.
2. Wetenschap en techniek op het gebied van luchtvaartjournalisme.
3. De luchtvaartpers en de jongeren.
4. De luchtfotografie en de luchtvaartpers.
5. De luchtvaart en de radio-omroep.
6. De luchtvaart als inspiratiebron voor kunst en literatuur.
7. De film en de luchtvaart.
8. Selectie en opleiding van luchtvaartjournalisten.

In het algemeen hebben wij den indruk gekregen, dat voor een vruchtbare gedachtenwisseling de onderwerpen meer zullen dienen te worden beperkt. Door de moeilijkheid van het taalverschil gaat toch reeds veel van de aandacht der toehoorders en het juiste begrijpen verloren. Zal men daarentegen zich op een congres tot één, hoogstens drie onderwerpen beperken, dan zal de aandacht zich meer kunnen concentreeren en de vrucht der gedachtenwisseling véél grooter zijn.

We zullen t.z.t., wanneer de tekst der lezingen nauwkeurig is te boek gesteld, op enkele onderwerpen nog nader terug komen, daar thans bij een definitieve bespreking er van mogelijkheden van misverstand, door het snelle tempo van het vertalingswerk, niet denkbeeldig zijn.

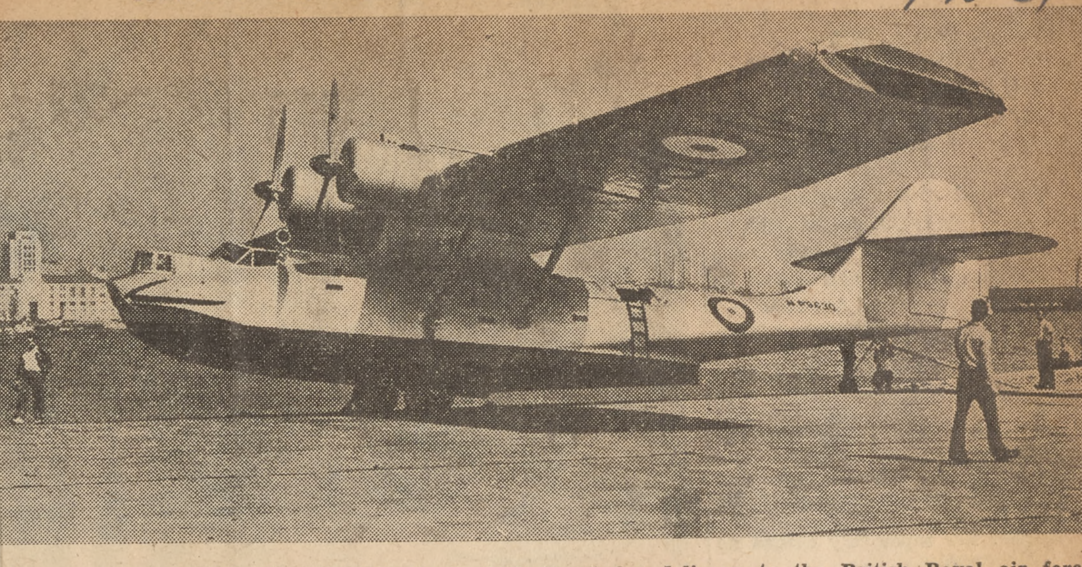
Reeds zijn er aanwijzingen, dat het wereldcongres voor de luchtvaartpers een traditioneel evenement gaat worden en daarmede zal ongetwijfeld het belang en het nut van een dergelijk congres toenemen. Voor 1940 zal Berlijn gastheer van de luchtvaartjournalisten zijn, terwijl in 1942 Rome bij gelegenheid van de groote wereldtentoonstelling wederom haar gastvrijheid heeft toegezegd.

Ons land zal dan in 1941, dank zij het initiatief van den heer Rusman, de luchtvaartjournalisten van alle landen ontvangen. Reeds werd van officieele zijde goedkeuring aan dit plan gehecht, zoodat ons land zich overeenkomstig zijn reputatie op luchtvaartgebied op een juist moment in een nieuw geboren traditie heeft ingeschakeld.

Domyn Keller.

READY FOR 2ND TAKEOFF TO ENGLAND

Union 7-10-39



sfortune overtook this Consolidated air boat designed for delivery to the British Royal air force Felixstowe, England, yesterday when the craft was forced to return to San Diego due to failure the automatic pilot. It will make another try today.

LEWIS A. YANCEY
navigator and co-pilot of the flying boat.

---

ht and
ht and
e west-

ow

89	60
00	79
	72
91	66
84	70
87	72

season.

lor

EV

24 PAGES—2

'Disloyalty' Char Criticized for S

NEW YORK, July 5 fense of American Ideals zations which bolted th over Communism, today loyalty to American y In a telegram sent her to "join with us institutions" and said placed its stamp of gram is to overthrow stitute therefor Mos In a further re J. O'Shea, Mrs. Ro the innocuous and Youth Congress the trust placed

---

Lat Parc Mrs. said sh the offic scene took d, she wen ffice, stood collapsed w fusely, the blo and shoes and th as alleged to have es later.

he trial the state a giant diagram, George Parchen's itness was John the dead girl, who dentified her body where she lies in of her sweetheart, l's association with followed a separa- husband, William ngeles.

Theft Suspect

28 years old who William Anderson nd said he was the a Wilma Anderson n who gave his Scott today were Riverside county of stealing an auto, nnedy, of the sher- unced.

orris Cope, of Fall- the two for San suspicion that the belonging to Wil- of La Jolla, Ken- uoted Anderson as get to San Diego y."

tate Witness

brought back from urder charges, but smissed on motion ttorney. He is ex- of the state's chief st the Parchens, mate, Clifford Rat

---

to today asked plane bids on a plant- ca sis, The Associated Press rep ted from Dayton, O. This was a departure from the corps' previous procedure for bids on specific allotments and Wright field procurement officers said the accelerated program was the first of its kind.

Meanwhile, the war department is considering asking congress for emergency authority to negotiate contracts on a "cost-plus" basis, rather than on the usual low-bid basis, The Associated Press reported from Washington, D. C.

This would revive the World war procedure of placing orders on the basis of cost, plus a limited profit. This would alleviate the fear that the 34 largest American plane manufacturers would be swamped with orders, while other factories would remain virtually idle at a time when all facilities were needed.

The program as contemplated by congress and the air corps would assure an air force of at least 5500 planes by 1941. In voting funds for the program, congress provided for recapture of all profits in excess of 12 percent.

Primary instruction for 396 cadets, who later will be placed at army fields for advanced work, is under way at nine scattered civilian schools. The program in the next two years calls for 2100 additional fliers and approximately 18,000 mechanics to man the equipment.

CONSOLIDATED EYES ARMY BIDS

Opening Of Estimates To Start Tomorrow

Sun 7-4-39

Aviation

Consolidated Aircraft Corp. officials this week will learn whether their bids on Army planes, to be opened in Wright Field, Dayton, O., beginning tomorrow, may net the concern large production orders for one or more types of war craft.

Estimates from manufacturers throughout the United States will be compared at Wright Field from tomorrow through Saturday on eight different kinds of planes.

TYPES KEPT SECRET

Although company officials have refused to reveal the specific types for which local bids have been submitted, it is believed that Consolidated will compete for contracts for twin-engined bombers to replace the now obsolete Douglas B-18, and for four-motored bombers, improvements over the Boeing "flying fortress."

Work has started at the local factory on a $2,880,000 contract for an experimental prototype and a small number of service test craft of the four-motored Army bombardment type. Also under way at the plant is a $4,700,000 order for six four-motored Navy patrol bombers.

BID SCHEDULE

The schedule of opening of bids at Wright Field follows:

July 5—Four-engined bombers, with estimates to be received on lots up to 250; twin-engined bombers, lots up to 700.

July 6—Advanced training planes, lots up to 500.

July 7—Primary training planes, lots up to 1000; basic training planes, lots up to 1000.

July 8—Multiplace fighter planes, lots up to 100; observation planes, lots up to 400; twin-engined pursuit planes, lots up to 200.

AMERICAN EXPORT'S CURRENT ACTIVITIES. American Export Airlines is "negotiating with U.S.aircraft manufacturers to produce non-stop trans-Atlantic luxury airliners which will carry a minimum of 40 passengers,and plans to inaugurate passenger service in addition to its mail and express service within the next 2½ years,the period required for development and construction of such aircraft," the company reveals in its latest house organ. The Consolidated PBY survey plane is now based at Floyd Bennett field. The Coast Guard,City of New York and other agencies are making possible use of ramp, hangar, machine shop, office and operations space. Communications systems,including Weather Bureau teletype,radio and telephones,are now in operation. A 24-hour weather observation bureau is operating at the company's base.

100,000-Mile Odyssey Of Airways Ends As Guba Returns To San Diego

S.D. SUN 7/6/39

By HAROLD KEEN

A 13-months' Odyssey over airways cleaved by propellors for the first time in aviation history ended in San Diego today.

The world's largest privately-owned plane, Richard Archbold's $250,000 "flying laboratory" Guba, landed in the bay at 5:15 a. m., completing in 11 hours the final leg of a journey that began here June 2, 1938, and took the crew more than 100,000 miles into tropical jungles, across three continents and three oceans.

The big airboat, which flew from New Orleans overnight, was manned by Russell Rogers, pilot; Capt. Lewis Yancey, navigator; Raymond Booth, radioman; and Gerald Brown and Stephen Barrinka, engineers. Mr. Archbold, a research associate of the American Museum of Natural History, remained in New York.

Only a short rest awaited the crew before it will take to the air again—in another Consolidated seaplane purchased by the English air ministry. According to present plans, the British plane will make a one-stop delivery flight to Felixstowe, England, leaving here either Saturday or Monday on a 3300-mile hop to Botswood, Newfoundland.

Pilot Rogers reported that the Guba made approximately 150 flights with personnel, supplies and equipment from the coastal camp of the museum expedition at Hollandia, Netherlands New Guinea, to the inland bases at Lake Habbema and the Eidenberg river—each a 225-mile round trip. .

The monotony of the expedition duty was relieved occasionally by a hop to Port Moresby, British New Guinea, or to Australia, according to Mr. Rogers. Two new engines were installed several months ago, and a total of 700 flight hours at an average of 150 miles per hour were flown in the past 13 months.

Details of rare finds in the New Guinea jungles were revealed on arrival of the Guba. These included:

A previously unknown species of small bird, with a bluish-black

Turn to Page 2, Col. 4.

TUESDAY MORNING, JULY 11, 1939

DINNER IN LONDON TOMORROW NIGHT THEIR GOAL

Union 7-11-39

. . . dinner in London tomorrow night is the goal of airmen who left yesterday morning in a Consolidated flying boat to be delivered to the British government.

Consair Vice President Returns From East

Union 7-11-39

Edgar Gott, Consolidated Aircraft Corp. vice president, who has been in Washington the last nine months, has returned to duty at the Lindbergh field plant. He will relieve Frank Learman of some of the public relations activities in connection with the aircraft factory.

Gott explained that so many factors enter into government contracts for military and navy aircraft it was difficult to predict when additional contracts will be awarded to Consolidated. The plant has a backlog exceeding $7,000,000 for army and navy bombers.

Union 7-11-39

Seaplane Wings Way to England

Dinner in London Tomorrow Planned

BULLETIN

"Everything fine," was the message flashed from the San Diego-built flying boat last night as it neared Chicago on a one-stop flight to England. Barney Boyd, local radio amateur, received the message.

Determined to keep a dinner appointment in a London hotel tomorrow evening despite a 24-hour delay here due to the automatic pilot's failing to function, Russell Rogers took less than 30 seconds to get a 15-ton Consolidated flying boat into the air at 8:23 a.m. yesterday on a one-stop flight to England.

Rogers spun the craft around as soon as the water of the bay had dripped from the air boat's hull. Heading eastward he began steering a course for Botwood, Newfoundland, 3300 miles distant, only stop he intends to make, barring mishap, between here and Felixtowe, England. At Felixstowe he will deliver the plane to the British royal flying corps.

The federal airways communication station reported to The Associated Press that the boat passed over Kansas City at 7:50 p.m. (Pacific Standard time). Rogers said he was flying the radio beacon to Chicago at 7000 feet and that the flight was progressing without incident.

The flight to Botwood, which Rogers hopes to complete within 22

(Continued on Page 2, Col. 7)

* * *

Seaplane Wings Way to England

(Continued From Page 1)

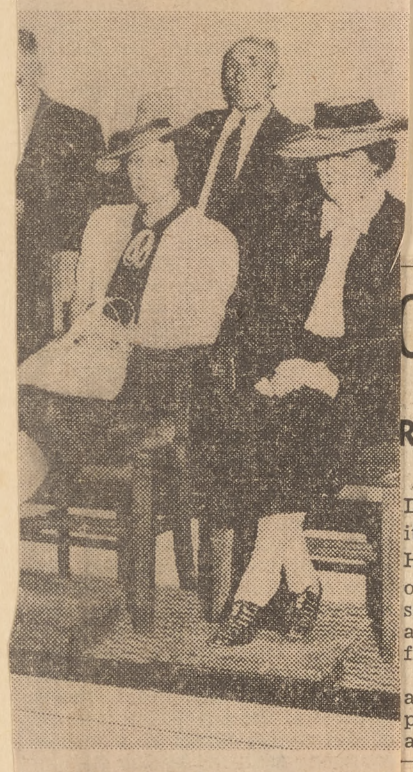
hours, is the longest sustained hop attempted by a seaplane over land and water. Landing in the Bay of Exploits, of which Botwood is the principal seaport, Rogers plans to refuel immediately and before noon today set off across the Atlantic.

The first attempt Sunday to fly to Botwood was cut short 10,000 feet over the Satlon sea when the automatic pilot failed. The plane returned to San Diego for repairs.

Flying with Rogers are Lewis A. Yancy, co-pilot and navigator; Ray Booth, radio operator, and Gerald Brown, flight engineer.

Barney Boyd, radio amateur is keeping in constant contact with the big plane on its flight from San Diego to England. Reports during the early part of the flight indicated that Rogers was carrying out his original flight plan of sailing along at a 12,000-foot altitude to take advantage of prevailing strong tail winds.

Last night's course was over the Great Lakes waterway and the St. Lawrence river to Montreal and Quebec.



st; Rose B. Johnston, of 1129 G-
646 A-st; Sarah G. Geddes, of 1
of 4621 Campus-av; Gertrude
Pauline Wilson of 515 San Ferna
Fig-st, Cl

Consair Wins $1910 Judgment

Union 7-12-39

★ ★ ★ ★ ★ ★

RULING HITS ENGINEER SENT TO RUSSIA

Consolidated Aircraft Corp., San Diego, won a $1910 judgment in its legal contest with Gilbert A. Henry, young plane engineer, over his failure to accept an assignment in Russia, The Associated Press reported yesterday from Los Angeles.

The corporation sought the amount as transportation expenses to Tagenrog, U.S.S.R., it advanced Henry. The latter asked $2747 for transportation home and loss of salary after his return to the United States.

He said living conditions in Moscow had convinced him his wife and 2-year-old son could not live in Russia for the two years demanded by his contract, and he accordingly turned back.

Superior Judge Thurmond Clarke found for the corporation after having taken the case under advisement earlier.

EADWINDS STAY OMBER'S FLIGHT

~~Union 7-12-39~~
SUN 7-10-39

Strong headwinds today interrupted a projected 3300-mile nonstop flight from San Diego to Botwood, Newfoundland, of a Consolidated patrol bomber being delivered to the British Royal Air Force.

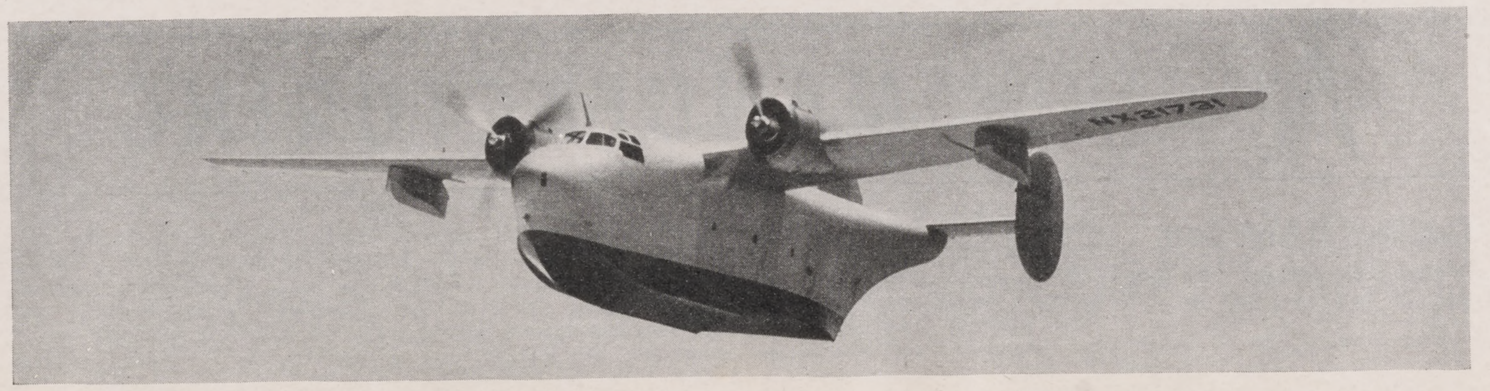
The 13-ton airboat, averaging less than 120 miles per hour as it fought the winds across the continent, was forced down in the harbor of Buffalo, N. Y., at 2:45 a. m. (PST), 18 hours, 22 minutes after taking off from San Diego.

Capt. Russell Rogers, chief pilot of the plane, reported he had enough gasoline left for 11 more hours of flying, but that the continued headwinds placed this amount below the safety factor in the 1100 miles still to go.

From the time the ship left here at 8:23 a. m. yesterday, the plane encountered unfavorable winds. Two hours out of San Diego, the bomber had progressed only 230 miles.

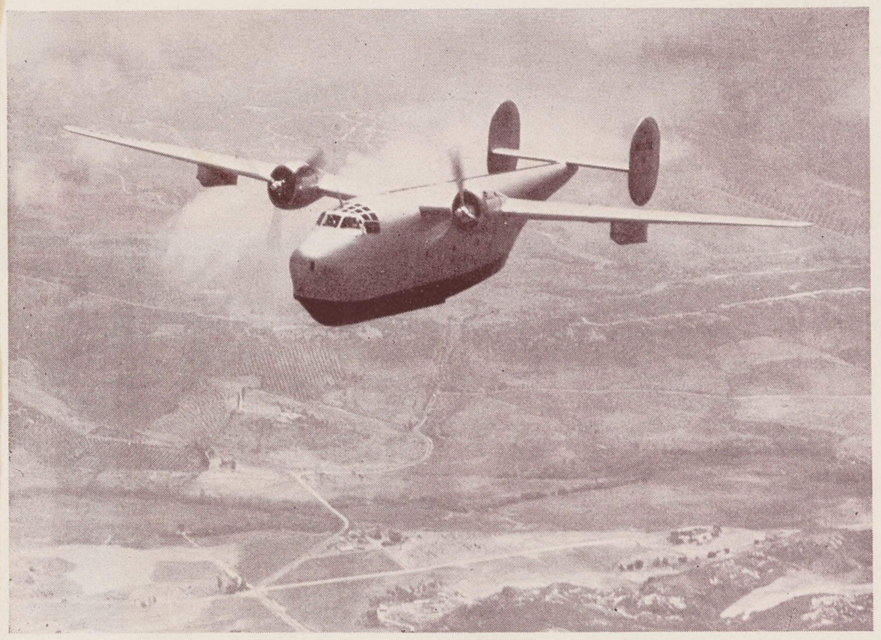
Captain Rogers told Buffalo airport officials he would attempt to take off at 7 a. m. (E. S. T.), tomorrow for Newfoundland.

AVIATION, JULY '39.



FIRST FLIGHT PICTURE: The new Consolidated 52-passenger, long-range flying boat shows off its paces above the factory at San Diego. Its two 2,000 hp. Wright Duplex-Cyclone engines give the 25-ton boat remarkable speed.

Consolidated NC 777 over Boulder Dam.



Consolidated "Model 31" flying boat in flight.

Flying Boats by Consolidated

Models and Plant Methods at San Diego

The growth of the Consolidated Aircraft Corporation's plant in San Diego, which has been commensurate with the natural expansion of the aircraft industry as a whole, has been recorded in earlier columns of this magazine. In the present article we include illustrative material not shown in earlier issues of Western Machinery and Steel World, and as a leading feature we introduce the corporation's newest product, Flying Boat "Model 31," here represented in flight over Southern California.

This craft exceeds in speed, range and load capacity the PBY type great twin-engined flying boats illustrated in our issue of July, 1938.

● Model 31 Flying Boat

The Model 31 flying boat is powered by two Wright Aeronautical Corporation 18 cylinder twin-row radial engines, each rated at 2,000 H.P. for takeoff. The propellers are three-blade Hamilton Standard Hydromatic, full feathering type. Approximate weight of the boat is 50,000 pounds. The crew consists of pilot, co-pilot, flight engineer, radio operator and navigator.

Approximate dimensions of the boat are: Wing span, 110 ft.; length overall, 73 ft.; height, 22 ft.; maximum wing chord, 14 ft. No armament is carried.

● General Description and Type of Construction:

The twin-engine flying boat is constructed of aluminum coated aluminum alloy skin internally reinforced with longitudinal stiffeners and transverse bulkheads and frames. The wings, tail surfaces and the planing surface of the hull bottom are flush riveted.

Wing: Full cantilever-integral fuel tanks in center section (following Consolidated standard practice); hydraulically operated Fowler Flaps extend from inboard side of aileron to hull. Outboard floats retract to underside of outer wing panel (wing tips too small to permit retraction at the tip as on PBY's). Ailerons and flaps are fabric-covered.

Tail Surfaces: Full cantilever stabilizer with twin fins and rudders. Rudders and elevators are fabric-covered.

Hull: Two full decks—one above the other—providing a large flight control compartment and eight additional large compartments.

Beaching Gear: Hydraulically operated retractable tricycle beaching gear. The nose wheel is housed in a well in the bottom of the hull and the side wheels swing upward into wells in the side of the hull. The side wheels are removable as well as retractable. The nose wheel well and side wheel wells are completely enclosed by doors for maximum efficiency in flight.

General Information: Unlike previous experimental flying boats which were constructed by the Consolidated Aircraft Corporation under Government contract, the Model 31 is the corporation's private venture. While the Navy Department was cognizant of the construction, the development has not been financed by the Government nor subjected to the ordinary procurement routine, which adds materially to the cost and time for construction. Only ten months were required for the design and construction of the airplane, whereas development of types of similar magnitude has required from two to three years heretofore.

The flight compartment has been completely sound-proofed and furnished with all latest type instruments and equipment.

As a military airplane, the Model 31 would augment the famous series of twin-engine patrol bombers built by Consolidated for the United States Navy. Although no performance figures may be released, the Model 31 greatly exceeds the PBY's in speed, range and load capacity.

● Features of the PBY Boats

Referring to the PBY, which is said to be the world's outstanding service patrol bomber flying boat, its consistent performance and reliability over long distances reflect the character of plant and personnel responsible for its design and construction. Several hundred boats of this type have already been built and delivered by the Consolidated factory, which represents one of the world's most modern and complete plants engaged in aircraft production. With the exception of the new Model 31 referred to above, the photographs reproduced in this article represent typical operations and plant activities in connection with production of the PBY boats.

These boats, when arranged for passenger transportation over relatively short distances, provide seating capacity for forty persons. When used for overnight flights, the arrangement is for 24 seats, convertible immediately into commodious berths for twelve. No sacrifice of military value occurs through incorporation of these features. For defense the PBY carries four machine guns. One of these is in the bow, one on each side of the deck just aft of the wing, and one tunnel gun is located in the hull bottom just forward of the tail. Bombs or torpedoes for offensive purposes are suspended from the wings just outboard of the engines.

The superior load carrying efficiency of this flying boat is attributed to, among other factors, the retractable wing-tip floats and the fuel tanks built integral with the wings. When in their retracted position, the floats create no drag and their buoyancy is sufficient to provide adequate stability on the water should a landing be inadvertently made with wings retracted. They can be raised or lowered in the water if such procedure becomes necessary.

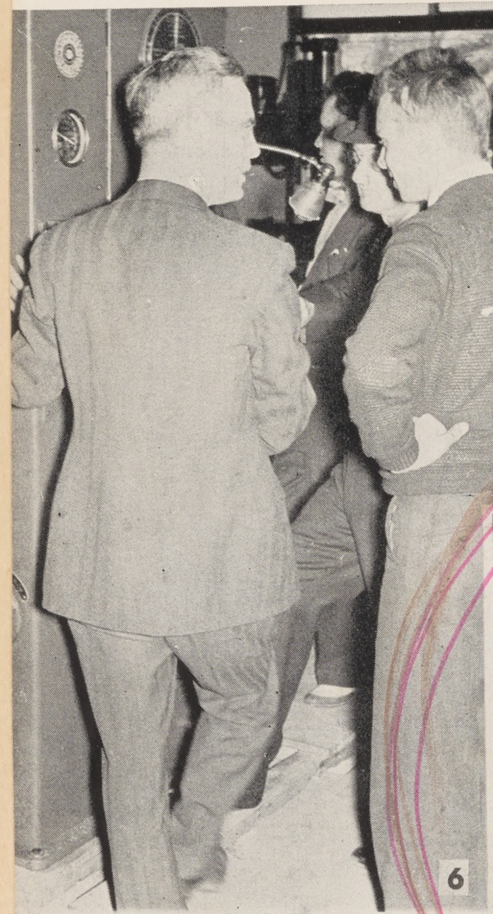
The construction of the fuel tanks integral with the wing structure permits large fuel capacity at greatly reduced weight as compared with separately built tank construction. Moreover, this type of construction prevents all possibility of fuel fumes entering the living quarters. This enables the entire hull structure to be utilized for passengers and for crew and cargo.

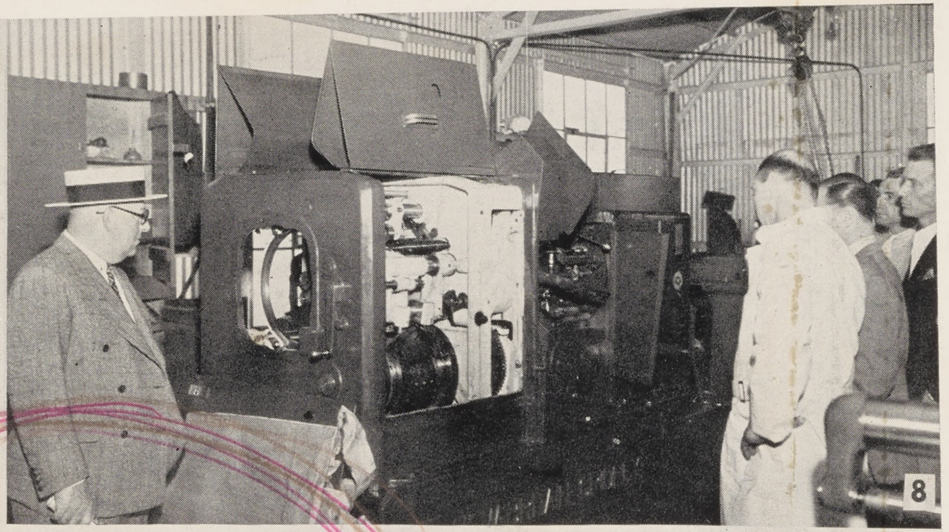
The full speed of the PBY at 12,000 feet is stated as 194 miles per hour; the stalling speed is 60.8 miles per hour. The maximum range is 4,200 miles. The service ceiling is 29,200 feet. The climb to 15,000 feet is made in 13.4 minutes.

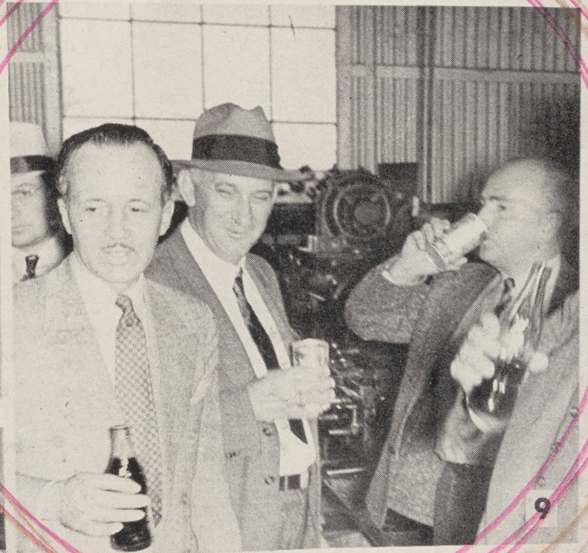
The plant behind the flying boats referred to is replete with modern and effective facilities of production and houses latest types of machine tools and appurtenances of all types peculiarly adapted to the exacting requirements of the aircraft industry. Many of these tools have already been illustrated in the pages of this magazine.

Unlike metal working plants as a rule, the problems of floor space for building of aircraft are found principally in the sub-assembly and final assembly departments. That is, considering an entire plant, the actual machining department is relatively small as compared with the great areas where bench work is carried on, sub-assemblies prepared and final assembly made.

Handling facilities of all kinds are important in preparation of these metal parts, and especially so for larger elements such as wing and other structures. Monorails, floor stands and trucks, lifting apparatus


6


8


9

10

7

11

"387 AIRCRAFTSMEN SURVEY NEW

Machines for the Industry"

Cola to cope with his hot dog, while Jack Sreenan of Lockheed next in line, works out on the pickles. 4. Two "Al's" were pals. Al Little and Al Sickenberger of U. S. Electrical Motors, Inc., show interest in a Hole Wizard Radial. 5. Messrs. Seavey and Jarvis of Lockheed Aircraft take time out for a rest. 6. L. B. Manley explains all to Salar Aircraft representatives—up from San Diego. George Probert of Emsco Derrick is also shown. 7. Vultee Aircraft's Frank Miller, one of the most interested! 8. Bill Turner, president of O.C.S. Mfg. Co., ooks at the "innards" of a 4-spindle New Britain Gridley automatic screw machine. 9. Stanley Smith of Masco with Phil Koenig and Henry Golem from Consolidated Aircraft of San Diego. 10. Douglas Aircraft Corporation—well represented. Here are some of them showing interest n an Ex-Cell-O precision boring machine. 11. Lawrence Harvey gets the low-down—as explained by L. B. Manley and Masco's Jerry Jelly.

Tribune 7-11-39

S. D. Plane Delayed at Buffalo; Hops Tomorrow for Newfoundland

Consolidated's Model 28-5, being flown from San Diego to England, landed on the Buffalo river at 3:30 a.m. (Pacific time) today to refuel before continuing on to Felixstowe, Eng., via Botwood, N. F., The Associated Press reported from Buffalo, N. Y. The plane left San Diego at 8:23 a.m. yesterday on a projected one-stop flight to England, but adverse head winds necessitated its landing in the Buffalo river to refuel.

Decision to make a landing on the river was made by Russell Rogers, pilot, when strong winds increased the gasoline consumption and cut down the margin of safety. Originally, the schedule called for one refuel stop at Botwood.

Take-Off Early

After delayed refueling, Rogers decided to remain overnight at Buffalo. Consolidated officials were advised the take-off for Botwood would be at 4 a.m. (Pacific time) tomorrow. Only a small amount of fuel was taken on today, and the main refueling for the Atlantic flight will be made at Botwood, as originally planned.

Rogers told Consolidated officials Model 28-5 bucked a 30-mile headwind all the way, despite flying at varying altitudes in an effort to escape it. The pilot reported "everything fine" with the plane.

The landing demonstrated the

(Continued on Next Page, Col. 2)

S. D. Plane Delayed; Will Hop Tomorrow

Tribune 7-11-39

CONTINUED FROM PAGE ONE

ability of Consolidated flying boats to make emergency stops on transcontinental flights. The planes are equipped only for water landings, but before taking off Rogers said no apprehension was felt on a flight across the continent because of the numerous rivers and lakes. Rogers piloted Richard Archbold's Consolidated plane Guba on the recent New Guinea expedition, where many landings were made on rivers and lakes of the island.

The flight from San Diego to Buffalo was without incident, according to reports yesterday and last night. Forced to put back to San Diego Sunday when the craft's automatic pilot became disabled over Salton Sea, Rogers made a quick take-off yesterday morning, and five hours after leaving San Diego passed south of Albuquerque.

The plane was over Kansas City at 7:50 p.m. (Pacific time), when Rogers reported he was flying the radio beacon to Chicago at 7000 feet. Radio communication with the plane is being maintained by Barney Boyd, local radio amateur.

With Rogers in the craft are Lewis A. Yancey, co-pilot and navigator; Ray Booth, radio operator, and Gerald Brown, flight engineer.

Upon landing at Buffalo, where the Consolidated plant was located before it was transferred to San Diego a few years ago, Rogers said he "figured we had enough fuel to reach Botwood if conditions were favorable, but we didn't want to take any chances on fog as we neared the coast." The twin-motored craft had traversed approximately 2400 miles when it came down in Buffalo harbor, near the municipal marine airport. Rogers said the stop made impossible realization of his hope to keep a dinner engagement in London tomorrow night.

Flying Boat Turns Back After Start for England

San Diego, Cal., July 9 (AP)—A big flying boat's first attempt at a one-stop flight to England was cut short today when it was forced to turn back for San Diego an hour after its take-off.

Crew members said the gyroscopic pilot of the two-engine plane failed to function.

It returned to the harbor at 9.17 a. m. (PST).

The ship is a commercial development of the U. S. navy patrol bombers manufactured for the British air ministry by the Consolidated Aircraft Corporation and is known as the model 28-5 flying boat.

The plan of flight to England calls for only one stop on this continent—at Botwood, Bay of Exploits, Newfoundland. The route then is the great circle course over the North Atlantic, across the center of Ireland and the Irish Channel, thence to Felixstowe, Ispwich, England.

Buffalo ?

FLYING BOAT ON LONG HOP

Buffalo.

Consolidated craft on one-stop England flight

San Diego, Cal., July 10 (AP)—In less than 30 seconds today, Pilot Russell Rogers lifted a fifteen-ton flying boat off San Diego Harbor waters and headed across the continent on a projected one-stop flight to Felixstowe, England.

Rogers was determined to keep a dinner engagement Wednesday at a London Hotel, (Claridge's) despite a 24-hour delay in getting away from California.

The only scheduled stop for the huge Consolidated model 28-5 craft, built for the British air ministry, was Botwood, Bay of Exploits, Newfoundland, 3,300 miles from San Diego.

Rogers and his three crewmen hoped to reach Botwood in 22 hours. The takeoff was at 8.23 a. m. (11.23 a. m. EST).

At 4 p. m. (PST) the ship radioed it had passed over Dalhart, in the Texas Panhandle, en route toward Wichita, Kan.

Cruising speed of the twin-engined 28-5 is 115 miles an hour.

Rogers planned to refuel at the Bay of Exploits and set off before noon tomorrow across the Atlantic. His Felixstowe destination is 2,450 statute miles from Botwood.

Servicing OUR FLYING FLEETS

Good maintenance is the essence of safe operation on the long over-water flights that are routine for Naval air missions. The author is now in charge of aircraft maintenance in the Bureau of Aeronautics.

By Commander Felix B. Stump, U. S. N.

Head of the Maintenance Division Bureau of Aeronautics

The maintenance of naval aircraft has undergone very rapid changes in a comparatively short time. The transition from wood to metal came about almost over night, and a generation of skilled woodworkers passed from the scene or shifted into the metals trades. There is a serious shortage even today of skilled personnel in the art of forming and fastening metals. From a maintenance standpoint, there are many advantages to wood and fabric and wire construction, and it has been said that minor repairs to the older types could be effected with hardly more than a needle and thread and a piece of cigar box. Modern aircraft require a can opener in many instances even for inspections.

The power of the fleet depends upon the efficiency of its bases, upon its shore facilities, without which it cannot operate. Our fleet, however, to a greater extent than that of any other great nation, must be sufficiently self-sustaining to operate for months far away from its essential shore establishments. And naval aviation, a vital part of the fleet, must maintain its efficiency far away from its bases by the efforts of its combat squadron personnel, officers and enlisted men, to a greater extent that any other air force.

In order to provide such trained personnel, our overhaul shops are manned by $\frac{1}{3}$ enlisted men and $\frac{2}{3}$ civilians in continental United States, with a greater proportion of sailors at outlying bases in the Canal Zone and Hawaii. The backbone of squadron maintenance consists of the officers and enlisted men who have had their tour of duty in overhaul shops ashore. There they have learned to be expert engine mechanics, metal workers, instrument and ordnance men. They must constantly perform work within the facilities of their own squadrons, which, in other air forces, would be done at the repair bases.

Aviation in all its phases is progressing so rapidly that it is impossible to visit a well managed aviation repair base, army, navy, or commercial, without finding some equipment (often built locally), some process or procedure, some method of inspection or test, or some shop arrangement different from and superior to all others. Recognizing this, with great benefits in economy, efficiency and quality and with the cooperation of the army and the airlines, the navy endeavors each year to have one or more of the leading personnel of each of our overhaul bases make a tour, generally in a group, of the larger army, navy and commercial overhaul bases in continental United States. At the completion of the tour, the personnel making it assemble in the Navy Department for two or three days for a general discussion and interchange of notes and ideas, in which various specialists and maintenance personnel on duty in the Bureau of Aeronautics participate. A complete report of the tour and discussions is then mailed to all units which would be benefited therefrom.

Naval aircraft will be found from the Mediterranean Sea to the China Coast and from Panama to Alaska. Spare parts must be duplicated when not too costly or arrangements must be provided for quick distribution from a central agency. The multitude of articles necessary for the maintenance of fleet aircraft is magnified by the divergency of types as well as the geographical separation of the points where the material is required.

Storage problems for perishable material are acute in the tropics and the available space aboard the aircraft carriers and other surface craft is a matter of serious moment.

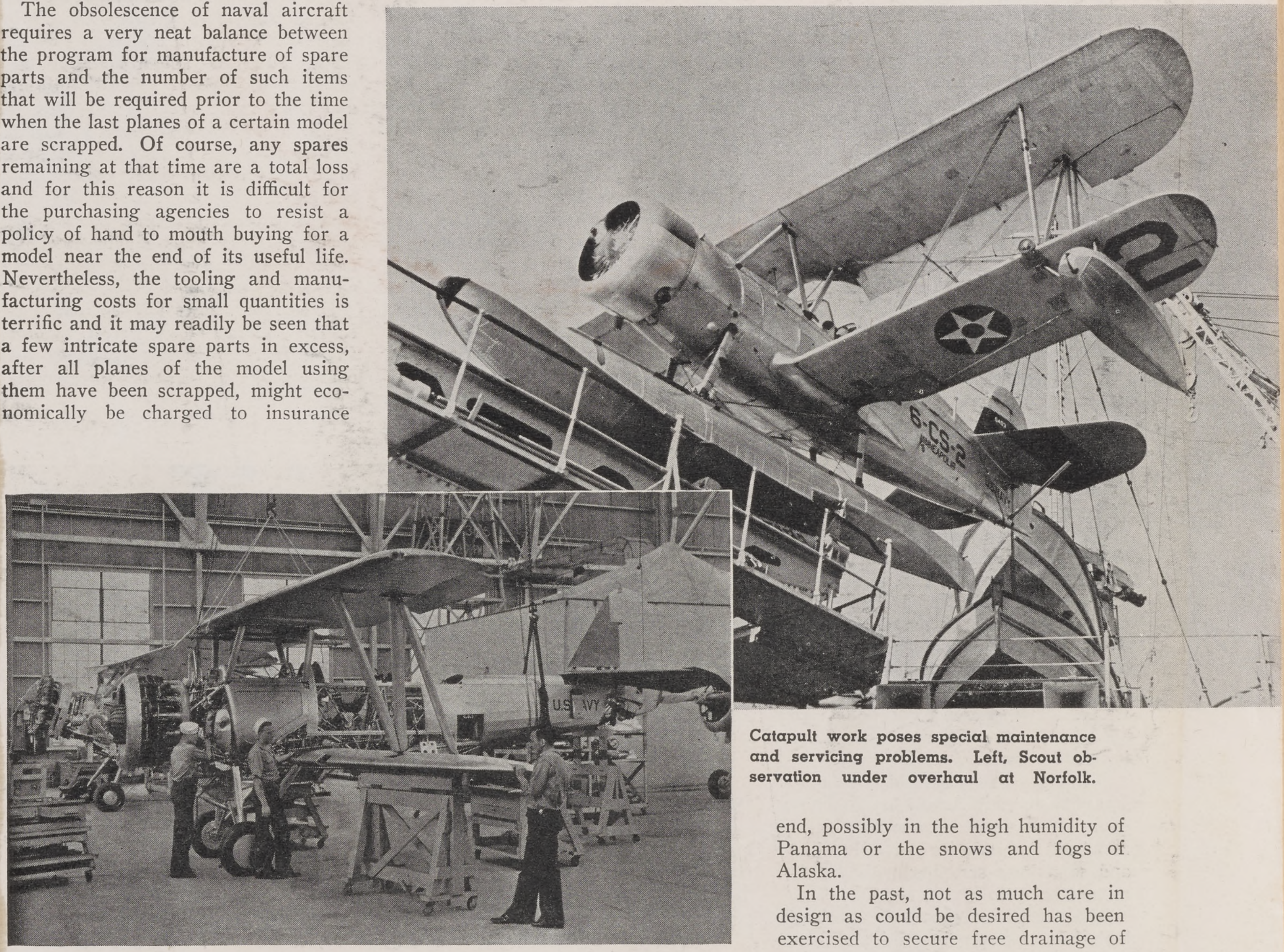
The obsolescence of naval aircraft requires a very neat balance between the program for manufacture of spare parts and the number of such items that will be required prior to the time when the last planes of a certain model are scrapped. Of course, any spares remaining at that time are a total loss and for this reason it is difficult for the purchasing agencies to resist a policy of hand to mouth buying for a model near the end of its useful life. Nevertheless, the tooling and manufacturing costs for small quantities is terrific and it may readily be seen that a few intricate spare parts in excess, after all planes of the model using them have been scrapped, might economically be charged to insurance against the possibility of manufacturing in small quantity at tremendous money cost and equally costly delay.

Standardization is of extreme importance in maintenance, primarily in insuring interchangeability between various parts on various types of airplanes at different maintenance bases. Army-Navy standardization in the past has been accomplished by agreements between the Army Air Corps and the Bureau of Aeronautics. This standardization involved primarily the establishment of records of technical agreements. Such agreements were not promulgated as such for procurement purposes. Under the Aeronautical Board there has been established recently a committee composed of representatives of the Chief of the Bureau of Aeronautics and the Chief of the Army Air Corps charged with coordinating the requirements of the two services to the extent that single joint documents will be issued and promulgated as such for procurement purposes by both services. This system is now in effect and doubtless will have a direct and beneficial bearing on maintenance. Incidentally, Army-Navy standardization is not only considered in terms of the needs of the Army and the Navy but consideration is given, prior to the adoption of these standards, to making them adaptable to commercial aeronautics as well.

Corrosion

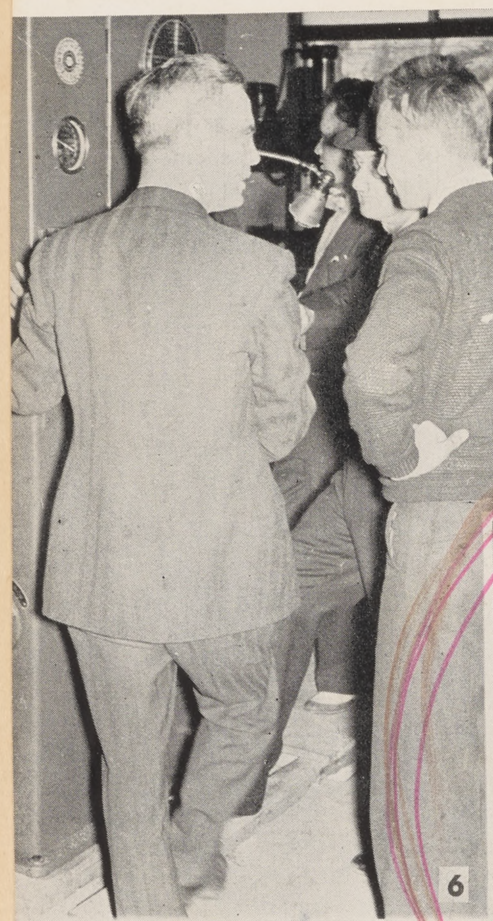
A problem particular to the Navy, or possibly to the very few commercial lines which operate over salt water, is that of corrosion. Carrier planes on deck, and the cruiser and battleship planes, perched on their catapults are subjected to salt air, spray, funnel smoke, and sun and rain for months at a time. Flying boats may be anchored out in the water for weeks on end, possibly in the high humidity of Panama or the snows and fogs of Alaska.

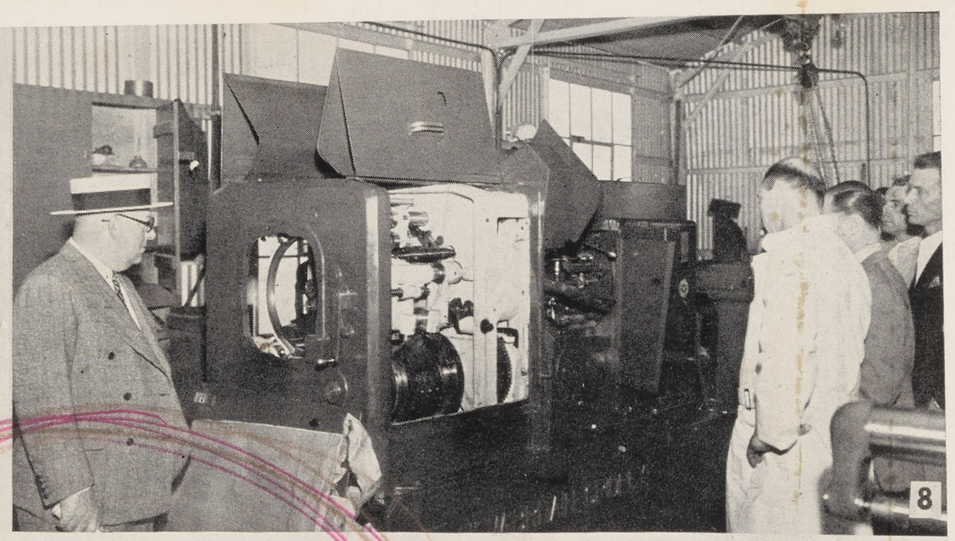
In the past, not as much care in design as could be desired has been exercised to secure free drainage of

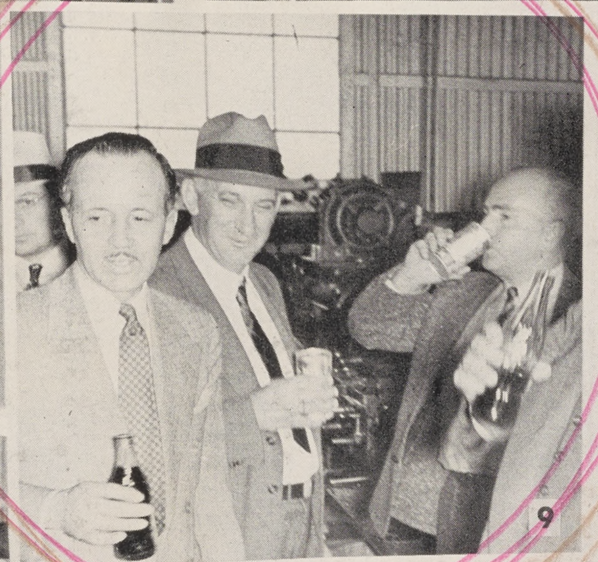


Catapult work poses special maintenance and servicing problems. Left, Scout observation under overhaul at Norfolk.

NOTE—The opinions or assertions contained in this article are the private ones of the writer and are not to be construed as official or reflecting the views of the Navy Department or the Naval Service at large.


6


8


9

10

7

11

"387 AIRCRAFTSMEN SURVEY NEW

Machines for the Industry"

Cola to cope with his hot dog, while Jack Sreenan of Lockheed next in line, works out on the pickles. 4. Two "Al's" were pals. Al Little and Al Sickenberger of U. S. Electrical Motors, Inc., show interest in a Hole Wizard Radial. 5. Messrs. Seavey and Jarvis of Lockheed Aircraft take time out for a rest. 6. L. B. Manley explains all to Salar Aircraft representatives—up from San Diego. George Probert of Emsco Derrick is also shown. 7. Vultee Aircraft's Frank Miller, one of the most interested! 8. Bill Turner, president of O.C.S. Mfg. Co., looks at the "innards" of a 4-spindle New Britain Gridley automatic screw machine. 9. Stanley Smith of Masco with Phil Koenig and Henry Golem from Consolidated Aircraft of San Diego. 10. Douglas Aircraft Corporation—well represented. Here are some of them showing interest in an Ex-Cell-O precision boring machine. 11. Lawrence Harvey gets the low-down—as explained by L. B. Manley and Masco's Jerry Jelly.

Tribune 7-11-39

S. D. Plane Delayed at Buffalo; Hops Tomorrow for Newfoundland

Consolidated's Model 28-5, being flown from San Diego to England, landed on the Buffalo river at 3:30 a.m. (Pacific time) today to refuel before continuing on to Felixstowe, Eng., via Botwood, N. F., The Associated Press reported from Buffalo, N. Y. The plane left San Diego at 8:23 a.m. yesterday on a projected one-stop flight to England, but adverse head winds necessitated its landing in the Buffalo river to refuel.

Decision to make a landing on the river was made by Russell Rogers, pilot, when strong winds increased the gasoline consumption and cut down the margin of safety. Originally, the schedule called for one refuel stop at Botwood.

Take-Off Early

After delayed refueling, Rogers decided to remain overnight at Buffalo. Consolidated officials were advised the take-off for Botwood would be at 4 a.m. (Pacific time) tomorrow. Only a small amount of fuel was taken on today, and the main refueling for the Atlantic flight will be made at Botwood, as originally planned.

Rogers told Consolidated officials Model 28-5 bucked a 30-mile headwind all the way, despite flying at varying altitudes in an effort to escape it. The pilot reported "everything fine" with the plane.

The landing demonstrated the

(Continued on Next Page, Col. 2)

S. D. Plane Delayed; Will Hop Tomorrow

Tribune 7-11-39

CONTINUED FROM PAGE ONE

ability of Consolidated flying boats to make emergency stops on transcontinental flights. The planes are equipped only for water landings, but before taking off Rogers said no apprehension was felt on a flight across the continent because of the numerous rivers and lakes. Rogers piloted Richard Archbold's Consolidated plane Guba on the recent New Guinea expedition, where many landings were made on rivers and lakes of the island.

The flight from San Diego to Buffalo was without incident, according to reports yesterday and last night. Forced to put back to San Diego Sunday when the craft's automatic pilot became disabled over Salton Sea, Rogers made a quick take-off yesterday morning, and five hours after leaving San Diego passed south of Albuquerque.

The plane was over Kansas City at 7:50 p.m. (Pacific time), when Rogers reported he was flying the radio beacon to Chicago at 7000 feet. Radio communication with the plane is being maintained by Barney Boyd, local radio amateur.

With Rogers in the craft are Lewis A. Yancey, co-pilot and navigator; Ray Booth, radio operator, and Gerald Brown, flight engineer.

Upon landing at Buffalo, where the Consolidated plant was located before it was transferred to San Diego a few years ago, Rogers said he "figured we had enough fuel to reach Botwood if conditions were favorable, but we didn't want to take any chances on fog as we neared the coast." The twin-motored craft had traversed approximately 2400 miles when it came down in Buffalo harbor, near the municipal marine airport. Rogers said the stop made impossible realization of his hope to keep a dinner engagement in London tomorrow night.

Flying Boat Turns Back After Start for England

San Diego, Cal., July 9 (AP)—A big flying boat's first attempt at a one-stop flight to England was cut short today when it was forced to turn back for San Diego an hour after its take-off.

Crew members said the gyroscopic pilot of the two-engine plane failed to function.

It returned to the harbor at 9.17 a. m. (PST).

The ship is a commercial development of the U. S. navy patrol bombers manufactured for the British air ministry by the Consolidated Aircraft Corporation and is known as the model 28-5 flying boat.

The plan of flight to England calls for only one stop on this continent—at Botwood, Bay of Exploits, Newfoundland. The route then is the great circle course over the North Atlantic, across the center of Ireland and the Irish Channel, thence to Felixstowe, Ispwich, England.

Buffalo ?

FLYING BOAT ON LONG HOP

Buffalo.

Consolidated craft on one-stop England flight

San Diego, Cal., July 10 (AP)—In less than 30 seconds today, Pilot Russell Rogers lifted a fifteen-ton flying boat off San Diego Harbor waters and headed across the continent on a projected one-stop flight to Felixstowe, England.

Rogers was determined to keep a dinner engagement Wednesday at a London Hotel, (Claridge's) despite a 24-hour delay in getting away from California.

The only scheduled stop for the huge Consolidated model 28-5 craft, built for the British air ministry, was Botwood, Bay of Exploits, Newfoundland, 3,300 miles from San Diego.

Rogers and his three crewmen hoped to reach Botwood in 22 hours. The takeoff was at 8.23 a. m. (11.23 a. m. EST).

At 4 p. m. (PST) the ship radioed it had passed over Dalhart, in the Texas Panhandle, en route toward Wichita, Kan.

Cruising speed of the twin-engined 28-5 is 115 miles an hour.

Rogers planned to refuel at the Bay of Exploits and set off before noon tomorrow across the Atlantic. His Felixstowe destination is 2,450 statute miles from Botwood.

structures. This condition is improving, but, not only in manufacturing, but also in overhaul every possible step should be taken to insure that water or moisture which gains access to the interior of a structure is afforded free drainage so that it may not remain and induce corrosion.

Upon removal from salt water, a seaplane should be washed immediately with fresh water to remove all traces of silt. A light film of oil should be applied to the unpainted parts.

In the same way, design has not always provided for the separation of dissimilar metals and many of the defects found during overhaul can be laid to such errors. Frequently care must be exercised to remedy such mistakes so that corrosion will not develop prior to subsequent overhauls. When dissimilar metals must be used because of structural conditions, they must be insulated from each other in order to forestall electrolytic action and consequent corrosion.

The greatest care in following approved specifications for the heat treating of aluminum alloys is important for strength considerations but is even more vital as a means of resisting corrosion. As an example, properly heat treated aluminum alloy 24ST has been in use in some of the later, larger patrol seaplanes for over a year's service under the most adverse conditions of contact with salt water and spray, with practically no corrosion—a surprisingly gratifying performance.

Barnacles

The growth of barnacles on the underwater surfaces of large seaplanes in the tropics constitutes a serious problem where facilities for readily removing the aircraft from the water are limited. Within a few days the growth of barnacles can become sufficient to prevent take-off without a great reduction in the normal load. Barnacles, some as large as $\frac{3}{8}$ in. in diameter, have completely covered the bottoms of airplanes moored ten days in unclean tropical water. The growth of barnacles occurs to a less, although still serious, degree in clean tropical water. The presence of both river silt and sewage appears favorable to barnacle growth.

Barnacles four days old can be removed with a stiff bristly brush. Those over ten days old become very firmly attached and require wire brushing and sometimes scraping with an aluminum scraper.

The barnacles penetrate through both bituminous paint and aluminum lacquer and attach themselves to the zinc chromate primer underneath. When bituminous paint was covered with "Par-al-ke-tone" there were fewer barnacles but the main advantage of the "Par-al-ke-tone" seemed to be that the barnacles formed were easier to remove.

The following coatings over the basic zinc chromate primer are listed in order of merit for the resistance to the formation of barnacles: "Silosyn," aluminum lacquer, black enamel mixed with bituminous paint, and bituminous paint. Of these, "Silosyn", an acrylate resin base product, gave by far the best results. It was the only one of the group which the barnacles did not penetrate and the amount formed was the least of the lot. Two coats can be sprayed on a large twin-engined seaplane hull in forty-five minutes.

The search for improved protective coatings in an effort to reduce maintenance difficulties has always been assigned high priority by the Bureau of Aeronautics and many developments initiated by the Navy have been passed on to commercial aviation. In particular, the magnesium anodic treatment, zinc chromate primer and a number of synthetic lacquers stand out as important contributions in recent years. The aluminum metal spray has been found very effective in preventing corrosion of steel as well as of aluminum alloy parts, and our standard overhaul practice makes use of this means of protecting engine cylinders in all cruiser and battleship based seaplanes where cleaning of the cylinders after they have been subjected to salt spray is difficult.

Engines

Three recent improvements in engine construction are resulting in more flight time between overhaul and upkeep periods.

The first improvement is the adoption of automatic valve gear lubrication. This has made possible the extension of the operating time between checks and readjustments of valve clearances from thirty hours to one hundred and twenty hours. Indications are that an even longer period may be adopted. Automatic valve gear lubrication reduces wear of the parts of the valve mechanism, particularly the exhaust valve stems and guides. It is no longer necessary to replace these parts on nearly every major overhaul, which was formerly necessary.

The second recent improvement is the adoption of nitriding as a means of hardening cylinder barrels. Service experience to date indicates that nitrided cylinders may last as long as the engine, thus eliminating regrinding, and, therefore, the need for much expensive equipment and skilled work. Thus, it may no longer be necessary to carry a stock of oversize pistons and rings or to rebarrel cylinders.

The third improvement in engine construction is the adoption of prefitted, lead coated silver master rod bearings, which can be installed immediately during overhaul without boring to size, thus eliminating the need for expensive boring equipment and skilled personnel to operate it.

Experience shows that corrosion of engine cylinders will start within twenty-four hours after stopping an engine which has been run on gasoline doped with ethyl fluid. Such corrosion is negligible in the case of engines being run continually as on the airlines. However, when an engine is to be placed in an inoperative status it is necessary to supply it with fresh oil and run it on clear, unleaded gasoline for one hour to remove all traces of ethyl fluid from the cylinders and from the other parts of the engine.

Ignition cable deteriorates rapidly and for that reason overhauled engines do not have ignition cable installed until just before they are to be placed in service. It has been found beneficial to purchase ignition wire in sealed cases and not to open the containers until the wire is actually needed.

One of the most useful items in a modern engine overhaul shop, and in other shops as well, is magnaflux equipment for conducting magnetic analyses of steel parts. By means of it, many small cracks are found which would eventually lead to major failures and would be undetected otherwise.

The duration of the post overhaul test of engines is a source of concern to overhaul activities. A long test is expensive in fuel and labor costs and ties up facilities to too great an extent. A test which is too short will not wear the engine enough to insure reliable performance. The principal concern is to have a sufficient running-in period to seat piston rings properly. Post overhaul engine running may be reduced by lapping the piston rings in their respective cylinders and by using rings having a slight taper on the face, resulting in high unit pressure on the edge, which will cause them to seat quickly. Apparently, with the use of tapered rings a running-in period of four or five hours' duration should be sufficient to insure proper engine performance.

Instruments

It has been found impossible to hire trained instrument men, thus necessitating training of both civilian and enlisted personnel at the navy overhaul bases. It has been found that marked deterioration of instruments will occur in storage due to lubricant evaporation and gasket shrinkage. Therefore, it is often necessary to overhaul instruments that have never been used. Overhauled instruments are often more accurate than new ones, possibly because one man does the whole job. There is an urgent need for an instrument lubricant which will operate satisfactorily throughout the range of —40 deg. F. to +190 deg. F.

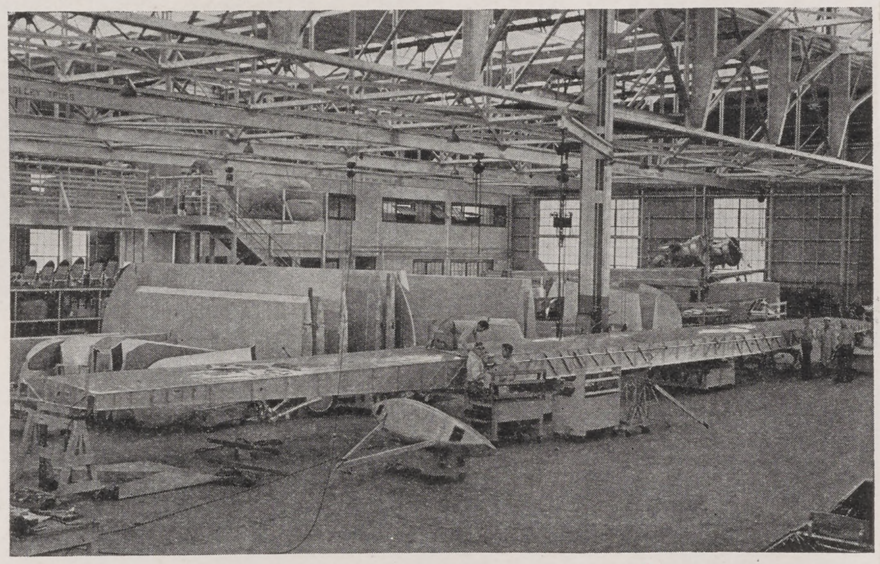
Maintenance and Research

Because of constant advancement in the art of aeronautics, it is many times not possible to obtain, on the first production order, airplanes one hundred per cent satisfactory in all details of design. Although Navy airplanes are subjected to a series of rigid and thorough tests prior to acceptance, experience has repeatedly shown that actual service operations usually bring to light the need for additional refinements. The need for such design changes obviously creates annoying maintenance problems. The discovery of the need for these changes calls for competent maintenance personnel. Further, the solution to the problems in many cases calls for extended research with the result that to a great extent maintenance and research are closely interrelated. For example, the need for a fire resisting doping system became very acute in the wake of several fires originating from sparks from ships funnels falling on airplanes while stowed on the decks of cruisers or battleships. These fires have been greatly minimized recently by the adoption of a fire resistant doping system for the upper surfaces of fabric wings of airplanes assigned to vessels of these types.

Carrier operations have also indicated the advisability of utilizing brakes which possess equal braking power in both directions. Such brakes have been developed and are now standard equipment on currently procured Navy airplanes.

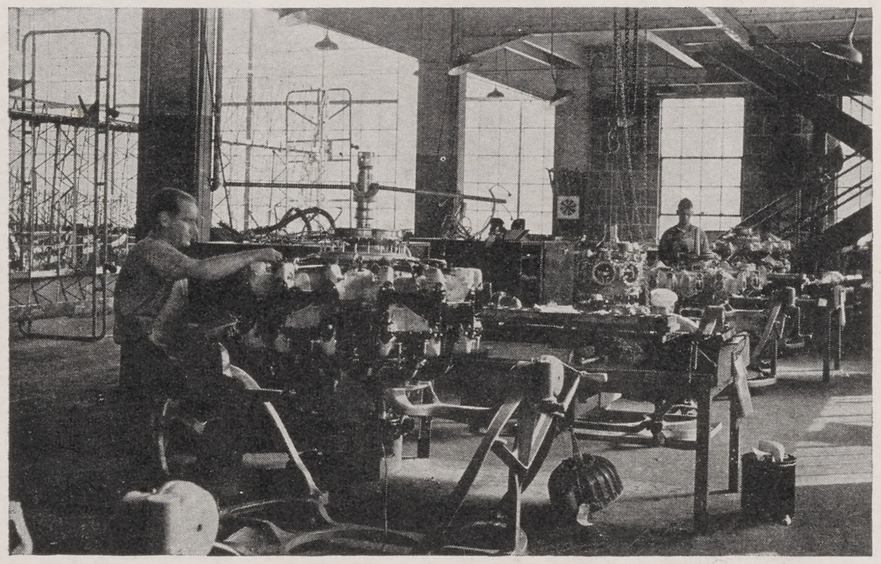
The Navy has been one of the pioneers in the adoption of integral fuel tanks for flying boats. After airplanes in which such tanks were incorporated had been in service a short while, it was determined that a radical change in the conventional tank maintenance procedure must be effected to insure satisfactory service from them. It was found that the seam compound in these tanks was especially troublesome if not properly cared for in service and that they would leak if they were completely drained and allowed to stand empty for any length of time, due to the evaporation of the volatiles in the material. This was corrected by keeping the tanks filled with gasoline even when they were not installed in the airplanes as the action of the gasoline had a tendency to swell the seam material and prevent shrinkage of the material.

Corrosion of such tanks was also discovered early in their life. Although it appeared serious at first, the trouble has been practically eliminated by observing certain precautions in the handling of the fuel to insure that only clean, water-free fuel is pumped into them. The interior seams of integral tanks not in use are coated with a preservative to prevent shrinkage of the seam filler. The overhaul of integral tanks which did corrode called for considerable ingenuity on the part of maintenance personnel and in working out the solution an effective scheme for cleaning and anodically treating such tanks in place was developed. By following these and other precautions, it has been the Navy's experience that integral fuel tanks are highly satisfactory as used in its flying boat equipment.



Annual overhauls involve complete stripping of wings of huge patrol boats

PBY



Navy's excellent safety record is built around exacting care of engines and accessories.

NEW MONIKERS FOR PBY UNITS

All Groups Effected By New Numbering

Union 7-12-39

Aviation

Sun - 7-11-39

The familiar designations by which the Navy's patrol squadron of giant airboats have been known in recent years have been abandoned, it was learned today.

San Diego's three 12-plane units of Consolidated PBY flying boats—Patrol Squadrons 7, 9 and 18—in the future will be referred to as Patrol Squadrons 11, 12 and 13 in a new system of identifying aircraft.

PATROL WING ONE

All squadrons of San Diego's Patrol Wing 1, will be designated by the numeral "one" followed by a digit indicating their seniority. Thus, should another bomber squadron be commissioned in this wing, it will be known as Patrol Squadron 14.

The five patrol units in Hawaii's Patrol Wing 2, formerly given the scattered designations—Patrol Squadron 1, 4, 6, 8 and 10—have been renamed Squadrons 21, 22, 23, 24 and 25. In the same manner, the numeral "three" will be used for Patrol Wing 3, at Coco Solo, Canal Zone—Squadrons 31, 32 and 33. Patrol Wing 4 at Seattle, which consisted of VP-16, VP-17, VP-19, VP-20 and VP-21, now comprises Squadrons 41, 42, 43, 44 and 45. Norfolk's Patrol Wing 5 has been expanded from two squadrons—VP-14 and VP-15—to four units, Squadrons 51, 52, 53 and 54.

LAND PLANES TOO

The same method is used in identifying land planes based on aircraft carriers. For instance, the Lexington's four squadrons have the "number two" designation—Bombing Squadron 2, Fighting Squadron 2, etc. The Saratoga's planes are the "number 3" group, the Ranger's "number 4," the Yorktown's "number 5," and the Enterprise's "number 6."

No more delivery flights of Consolidated planes from San Diego to Pearl Harbor or the Canal Zone are planned in the near future, it was reported at North Island today.

AN DIEGO UNION: WEDNE

Head Winds Halt S. D. Flying Boat At Buffalo

Union 7-12-39

Beset by strong head winds that cut down his flying speed and reduced the gasoline supply beyond the safety point, the Consolidated plane piloted by Russell Rogers, which left San Diego at 8:23 a.m. Monday bound for England via Botwood, Newfoundland, landed at Buffalo at 3:30 a.m. (Pacific time), yesterday, The Associated Press reported.

Rogers said he would remain at Buffalo overnight before continuing the flight to Botwood and Felixstowe, England, today. The 15-ton plane had flown 2400 of the 3300 miles on a projected nonstop flight from San Diego to Botwood when it landed.

SECOND DELAY

It marked the second time that Rogers attempted to keep a dinner engagement in a swank London hotel scheduled for tonight. Sunday morning he took off for England only to meet with disapopintment when the failure of the automatic pilot forced him to return here after being aloft less than three hours. He announced at Buffalo the dinner, as far as he was concerned, was off.

The plane is to be delivered to the British Royal flying corps at Felixstowe.

ROUTE SAFETY PROVED

The landing proved the ability of the San Diego-built flying boats to make emergency stops on transcontinental flights. The planes are equipped only for water landings, but before taking off Rogers said no apprehension was felt on a flight across the continent because of the numerous rivers and lakes.

Rogers piloted Richard Archbold's plane Guba on the recent New Guinea expedition, where many landings were made on rivers and lakes of the island.

AIRCRAFT, May 1, 1939. Page Twenty.

Indian Ocean Survey

Capt. P. G. Taylor (right), who has been appointed by the Commonwealth Government to take charge of the Indian Ocean flight survey, with J. Percival, Junr., a member of the expedition, and official newspaper correspondent in charge of special organisation.

NEGOTIATIONS for the charter of Mr Richard Archbold's Consolidated P.B.Y. flying boat, the *Guba*, for a flight survey of the Indian Ocean from the west coast of Australia to the east coast of Africa, by way of the Cocos Islands, the Chagos Archipelago and the Seychelles Islands, commenced last year, when the aircraft was flown from Port Moresby to Sydney and Melbourne for instrument and general overhaul.

Before the *Guba* crossed the Pacific from the United States to Dutch New Guinea to ferry scientific personnel, soldiers, labor and supplies from Hollandia to an inland lake, 11,000 feet above sea level, Captain P. G. Taylor had made a special journey to England and the United States in an effort to secure, preferably, a British craft with sufficient range to fly the distances between the island bases. When this was found to be impossible he tried to secure an American craft.

Sufficient capital, however, was not forthcoming from private sources to purchase a twin-engined flying boat, and there was, in addition, the necessity to lay down fuel dumps and other supplies at the various stopping places.

A proposal, however, was put before the late Prime Minister, Mr Lyons, which included the purchase or charter of, preferably a British flying boat, or, failing this, an American aircraft.

Messrs Short Bros., however, were so busy in supplying craft to Imperial Airways Ltd. and its subsidiary-companies, and Imperial Airways Ltd. and Qantas, in turn, were fully occupied in inaugurating the flying boat scheme; so it was apparent that a British flying boat could not be obtained.

After an interview in Melbourne with Captain Yancey and Mr Russell Rogers, Mr Archbold's navigator and first pilot, it was decided by Captain Taylor that a concrete proposal could be placed before the Government for the charter of the *Guba*. This proposal was prepared, and it included, on one side, revenues obtainable from a special air mail, sale of newspaper, broadcasting, film and other rights, and, on the other side, a small deficit which the Government was asked to guarantee, although it is expected that this deficit will be covered by private enterprise.

The proposal was sponsored by the Federal Treasurer, Major R. G. Casey, and after it was submitted and approved by Cabinet, Captain Taylor was authorised to negotiate with Mr Archbold.

Captain Yancey flew to Sydney from Papua in a W. R. Carpenter 86B, and a contract was drawn up which was signed on behalf of the Federal Government by Mr Thorby, and by Captain Yancey, Mr Archbold's fully accredited representative. Thus ended five years' dogged, and, at times, heart-breaking efforts by Captain P. G. Taylor to secure suitable equipment to make a survey of what has become known on maps of the world air routes as "The Reserve Empire Air Mail Route."

Mr Richard Archbold (left), owner of the Guba, and Messrs. R. Rogers and L. Yancey (right) respectively. Archbold Expedition's chief pilot and navigator.

Vulnerability of Empire Route

FREQUENTLY Captain Taylor has pointed out the vulnerability of the present air mail route to Australia, which is dependent on clear air corridors along the Mediterranean and through the East. During the crisis last December the flying boat service was interrupted when there was a threat of hostilities, and some of the craft did not proceed further towards Australia than France until the international atmosphere was cleared.

In the event of war involving the Mediterranean and the near East, Captain Taylor pointed out, flying boats could proceed to Australia by way of the west coast of Africa and the Indian Ocean. Nature has divided the Indian Ocean into flying distances within the range of modern commercial aircraft.

The total flying distance across the Indian Ocean by the route to be surveyed is approximately 4,674 nautical miles, but this distance, of course, is dependent upon the site of the base which will be selected by Captain Taylor on the west coast of Australia. At this stage it cannot definitely be stated from where the survey flight will be started.

The distances between the Indian Ocean air bases are as follows:— The Cocos Islands to Diego Garcia, 1172 nautical miles; Diego Garcia to the Seychelles, 1022 nautical miles; and the Seychelles to Mombasa (Kenya) 950 nautical miles. The distance from the west coast of Australia to the Cocos cannot be given until it is definitely decided which will be the jumping off position.

During the flight across the Indian Ocean the *Guba* will stay at each of the islands for a week, when Captain Taylor, assisted by Mr J. Percival, will make a survey to determine the most suitable flying boat bases and the suitability of the islands for the establishment of landplane aerodromes.

Mr Archbold, who is a research associate of the American Museum of Natural History, in addition to being a pilot of skill, will pursue scientific studies at each of the islands which have not yet been visited by an expert biologist.

The flight is scheduled to commence at a date to be decided upon between the Commonwealth Government, Captain Taylor and Captain Yancey—any time between June 10 and August 1.

The *Guba* will be flown from Port Moresby to the Rose Bay flying boat base on about May 20, when it will

(*Continued on page* 52)

INDIAN OCEAN SURVEY—

(*Continued from page* 20)

be hauled up the slipway and thoroughly inspected. Before flying south two new Pratt & Whitney engines will be slung into the bearers, and they will be gently worked in while the flying boat ferries the expedition's personnel, wireless equipment and other appurtenances from the inland lake to the coast.

The laying down of 2500 gallons of 87 octane fuel at each of the islands has been commenced by the Vacuum Oil Co., and the petrol, oil and other supplies will be shipped from Capetown, Singapore and Fremantle.

The crew for the flight will be Mr Richard Archbold, owner of the *Guba;* Captain P. G. Taylor, in charge of the flight survey for the Commonwealth Government; Captain L. A. Yancey, navigator; Mr R. Rogers, first pilot; Mr J. Percival, the Commonwealth Government's second representative, who will also act as official newspaper correspondent and be in charge of special organisation; Mr R. Booth, radio operator; and Messrs. G. Brown and S. Berrinka, mechanics.

Received 7-12-39.

Metalen vliegtuigen

DOOR J. STEYNIS.

De laatste jaren treden in den ontwikkelingsgang van den vliegtuigbouw twee grondslagen sterk op den voorgrond, eerstens de ver doorgevoerde gunstige aerodynamische vormgeving (zie fig. 1) welke langzamerhand algemeen toepassing vindt bij alle moderne, meermotorige landvliegtuigen en tweedens de geheel gewijzigde inzichten betreffende de constructie van romp en vleugels. De gemengde bouwwijze — hout, staal en aluminium — heeft bij alle moderne groote vliegtuigen het veld moeten ruimen voor de uitsluitende metaalconstructie, waardoor een nieuw tijdperk in den vliegtuigbouw is ingetreden. De jaren, waarin de ontwikkeling van het vliegtuig zoo snel ging, dat zelfs gedurende den bouw van één enkel vliegtuig, dikwijls in de plannen ingrijpende wijzigingen noodzakelijk worden, liggen daarmede achter ons. Bij den tegenwoordigen stand van zaken, nu alle krachten, welke onder normale omstandigheden op het vliegtuig kunnen werken, van te voren nauwkeurig berekend kunnen worden en een juist inzicht in de verschillende aerodynamische problemen is verkregen, is een zekere mate van standaardiseering mogelijk geworden. De practijk leert echter dat slechts geheel metalen vliegtuigen voor massafabrikatie in aanmerking komen. Nog andere problemen drongen de fabrikanten van groote vliegtuigen op den weg naar het geheel metalen vliegtuig. Slechts enkele houtsoorten, welke dan nog zorgvuldig moeten worden gesorteerd, zijn geschikt voor den vliegtuigbouw. Hierdoor beschikt men slechts over stukken van beperkte afmetingen, welke dan bij den bouw van groote vliegtuigen aan elkander moeten worden gevoegd, wat de constructie zwaar en duur maakt.

Metaal daarentegen laat zich vrijwel in elke gewenschte afmeting fabriceeren, de sterkte is nauwkeurig bekend en ondervindt geen nadeelige invloeden van vochtigheid en temperatuur, zooals het hout.

Om dezelfde reden, waarom groote bruggen lichter kunnen worden gemaakt van ijzer dan van hout, is ook het groote vliegtuig uit metaal aanzienlijk lichter dan die uit hout. Zooals bekend mag worden verondersteld, is het van het grootste belang, het eigengewicht van het vliegtuig zoo laag mogelijk te houden. Elke besparing van gewicht aan het vliegtuig zelf, beteekent een vermeerdering van de nuttige last, welke het vliegtuig kan meevoeren.

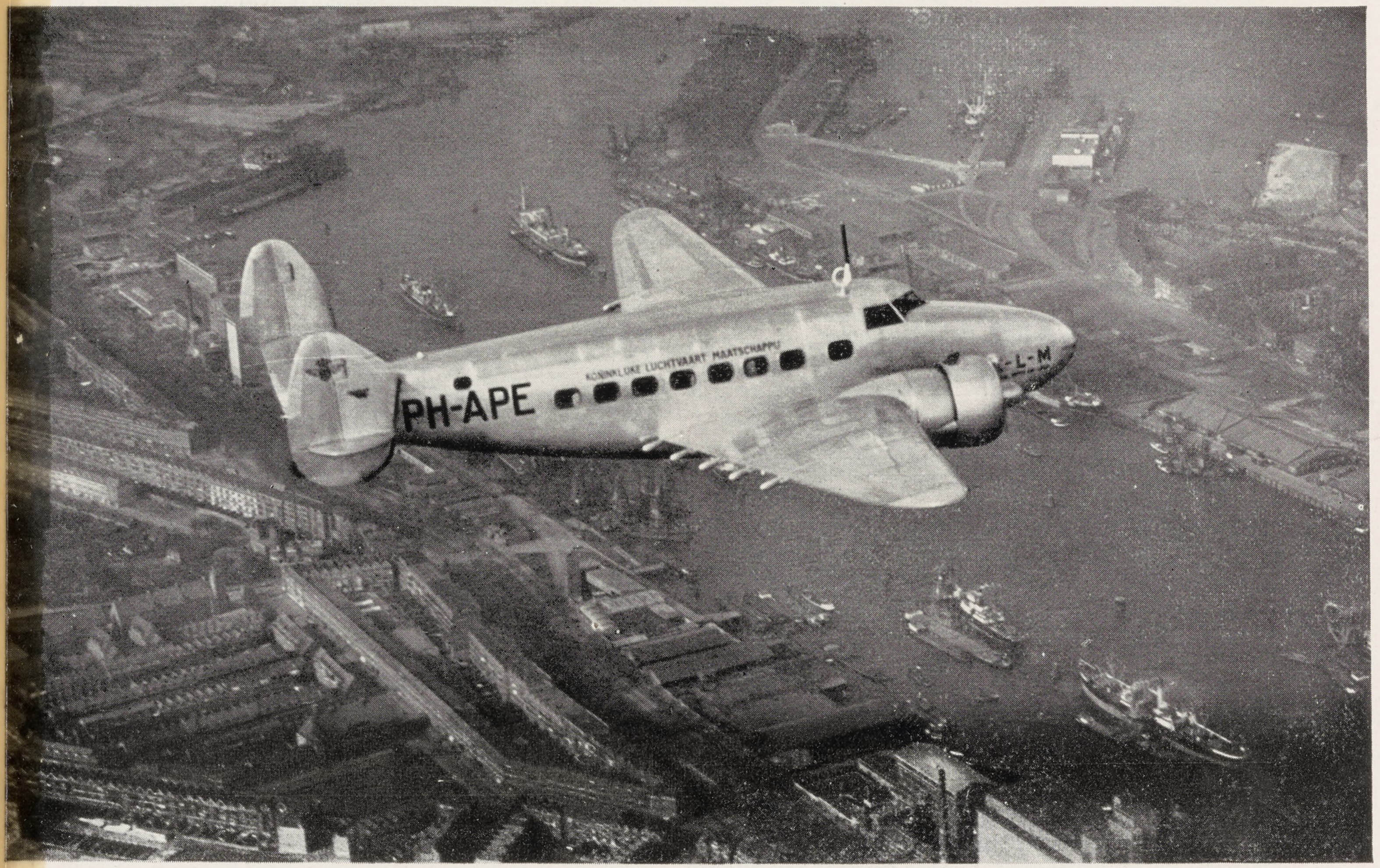
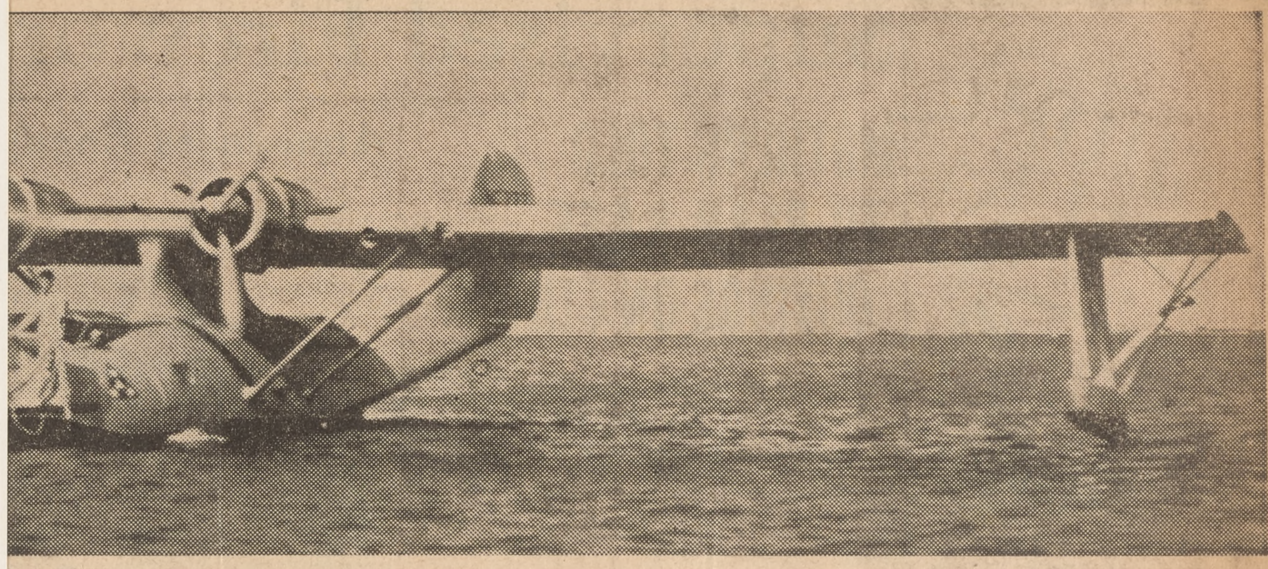


Fig. 1: de „Ekster", een Lockheed „14" zooals de K.N.I.L.M. die op de Australië-lijn gebruikt.

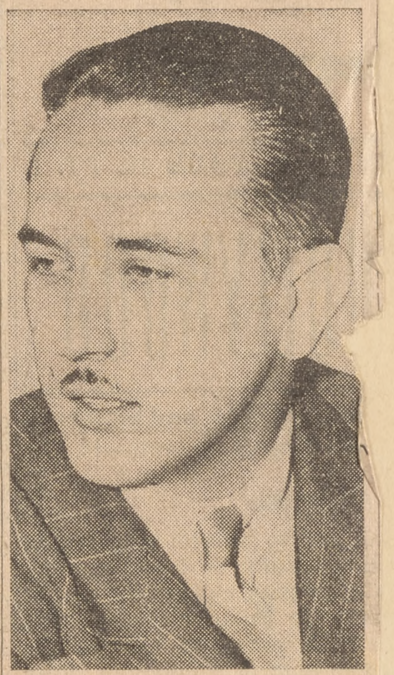
3, 1939



★ L.A. Times July 12-39 JULY 1

Aircraft Company Awarded Judgment From Engineer

Expert Who Refused to Stay in Russia Must Repay Expenses



LOSES SUIT — Gilbert A. Henry, sued by company.

Judgment of $1910.55 in favor of Consolidated Aircraft Corp. of San Diego was returned by Superior Judge Thurmond Clarke yesterday against Gilbert A. Henry, young airplane engineer, in a lawsuit arising from Henry's refusal to work in Soviet Russia.

The corporation brought the action on the ground that it was entitled to recover transportation expenses advanced Henry on sending him to Tagenrog, U.S.S.R., to work at building airplanes for the Soviet government under a contract.

STAYS ONLY WEEK

Henry, the concern complained, reached Moscow, remained there a week, and then turned back without even seeing the plant at Tagenrog.

In a cross-complaint for $2747.23, Henry contended that the corporation had misrepresented living conditions in Russia in sending him there. He argued that life in Moscow had been enough to convince him that sanitary conditions were not adequate and he could not send for his wife and 2-year-old son, who would have been forced to remain with him for the two years called for by his contract.

RECOVERY DENIED

Judge Clark denied Henry any recovery on the cross-complaint through which the engineer sought reimbursement for his expenditures in returning to the United States and his loss of salary after his return.

Tribune 7-12-39

Sued for Refusal Of Job in Russia

Refusal of Gilbert Henry, aircraft engineer, to accept an assignment in Soviet Russia, was cited in Los Angeles superior court by Consolidated Aircraft Corp. in its successful suit to recover $1910.55 advanced Henry in traveling expenses.

Henry, the company complained, reached Moscow, remained there a week and returned without even seeing the aircraft plant at Tagenrog, where he was to work on planes for the Soviet government under contract.

In a cross-complaint for $2747.23, Henry contended the company had misrepresented living conditions in Russia.

NEW MONIKERS FOR PBY UNITS

All Groups Effected By New Numbering

~~Union 7-12-39~~

Aviation

SUN - 7-11-39

The familiar designations by which the Navy's patrol squadron of giant airboats have been known in recent years have been abandoned, it was learned today.

San Diego's three 12-plane units of Consolidated PBY flying boats—Patrol Squadrons 7, 9 and 18—in the future will be referred to as Patrol Squadrons 11, 12 and 13 in a new system of identifying aircraft.

PATROL WING ONE

All squadrons of San Diego's Patrol Wing 1, will be designated by the numeral "one" followed by a digit indicating their seniority. Thus, should another bomber squadron be commissioned in this wing, it will be known as Patrol Squadron 14.

The five patrol units in Hawaii's Patrol Wing 2, formerly given the scattered designations—Patrol Squadron 1, 4, 6, 8 and 10—have been renamed Squadrons 21, 22, 23, 24 and 25. In the same manner, the numeral "three" will be used for Patrol Wing 3, at Coco Solo, Canal Zone—Squadrons 31, 32 and 33. Patrol Wing 4 at Seattle, which consisted of VP-16, VP-17, VP-19, VP-20 and VP-21, now comprises Squadrons 41, 42, 43, 44 and 45. Norfolk's Patrol Wing 5 has been expanded from two squadrons—VP-14 and VP-15—to four units, Squadrons 51, 52, 53 and 54.

LAND PLANES TOO

The same method is used in identifying land planes based on aircraft carriers. For instance, the Lexington's four squadrons have the "number two" designation—Bombing Squadron 2, Fighting Squadron 2, etc. The Saratoga's planes are the "number 3" group, the Ranger's "number 4," the Yorktown's "number 5," and the Enterprise's "number 6."

No more delivery flights of Consolidated planes from San Diego to Pearl Harbor or the Canal Zone are planned in the near future, it was reported at North Island today.

AN DIEGO UNION: WEDNE

Head Winds Halt S. D. Flying Boat At Buffalo

Union 7-12-39

Beset by strong head winds that cut down his flying speed and reduced the gasoline supply beyond the safety point, the Consolidated plane piloted by Russell Rogers, which left San Diego at 8:23 a.m. Monday bound for England via Botwood, Newfoundland, landed at Buffalo at 3:30 a.m. (Pacific time), yesterday, The Associated Press reported.

Rogers said he would remain at Buffalo overnight before continuing the flight to Botwood and Felixstowe, England, today. The 15-ton plane had flown 2400 of the 3300 miles on a projected nonstop flight from San Diego to Botwood when it landed.

SECOND DELAY

It marked the second time that Rogers attempted to keep a dinner engagement in a swank London hotel scheduled for tonight. Sunday morning he took off for England only to meet with disapopintment when the failure of the automatic pilot forced him to return here after being aloft less than three hours. He announced at Buffalo the dinner, as far as he was concerned, was off.

The plane is to be delivered to the British Royal flying corps at Felixstowe.

ROUTE SAFETY PROVED

The landing proved the ability of the San Diego-built flying boats to make emergency stops on transcontinental flights. The planes are equipped only for water landings, but before taking off Rogers said no apprehension was felt on a flight across the continent because of the numerous rivers and lakes.

Rogers piloted Richard Archbold's plane Guba on the recent New Guinea expedition, where many landings were made on rivers and lakes of the island.

Indian Ocean Survey

NEGOTIATIONS for the charter of Mr Richard Archbold's Consolidated P.B.Y. flying boat, the *Guba,* for a flight survey of the Indian Ocean from the west coast of Australia to the east coast of Africa, by way of the Cocos Islands, the Chagos Archipelago and the Seychelles Islands, commenced last year, when the aircraft was flown from Port Moresby to Sydney and Melbourne for instrument and general overhaul.

Before the *Guba* crossed the Pacific from the United States to Dutch New Guinea to ferry scientific personnel, soldiers, labor and supplies from Hollandia to an inland lake, 11,000 feet above sea level, Captain P. G. Taylor had made a special journey to England and the United States in an effort to secure, preferably, a British craft with sufficient range to fly the distances between the island bases. When this was found to be impossible he tried to secure an American craft.

Sufficient capital, however, was not forthcoming from private sources to purchase a twin-engined flying boat, and there was, in addition, the necessity to lay down fuel dumps and other supplies at the various stopping places.

A proposal, however, was put before the late Prime Minister, Mr Lyons, which included the purchase or charter of, preferably a British flying boat, or, failing this, an American aircraft.

Messrs Short Bros., however, were so busy in supplying craft to Imperial Airways Ltd. and its subsidiary-companies, and Imperial Airways Ltd. and Qantas, in turn, were fully occupied in inaugurating the flying boat scheme; so it was apparent that a British flying boat could not be obtained.

After an interview in Melbourne with Captain Yancey and Mr Russell Rogers, Mr Archbold's navigator and first pilot, it was decided by Captain Taylor that a concrete proposal could be placed before the Government for the charter of the *Guba*. This proposal was prepared, and it included, on one side, revenues obtainable from a special air mail, sale of newspaper, broadcasting, film and other rights, and, on the other side, a small deficit which the Government was asked to guarantee, although it is expected that this deficit will be covered by private enterprise.

The proposal was sponsored by the Federal Treasurer, Major R. G. Casey, and after it was submitted and approved by Cabinet, Captain Taylor was authorised to negotiate with Mr Archbold.

Captain Yancey flew to Sydney from Papua in a W. R. Carpenter 86B, and a contract was drawn up which was signed on behalf of the Federal Government by Mr Thorby, and by Captain Yancey, Mr Archbold's fully accredited representative. Thus ended five years' dogged, and, at times, heart-breaking efforts by Captain P. G. Taylor to secure suitable equipment to make a survey of what has become known on maps of the world air routes as "The Reserve Empire Air Mail Route."

Mr Richard Archbold (left), owner of the Guba, and Messrs. R. Rogers and L. Yancey (right) respectively. Archbold Expedition's chief pilot and navigator.

Capt. P. G. Taylor (right), who has been appointed by the Commonwealth Government to take charge of the Indian Ocean flight survey, with J. Percival, Junr., a member of the expedition, and official newspaper correspondent in charge of special organisation.

Vulnerability of Empire Route

FREQUENTLY Captain Taylor has pointed out the vulnerability of the present air mail route to Australia, which is dependent on clear air corridors along the Mediterranean and through the East. During the crisis last December the flying boat service was interrupted when there was a threat of hostilities, and some of the craft did not proceed further towards Australia than France until the international atmosphere was cleared.

In the event of war involving the Mediterranean and the near East, Captain Taylor pointed out, flying boats could proceed to Australia by way of the west coast of Africa and the Indian Ocean. Nature has divided the Indian Ocean into flying distances within the range of modern commercial aircraft.

The total flying distance across the Indian Ocean by the route to be surveyed is approximately 4,674 nautical miles, but this distance, of course, is dependent upon the site of the base which will be selected by Captain Taylor on the west coast of Australia. At this stage it cannot definitely be stated from where the survey flight will be started.

The distances between the Indian Ocean air bases are as follows:— The Cocos Islands to Diego Garcia, 1172 nautical miles; Diego Garcia to the Seychelles, 1022 nautical miles; and the Seychelles to Mombasa (Kenya) 950 nautical miles. The distance from the west coast of Australia to the Cocos cannot be given until it is definitely decided which will be the jumping off position.

During the flight across the Indian Ocean the *Guba* will stay at each of the islands for a week, when Captain Taylor, assisted by Mr J. Percival, will make a survey to determine the most suitable flying boat bases and the suitability of the islands for the establishment of landplane aerodromes.

Mr Archbold, who is a research associate of the American Museum of Natural History, in addition to being a pilot of skill, will pursue scientific studies at each of the islands which have not yet been visited by an expert biologist.

The flight is scheduled to commence at a date to be decided upon between the Commonwealth Government, Captain Taylor and Captain Yancey—any time between June 10 and August 1.

The *Guba* will be flown from Port Moresby to the Rose Bay flying boat base on about May 20, when it will

(*Continued on page* 52)

INDIAN OCEAN SURVEY—

(*Continued from page* 20)

be hauled up the slipway and thoroughly inspected. Before flying south two new Pratt & Whitney engines will be slung into the bearers, and they will be gently worked in while the flying boat ferries the expedition's personnel, wireless equipment and other appurtenances from the inland lake to the coast.

The laying down of 2500 gallons of 87 octane fuel at each of the islands has been commenced by the Vacuum Oil Co., and the petrol, oil and other supplies will be shipped from Capetown, Singapore and Fremantle.

The crew for the flight will be Mr Richard Archbold, owner of the *Guba;* Captain P. G. Taylor, in charge of the flight survey for the Commonwealth Government; Captain L. A. Yancey, navigator; Mr R. Rogers, first pilot; Mr J. Percival, the Commonwealth Government's second representative, who will also act as official newspaper correspondent and be in charge of special organisation; Mr R. Booth, radio operator; and Messrs. G. Brown and S. Berrinka, mechanics.

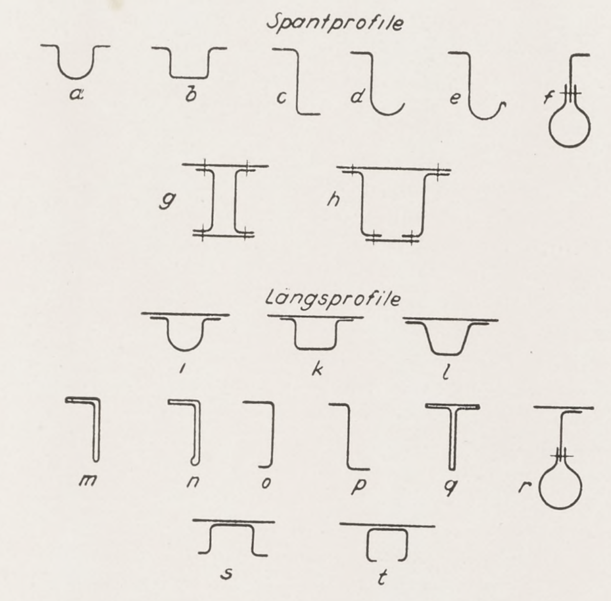


Fig. 2. Profielvormen voor spanten en langsverstijvingen.

Ook is het metalen vliegtuig, zooals reeds is opgemerkt, ongevoelig voor vochtigheid en temperatuur. Het is dus niet noodzakelijk dat het vliegtuig ten alle tijde in groote en dure vliegtuighallen moet worden ondergebracht. Het kan zoo noodig buiten in alle weer en wind worden verankerd, wat vooral voor groote watervliegtuigen van belang is, daar het transport van deze vliegtuigen op het land dikwijls niet eenvoudig is.

Het oplossen van de verschillende problemen, welke zich bij het construeeren van geheel metalen vliegtuigen voordeden, waren kostbaar en zeer tijdroovend.

In het bijzonder heeft zich het duraluminium voor het vervaardigen van metalen vliegtuigen als een zeer geschikt materiaal doen kennen. Duraluminium is een legeering van aluminium, koper en magnesium. Ofschoon dit duraluminium toch nog altijd 3 à 4 maal zwaarder is dan hout, is dit voordeel van geringer gewicht slechts schijnbaar. Voor de lichtheid van een constructie is niet alleen het soortelijk gewicht van het gebruikte materiaal van belang, ook de sterkte hiervan spreekt een woordje mee. Van groot belang is dan ook de z.g.n. ,,specifieke vastheid'' van het materiaal. Hieronder verstaat men de verhouding :

$$\frac{\text{toelaatbare materiaalspanning}}{\text{soortelijk gewicht}}$$

In onderstaande tabel is ter vergelijking voor enkele materialen de specieke vastheid vermeld.

Materiaal	Specifieke vastheid	S.G.
Zacht staal	3,85	7,8
Chroom-nikkelstaal	12,8	7,8
Duraluminium	10,—	2,3
Spruce hout	10,6	0,5

Wij zien hieruit dat het hoogwaardig chroom-nikkelstaal eigenlijk voor een vliegtuig de lichtste bouwstof is, m.a.w. dat men, door een bepaald constructiedeel in dit materiaal uit te voeren, met minder gewicht zou kunnen volstaan, dan bijvoorbeeld bij gebruik van duraluminium of hout. Om constructieve redenen geeft men echter in de meeste gevallen de voorkeur aan duraluminium, omdat uit staal vervaardigde onderdeelen dikwijls te klein uitvallen of van zoo geringe wanddikte zouden worden, dat praktische moeilijkheden zouden ontstaan.

Zooals reeds is opgemerkt, gemakkelijk is de overgang van de gemengde bouwwijze naar het geheel uit metaal vervaardigde vliegtuig niet geweest. Het bewerken van het zilver glanzend duraluminium stelt geheel andere eischen dan staal of koper. Alleen al de bescherming van aluminiumlegeeringen tegen oxydeerende invloeden van buiten, bijvoorbeeld tegen zeewater, is een wetenschap op zichzelf geworden, waarmede men nog lang niet gereed is. Zeer veel bittere ervaringen moesten worden opgedaan en zeer vele proefnemingen verricht, voor men gekomen was op de hooge trap van ontwikkeling, waarop de tegenwoordige metaalvliegtuigbouw staat.

Verschillende legeeringen zijn op de markt verschenen, welke alle ten doel hebben, de sterkte te vergrooten en zoodoende materiaal te kunnen uitsparen. En nog steeds wordt in deze richting verder gezocht.

Een ander belangrijk punt is het doelmatig gebruik van het materiaal bij de constructie van het vliegtuig. Daar de verschillende duraluminiumlegeeringen slechts verkrijgbaar zijn in strippen, platen, staven en dunwandige buizen, is de constructeur gedwongen, de verschillende deelen, waaruit het vliegtuig wordt samengesteld, hieruit te vervaardigen. Wanneer men dan ook een geheel uit metaal vervaardigd vliegtuig van binnen bekijkt, ziet men dat dit geheel is samengesteld uit platen en uit plaat vervaardigde profielen van alle mogelijke vormen. Enkele van deze profielen zijn weergegeven in fig. 2.

Vooral de laatste jaren ziet men constructies toegepast, waarbij de plaatbekleeding van romp en vleugels zeer veel tot de sterkte van het vliegtuig bijdragen. Hierbij kan men eigenlijk niet meer spreken van vakwerkconstructies, die door opgeklonken platen verstijfd worden (meedragende huid) zooals bij de meer conservatieve bouwwijzen. Bij de nieuwere constructies, zooals bij de Douglasvliegtuigen en andere, moeten romp en vleugel in zijn geheel meer als doosliggers beschouwd worden, met de gewenschte aerodynamische vorm, zie fig. 3. De huidplaten worden hierbij door langs- en dwarsschotten verstijfd. Tengevolge van de belastingen ontstaan in dergelijke verstijfde plaatcylinders trek- of drukspanningen. Waar drukspanningen kunnen optreden, zullen de platen, die meestal heel dun zijn (0,5 — 2 mm) willen uitknikken. Deze moeten dus door profielen verstijfd worden.

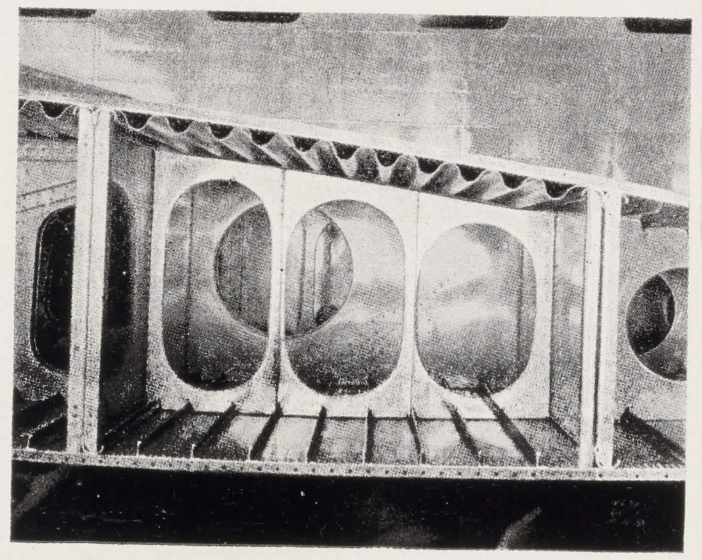


Fig. 3. Vleugelconstructie van de Douglas D.C. 3 De constructie van de ribben wijkt geheel af van de vroegere vakwerksconstructie, zooals bij hout gebruikelijk was, en in de eerste metalen vleugels werd overgenomen.

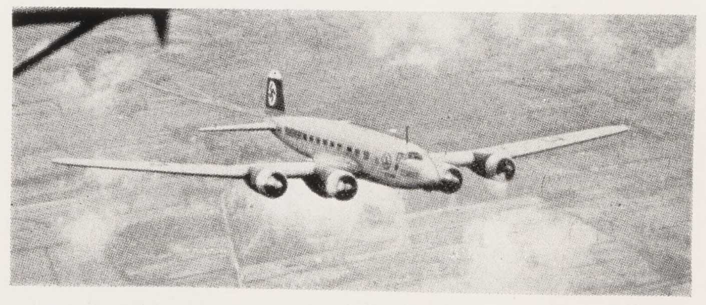


Fig. 4. Verkeersvliegtuig ,,Condor F.W. 200'' voor 26 passagiers.

Reeds in den wereldoorlog werden dergelijke constructies, z.g.n. ,,schaalconstructies'' in hout uitgevoerd. In latere jaren werden door de Lockheed fabrieken dergelijke vliegtuigen de ,,Lockheed Vega's'' in serie vervaardigd. Ook de beroemde ,,Panderjager'' was als zoodanig gebouwd. Lange jaren werd deze constructie echter zelden toegepast. Slechts voor zeer snelle vliegtuigen, wanneer men bijzonder vloeiende vormen wenschte, bracht de schaalconstructie voordeelen.

Door het toenemend luchtverkeer is het in serie vervaardigen van geheel metalen vliegtuigen mogelijk geworden, waarvoor de schalenbouwwijze zich uitstekend leent.

Deze heeft verder nog het voordeel, dat de ruimte binnen in het vliegtuig veel minder in beslag genomen wordt door spanten, schoren en verspanningen, wat voor verkeersvliegtuigen een voorname factor is.

Als voorbeeld van een modern verkeersvliegtuig, gebouwd volgens de nieuwste inzichten, kan het groote verkeersvliegtuig van de Duitsche Lufthansa, de ,,Condor F.W.200'' dienen, welke in Augustus in precies 25 uur, met 4 man, zonder tusschenlanding, van Berlijn naar New-York is gevlogen.

Dit vliegtuig is een 4-motorige laagdekker voor 26 passagiers en een bemanning van 4 personen. De maximumsnelheid is 430 km per uur kruissnelheid 400 km per uur.

De romp is als schaalconstructie uitgevoerd, m.a.w. de huidplaten zijn door langsprofielen en spanten verstijfd. Vleugels en staartvlakken zijn met duraluminium platen bekleed. De roeren zijn met doek bespannen. Motorbokken, intrekbaar landingsgestel en staartwiel zijn van hoogwaardig staal. Het landingsgestel wordt naar voren ingetrokken, waardoor bij weigeren van het mecanisme toch de wielen naar buiten kunnen worden gebracht, daar het eigengewicht en de vliegwind dan het mecanisme vervangen. Speciale aandacht is geschonken aan de mogelijkheid, de motoren snel te kunnen verwisselen, wat vooral voor verkeersvliegtuigen van het grootste belang is. Volgens mededeelingen van den fabrikant kan dit door 3 man binnen de 15 minuten geschieden. Aan de wenschen van den vlieger is in ruime mate tegemoet gekomen. Hoogte-richtingsroeren en vleugelklappen zijn voorzien van electrisch bedienbare trimvlakjes. Zelfs bij het uitvallen van beide stuurboord of bakboord motoren, blijft hierdoor het vliegtuig licht bestuurbaar.

Een bijzondere inrichting is aangebracht, die er voor zorgt, dat wanneer geland wordt met vol uitgeslagen landingsklappen, deze geleidelijk in den stand voor ,,starten'' worden gebracht, wanneer bijvoorbeeld op het laatste moment blijkt, dat er niet geland kan worden. Hierdoor kan de vlieger zonder bezwaar plotseling weer ,,vol gas'' geven, zonder dat hij bang behoeft te zijn, dat het vliegtuig doorzakt.

De hoofdligger van de vleugel, welke door de romp heenloopt, verdeelt de passagiersruimte in een ,,rooken'' en een ,,niet rooken'' cabine. Hier vindt de meest eischende passagier alle denkbare comfort. Voor iedere zitplaats is een klaptafeltje, een leeslampje en een schakelknopje voor het seinlampje voor de steward aangebracht en in de rookcabine nog een electrische aansteker en een asbakje.

Amerika verrast ons bijna elken dag met iets nieuws op luchtvaartgebied en veel is er thans werkelijkheid geworden, dat men niet lang geleden in Europa nog als een utopie beschouwde. Dit heeft zoowel betrekking op het bouwen van bijzonder sterke motoren, verstelbare luchtschroeven met constante prestatie, als op het verbeteren van de constructiemethoden van den vorm der vliegtuigen.

Duitschland stond vroeger aan de spits wat betreft het maken van geheel metalen vliegtuigen, in de laatste jaren is hierin echter een groote verandering gekomen en vooral Amerika heeft in dit opzicht buitengewoon uitgeblonken. In de eerste plaats moet genoemd worden

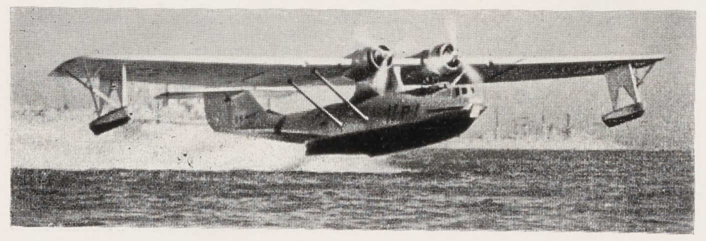


Fig. 5. Consolidated vliegboot voor de Amerikaansche Marine.

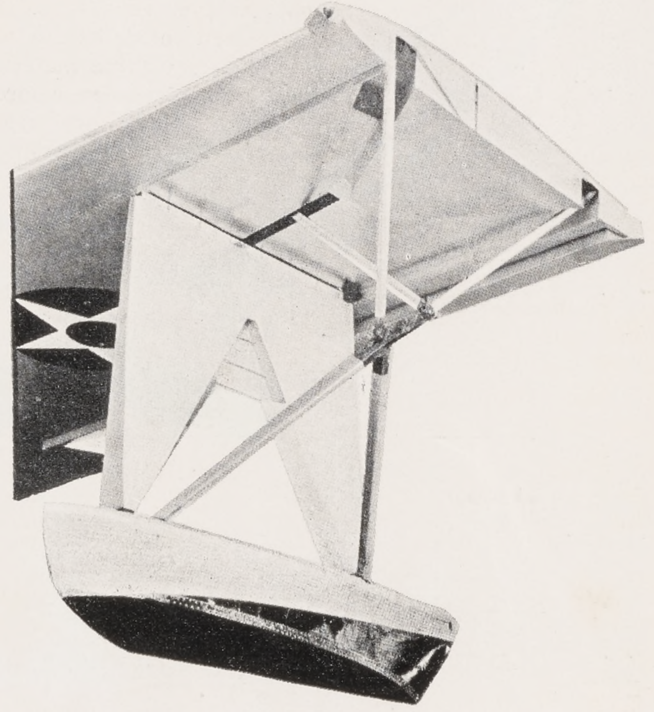
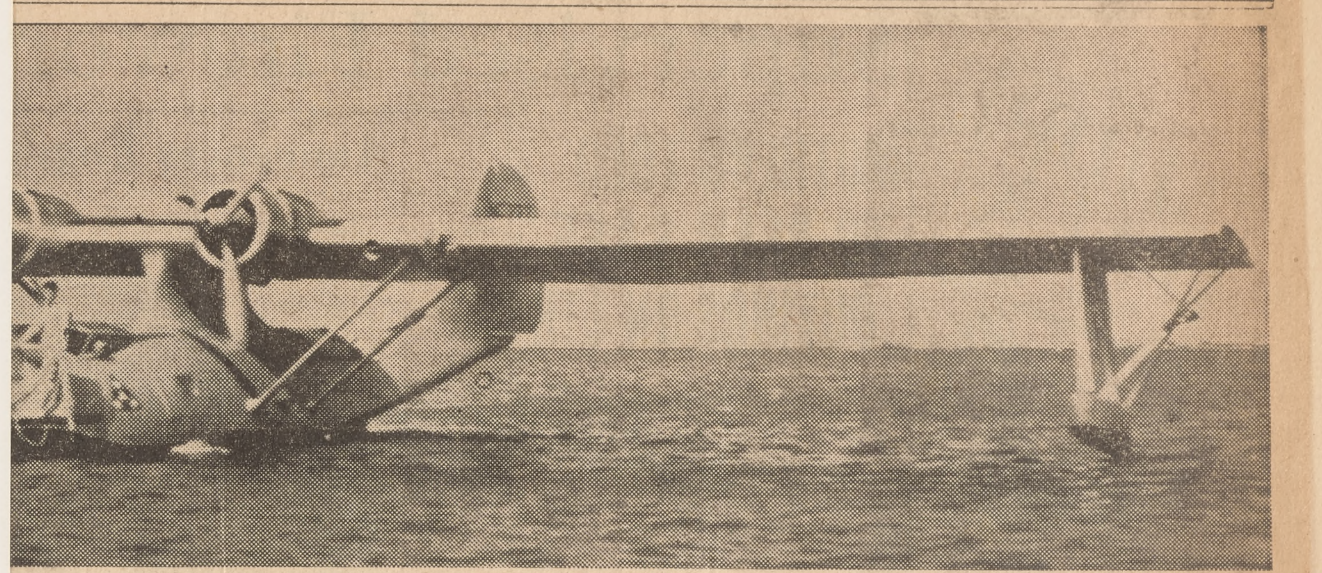


Fig. 6. Vleugeldrijver van de Consolidated vliegboot van fig. 5.

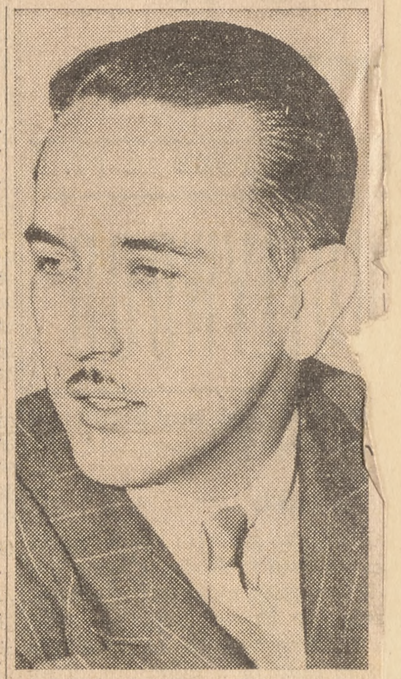
3, 1939



★ L.A. TIMES July 12-39 JULY 1

Aircraft Company Awarded Judgment From Engineer

Expert Who Refused to Stay in Russia Must Repay Expenses



LOSES SUIT — Gilbert A. Henry, sued by company.

Judgment of $1910.55 in favor of Consolidated Aircraft Corp. of San Diego was returned by Superior Judge Thurmond Clarke yesterday against Gilbert A. Henry, young airplane engineer, in a lawsuit arising from Henry's refusal to work in Soviet Russia.

The corporation brought the action on the ground that it was entitled to recover transportation expenses advanced Henry on sending him to Tagenrog, U.S.S.R., to work at building airplanes for the Soviet government under a contract.

STAYS ONLY WEEK

Henry, the concern complained, reached Moscow, remained there a week, and then turned back without even seeing the plant at Tagenrog.

In a cross-complaint for $2747.23, Henry contended that the corporation had misrepresented living conditions in Russia in sending him there. He argued that life in Moscow had been enough to convince him that sanitary conditions were not adequate and he could not send for his wife and 2-year-old son, who would have been forced to remain with him for the two years called for by his contract.

RECOVERY DENIED

Judge Clark denied Henry any recovery on the cross-complaint through which the engineer sought reimbursement for his expenditures in returning to the United States and his loss of salary after his return.

Tribune 7-12-39

Sued for Refusal Of Job in Russia

Refusal of Gilbert Henry, aircraft engineer, to accept an assignment in Soviet Russia, was cited in Los Angeles superior court by Consolidated Aircraft Corp. in its successful suit to recover $1910.55 advanced Henry in traveling expenses.

Henry, the company complained, reached Moscow, remained there a week and returned without even seeing the aircraft plant at Tagenrog, where he was to work on planes for the Soviet government under contract.

In a cross-complaint for $2747.23, Henry contended the company had misrepresented living conditions in Russia.

NEW MONIKERS FOR PBY UNITS

All Groups Effected By New Numbering

Union 7-12-39

Aviation

SUN - 7-11-39

The familiar designations by which the Navy's patrol squadron of giant airboats have been known in recent years have been abandoned, it was learned today.

San Diego's three 12-plane units of Consolidated PBY flying boats—Patrol Squadrons 7, 9 and 18—in the future will be referred to as Patrol Squadrons 11, 12 and 13 in a new system of identifying aircraft.

PATROL WING ONE

All squadrons of San Diego's Patrol Wing 1, will be designated by the numeral "one" followed by a digit indicating their seniority. Thus, should another bomber squadron be commissioned in this wing, it will be known as Patrol Squadron 14.

The five patrol units in Hawaii's Patrol Wing 2, formerly given the scattered designations—Patrol Squadron 1, 4, 6, 8 and 10—have been renamed Squadrons 21, 22, 23, 24 and 25. In the same manner, the numeral "three" will be used for Patrol Wing 3, at Coco Solo, Canal Zone—Squadrons 31, 32 and 33. Patrol Wing 4 at Seattle, which consisted of VP-16, VP-17, VP-19, VP-20 and VP-21, now comprises Squadrons 41, 42, 43, 44 and 45. Norfolk's Patrol Wing 5 has been expanded from two squadrons—VP-14 and VP-15—to four units, Squadrons 51, 52, 53 and 54.

LAND PLANES TOO

The same method is used in identifying land planes based on aircraft carriers. For instance, the Lexington's four squadrons have the "number two" designation—Bombing Squadron 2, Fighting Squadron 2, etc. The Saratoga's planes are the "number 3" group, the Ranger's "number 4," the Yorktown's "number 5," and the Enterprise's "number 6."

No more delivery flights of Consolidated planes from San Diego to Pearl Harbor or the Canal Zone are planned in the near future, it was reported at North Island today.

Head Winds Halt S. D. Flying Boat At Buffalo

Union 7-12-39

Beset by strong head winds that cut down his flying speed and reduced the gasoline supply beyond the safety point, the Consolidated plane piloted by Russell Rogers, which left San Diego at 8:23 a.m. Monday bound for England via Botwood, Newfoundland, landed at Buffalo at 3:30 a.m. (Pacific time), yesterday, The Associated Press reported.

Rogers said he would remain at Buffalo overnight before continuing the flight to Botwood and Felixstowe, England, today. The 15-ton plane had flown 2400 of the 3300 miles on a projected nonstop flight from San Diego to Botwood when it landed.

SECOND DELAY

It marked the second time that Rogers attempted to keep a dinner engagement in a swank London hotel scheduled for tonight. Sunday morning he took off for England only to meet with disapopintment when the failure of the automatic pilot forced him to return here after being aloft less than three hours. He announced at Buffalo the dinner, as far as he was concerned, was off.

The plane is to be delivered to the British Royal flying corps at Felixstowe.

ROUTE SAFETY PROVED

The landing proved the ability of the San Diego-built flying boats to make emergency stops on transcontinental flights. The planes are equipped only for water landings, but before taking off Rogers said no apprehension was felt on a flight across the continent because of the numerous rivers and lakes.

Rogers piloted Richard Archbold's plane Guba on the recent New Guinea expedition, where many landings were made on rivers and lakes of the island.

Indian Ocean Survey

NEGOTIATIONS for the charter of Mr Richard Archbold's Consolidated P.B.Y. flying boat, the *Guba*, for a flight survey of the Indian Ocean from the west coast of Australia to the east coast of Africa, by way of the Cocos Islands, the Chagos Archipelago and the Seychelles Islands, commenced last year, when the aircraft was flown from Port Moresby to Sydney and Melbourne for instrument and general overhaul.

Before the *Guba* crossed the Pacific from the United States to Dutch New Guinea to ferry scientific personnel, soldiers, labor and supplies from Hollandia to an inland lake, 11,000 feet above sea level, Captain P. G. Taylor had made a special journey to England and the United States in an effort to secure, preferably, a British craft with sufficient range to fly the distances between the island bases. When this was found to be impossible he tried to secure an American craft.

Sufficient capital, however, was not forthcoming from private sources to purchase a twin-engined flying boat, and there was, in addition, the necessity to lay down fuel dumps and other supplies at the various stopping places.

A proposal, however, was put before the late Prime Minister, Mr Lyons, which included the purchase or charter of, preferably a British flying boat, or, failing this, an American aircraft.

Messrs Short Bros., however, were so busy in supplying craft to Imperial Airways Ltd. and its subsidiary-companies, and Imperial Airways Ltd. and Qantas, in turn, were fully occupied in inaugurating the flying boat scheme; so it was apparent that a British flying boat could not be obtained.

After an interview in Melbourne with Captain Yancey and Mr Russell Rogers, Mr Archbold's navigator and first pilot, it was decided by Captain Taylor that a concrete proposal could be placed before the Government for the charter of the *Guba*. This proposal was prepared, and it included, on one side, revenues obtainable from a special air mail, sale of newspaper, broadcasting, film and other rights, and, on the other side, a small deficit which the Government was asked to guarantee, although it is expected that this deficit will be covered by private enterprise.

The proposal was sponsored by the Federal Treasurer, Major R. G. Casey, and after it was submitted and approved by Cabinet, Captain Taylor was authorised to negotiate with Mr Archbold.

Captain Yancey flew to Sydney from Papua in a W. R. Carpenter 86B, and a contract was drawn up which was signed on behalf of the Federal Government by Mr Thorby, and by Captain Yancey, Mr Archbold's fully accredited representative. Thus ended five years' dogged, and, at times, heart-breaking efforts by Captain P. G. Taylor to secure suitable equipment to make a survey of what has become known on maps of the world air routes as "The Reserve Empire Air Mail Route."

Mr Richard Archbold (left), owner of the Guba, and Messrs. R. Rogers and L. Yancey (right) respectively. Archbold Expedition's chief pilot and navigator.

Capt. P. G. Taylor (right), who has been appointed by the Commonwealth Government to take charge of the Indian Ocean flight survey, with J. Percival, Junr., a member of the expedition, and official newspaper correspondent in charge of special organisation.

Vulnerability of Empire Route

FREQUENTLY Captain Taylor has pointed out the vulnerability of the present air mail route to Australia, which is dependent on clear air corridors along the Mediterranean and through the East. During the crisis last December the flying boat service was interrupted when there was a threat of hostilities, and some of the craft did not proceed further towards Australia than France until the international atmosphere was cleared.

In the event of war involving the Mediterranean and the near East, Captain Taylor pointed out, flying boats could proceed to Australia by way of the west coast of Africa and the Indian Ocean. Nature has divided the Indian Ocean into flying distances within the range of modern commercial aircraft.

The total flying distance across the Indian Ocean by the route to be surveyed is approximately 4,674 nautical miles, but this distance, of course, is dependent upon the site of the base which will be selected by Captain Taylor on the west coast of Australia. At this stage it cannot definitely be stated from where the survey flight will be started.

The distances between the Indian Ocean air bases are as follows:— The Cocos Islands to Diego Garcia, 1172 nautical miles; Diego Garcia to the Seychelles, 1022 nautical miles; and the Seychelles to Mombasa (Kenya) 950 nautical miles. The distance from the west coast of Australia to the Cocos cannot be given until it is definitely decided which will be the jumping off position.

During the flight across the Indian Ocean the *Guba* will stay at each of the islands for a week, when Captain Taylor, assisted by Mr J. Percival, will make a survey to determine the most suitable flying boat bases and the suitability of the islands for the establishment of landplane aerodromes.

Mr Archbold, who is a research associate of the American Museum of Natural History, in addition to being a pilot of skill, will pursue scientific studies at each of the islands which have not yet been visited by an expert biologist.

The flight is scheduled to commence at a date to be decided upon between the Commonwealth Government, Captain Taylor and Captain Yancey—any time between June 10 and August 1.

The *Guba* will be flown from Port Moresby to the Rose Bay flying boat base on about May 20, when it will

(*Continued on page* 52)

INDIAN OCEAN SURVEY—

(*Continued from page* 20)

be hauled up the slipway and thoroughly inspected. Before flying south two new Pratt & Whitney engines will be slung into the bearers, and they will be gently worked in while the flying boat ferries the expedition's personnel, wireless equipment and other appurtenances from the inland lake to the coast.

The laying down of 2500 gallons of 87 octane fuel at each of the islands has been commenced by the Vacuum Oil Co., and the petrol, oil and other supplies will be shipped from Capetown, Singapore and Fremantle.

The crew for the flight will be Mr Richard Archbold, owner of the *Guba;* Captain P. G. Taylor, in charge of the flight survey for the Commonwealth Government; Captain L. A. Yancey, navigator; Mr R. Rogers, first pilot; Mr J. Percival, the Commonwealth Government's second representative, who will also act as official newspaper correspondent and be in charge of special organisation; Mr R. Booth, radio operator; and Messrs. G. Brown and S. Berrinka, mechanics.

de vroegere Russische constructeur Sikorsky, die het meeste succes had met zijn vliegboottypen met één tot vier motoren.

Verder Martin, die veel leger-vliegtuigen maakt, Douglas, Grumman en Consolidated.

Daar is bijvoorbeeld de vliegboot welke de Consolidated aan de Marina van de Vereenigde Staten levert. Deze tweemotorige eendekker schijnt alle records te slaan wat duur, afstand en mede te nemen last bedreft. Deze vliegboot welke geheel van metaal is gemaakt, wordt door de Amerikaansche Marine voor de bescherming van de kust en als patrouilleboot gebruikt en heeft 2 Wright Cyclone motoren van 1000 P.K. welke twee verstelbare metalen Hamilton schroeven met 3 schroefbladen drijven. Deze vliegboot heeft een scherpe kiel, de achtersteven loopt erg op, de doorsnede van de boot is van onder vlakker d.w.z. meer afgeplat dan gewoonlijk. Vóór aan den boeg en achter de vleugels aan de bovenzijde van de boot zijn de mitrailleurs opgesteld. Door middel van een verbindingskoker kan men van de kajuituit de daarboven gelegen vleugels bereiken.

Ondanks de betrekkelijk groote vleugels schijnen de anders gebruikelijke bootvormige ondersteuningen aan de uiteinden van de vleugels te ontbreken. In werkelijkheid zijn ze echter wel aanwezig, alleen heeft men hun bevestiging aan de vleugels zeer veranderd.

Als ze gebruikt moeten worden, d.w.z. bij het vertrek en bij het neerdalen, worden ze hydraulisch naar buiten gedrukt om later, als ze geen dienst meer behoeven te doen, even snel weer te worden ingetrokken, of liever omgeklapt; want tijdens het vliegen zouden ze te veel weerstand bieden aan de lucht en zoodoende de snelheid van de vliegboot verminderen.

Om deze gemakkelijk te kunnen omklappen heeft men aan den onderkant van de vleugels nabij de uiteinden M-vormige insnijdingen gemaakt, waarin het raamwerk van de ondersteuningen na het omklappen precies past. Het schuitje van de ondersteuningen vormt dan slechts een dikke knobbel aan het uiteinde van de vleugel.

Het vastzetten van de ondersteuningen bij het gebruik hiervan, geschiedt door middel van hefboomen en een kniegewricht van stalen buizen (zie fig. 6).

Ook heeft de Consolidated een ontwerp gemaakt, dat de constructie van een vliegboot, welke meer dan 100 ton weegt, beoogt.

Deze reusachtige vliegboot zal met zes motoren, elk van 2000 P.K. worden uitgerust en een snelheid van 480 mijl per uur in de substratosfeer, dus boven 6000 meter, kunnen ontwikkelen.

Ofschoon de ontworpen vliegboot zes motoren zal bezitten, zullen er slechts vier noodig zijn gedurende het vliegen. De beide overige motoren zullen worden gebruikt om het opstijgen te vergemakkelijken en gedurende de eerste uren van de vliegreis totdat de vliegboot tengevolge van het verbruik der bedrijfsstoffen lichter geworden is. Deze beide motoren worden dan uitgeschakeld en de luchtschroeven in vaanstand gezet, zoodat zij niet blijven doordraaien en dus de snelheid nadeeling beïnvloeden. Door de besparing op het bedrijfsstoffen-verbruik van deze twee beide motoren wordt het vliegbereik vergroot.

Er is berekend dat een dergelijke Consolidated-vliegboot een vervoerscapaciteit heeft van 300 passagiers, exclusief bagage, luchtpost en vrachtgoed. Het vliegbereik is ruimschoots voldoende om den Atlantischen Oceaan of den Stillen Oceaan over te steken met een ruime reserve aan bedrijfsstoffen. Veel ruimte zou worden verkregen in den vleugel, die van groote doorsnede is. Daar zijn de verblijven voor passagiers ontworpen benevens de bedrijfsstoffen-tanks en de vrachtruimen.

Het systeem van zgn. druk-kajuiten voor het vliegen op groote hoogte in de ijle luchtlagen zal natuurlijk worden toegepast.

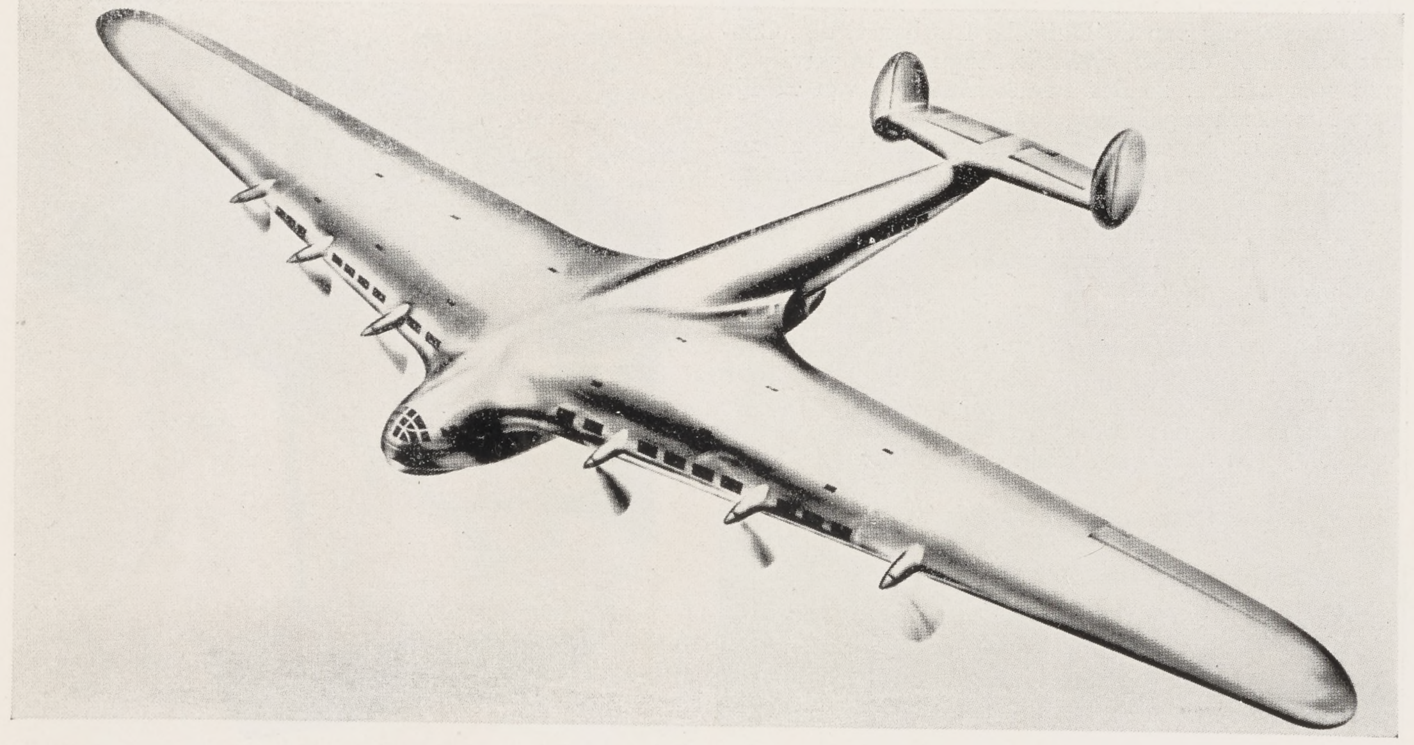
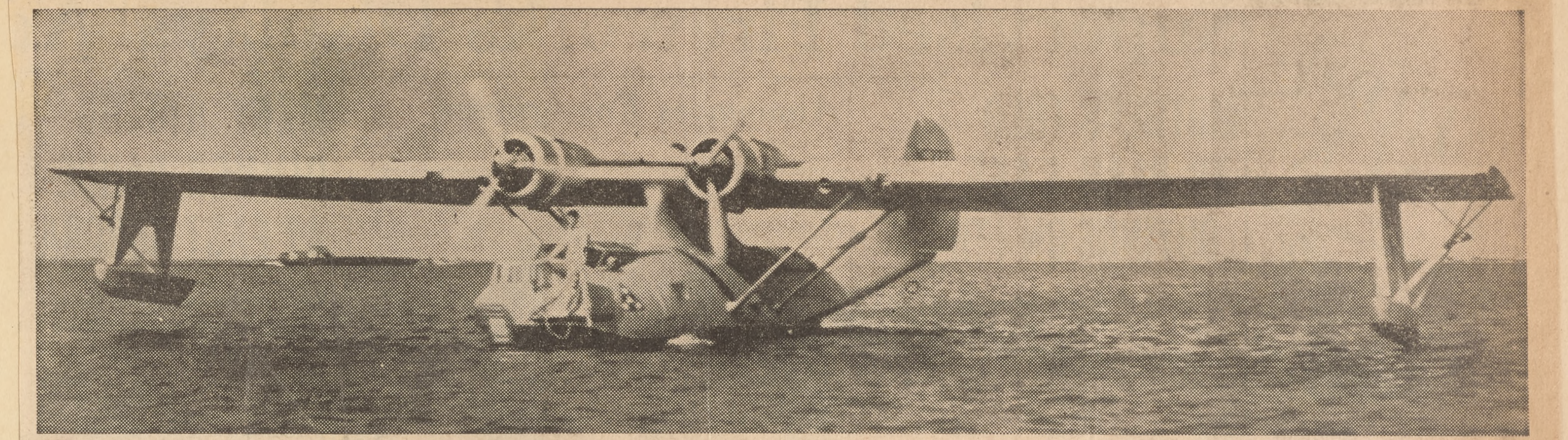


Fig. 7. Plan voor een 100 tons vliegboot voor 300 passagiers.

BUFFALO COURIER-EXPRESS, MONDAY, JULY 3, 1939

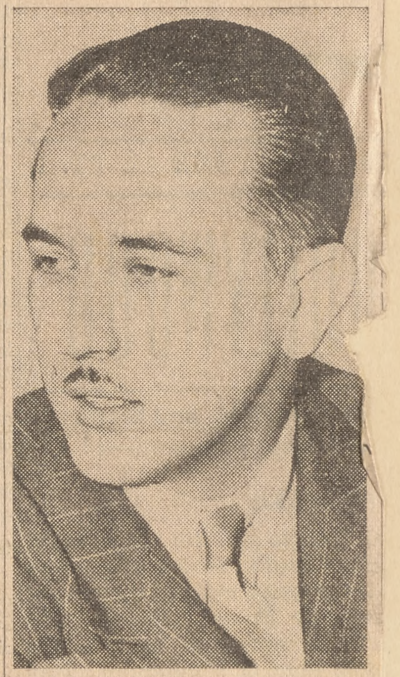


FROM DOWN UNDER—The fourteen-ton flying boat Guba is shown as it came to rest in Jamaica Bay at New York Saturday, ending an 18,000-mile pioneering flight from Australia by way of Africa and the Virgin Islands with the six-man Archbold-New Guinea expedition aboard.

★ L.A. TIMES July 12-39 JULY 1

Aircraft Company Awarded Judgment From Engineer

Expert Who Refused to Stay in Russia Must Repay Expenses



LOSES SUIT—Gilbert A. Henry, sued by company.

Judgment of $1910.55 in favor of Consolidated Aircraft Corp. of San Diego was returned by Superior Judge Thurmond Clarke yesterday against Gilbert A. Henry, young airplane engineer, in a lawsuit arising from Henry's refusal to work in Soviet Russia.

The corporation brought the action on the ground that it was entitled to recover transportation expenses advanced Henry on sending him to Tagenrog, U.S.S.R., to work at building airplanes for the Soviet government under a contract.

STAYS ONLY WEEK

Henry, the concern complained, reached Moscow, remained there a week, and then turned back without even seeing the plant at Tagenrog.

In a cross-complaint for $2747.23, Henry contended that the corporation had misrepresented living conditions in Russia in sending him there. He argued that life in Moscow had been enough to convince him that sanitary conditions were not adequate and he could not send for his wife and 2-year-old son, who would have been forced to remain with him for the two years called for by his contract.

RECOVERY DENIED

Judge Clark denied Henry any recovery on the cross-complaint through which the engineer sought reimbursement for his expenditures in returning to the United States and his loss of salary after his return.

Tribune 7-12-39

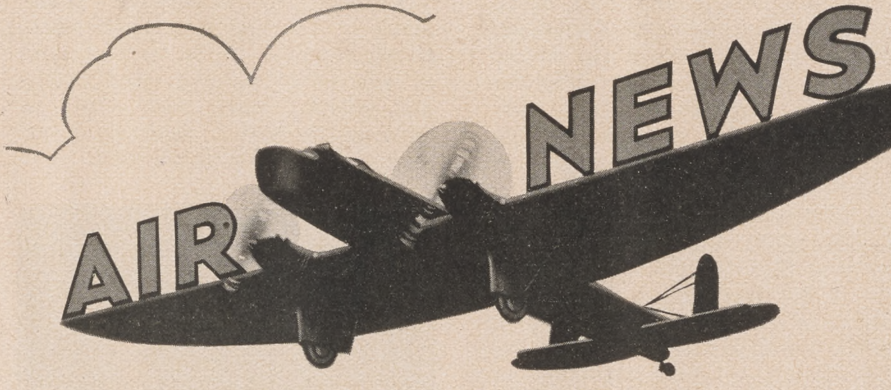
Sued for Refusal Of Job in Russia

Refusal of Gilbert Henry, aircraft engineer, to accept an assignment in Soviet Russia, was cited in Los Angeles superior court by Consolidated Aircraft Corp. in its successful suit to recover $1910.55 advanced Henry in traveling expenses.

Henry, the company complained, reached Moscow, remained there a week and returned without even seeing the aircraft plant at Tagenrog, where he was to work on planes for the Soviet government under contract.

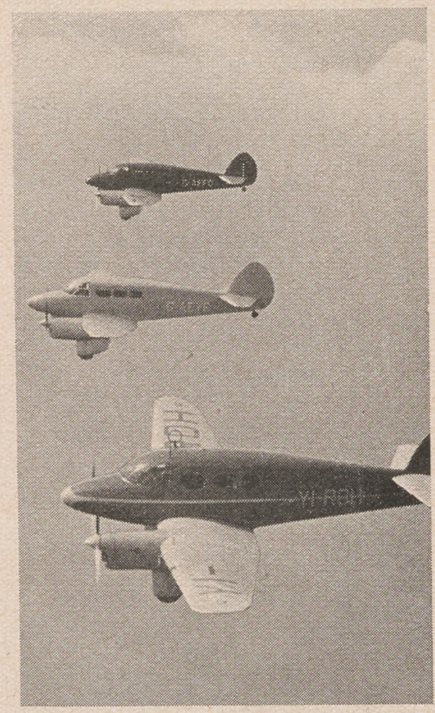
In a cross-complaint for $2747.23, Henry contended the company had misrepresented living conditions in Russia.

July 1939



Transatlantic Air Service

The Pan American Airways flying boat *"Yankee Clipper,"* which carried out a transatlantic survey flight in March last, inaugurated an air service over this route on 20th May, when she took off from Port Washington, Long Island, with nearly a ton of mail on board. Calls were made and mails delivered at the Azores, Lisbon, and Marseilles, and the flying boat then continued to Southampton, where she arrived on 23rd May. The total flying time for the full journey was just under 32½ hrs.



A trio of Percival Q.6 monoplanes. Photograph by courtesy of "Flight."

After an overnight stay at Southampton the *"Yankee Clipper"* set off on the return trip, and reached Port Washington on 27th May. On the same day the sister aircraft *"Atlantic Clipper"* began the second of the transatlantic mail flights to Marseilles, and she arrived back at Port Washington on 3rd June.

The certificate authorising this service and granted to Pan American Airways by the U.S. Civil Aeronautics Authority prohibits the transport of passengers over the route until five return mail flights have been accomplished. There are heavy bookings for the passenger flights.

R.A.F. Vacancies for Apprentice Clerks

The Air Ministry announce that a substantial number of boys of School Certificate or approximately equivalent educational standard will be required this month to fill vacancies for apprentice clerks under the Royal Air Force new recruiting programme.

Candidates must be between 15½ and 17½ years of age on 1st July, and those who are successful will undergo a thorough course of training in clerical duties during their first 18 months' service. They will be attested for 12 years' regular Air Force service from the age of 18 years. The work on which Service Clerks are employed is varied, and includes administrative duties, shorthand, and accounting for pay and equipment.

A limited number will be permitted to re-engage to complete 24 years' service and so qualify for an R.A.F. pension. Those who return to civil life after completing only the first period of 12 years' service will be given an opportunity of entering the R.A.F. Reserve and of drawing a gratuity of £100.

All Apprentice Clerks have an opportunity to volunteer for training as airman pilots, and those who are selected become Sergeant Pilots when they have completed their training, and are employed on flying duties for six years. Airman Pilots who are specially qualified may be recommended for permanent commissions in the General Duties Branch, and a limited number of permanent commissions may be granted also in the Accountant and Equipment Branches to ex-apprentice clerks.

The conditions of entry are given in A.M. Pamphlet 9, a copy of which may be had upon application from The Inspector of Recruiting, Royal Air Force, Victory House, Kingsway, London W.C.2.

New American Flying Boat

The lower illustration on this page shows an interesting new twin-engined flying boat built by the Consolidated Aircraft Corporation, of San Diego, California. It is known as Model 31 and can be produced either as a civil or military aircraft. As a commercial air liner it will have a capacity of 52 passengers for day flying and sleeper accommodation for 28 at night. On transatlantic service it would be equipped to seat 28 passengers.

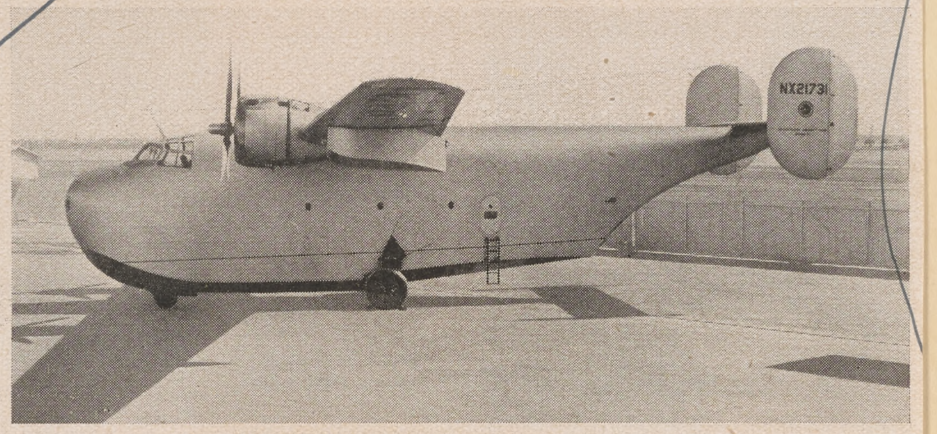
Model 31 was designed and built in 10 months, something of a record for an aircraft of this class. It is of metal construction, and has a wing span of 110 ft. Outboard floats, one on each side of the hull, help to steady the flying boat on the water, and they are drawn up to the underside of the wing during flight. The deep hull has two decks, and the control cabin is in the front part of the upper one. An interesting feature is the hydraulically operated beaching gear. When not in use the nose wheel is retracted into a recess in the underside of the hull and the two side wheels are drawn up into recesses in the sides of the hull. The openings are then closed by doors.

The two engines of this flying boat are of a new Wright type called the "Duplex-Cyclone" and rated at 2,000 h.p. They are said to give the aircraft a top speed of about 300 m.p.h.

Australia-Africa Survey Flight

A possible alternative to the present England-Australia Empire air route through Karachi, Calcutta, and Singapore, is being investigated by the Australian Commonwealth Government. The route under consideration is from western Australia to Mombasa, in Kenya, by way of the Cocos Islands, Diego Garcia, in the Chagos Islands, and Mahe, in the Seychelles, and involves flying across the Indian Ocean.

A 4,670-miles survey flight over this proposed route began on the 4th June. The twin-engined long-range flying boat *"Guba,"* used by Professor Archbold on a recent scientific expedition to New Guinea, was chartered for the survey by the Government, and it took off from Port Hedland, in Western Australia, on the first stage of the flight, a 1,230-miles "hop" to the Cocos Islands. It was piloted by Capt. P. G. Taylor, who was navigator to the late Sir Charles Kingsford-Smith on one of that famous airman's long flights. The crew of nine includes Professor Archbold.



This broadside view of the Consolidated Model 31 flying boat shows the unusual "cut" of the deep hull, and one of the outboard floats drawn up to the wing. Photograph by courtesy of Consolidated Aircraft Corporation, U.S.A.

MUSEUM PLANE IS HOME AFTER ODYSSEY BY AIR

Buffalo Courier Express

Flying boat returns from Australia by way of Africa and Virgin Islands

July 2-39

New York, July 1 (AP)—An 18,000-mile pioneering flight from Australia by way of Africa and the Virgin Islands ended last today when the $250,000 flying boat Guba sat down on Jamaica Bay.

The fourteen-ton craft, carrying the six-man Archbold-New Guinea expedition of the American Museum of Natural History, had flown non-stop from the Virgin Islands about 1500 miles to the southward, the last lap of an odyssey that had carried over territory never before seen by white men.

Scientific Explorations

Before that venture, the plain had participated in scientific explorations in Dutch New Guinea, covering a total of 40,000 miles since it took off from San Diego, Cal., June 3, 1938.

Heading the party was Richard Archbold, owner of the "Flying Laboratory" and research associate of the museum. With him were Russell B. Rogers, first pilot; Lewis A. Yancey, who flew the Atlantic to Rome in 1929, navigator; Gerald D. Brown, flight engineer; Stephan Barrinka, assistant flight engineer, and Ray Booth, radio operator.

After docking at Jamaica Bay, the group was flown to flushing airport and tendered a formal reception at the New York World's Fair.

There Archbold reviewed the journey and said both the survey flight and the scientific expedition had untold value.

The survey flight, he said, proved that Great Britain in time of war could reach Australia by air by flying over only its own territory, "presumably friendly" French and Belgian territory and several water hops the longest being the 1,400-mile trip over the Indian Ocean.

Flying Big Advantage

Of the science side, he said the plane proved a "tremendous advantage over all other expeditionary methods" because explorers in the past "could not have reached the territories that came under our scrutiny and would have starved on the way to the most fertile fields of our investigation."

He said that about 20 per cent of the specimens of plant and animal life obtained by the expedition in New Guinea were entirely new to science and that 6,000 specimens of plant life and 350 species of mammals were gathered for return to this country.

The expedition was "treated in a very friendly manner by all the primitive tribes encountered," he said, adding:

"I'd rather deal with primitive man than any modern civilized or semi-civilized man because he sticks to his word."

Mombasa Times
MOMBASA, KENYA, AFRICA.
Thursday, June 22, 1939.

The New Route To Australia

Mombasa has taken a very lively interest in the progress of Dr. Archbold's flying-boat "Guba," chartered by the British and Australian Governments to survey the alternative Empire air route from London to Australia via Mombasa, the Seychelles, and Cocos Keeling Islands. When the "Guba" touched down at Shimanzi yesterday, after encircling the town, she at once became the central topic of interest; and everybody was glad to welcome the crew of the flying-boat after their successful journey accomplished, as such flights usually are, with a quiet competence which is a welcome contrast to the freak flights which so often end in disaster. The "Guba" has winged her way across the Indian Ocean with the serious purpose of testing out the suitability of the new route, so that it may be used in time of war instead of what would then become the impossible eastern route via the Mediterranean and the Near East. In Captain Taylor's words, which are quoted elsewhere, the flight has proved beyond doubt the entire suitability of the route and the fact that it can be utilised at once.

This is important because it means that even in time of peace the alternative across the Indian Ocean is a practical and attractive way to fly. It is clear, since the route can be brought into operation now, that no extensive and costly arrangements are required which would take a very long time to bring into being, and once more the wisdom of utilising the flying boat for Imperial air communications is amply vindicated. Where there is suitable water the flying boat can "land," whereas the land 'plane requires an extensive ground organisation, and suitable aerodromes which can be used in all weathers. The Empire flying boats have already proved their worth, and the ill-luck of recent weeks, culminating in the barge fire which spread to the Connemara the day before yesterday, has not been a feature of the work done on the Imperial routes since they were operated by flying boats.

"Guba" is taking off this morning at 8 a.m. on her journey to Kisumu and thence to the West Coast, but Captain Taylor and his Australian Government colleague have done their work and a survey is completed. In fact it was completed when the "Guba" left Seychelles yesterday morning, for of course the facilities of Mombasa for flying boats are already well-known and require no further exploration. Members of the crew who took part in this memorable flight are pioneers in a very real sense, and it was interesting to note that among them were several American citizens including the owner of the aircraft, Dr. Archbold, whose name is already well known for his scientific exploration and for his exploits with the "Guba" in New Guinea. It is to be hoped that it will not be war which will cause the utilising of the new Indian Ocean route to Australia. Mombasa would welcome the operation of the route by Imperial aircraft, but in times of peace rather than only as a war-time measure. The economics of this aspect of the case will doubtless change as time goes on and it may well be that events will prove it commercially worth while to fly along the Mombasa-Seychelles-Cocos route long before war compells the flying boats to quit the vicinity of Italy. In the air progress is rapid, and what a few years ago seemed impossible is to-day commonplace so it may be in the case of this route.

In Mombasa we are interested because of the influence which the introduction of such a schedule might wield upon the importance of the Island as an air base. If Mombasa should become the axis of several routes it would become necessary to increase the protection afforded to Mombasa and in that way the development of the town might be set ahead very rapidly indeed. Mombasa would have an additional strategic value under such circumstances, which could not help exercising a lively influence upon the growth of the town and the prosperity of its inhabitants.

S.D. Progress Journal 7-14-39

"U. S. Four Years Ahead With Its Flying Boats"

The Consolidated Aircraft-built airboat Guba, and its history-making aviation feats, have proved that the United States Navy is equipped with the type of seaplanes that can travel swiftly to or from this country's most distant dependencies in time of emergency.

C. A. Van Dusen, vice-president of Consolidated Aircraft Corp., made this observation at a luncheon given in honor of the crew of the Guba, recently here following a 25,000-mile circuit of the world.

"The Guba has shown that large airboats can be delivered over any ocean to any part of the world without interference from surface vessels," Van Dusen said.

"Should America be engaged in a war requiring immediate transfer of the hard-hitting flying equipment the Navy now possesses in its Consolidated PBY's, this could be done in a few days between such widely separated points as New York and the Philippines. The United States is four years ahead of the rest of the world in its flying boats," he stated.

MOMBASA TIMES

PHOTOGRAPHERS BUSY

MOMBASA, KENYA AFRICA

THE arrival of the "Guba" yesterday attracted a considerable amount of interest from visitors to Mombasa and also local residents. Down at Shimanzi there was quite a collection of amateur photographers busy with their cameras on the jetty and they had some wonderful opportunities as the "Guba" landed almost in front of them.

Thursday, June 22, 1939. MOMBASA, KENYA, AFRICA
MOMBASA TIMES.

"GUBA" IN MOMBASA: OCEAN ROUTE SATISFACTORY

WHEN THE FLYING BOAT GUBA ALIGHTED AT KILINDINI HARBOUR AT 09.40 HRS. G.M.T. YESTERDAY CAPTAIN P. G. TAYLOR COMPLETED HIS SURVEY OF THE INDIAN OCEAN AIR ROUTE FROM THE WEST COAST OF AUSTRALIA TO MOMBASA, BY WAY OF THE COCOS ISLANDS, DIEGO GARCIA AND THE SEYCHELLES, FOR THE BRITISH AND AUSTRALIAN GOVERNMENTS.

The route surveyed has been known in Great Britain and Australia for a number of years as "The Reserve Empire Air Mail Line." It has been pointed out that in the event of a war involving the Mediterranean and the East the present air line to India, Malaya and Australia might be severed in several places. The Indian Ocean air route passes through British territory from the west coast of Africa to Australia.

Those who arrived in the Guba at Mombasa yesterday were Captain P. G. Taylor, in charge of the survey for the British and Australian Governments; Mr. R. Archbold, American scientist and owner of the Consolidated PBY 2 flying boat used for the flight; Captain L. A. Yancey, navigator; Mr. R. R. Rogers, pilot; Mr. J. Percival, second representative of the Australian Government and official newspaper correspondent; Mr. R. Booth, radio operator; and Messrs. S. Barrinka and G. Brown, engineers.

The Guba departed from Rose Bay flying boat base, Sydney, on June 3, and flew non-stop across Australia to Port Hedland, a distance, by the route taken, of 2,600 miles. Immediately on arrival at Port Hedland the aircraft was fuelled and a start was made for the Cocos Islands. Because the thick cloud prevented the navigator from fixing position by astromical navigation it was decided to fly to Batavia when only a few miles from the Cocos. After a few days' stay at Batavia the Guba took off for Cocos, and following an uneventual passage by way of Christmas Island, which was surveyed from the air, Cocos Island was sighted through a rain squall and the aircraft alighted on the lagoon.

Several days were spent at the Cocos during which Captain Taylor made a survey of suitable sites for the operation of flying boats and landplanes.

A Fine Lagoon

On arrival at Diego Garcia from the Cocos it was apparent that the lagoon there was a fine natural flying boat base. H.M.S. Manchester was based there in case it could be of assistance for radio bearings.

A short stay was made at Diego Garcia during which Captain Taylor fully satisfied himself about the suitability of the lagoon for flying boat operation. A take-off was then made for the Seychelles.

On arrival at the Seychelles it was obvious that Port Victoria at Mahe fulfilled Captain Taylor's anticipations. At this island the Indian Ocean survey flight really terminated as there is already at Mombasa an excellent flying boat base.

The flying boat Guba, was employed in Hollandia, Dutch New Guinea, for about 12 months as a unit of the Archbold scientific expedition for the New York Museum of Natural History. It ferried hundreds of tons of equipment and food supplies to inland posts and to a lake 11,000 feet above sea level. It was due in a large measure to Mr. Archbold's co-operation that Captain Taylor's efforts to have the Indian Ocean route surveyed came to a head. Captain Taylor yesterday expressed the keenest appreciation for the co-operation of Mr. Archbold and his crew during the 5,000 miles ocean flight.

"Can be used now"

"The Indian Ocean air route is practical," said Captain Taylor.

"It will be a valuable acquisition to the Empire in the future. All the island bases fulfilled my expectations, and there is no reason why an air service should not be immediately started over the route. The island bases are beautiful and should appeal immensely to air travellers. I am fully satisfied with the results of the flight, and I will deal fully with other aspects in my report to the British and Australian Governments."

THE MONTREAL DAILY STAR, MONDAY, JULY 10, 1939

R.A.F. Plane Starts San Diego to Botwood Hop

Giant Plane To Fly Over Montreal

After a brief delay due to a faulty gyroscopic pilot, the mammoth 15-ton bomber ordered for the Royal Air Force took off from San Diego, California, at noon today bound for England via Newfoundland. The giant flying boat will fly non-stop to Botwood, Newfoundland, the machine's route taking it north over Toronto, Ottawa and Montreal. The non-stop flight from San Diego to Botwood is 3,300 miles, and the hop from Newfoundland to Felixstowe, England, where the machine will be delivered, 2,450 miles. Montrealers should be able to see the big ship pass over the city tomorrow morning.

The photo shows the crew aboard the ship. From left to right, they are: Raymond Booth, radio operator, Russell Rogers, pilot, Lewis A. Yancey, co-pilot and Gerald Brown, flight engineer.

Flying Boat To Pass Over City

Craft To Make 3,300-Mile Trip Non-Stop

SAN DIEGO, Calif., July 10—(A.P.) — A 15-ton flying boat for the Royal Air Force took-off this morning for England via Newfoundland.

The first leg is a proposed non-stop flight to Botwood, Newfoundland, 3,300 miles. Captain Russell Rogers, chief pilot, and his crew of three, made an easy take-off. A defective gyroscopic pilot, which caused return on the first attempt of the delivery flight, was repaired. Weather reports indicated favorable conditions most of the way eastward.

The plane's route will take it north of Detroit over the Canadian Airways course, across Lake St. Clair, over Toronto, Ottawa and Montreal and then over Quebec to Botswood.

The plane has American registration No. NRP9630 and British No. P9630, as well as British insignia on wing and hull.

Officials said that from the Chicago area onward the plane could always glide from the planned flight altitude of 12,000 feet and reach some body of water in case of trouble.

Built by the Consolidated Aircraft Company here, the model 28-5 flying boat, which has a cruising speed of 115 miles an hour, is to be delivered to the R.A.F. at Felixstowe, England. The Newfoundland-England hop will be 2,450 miles.

Rogers and Lewis A. Yancey, co-pilot-navigator, Raymond Booth, radio operator, and Flight Engineer Gerald Brown, took off in ideal weather conditions yesterday but turned back upon reaching the Salton Sea in California's Imperial Valley.

Rogers said failure of the automatic pilot would have required hand-steering of the plane for 41 hours.

Y MORNING, JULY 14, 1939 S.D. Union

CONSAIR BIDS FOR ARMY ORDERS AS S. D. PLANE INDUSTRY 'BOOMS'

Consolidated Aircraft Corp.'s recent $3,400,000 order for planes for the army air corps constitutes the first army business accorded the local firm since it was established in San Diego and has led to the hope that additional army orders will be forthcoming, Edgar N. Gott, Consolidated vice president, told fellow chamber of commerce directors at a session yesterday.

Gott, reporting on his activities in Washington, D. C., where he spent eight months in the interests of the local aircraft firm, told of preliminary work incident to final approval of a measure fixing 5500 planes as the maximum air strength of the air corps.

AWAIT DECISION ON BIDS

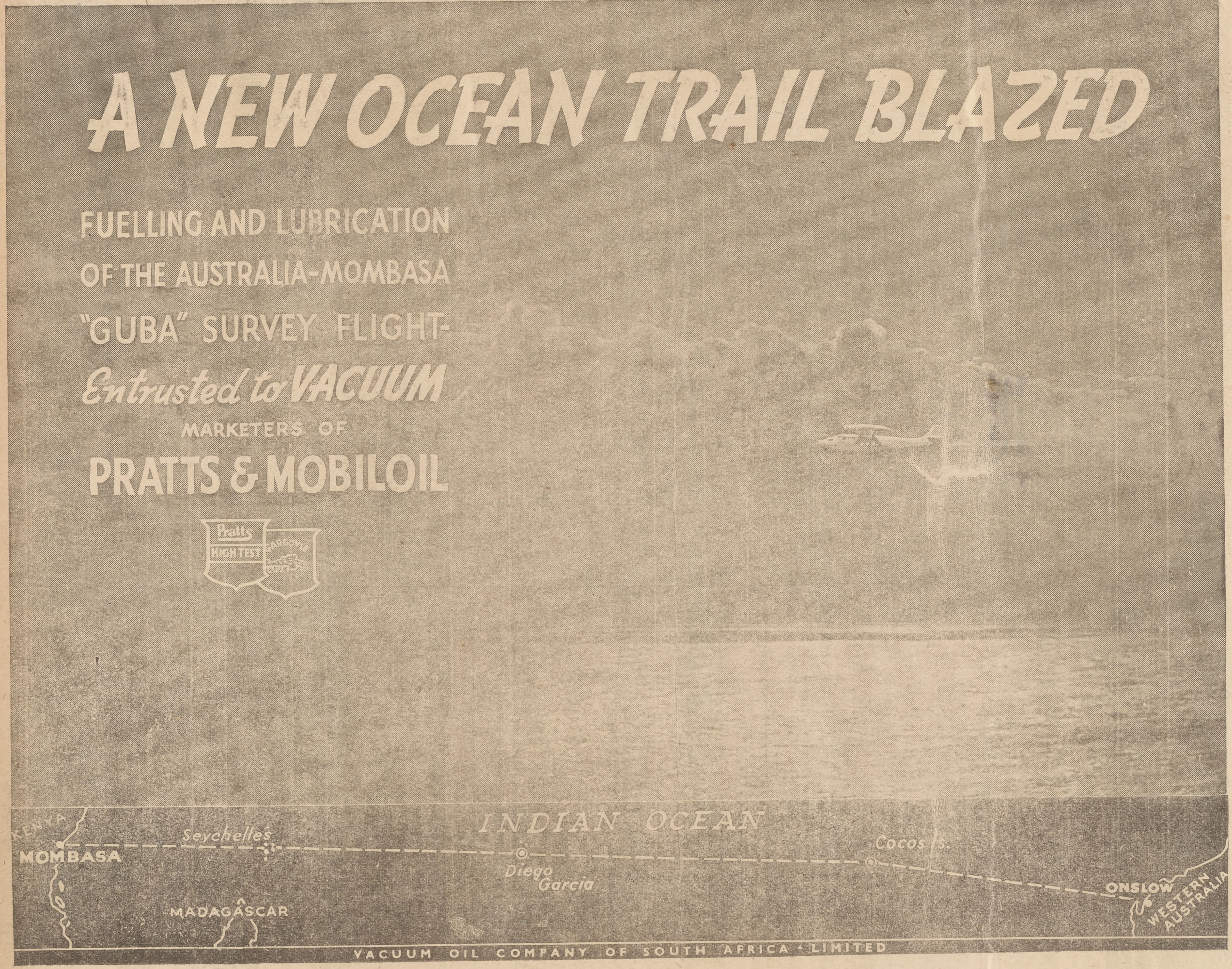
Consolidated officials are awaiting decision on bids submitted for building of giant four-motored bombers for the army but Gott declined to comment on present prospects for Consolidated obtaining any of this business.

Chamber directors were provided a summary of aviation advancement in San Diego through reports given by Gott, Earl Prudden, representing Ryan Aeronautical Co., and Ed Price, Solar Aircraft president and general manager.

Completion of Consolidated's $500,000 modernization program, construction of Ryan's $150,000 factory on Lindbergh field and completion of a $35,000 structure housing $20,000 in new equipment at the Solar plant were among recent improvements mentioned to indicate progress in the aviation industry here.

Arthur Wells, chamber federal projects committee chairman, reported that bills calling for governmental acceptance of lands transferred by San Diego and National City for navy expansion have been approved by 11th naval district officials and are en route to Washington, D. C., with a request that they be enacted during the current session of congress.

Wells said that in a recent report by Comdr. J. T. Mathews, 11th naval district public works officer, it was stated $7,000,000 has been expended in this area on federal projects during the last fiscal year.



A NEW OCEAN TRAIL BLAZED

FUELLING AND LUBRICATION
OF THE AUSTRALIA-MOMBASA
"GUBA" SURVEY FLIGHT-
Entrusted to VACUUM
MARKETERS OF
PRATTS & MOBILOIL

VACUUM OIL COMPANY OF SOUTH AFRICA LIMITED

Guba Home

aviation
8/39

Archbold expedition ends brilliant circling of globe.

One of the most remarkable flights in aviation history, and incidentally one of the least adequately publicized, ended July 6, as the big Consolidated flying boat Guba, bearing the Archbold New Guinea expedition of the American Museum of Natural History landed at San Diego. June 3, 1938, it had headed across the Pacific to Honolulu. Thence two non-stop flights carried it to Wake Island and Hollandia in Dutch, New Guinea, a distance of some 7,224 miles. For almost a year the Guba transported supplies from Hollandia to various scientific ground parties in the mountainous interior of that island. Thousands of plant specimens, birds and mammals were collected, many of them new. A number of villages with entire populations which had never before seen white men were visited and studied. Thousands of miles of unknown territory were investigated and mapped. A direct return homeward by the outward route after such successes would have been enough for most expeditions. Not for this one.

This spring the crew of the Guba (see page 51) flew to nearby Australia. Then, chartered by the Australian government to survey an alternate route to England via the Indian Ocean and Central Africa, it took off on another adventure.

Accompanied by a Captain Taylor as a representative of the Australian government, the ship made its leisurely way across the Indian Ocean. Setting out during the first week in May it called at Batavia, flew over Christmas Island, stopped at Cocos Island, hopped to the Chagos group, then pushed on to Mahé, principal island of the Seychelles group approximately 1,000 miles from the east coast of Africa. June 21, it arrived at Mombassa, Kenya Colony, East Africa. By this time it had crossed 9,820 miles of open ocean since leaving Sydney. June 27, the plane arrived at Dakar on the west coast of Africa. A few days later it struck out over a new route, crossing to the Virgin Islands in the Caribbean. July 2, the crew was home in New York for an elaborate reception at the New York World's Fair. In all, the expedition had completed some 700 hours of the sheerest type of pioneering flight without a single serious untoward incident.

SAN DIEGO UNION: THUR

Union July 13-39

Flying Boat Will Hop Today For England

Completing the second leg of a 5000-mile flight from San Diego to England for delivery to British Royal Air force, the big Consolidated flying boat which left here Monday, landed smoothly at Botwood, Newfoundland, at 12:40 p.m. (P.S.T.), The Associated Press reported.

Consolidated officials received the following message from crew members:

"Will hop 5:30 a. m. (P.S.T.) for Felixstowe, England. Excellent service here. Everything going well. Ship fine. Weather looks good for tomorrow."

Members of the crew told The Associated Press they would take off this morning for the 2400 mile hop to Felixstowe, England. Originally it had been planned that Pilot Russell Rogers and his three-man crew would leave tonight after refueling the 15-ton ship.

The big craft settled down on Exploits river after an eight-hour flight from Buffalo, N. Y., where it landed Tuesday in adverse weather, breaking a planned non-stop flight from San Diego to Botwood.

Besides Rogers, crewmen aboard are Lewis A. Yancey, navigator and relief pilot; Raymond Booth, radio man; and Gerald Brown, engineer.

CONSAIR BOMBER SPANNING OCEAN

S.D. SUN 7-13-39

Three days out of San Diego a Consolidated patrol bomber today was spanning the North Atlantic from Botwood, Newfoundland, to Felixstowe, England, 2450 miles away, the United Press reported.

At noon (PST), the airboat, averaging approximately 190 miles per hour in perfect flying conditions, was half way across. The crew radioed Barney F. Boyd, local amateur wireless operator, that they expected to reach England at 7 p. m. (PST).

The 13-ton plane, with a four-man crew, arrived at Botwood at 12:40 p. m. (PST) yesterday, after an 1100-mile flight from Buffalo, N. Y., where it was forced down Tuesday when its fuel supply fell below the safety factor on an attempted 3300-mile non-stop hop from San Diego to Newfoundland.

The bomber is being delivered to the British Royal Air Force. In the crew are Chief Pilot Russell Rogers, Navigator and Co-Pilot Lewis Yancey, Engineer Gerald Brown and Radioman Raymond Booth.

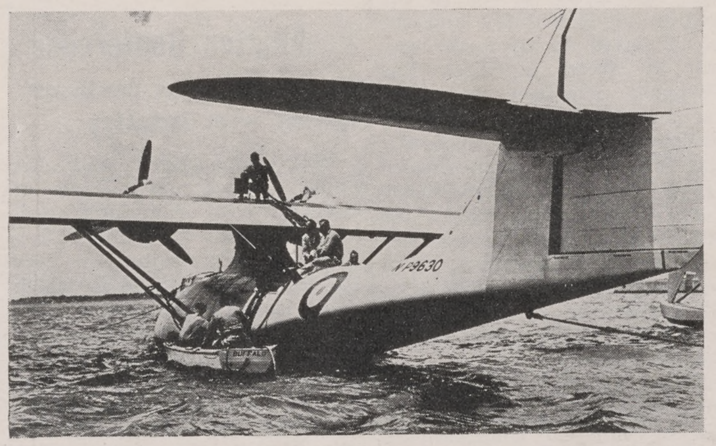
Aviation Aug/39

Flyaway Factory

Consolidated makes first trans-Atlantic delivery

Twenty-two years ago, a lot of high-pitched crowing was going on in this country about (1) How many tens of thousands of combat planes the U. S. was about to build and deliver to Europe. (2) How the biggest of these were going to be delivered by flying them across the Atlantic. Cynics on the subject of war-time propaganda as dished out for home consumption may therefore relish the facts that (1) The U. S. has already this year delivered more combat planes to England and France than it did during the entire war period. (2) That just last month the first military aircraft ever to be delivered by air across the Atlantic arrived in England.

Not that the delivery on July 14, of the Royal Air Force's new fifteen-ton Consolidated patrol-bomber was not a brilliant enough feat of airmanship. The crew was no amateur one. Russel Rogers was pilot; Lewis A. Yancey, navigator and relief pilot; Raymond Booth, radio man; and Gerald Brown, engineer. All of them were just returned from the brilliant Archbold round-the-world flight described in another column. First plans were to make the first stop out of San Diego at Botwood, Newfoundland, but the first leg of the trip, which started July 10, was ended at Buffalo after the ship had run into severe headwind conditions while crossing the Middle West. The next day, the big ship pushed on toward Botwood. The day after that with no more fanfare than as if they were ferrying their big Consolidated across San Francisco Bay, Rogers and his crew crossed over to land at Felixstowe, England.



DELIVERY SERVICE PLUS: The R.A.F.'s new Consolidated pauses at Buffalo.

Union 7-14-39

S. D. Flying Boat Lands in England

After a 2400-mile hop from Botwood, Newfoundland the giant Consolidated flying boat which left here Monday for delivery to British Royal Air force, yesterday completed its journey to England. Bernard F. Boyd, local amateur radio operator, received a message from the crew stating they landed at Felixstowe, England, at 8:56 last night.

The flight from Botwood took more than 15 hours. The crew had planned a non-stop voyage from San Diego to Botwood, but the craft was forced to land in Buffalo, N. Y., Tuesday because of adverse weather. Crew members are Russell Rogers, pilot; Lewis A. Yancey, navigator and relief pilot; Raymond Booth, radio man, and Gerald Brown, engineer.

U.S. Guards New 52-Passenger Plane Able to Fly 10,000 Miles Non-Stop

Military Chiefs Study Craft as Possible Bomber

Paris Edition N.Y.

Huge Flying Boat Expected To Make Boston-Azores Run in About 15 Hours

HEROLD TRIBUNE.

Censorship Clamped Down

5-30-39

Government Action Follows Series of Secret Tests

By United Press

SAN DIEGO, Calif., May 29.—Day and night guards watch the secret 52-passenger flying boat developed by Consolidated Aircraft to cross the Atlantic in less than 15 hours and said to be capable of a 10,000-mile cruising range.

Trial flights of the twin-motored "commercial" airboat revealed military possibilities of the giant craft so significant that government and company officials immediately clamped a rigid censorship on the craft's performance.

Sole comment relative to the ship's possibilities was made by William Wheatley, chief test pilot, only man to whom the half-million dollar plane has been intrusted for trials. The veteran test pilot merely remarked he was "well pleased" with the first test flights.

Since its construction began behind locked doors on August 1, 1938, Consolidated has refused to divulge information regarding the plane, denying until its launching that such an airboat was being built.

U. S. Asks Secrecy

Although officials described the plane as a "commercial experimental" ship and not of military design, U. S. military officials were given access to the plans, and Navy Department attachés evidenced great interest in its possibilities as a long-range bomber, asking that construction details be kept secret.

Several new principles of design are included in the radically constructed ship. Two of these, the 110-foot Davis "perfect curve" wing and the two, 2,000 horsepower Wright 18-cylinder engines, are closely guarded secrets.

The "perfect" wing was invented by David R. Davis, former partner of Donald Douglas, plane manufacturer, from a formula evolved after 10 years of experimenting.

Speed increases of 20 per cent are attributed by engineers to the use of the Davis wing, which is capable of lifting and carrying the 25-ton plane at an estimated 275 miles an hour for non-stop distances up to 10,000 miles.

Two Giant Propellers

Pulling the plane through the air are two, three-bladed propellers 16 feet in diameter and powered by the Wright twin-row radial engines, largest ever installed in an airliner.

Although not an amphibian, the huge airboat carries hydraulically-operated retractable floats and tricycle landing gear which will enable it to be beached largely under its own power.

Twin fins and rudders feature the tail assembly, constructed to maintain stability at high speeds, the builders said.

A maximum of 52 passengers can be accommodated in the steep-hulled craft, with sleeping compartments berthing 28. The ship is double-decked and carries a crew of five: pilot, co-pilot, flight engineer, radio operator and navigator.

Fuel capacity of the model 31 is estimated at 5,000 gallons, giving it a cruising range of 10,000 miles.

Its predecessors, the PBY Navy bombers, famed for their non-stop flights from San Diego to Hawaii and Panama, have a fuel capacity of only 1,760 gallons.

Suited for Military Use

For military use, it can quickly be converted into an aerial arsenal, with a minimum of eight machine guns or small cannon mounted on all sides of its narrow, extremely steep hull. At its launching, however, it had no armament.

Consolidated engineers refused to comment on plans for mass construction of the new ship until air tests have been completed late this summer. Trials will continue for the next few weeks to "clean out" construction flaws as fast as they are found.

A possible buyer for the big ships is American Export Airlines, competitor of Pan American Airways for commercial air transportation across the Atlantic.

American Export was said to be interested in purchasing a fleet of the ships if trials prove them to be capable of transporting heavy pay loads economically over long distances.

The builders said the big ship would be expected to make the Boston to Azores run in approximately 15 hours. Pan American's Yankee Clipper flew the 2,880-mile route from Baltimore to the Azores in 17 hours and 33 minutes on March 26, 1939.

May 20

U.S.A. AIRPLANES TO DO BIG JOBS FOR BRITAIN

London Evening Standard

By ROBERT WALLING

Evening Standard Aviation Correspondent

WITH the start of Britain's Atlantic air mail service seriously delayed there comes news to-day that two American flying boats, of a type of which 230 are being supplied to the United States navy, will take a prominent part in aviation in this country in July.

Meanwhile, it is reported to-day that the American air-mail service across the Atlantic starts to-day. The destination is Marseilles.

The first American flying boat has been bought by the Air Ministry. It will be flown direct to Felixstowe, where Government experts will discover its secrets.

The aircraft will fly 2450 miles across the Atlantic from Botwood, Newfoundland, after a still longer non-stop flight of 3300 miles from the Consolidated Aircraft Factory at San Diego, California. The total distance of this "delivery flight" will therefore be 5750 miles, with one stop. It will arrive during the first week in July.

The second flying boat, from the same factory, is to be employed on a survey flight on a new British Empire route.

The Government want to survey a new route across the Indian Ocean from East Africa to Australia, with landings at groups of British islands on the way.

START FROM AUSTRALIA

The object is to provide a safe Empire route as an alternative, in case of war, to the present route across the Mediterranean.

Apparently no British flying boat capable of the journey is available.

In Australia Captain Richard Archbold, a wealthy young American, is now preparing this American flying boat for the survey flight. He has been commissioned by the Australian Government and will be making it in the reverse direction—to Africa.

Only a few days ago it was announced that Britain had agreed to pay £3500 towards the expense of this flight.

I am told officially that the British Government placed the entire arrangements, including the supply of the aircraft, in the hands of the Australian Government.

New Military Orders

Pratt & Whitney, awarded $929,074 by Navy for engines and spare parts.

Elgin National Watch, awarded $13,597 for aircraft clocks.

K. E. Parker Company, awarded $845,221 for store house and power plant buildings at Naval Air Station, Alameda, Calif.

Fairchild received a tentative Army award of $1,579,338 for light training planes Model M-6-2, two place tandem low wing, with Ranger engine, following a design competition.

Ryan got a tentative award of $19,350 for a number of STA-1 wire-braced low wing tandem fabric-covered training planes, with Monasco engines, following design competition.

General Electric was awarded $2,678,852 for radio transmitting equipment for heavy and medium bombardment planes, including $417,643 for radio for short range liaison planes. Also $25,400 for superchargers.

Pratt & Whitney, $56,250 for engines.

Pioneer Instrument, $506,710 for indicator assemblies and venturi tubes, War Department.

Kollsman Instrument, $494,940 for altimeter assemblies, War Department.

Wright Aeronautical, $50,824 for engine parts.

Curtiss Airplane, tentative award of $5,000,000 for high-wing-strut-braced monoplanes, P. & W. Wasps, following design competition.

Sperry Gyroscope, $1,765,157, for sound locators.

Consolidated Aircraft, about $8,485,000 for four-engine bombardment planes, similar to Consolidated Type B-24.

Boeing Aircraft, about $8,090,000 for four-engine bombardment, similar to B-17B, which established the Los Angeles-New York course record with crew and passengers at 263.8 mph.

Glenn L. Martin, about $15,815,000, for medium bombers.

North American, about $11,771,000 for medium bombers. Also $1,326,000 for advanced training planes of type used at Randolph Field. Also $2,707,000 for basic trainers similar to BC-1.

Vultee, about $2,986,000, for trainers not described.

Boeing Airplane, Stearman Division, about $668,000 for primary trainers, modern versions of PT-13, the standard trainer in Texas.

Lockheed Aircraft, $4,845,000 for twin-engined interceptor pursuits, similar to Lockheed P-38, twin engines.

A $21,000,000 order of engines for War Department planes will be divided among four manufacturers approximately as follows:

United Aircraft, $12,320,000; Wright Aeronautical, $7,000,000; Allison Engine, $2,275,000; Aviation Corporation, Lycoming, $270,000.

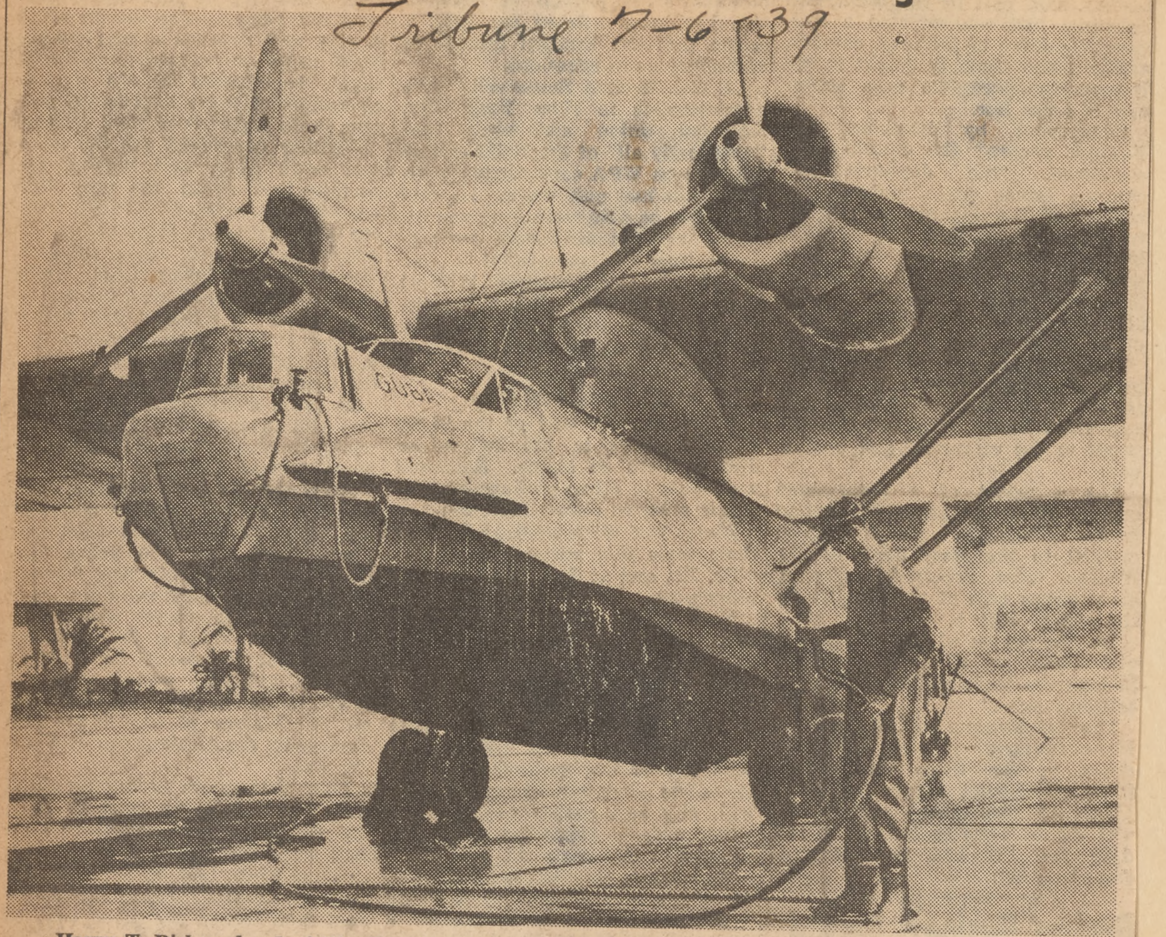
Seversky Aircraft, $3,478,000 for single engine interceptor planes.

Bell Aircraft, $2,839,000, for single engine interceptors.

Aviation 10/39

Guba Gets San Diego Bath After Round-World Flight

Tribune 7-6-39



Harry T. Bishop, head of The Evening Tribune art and photographic department, found the answer today to the question of what happens to airplanes right after they make a round-the-world flight. Soon after he Guba alighted on San Diego bay, Bishop went to Lindbergh field and found the big plane getting a bath from a Consolidated Aircraft Corp. employe. A few minutes later the plane was towed from the ramp to the Consolidated plant for a check

TAKING NEW PLANE TO ENGLAND ON WEEK-END FLIGHT

Speeding up the return flight to San Diego, Russell Rogers, pilot of Richard Archbold's $250,000 Consolidated-built flying boat Guba, which has completed a round-the-world flight, brought the Guba down on San Diego bay at 5:15 a.m. today. Rogers and other crew members left New Orleans at 8 p.m. yesterday, four hours ahead of schedule.

Archbold is remaining in New York, where the Guba arrived Saturday after a flight from the Virgin islands. Rogers and the crew of the Guba will remain in San Diego until this week-end, when they take off for England in a Consolidated PBY plane built for the British government, flying from here via Botwood, N. F.

For Lewis A. Yancey, navigator of the Guba, this week is memorable in that it marks the return of the Guba to San Diego from a flight around the world and also the 10th anniversary of the start of his flight with Roger O. Williams, to Rome. Yancey and Williams left New York for Rome, July 8, in the plane Pathfinder, and landed at Littorioi airport, Rome, July 10. Among those who welcomed the America nairmen, first to make a New York-Rome flight, were Italo Balboa, then Italian under-secretary for aviation, and Francesco de Pinedo, Italian air hero. Yancey later made more aviation history when he was the first flier to pilot an autogiro to Cuba and Mexico in 1932.

In the Guba when it landed here were Rogers, Lewis B. Yancey, navigator; Gerald D. Brown, flight engineer; Stephen Barrinka, assistant flight engineer, and Ray Booth, radio operator. Harold Ramm, radioman during the 10½ months' stay of the Guba in New Guinea, where Archbold carried on scientific work for the American Museum of Natural History, of which he is a research associate, returned here by steamer a few weeks ago.

Welcomed by Few

Because of its early arrival, only a few persons were on hand to welcome the Guba. These included: Ramm and Mrs. Ramm, Barney Boyd, San Diego radio amateur who maintained radio contact with the plane from San Diego, and Mrs. Boyd; William Anderson, Boyd's brother-in-law; Jack Kline, Consolidated assistant final assembly foreman, and Frank Learman jr., assistant to the president, Consoli-

dated. The Guba's crew will be honored tomorrow at a luncheon to be given at the Cuyamaca club by the aviation committee of the chamber of commerce.

"There were no highlights to our flight," declared Rogers. "Ever since leaving San Diego more than a year ago we have had just a

(Continued on Next Page, Col. 4)

Guba Returns With Crew

CONTINUED FROM PAGE ONE

series of pleasant air trips, and the Guba did not give us one second's trouble."

All flights in New Guinea from Hollandia, on the coast, to the interior were made according to set schedules, carried out to the minute, said Rogers. He reported the Guba made 165 flights in New Guinea, covering approximately 50,000 miles and transporting approximately 40,000 specimens of birds, mammals and plants, which were shipped by steamer to New York. He voiced praise for the cooperation shown by the government of The Netherlands in the expedition's work.

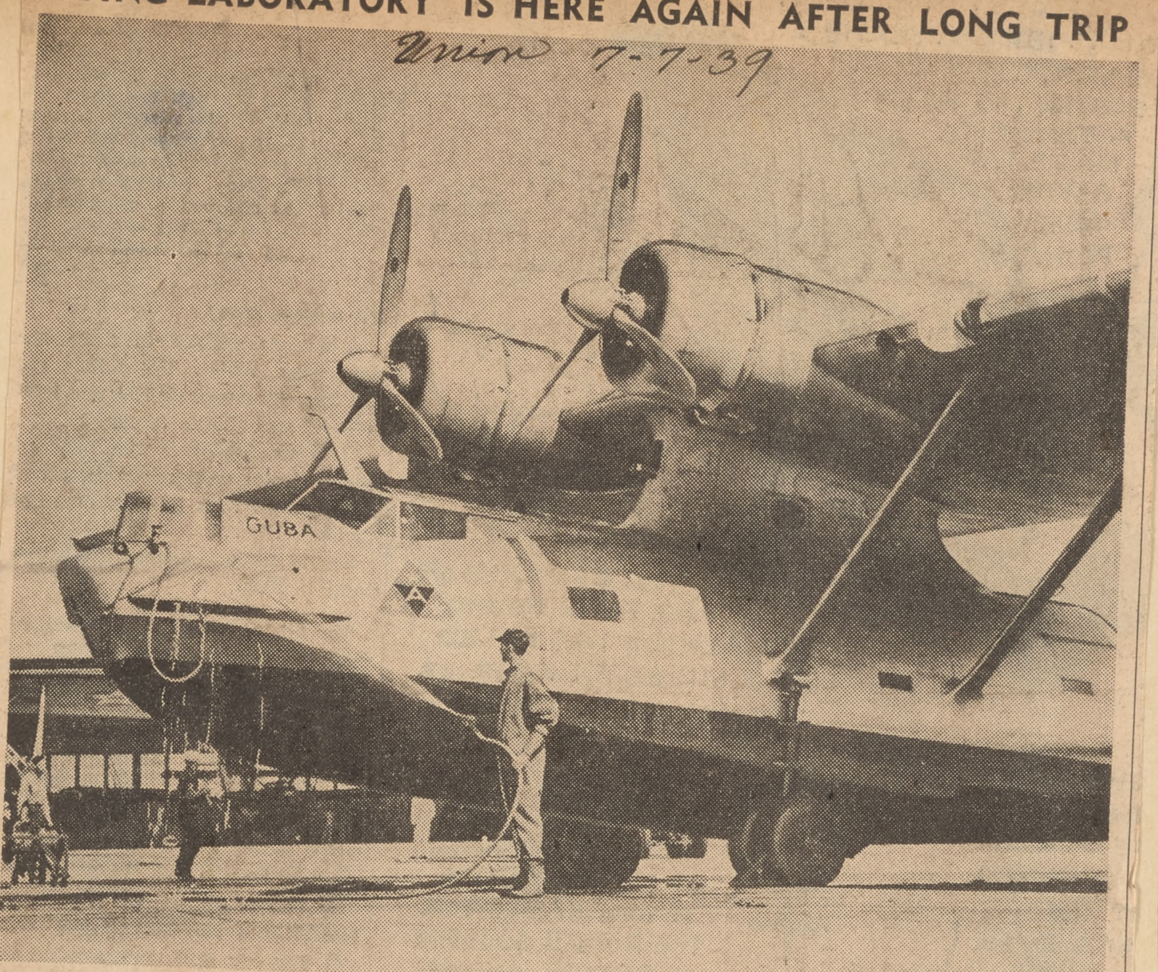
"Never Worry," Statement

see reverse side

SAN DIEGO, CALIFORNIA, FRIDA

'FLYING LABORATORY' IS HERE AGAIN AFTER LONG TRIP

Union 7-7-39



Back home at Lindbergh field after writing another brilliant chapter in aviation history. Richard Archbold's "flying laboratory," the Guba, is getting a bath after its record flight from Sydney to San Diego via Africa, the West Indies, New York and New Orleans.

* * *

Guba Returns to San Diego

Archbold Plane Makes Records in Science, Aviation

Taking its place in America's aviation hall of fame along with Lindbergh's Spirit of St. Louis and Kelly and Macready's famed T-2, the Guba, Richard Archbold's $250,000 "flying laboratory," returned to San Diego yesterday from a 120,000-mile flight. The Guba landed at 5:15 a.m. after an 11-hour flight overland from New Orleans. It started its homeward voyage from Sydney, Australia.

Since the Consolidated-built boat left San Diego June 2, 1938, it engaged in a scientific mission for the American Museum of Natural History in Netherlands New Guinea; blazed new airways over the Indian ocean to Africa, spanned the African continent and flew more than 15,000 miles over the Atlantic and Pacific oceans.

ARCHBOLD STAYS EAST

The huge flying boat made the last lap of its flight manned by Russell Rogers, pilot; Capt. Lewis Yancy, navigator; Raymond Booth, radioman; Gerald Brown and Stephen Barrinka, engineers. Archbold remained in New York.

Within the next 72 hours Rogers, Yancey, Booth and Brown will leave Lindbergh field on another epochal flight. As members of a crew of a Consolidated-built flying boat to be delivered to the British Royal air force at Felixstowe, England, they will take to the air either Saturday or Monday on the 5750-mile transcontinental, transoceanic flight.

The flight track will be from San Diego to Botwood, Newfoundland, via Wichita and Detroit, over the Canadian airways to Montreal and Quebec, thence to Botwood, 3300 miles airline. It will be the longest overland flight ever attempted by a flying boat.

TO FOLLOW CIRCLE

The great circle route over the Atlantic will be followed to the coast of Ireland, thence over the Irish channel to Cardigan bay, where a course will be set for Felixstowe.

Rogers reported the Guba made about 150 flights while in Netherlands New Guinea. Most of these were with supplies from the main base at Hollandia to Lake Habbema, 125 miles in the interior, and to Mt. Wilhelmina.

Specimens obtained by the expedition for the American Museum of Natural History included a number of small birds with bluish-black body and brilliant red hued throats which live only at high altitudes in the Mt. Wilhelmina region; three climbing kangaroos, four of which are en route to the local zoo from Sydney aboard the liner Mariposa; huge rats described as being four feet long and eight inches high, and beautiful birds of paradise.

WILL BE OVERHAULED

The Guba is to be overhauled at Consolidated and made ready for further air adventures by Archbold.

Among the few persons who greeted the returned airmen when they landed at Lindbergh field at dawn was Barney Boyd, local radio amateur, who kept in almost constant touch with the Guba during its 13 months of flying over the airways of three continents.

PILOT OF BOMBER SEEKS ADVENTURE IN JUNGLES AGAIN

Buffalo

Capt. Rogers Will Return to New Guinea, Where Failure of Motor Means Death at Hands of Head Hunters.

about 7-11-39

Capt. Russell R. Rogers, who was roaring through the skies today toward Newfoundland and England in his giant Consolidated Aircraft Corporation flying boat, is looking forward to the return to his tropic base in New Guinea "where flying's really dangerous."

It was shortly before the big patrol bomber took off at 7:29 o'clock this morning from the Niagara River that Capt. Rogers recounted some of his adventures in the tropics. The flying boat remained in Buffalo overnight after being forced down here to refuel.

Rugged, river-cut jungles and snow-capped mountain ranges give motor trouble in New Guinea "the thudding of death drums." Because if the crash doesn't kill you, there are always the head-hunting natives to contend with.

Eleven Months in Jungle.

For 11 months Capt. Rogers and Lewis Yancey, his navigator, ferried equipment and supplies inland there for the American Museum of Natural History. On July 1 they arrived back in New York City after circling the globe.

"We're on leave of absence from the museum now," Capt. Rogers explained Tuesday night. "Richard Archibold, head of the museum's field staff, is in Java now making arrangements for another New Guinea expedition to start in eight months. Yancey and I are anxious to get back."

The two fliers left San Diego June 2, 1938, in a plane similar to the one they are taking to England. A week later, after stops at Honolulu and the Island of Wake, they arrived in Dutch New Guinea.

Base in Hollandia.

Hollandia, a small town on the northern coast of the island, which is north of Australia, formed their base.

During their stay they transported 290 tons of scientific equipment, food, and supplies 225 miles inland to Lake Habbema, knocking the seats out of the plane to provide more baggage space.

"We also ferried in the entire pary of 186 men, including 80 native Dyak carriers, eight museum naturalists, and Dutch soldiers for protection," Capt. Rogers said.

"The natives are cannibals and head hunters, still in the wood and stone age, and fierce fighters. And proud! We wanted to make a temporary base on one of the rivers. We negotiated for days. Finally they made us buy the giant camphor trees on the banks before we could cut them down."

Currency of Shells.

Cowrie shells are currency there, with 6 or 8 shells the price of a full-grown tree.

"Because they have 125 inches of rain a year, the natives are planting trees to prevent erosion of the soil," the captain said. "They have an elaborate drainage system, consisting of small canals. The banks are coated with a clay similar to our cement."

Lake Habbema, their inland base, is 11,342 feet above sea level—one of the highest altitudes from which a flying boat has ever operated, Capt. Rogers believes. Though only 250 miles from the equator, a skim of ice forms over open water every night. Circling mountain ranges rise to 17,000 feet.

"Luckily, the plane never coughed or got us into tight spots where a forced landing was necessary," Capt. Rogers said.

40,000 Specimens Collected.

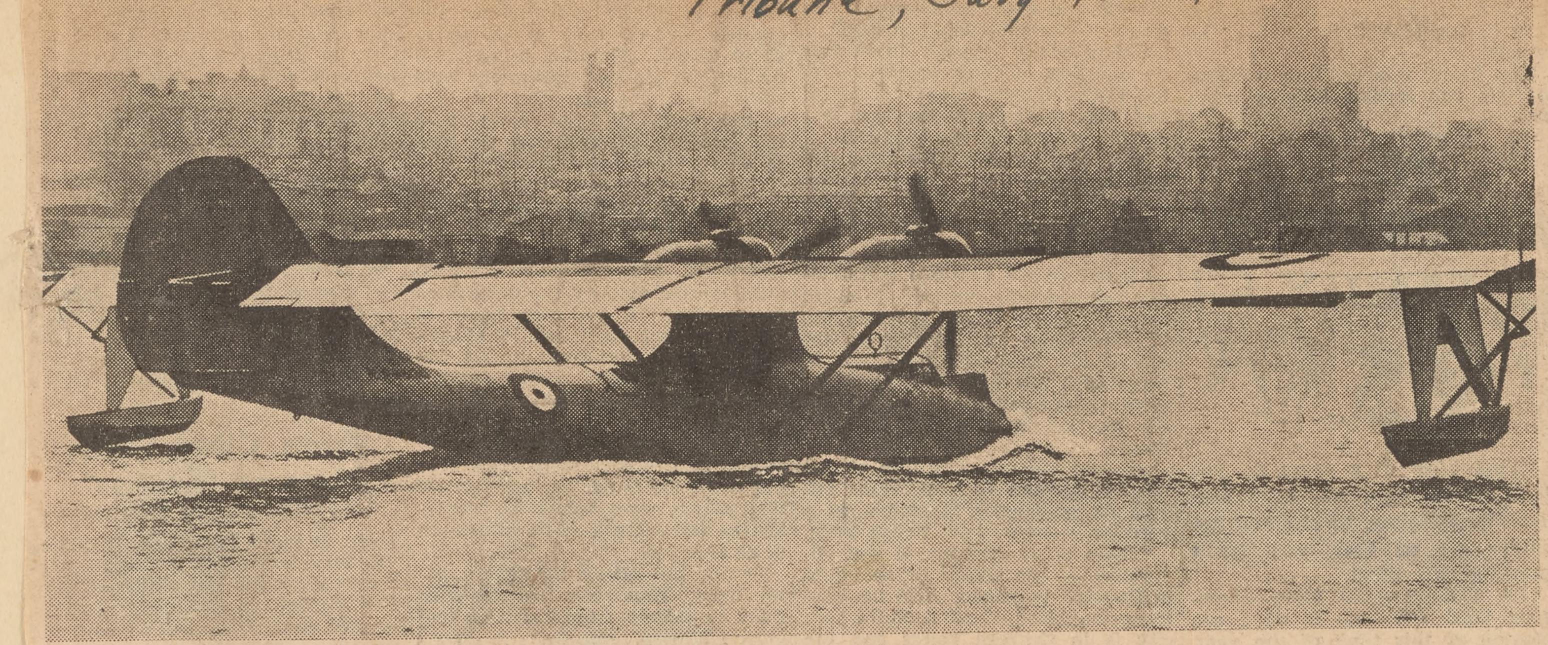
Spare motors and triple-bladed propellors were kept at the Hollandia base. Because travel on foot was impossible, the entire expedition was transported out of the jungle by plane. They brought out 40,000 specimens—plants, flowers, small animals and caged parrots, bower-birds and the famed birds of paradise.

On the return trip, which pushed their year's travel over the 100,000-mile mark, the fliers visited Cocus Island, Dago Garcia, Seychelles and Mombasa in the Indian Ocean while mapping out an alternate route to the continent for the Australian Government.

The flight to New York City was made by way of Lake Victoria and Cocquilhatville in the Belgian Congo.

Consair Airboat Speeding East on Delivery Hop to Britain; 'All Well,' Radio Message

Tribune, July 10-39



Consolidated's Model 28-5 as it made its second take-off for England today.

TAKES OFF AGAIN AFTER RETURN HERE AS DEFECT FOUND

Consolidated's Model 28-5, twin-engined flying boat built for the British government, made its second take-off for England at 8:23 a.m. today after returning here yesterday morning because of trouble with the craft's automatic pilot when the plane was over Salton sea. It is expected to land at Botwood, N. F., tomorrow for refueling, and depart immediately for the flight across the north Atlantic to Felixtowe, Eng., 5750 miles from San Diego.

At 10:30 a.m. the plane was 230 miles east of San Diego, according to a message received from the craft by Barney Boyd, local radio amateur. Those on the plane reported "everything going nicely." Noon contact with the plane was not made, but by mid-afternoon Boyd said he expected to have another report on the airboat's position.

Gyro Fails To Function

The delivery flight began yesterday under auspicious circumstances, with the plane functioning perfectly and excellent weather forecast for the 3300-mile flight to Botwood. Over the Salton sea the Sperry gyro failed to function, and rather than deliver the craft to British authorities with a broken piece of equipment, Russell Rogers, captain and chief pilot, brought the plane back to San Diego, landing here at 9:15 a.m.

Repairs to the automatic pilot were made by an expert from the naval air station, and Rogers took the plane aloft shortly before dusk yesterday for a short trial flight. Weather conditions for the flight today were declared equally as good as those yesterday, and the flight across the continent is expected to be made without incident, Consolidated officials reported. They pointed out the craft could have been flown to England without the use of the automatic pilot, but wished it to be delivered with all parts in good condition.

Like Archbold's Guba

Model 28-5, a commercial development of the navy PBY planes and similar to Richard Archbold's Guba, which returned here last week from New Guinea, is being flown by the crew of the Guba. With Rogers are Lewis A. Yancey, co-pilot and navigator; Raymond Booth, radio operator, and Gerald Brown, flight engineer.

From San Diego to Newfoundland the plane is scheduled to fly over Phoenix, Albuquerque, Amarillo, Wichita and Kansas City, near Chicago and Detroit, and over Lake St. Clair, Toronto, Ottawa and Montreal. Had yesterday's flight been completed, Rogers said he and the other crew members expected to make only a two-hour stop-over

(Continued on Next Page, Col. 6)

Consair Plane Off For Britain Delivery

CONTINUED FROM PAGE ONE

this morning at Botwood before continuing to Felixtowe. After the plane is delivered, the crew members will return to this country on the liner Washington July 27, coming to San Diego for further flight duty with the Guba.

"The purpose of the flight is to deliver Model 28-5 to the British Air Ministry," states a Consolidated announcement. "The plane is owned by Consolidated Aircraft Corp. until completion of the delivery flight."

Totes Full Equipment

Unlike the many over-water "routine delivery flights" which the navy has made with Consolidated PBY planes, Model 28-5 will cross the Atlantic without benefit of surface ships stationed over the route of the flight. The craft, however, carries complete navigational equipment, a seven-man life raft, life jackets, parachute flares, signal equipment, water supply, a still, and emergency rations, the equipment in general being similar to that used by the navy department for long distance flights. In the navy's over-water delivery flights, made from San Diego to Honolulu and from here to Panama, 12 planes or more have been flown at a time, and to date no forced landings on the high seas during the delivery flights have been necessary.

Model 28-5 is powered with two Pratt and Whitney twin-row Wasp engines, and two Hamilton standard constant speed propellers. It is equipped with Sperry gyro and blind flying instruments. It has American registration No. NRP9630 and British No. P9630, as well as British insignia on the wing and hull. Radio installtion includes two Bendix transmitters, operating on frequencies selected for transcontinental and north Atlantic route operation; two Bendix all-wave receivers, having a tuning range of from 150 to 1500 kc. and 1800 to 15,000 kc., capable of receiving telephone and c.w. signals, and one Bendix radio direction finder.

AIR GIANT HALTS HERE TO REFUEL, STAYS 24 HOURS

Huge flying boat, on hop from West Coast to England, finds facilities lacking here

Buffalo was an unexpected and unprepared host to a famous giant of the air yesterday, when a fifteen-ton Consolidated Aircraft patrol bomber, en route to England, nosed down into Buffalo Harbor "just to refuel" and remained for 24 hours.

First of the huge planes to visit Buffalo, the big flying boat was an immediate center of attention. Crowds began flocking to the foot of Georgia Street early in the afternoon to see a plane which was on its way to a new distance and time record until it bumped into the snag of the complete lack of facilities constituting this city's so-called Marine Airport.

Pilot Annoyed

Capt. Russell R. Rogers of New York City, pilot of the huge plane, was decidedly annoyed at the "various unexpected circumstances" that transformed the projected one-stop flight from San Diego to Felixstone, England, into a two-stop journey with a 24-hour "interesting but irritating" stopover in Buffalo. The delay was caused because of a mix-up in ordering gas to refuel the plane, because of a delay caused by Rogers' disappearance for several hours yesterday morning, and because of temporary difficulty in locating enough of the right kind of gasoline for the big plane.

All of these incidents, however, hinged on and were directly related to the complete lack of facilities for such emergencies at the marine air base.

by 1.30 o'clock yesterday afternoon, but Pilot Rogers decided against taking off at that hour for the trip to Botwood, Bay of Exploits, Newfoundland. Instead, the ship will leave for Botwood, its original first-stop destination, at dawn today. This will eliminate any possibility of the big plane landing in the unfamiliar Newfoundland territory after dark.

R. Leslie (Doc) Marsden of the Buffalo Aeronautical Corporation was in charge of refueling the big plane, in accord with the current procedure of that company gas-

FLYING BOAT
Continued on Page Twenty

FLYING BOAT

Continued from Page Eleven

servicing all planes at Buffalo Airport other than Curtiss and Bell craft, which have their own private supplies. This service formerly was operated by the city, but was turned over to the private company on July 1st. Marsden reported receiving a call from New York City, asking that the plane be refueled at 7.30 o'clock yesterday morning. The fifteen-ton plane landed in Buffalo harbor at 6.45 a. m.

Capt. Rogers was under the impression that refueling arrangements had been made and expected a gas truck to meet the big boat, but none was on hand. He reported to New York and the New York office of the flight in turn called the Buffalo Aeronautical Company.

Marsden promptly hastened to locate a supply and made arrangements for refueling the plane. He arrived at the marine air base at 8.30 o'clock, but it was 10.30 before he could find the pilot and have the big plane towed close to the concrete "apron."

The plane was fueled from the big army truck based at the Buffalo Airport, by use of an extra 100 feet of hose. Into its tanks went 965 gallons of gasoline. The refueling took 55 minutes.

Wanted to Be "Sure"

Capt. Rogers said that the ship's fuel capacity was 1,750 gallons and stated his belief that he had had enough to reach Botwood, but that he had "just wanted to be sure." On the flight from San Diego the plane bucked heavy head winds.

The flight delay blasted the flight captain's plan to dine at Claridge's in London, England, this evening.

Welcome as the unexpected visitors were, the emergency landing of yesterday is expected to "bust wide open" the old Marine Airport situation which has been a center of many Council fights and much civic propaganda. It is a subject that reached fever pitch in the days of the famous Balbo flight from Italy to Chicago five years ago, when Buffalo was skipped because it had no place to house flying boats.

It was pointed out then, as it was yesterday, that although the city spent $123,000 for a Marine Airport, it has at the foot of Georgia Street a vast expanse of concrete, and nothing more. There is no building of any kind at the base. There is no telephone or any means of communication with the Municipal Airport. There are no gas tanks, not even a rowboat, in fact not even a tow rope. No effort is made to keep the water near the airport free of logs or other floating objects that might endanger flying boats.

The Marine "Airport" is a concrete platform 300 feet wide by 460 feet long, with a ramp into the water 90 feet wide by 149 feet long. It is reached by climbing over railroad tracks and after coming to the impasse of a dead end street. Many citizens have been unable to find it at all. In recent years it has been used as a "swimming hole" for citizens, disastrously so on Monday.

"Capt. Rogers evidently contacted the Coast Guard on arrival and was rowed to shore," Marsden said in reviewing the refueling delay. "We had no advance information of his stop here. He called his New York office and they called us. I went immediately to the marine base, hired a boat and went out to the plane, but the pilot was not on board and we spent the next three hours trying to locate him. I tried all the hotels, clubs and restaurants and finally thought of the Coast Guard base, where I found him. I made arrangements for him to move the plane in, and got the truck down. The whole maneuver then took less than an hour."

The crew of the big plane includes Capt. Rogers, Lewis A. Yancey, navigator; Raymond Booth, radio man, and Gerald Brown, engineer. The four fliers returned July 1st from a round-the-world flight for the American Museum of Natural History.

Brief Stop at Botwood

In discussing continuation of his flight last night, Capt. Rogers estimated the plane will travel at a cruising speed of 125 miles an hour today and should make the 1,150-mile hop from here to Botwood in eight or nine hours. Rogers said he would stop at Botwood only to refuel and check his ship, and then take off for England immediately.

Capt. Rogers planned to spend the night as the guest of George Cobb, aeronautical engineer, with whom he flew for Pan-American Airways several years ago. The remaining members of the crew, with the exception of the mechanic, who spent the night on the plane, stopped at Hotel Statler.

Unexpected Visitor Finds City Unprepared

Buffalo. 7-12-39

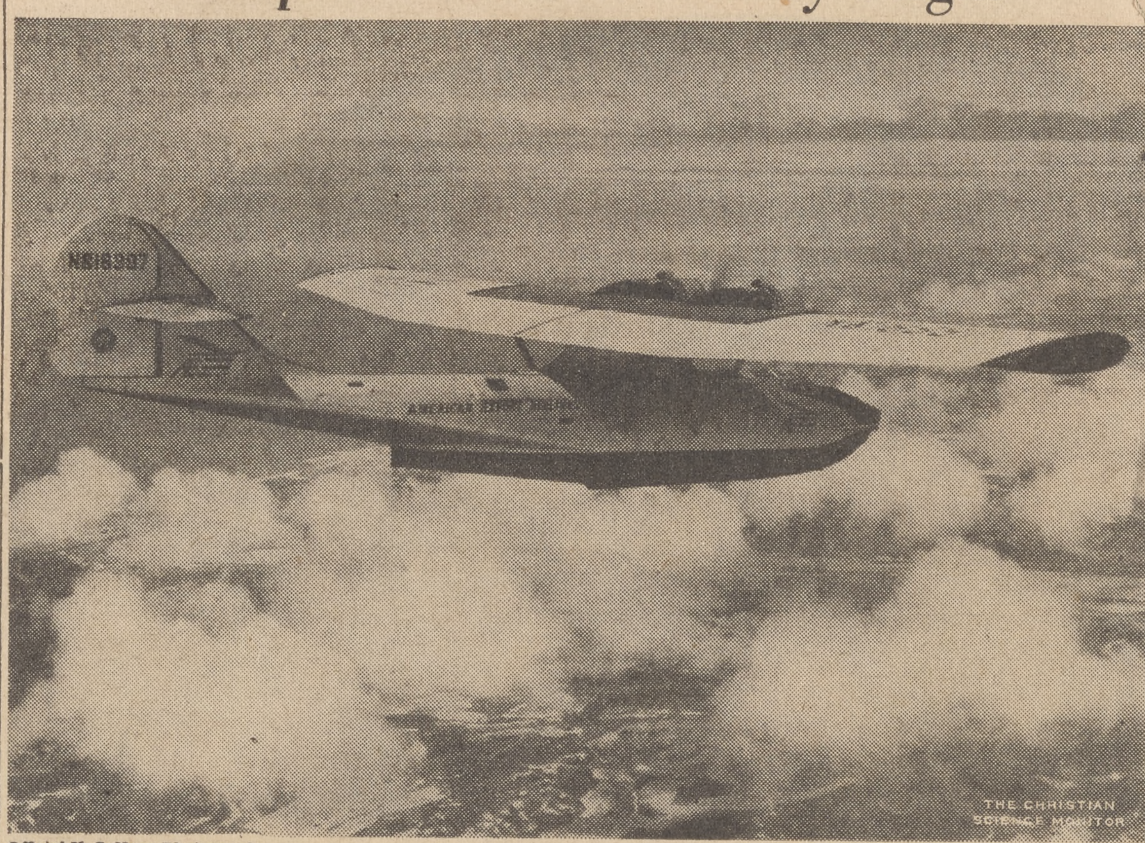
N P9630
BUFFALO

Dropping in at Buffalo's Marine Airport for a refueling stop, the huge Consolidated flying boat pictured above remained for 24 hours because of the city's lack of facilities at its harbor air base. The huge patrol bomber was on what was scheduled to be a one-stop flight from San Diego, Cal., to Felixstowe, England.

THE CHRISTIAN SCIENCE MONITOR, BOSTON, THURSDA

7-13-39

Completes Atlantic Survey Flight



Official U. S. Navy Photograph

Trans-Atlantic

American Export Line's twin-motored plane which has just completed a trans-Atlantic survey flight. Capt. P. J. Byrne is in command of a crew of six.

U. S. Boat Line Takes to Air In Trans-Atlantic Service

By a Staff Correspondent of The Christian Science Monitor

NEW YORK, July 12—Completion of the first round-trip survey flight to Europe of the American Export Airlines this week brings a steamship company into international aviation—a notable innovation for one of the world's oldest businesses.

Decision of the steamship company to take to the air proved another case of progress being spurred by competition.

Severe Competition

For a number of years the American Export Steamship Lines has been running a fleet of standard 10,000-ton passenger and freight combination boats to the Mediterranean. But the Company had severe competition from the large, good looking, and fast vessels of the Government-operated Italian Line.

Under his policy of "not spending money you haven't got," William H. Coverdale, President of the American concern, saw no chance of building rival luxury liners. But he did recognize the opportunity of resorting to the air, and asked his competitor to help him.

Competition between the two companies already was friendly both using the same wharfs, etc. The Italian airplane service, Ala Littoria, likewise Government-run, lent its co-operation, because of the possibility of its using the same facilities when setting up its own flying service across the Atlantic.

Unique Equipment

With 14 ships between them, the two fleets had a unique surface equipment for weather reports and other messages.

The trial flight just finished found the ship-plane tie-in working effectively, according to Capt. P. Y. Byrne of the American Export Airlines' twin-motored plane Transatlantic. He flew over reporting ships about every 200 miles across the entire route.

Wednesday, July 12, 1939 —— THE SAN DIEGO SUN

TINY ISLES NOW KEYS TO CANAL ZONE DEFENSE

American Planes Using Islands Could Spot Enemy Carriers

National Defense

War correspondent, Thomas M. Johnson gave special attention to air defense when NEA Service and The Sun sent him to the Canal Zone to get the thrilling story of the race to make the Big Ditch "safe-plus." Below, in the third of six articles, he gives a first-hand report of plans and preparations for repelling aerial invasion. — The Editor.

By THOMAS M. JOHNSON
War Correspondent and Author

ANCON, Panama Canal Zone, —"Smash that Canal at any cost! Even if none of you comes back—smash it!"

Those are the orders (grimly realistic American officials here told me) that an enemy leader would give to the pilots of his bombing planes in the event of war against the United States.

In the present vulnerable state of the Panama Canal, a hostile power would think nothing of losing a hundred or two hundred planes in a desperate effort to seal this vital waterway.

Planes might attack the Canal either in small raiding parties or in vast armadas.

Whence would they come?

A startling, threatening answer is given in the words of an American authority:

"We know that Germany has 3000 airplanes that can fly the South Atlantic."

And how could those airplanes or others menace the Panama Canal?

Perhaps from secret bases or nearby Central and South American coasts. Perhaps from potentially hostile islands like the Spanish Canaries, or undefended islands like the Portuguese Cape Verdes or Azores; or the many small islands that dot the Caribbean Sea.

And perhaps from airplane carriers. For instance, avoiding the regular Pacific ship lanes, enemy carriers might slip up and arrive some nightfall within 500 miles of the Canal Zone. Steaming all night, they would be close enough by dawn to launch planes. And one bomb — a 1000-pound bomb, perhaps—dropped on a lock that was built when airplane bombs were something H. G. Wells wrote about . . .

PACIFIC ISLES IMPORTANT TO CANAL

And look! About where that carrier started its final, thrusting dash, 480 miles out, is a dot on the map — Cocos Island, storied treasure-trove of pirate gold. Costa Rica owns it but no one has developed it, and the island lies deserted, inviting the invader.

"Come ashore," it says. "Establish your base. Fly over the Canal. Drop your bombs. Come back for more—and back—and back—until the Canal is a ditch full of junk. The Americans didn't want me—now you take me."

"Us, too," cry out Ecuador's Galapagos Islands, southwest and 875 miles out from Panama.

Those tiny isles, keys to the air defense of the Canal, invite the burglar's grasp. The Japanese know that. Their spy fishing boats have been there, taking observations and soundings.

Attention has been called to the islands' importance and it is hoped Congress will vote to lease or buy either the entire islands or the right to establish there warning stations whence our planes could patrol in great arcs 500 miles farther out to sea.

AIR DEFENSE NEEDS STRENGTHENING

"The Canal should be impregnable," said Maj. Gen. G. V. Strong, chief of the War Plans Division of the General Staff, concurring in the estimate of Maj. Gen. David I. Stone, commanding here.

To make it impregnable will take years at the present rate, depending on the money available.

Resources here for air defense need strengthening until this is a great aviation base like that just begun at Puerto Rico. The Canal wants 600 first rate airplanes. It is hoped that by autumn the air force here will at least be in a better position than it is now to put up a good fight.

It may be much longer before there are fully enough planes. The best here now are equal to the best of Germany and Italy.

The planes that recently gave a demonstration off the Fortified Islands on the Pacific Ocean side were very good planes. Later arrivals will be still better as the Army swings from the earlier 2320 airplane program into the 5500 airplane schedule. There is good authority for saying that Panama will get an ample share.

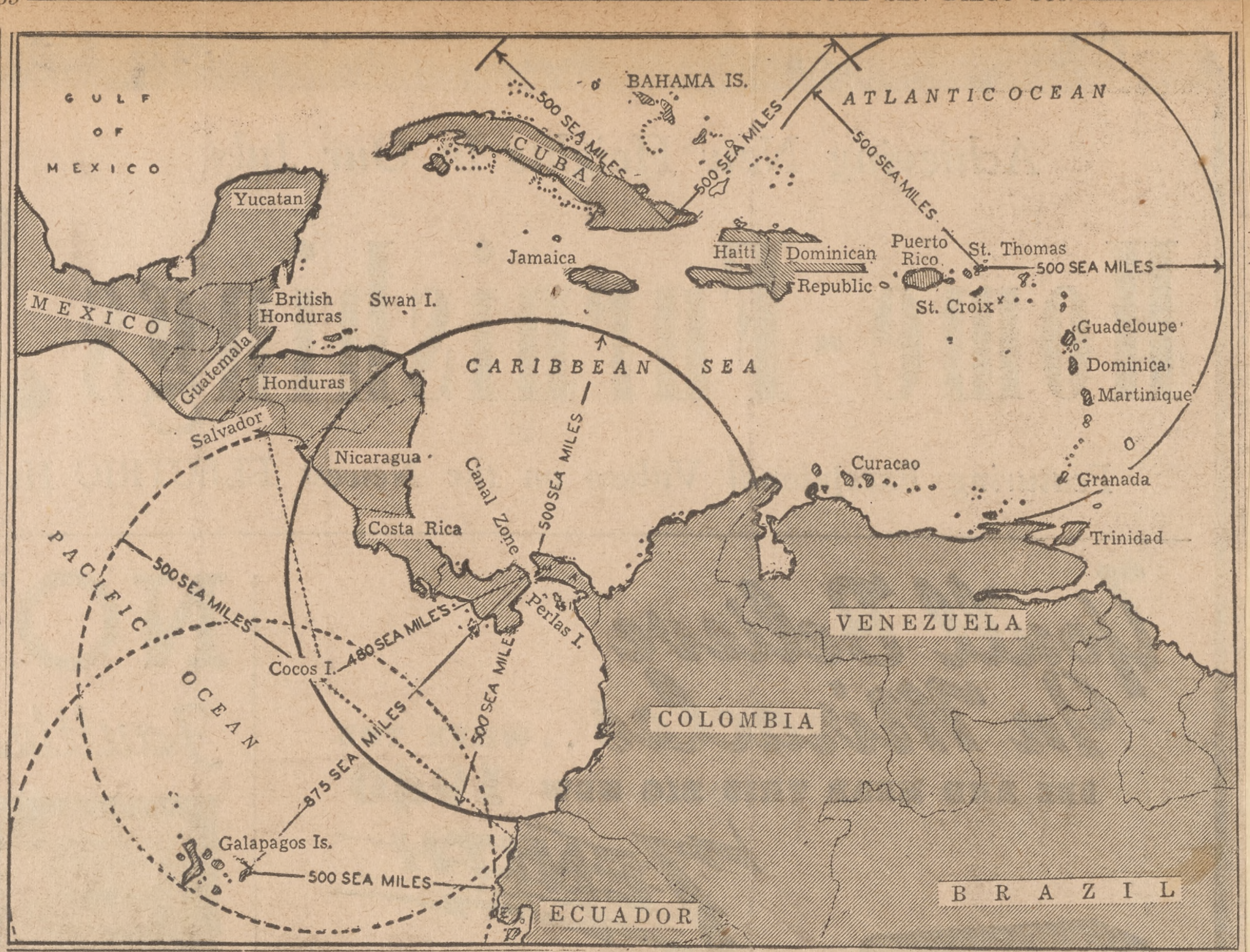
As jumping-off places, U. S. military planes now have two fields: at the Atlantic end, France Field; at the Pacific end, Albrook Field, whose runway has recently been concreted at a cost of $500,000. And $1,500,000 has been received to begin an air depot. The Pacific side also will get two more fields—one at a yet unchosen site, the other on 19,000 acres leased from the Republic of Panama at Rio Hato.

RAINS HAMPER DEFENSE PROGRAM

"If only war doesn't come this summer!" That is the prayer of everyone here, especially of those in charge of the anti-aircraft defense program.

The rainy season has stopped construction of roads that lead to a network of recently constructed anti-aircraft stations. From these stations bombing airplanes that managed to get near the Canal might be spotted by sound-locators and searchlights and brought down by anti-aircraft guns. To help equip these stations, the General Staff asked Congress for nearly a half-million.

Some equipment is coming in now, but little can be done with it until January, for the stations—many out in the jungle—are being marooned in mud



THE AERIAL DEFENSE OF THE CANAL ZONE—Air patrols are effective within a radius of 500 miles. The arcs or circles drawn in SOLID lines on the map above show the areas within which U. S. battle planes—operating from the Panama Canal itself, from St. Thomas and Puerto Rico, and from our base on the southeastern tip of Canada—could fly out to resist the approach of invaders. Thus, the Atlantic gateway to the Canal would seem to be well grounded. . . . On the Pacific side the situation is not so good. Enemy aircraft carriers could slip up to the edge of the 500-mile patrol zone without being detected and dispatch their bombers over the Canal . . . U. S. authorities urge, therefore, that we obtain bases on Cocos Island and the Galapagos Islands, so that our air patrols could operate over the Pacific within the 500-mile arcs indicated by the dotted lines.

Buffalo?

"ALL ABOARD FOR ENGLAND."—In completely casual fashion three fliers just returned from a round-the-world flight are shown preparing to go out in the rowboat at San Diego to the huge new flying boat in the distance which they will deliver in England. Left to right: Russell Rogers, pilot; Lewis Yancey, navigator; Raymond Booth, radioman. (AP Wirephoto.)

Sun 7-14-39

Colonel Ryan In San Diego On Aircraft Inspection

On a special tour of inspection of U. S. aircraft production facilities, Col. William Ryan of the Army Air Corps was to leave today after a visit to the Consolidated Aircraft Corp. and Ryan Aeronautical Co. plants.

Col. Ryan is on assignment by the Secretary of War, according to Consair officials.

Of special interest during his local stay were the four-motored bombers under construction at Consolidated for the Army Air Corps in a $2,800,000 contract, and the small single-engined training and observation planes being built at Ryan.

Edgar Gott, assistant to the president at Consolidated, reported today that the concern's bids on large-scale production of two and four-motored Army bombers now are being compared by the War Department in Washington with estimates of other companies.

Results of the competitive bidding may be announced within the next two weeks, Mr. Gott said. Maj. Reuben H. Fleet, Consolidated president, "stood by" in Dayton, O., last week when bids for eight different types of planes were opened in Wright Field, the Army Air Corps' research center.

CONSAIR BOMBER IN ENGLAND

Sun 7-14-39

A Consolidated bombing plane, built at San Diego for the British Royal Air Force, arrived at Felixstowe airport, England, today, adding a new chapter in aviation history.

Twenty years and one month ago, two young Royal Air Force aviators took off from St. Johns, N. F., under orders to fly the Atlantic to the first landfall on the English side. They set their plane down in a bog near Cliffden, Ireland, June 15, 1919.

Today, Russell Rogers landed the two-motored flying boat, which he had flown 5750 miles from San Diego, in 50 minutes short of four days with stops at Buffalo, N. Y., and Botwood, N. F. He handed over the plane to the Royal Air Force officers for its final tests.

The first British bombing plane which flew the Atlantic was a wartime Vickers-Vimy. The fliers were the late Sir John Alcock, pilot, and Sir Arthur Whitten-Brown, navigator. They received a Daily Mail $50,000 prize for the first non-stop trans-Atlantic flight.

$700,000 SPENT ON S. D. AIR PLANTS

Sun 7-14-39

Improvements to local aircraft plants totalling more than $700,000 within the past few months were described to the Chamber of Commerce board of directors by Earl Prudden, vice-president of Ryan Aeronautical Co.

Included in his report was the $500,000 plant modernization program of Consolidated Aircraft Corp., featuring installation of giant drop hammer equipment; the $150,000 plant addition of Ryan, and the $55,000 expansion, consisting of a new building and equipment, of Solar Aircraft Co.

Edgar N. Gott, assistant to the president at Consolidated, told the directors his concern was hoping for additional Army business in the near future, based on bids recently opened in Wright Field, Dayton, O., on two and four-motored bombers.

Approximately $7,000,000 was spent on Navy projects during the fiscal year, according to a report by Comdr. J. T. Mathews, 11th Naval District public works officer, revealed by Arthur Wells, Federal projects committee chairman of the Chamber.

Union 7-15-39

Aircraft Factories Weed Out Aliens

Aircraft manufacturers are weeding out aliens from their employes as a move to insure safeguarding of aviation secrets, The Associated Press reported from Washington yesterday.

Locally, aircraft manufacturers said only citizens are employed at present.

A number of foreign technicians have been discharged or transferred to non-military work by direction of war and navy departments.

Disclosure of the ban on aliens was made after a Hartford, Conn., arms firm announced all aliens in its machine-gun division would be let out at once.

Scrap Book

Learman

What's Up in the Air?

Trans-Ocean Deliveries.
Waiting For It To Burn.
Noted Squadron Revived.

By Flight Commander A. H. Sandwell

THE passage through Canada this week of the large flying boat built by Consolidated Aircraft for the British Air Ministry signalized the first delivery by air across the North Atlantic of a heavier-than-air machine. The German-built Zeppelin airship commonly known as the Los Angeles was, of course, the first aircraft in the world to be flown to its new owners across this ocean away back in October, 1924. To forestall a flood of corrections, I might state that I am well aware that the British airship R-34 made a double crossing of the Atlantic in July, 1919, but neither of these trips was really a delivery flight.

One of the striking features of all the recent Consolidated boats is the retractable wing-tip float. Whether this will find favour at Felixtowe remains to be seen; but it has always seemed a very bright idea to me, for several reasons. There can be no doubt that the retracted float, forming as it does an excellent wing-tip, with its supporting struts completely housed within the structure of the wing, presents much less resistance to the passage of the machine through the air than the permanent (but not so very) wing floats which dangle from the planes of the Empire boats and their successors.

The ability to retract these floats as soon as the machine is moving fast enough, during the take-off, to answer its ailerons must facilitate the process of unsticking considerably. Likewise the ability to leave the floats retracted while landing until the machine is well on the water and has lost most of its speed might be valuable under some circumstances. Had "Cambria" been equipped with these floats she would probably not have been nearly lost while landing at Toronto in 1937. This little catastrophe, incidentally, was a near thing and caused a lot more structural damage than many people realized. And even should the crew forget, or be unable, to lower the floats when slowing down after landing, the results are not likely to be serious, as they still form part of the wing-tips and would prevent the latter from dipping below the surface.

Bigger Boats, Engines And Propellers Coming

HARDLY have the Boeing Super Clippers, with their 6,000 h.p. and their 82,500 lbs. of weight, been put into service by Pan American, and hardly have Imperial Airways taken delivery of the new 31½-ton 5,500 h.p. "Golden Hind' from Short Brothers, than the technical press gets busy again with discussions of the next step. It may be remembered that Pan American called for tenders for a 100-passenger, 5,000-mile-range plane, for which several American manufacturers submitted specifications. I do not believe any prices were quoted, and there is no record of Pan American having handed out any orders so far. But there is little doubt that flying boats with wing spans of 175 to 200 feet and weighing up to 90 tons, will be on the stocks shortly, probably within a year. Three manufacturers, Sikorsky, Douglas and Boeing, expect to require six engines for such a craft; Consolidated hope to get by with four.

You remember the DOX, with its 12 engines perched on a forest of struts? Well, engines have increased in power since those days, but they, and the propellers they drive ,are still the limiting factors in the design of really large flying boats. The bottle-neck really seems to be the propeller, for with increase in diameter and of the power which it has to absorb, its weight goes up alarmingly. And it is not good to have such large and heavy objects rotating at such high speeds in a structure so comparatively flimsy as a heavier-than-air machine must be. The centrifugal and gyroscopic forces involved become terrific. Hence the frantic search for strong yet light materials for the blades of these airscrews, which are likely to require diameters as great as 21 feet in order to absorb the more than 2,000 h.p. which will flow into them.

There seems no great difficulty in producing an engine of 2,000 h.p. and upwards. Junkers have been working on designs of a Diesel unit of this power for some time past. One of the manufacturers of radial air-cooled engines has got mighty close. The makers of the Allison have a V-12 liquid-cooled engine which is used in the Bell "Airacuda" and other U.S. military aircraft. By bolting two of these V-12's together, and gearing the two crankshafts to a separate propeller shaft, they have produced an engine which will give something like 2,300 h.p. at the take-off. Though slightly heavier per horsepower than some of the smaller engines, it is hoped that these will permit a fuel consumption considerably lower, so that the net result on long flights will be a gain, despite the heavier engine.

Estimated Alighting Speed Far Too High

POINT is given to the recent remarks of C. B. Allen mentioned in this column some months ago about the coming necessity for something along Autogiro lines in the near future by the anticipated landing speeds of these projected boats. They are already talking airily of landing at 80 m.p.h. "Because of the large size of the boats, a landing speed in the neighborhood of 80 m.p.h. would not be dangerous," writes Robert C. Morrison in a recent issue of "Flight." It seems to me that exactly the opposite is the case. Any one who speaks glibly of hurling a mass weighing 90 or 100 tons at 80 m.p.h. at any kind of water—let alone the waves of an Atlantic storm—might as well take his car out and drive it into a stone wall at the speed he talks about. If he likes that I am willing to listen to him afterwards.

Connemara Fire Means More Atlantic Delays

THE loss by fire at Southampton of "Connemara", one of the new Cabot type boats with which Imperial Airways were planning to conduct experimental Atlantic flights this summer, seems to have been an extraordinary affair. It is reported that the fire started in the engine room of the refuelling barge. Though the flames did not spread to the flying boat for fully 15 minutes after the first outbreak, the barge and the boat were still connected to each other by the fuel hose all that time, and it was along the hose that the fire spread to the flying boat. There were seven men aboard the two craft, all of whom jumped overboard, one of hem to his death. Frankly, for the life of me, I do not see how such an event can be blamed on "sheer bad luck". It has looked for a long time as if what Imperial Airways needs is a professional pessimist to spend his days and nights expecting and anticipating simple little things like gasoline catching fire and carburettors icing up before these things happen. Such a person might goad the management either into taking steps to see that they did happen or to provide trained crews and adequate equipment to deal with them if they cannot be avoided. To sit around for a quarter of an hour waiting for fire to spread from a barge to a flying boat, and to have no means available to extinguish the fire or to tow the boat out of harm's way is not worthy of a heavily subsidised corporation one of the main objects of which is avowedly to uphold Britain's prestige among the nation's of the world.

My old "pen pal" Robert Brenard, Imperial Airways Press Officer, wth whom, as you may readily guess, I have exchanged "warmish" but always good tempered views about the running of an air line, retired from that position at the beginning of this month to specialize in aviation journalism.

The new press officer is the distinguished journalist and author, J. R. Glorney Bolton, who joined the editorial staff of the Yorkshire Post in 1923; became assistant editor of the Times of India in 1927; returned to England as leader writer for the Yorkshire Post in 1931, and served on the London Daily Mail from 1933 to 1935. Since that time he has been engaged in authorship and general journalism. His publications include "The Tragedy of Gandhi", "Peasant and Prince", "Two Lives Converge" and "The Dome of Devotion"'. All of which, as you might say, must have given him a first-class background in aviation and fitted him admirably for his new post.

Famous Royal Air Force Squadron Is Re-Formed

ONE of the most famous wartime units of the R.F.C. and R.A.F., No. 85 Squadron, has recently been re-formed at Debden, Essex. Once more it is a fighter squadron, equipped with Hurricanes, and forms part of the London Air Defences. There were several reasons for 85 Squadron's distinguished standing in the annals of Britain's war-time campaign in the air. Its record of hostile aircraft destroyed was phenomenal. I do not know whether the full record is available; at any rate I regret I do not have it. Among its famous members was Elliott White Springs, the American author who edited "The Diary of an Unknown Aviator" and wrote numerous books on his adventures and those of the advance guard of sporting Americans who served in the Royal Flying Corps. And last but not least, this Squadron had two very famous Commanding Officers, Major Edward "Mickie" Mannock, V.C., who was killed in action on July 26, 1918, and Major (now Air Marshal) W. A. Bishop, V.C., D.S.O., Canada's most famous fighter pilot, who survived the war and is today wit us in Montreal.

Just how much war-time record mean to a fighter squadron i evidenced by the reverence accord ed a few historic documents obtained from the Air Ministry and now mounted in glass frames in the pilots' room. These include a combat report of Major Bishop's dated June 19, 1918; the recommendation for Major Mannock's V.C., with His Majesty the King's signature approving it, and a flight combat report for August 22, 1918.

The new Commanding Officer of 85 Squadron is rather a famous individual himself, none other than R. L. R. Atcherley, Schneider Trophy race pilot, winner of the King's Cup race in 1929 and one of the most popular and respected British pilots in America, where his exhibition flying at the Cleveland Air Races while on leave one year had the spectators standing on their seats.

Because so many past members of the Squadron were Americans, and in honor of its Canadian C.O., a tomahawk has been provisionally

---

Sea Spanned By Consair Flying Boat

Trib. 7-14-39

Transatlantic delivery of Consolidated's Model 28-5 flying boat was completed today when the 15-ton plane, which left here Monday morning, landed at Felixtowe, England, after a two-stop flight over the 5750-mile route.

In a message to Consolidated officials telling of the landing at 8 a.m. (PST), Russell Rogers, pilot, said: "All well; very nice trip, as usual with Consolidated equipment."

The flying boat left San Diego at 8:23 a.m., Monday, and after encountering strong head winds, landed at Buffalo, N. Y., at 3:30 a.m. Tuesday to refuel. It left Buffalo for Botwood, N. F., to refuel before starting the flight across the Atlantic, and took off from Botwood early yesterday morning. With Rogers are Lewis A. Yancey, navigator; Raymond Booth, radioman, and Gerald Brown, engineer. The four will return to the United States by liner, and are expected back at San Diego early next month.

Inspects S. D. Cadets

Tribune 7-18-39

LOUIS A. JOHNSON

JOHNSON LEAVES FOR L. A. ON TOUR OF AIR SCHOOLS

Louis A. Johnson, assistant secretary of war, completing a quick review of young fliers in training at the Ryan school of aeronautics for the army air corps, left San Diego in his special plane at 9:15 a.m. today, bound for Los Angeles. Johnson arrived here at 9:35 p.m. yesterday, when he was met at Lindbergh field by T. Claude Ryan, head of the school, and Capt. J. C. Horton and Lt. L. P. Hopwood, army officers in charge of the flight cadet training school.

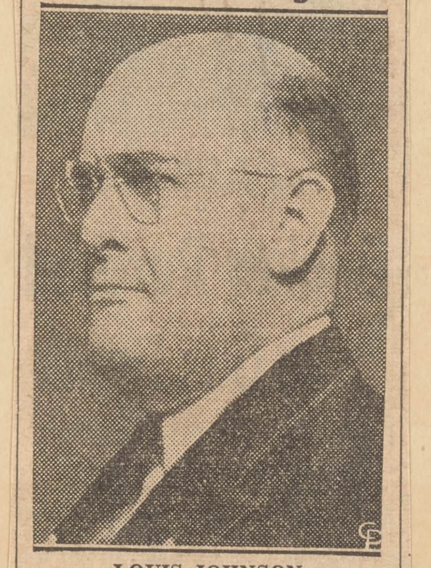
In addition to reviewing the fliers, Johnson also inspected Ryan Aeronautical Co. and Consolidated Aircraft Corp. plants. Purpose of his nation-wide tour, he explained, is to view "field operations" of the war department's plane expansion and flight training program.

"We had the aircraft manufacturers in Washington for discussion of aviation expansion," he said. "Now we're checking on factors in the field."

Johnson's inspection came less than 24 hours after Brig. Gen. Barton K. Yount, assistant chief of the army air corps, reviewed fliers at the Ryan school and approved progress of the 35 cadets in their first three weeks here. He said 2200 are to receive training at nine flying schools the next two years.

Yount left San Diego for Santa Maria to inspect cadets in training there. Before returning to Washington, D. C., he will make similar inspections at Lincoln, Neb., St. Louis and Chicago. He has made inspections at Tuscaloosa, Ala.; Dallas and Tulsa.

Heads Air Program



LOUIS JOHNSON
. . . flies from Washington.

7-18-39 Union

Louis Johnson Here From East

Aviation Plants To Be Inspected

Louis A. Johnson, assistant secretary of war in charge of the army's air expansion program, arrived last night by plane from Washington via Helena, Ark., for an inspection of the Ryan aviation school and the Ryan and Consolidated aircraft plants.

"I want to look over the Ryan school," he said. This school is one of the civilian schools giving primary training to army aviation cadets.

An article featuring Louis Johnson appears on Page 2, Section B.

"We had the aircraft manufacturers in Washington on the 10th for discussion of aviation expansion. Now we're checking on factors in the field. I expect to look over the Ryan plant and Maj. Fleet's plant, the Consolidated, tomorrow. The inspection will start at 7:30 in the morning, and I'm leaving for Los Angeles at 9:30."

PLANE IS OFFICE

The war chief left Washington Sunday in his special plane fitted up as a traveling office. He arrived at Helena, Ark., Sunday night, and yesterday morning addressed the Arkansas convention of the American Legion. He is a former national commender of the Legion.

Accompanying Johnson on his inspection tour are Col. Burns of the army general staff, who is acting assistant secretary of war; Capt. Vance, also of the general staff, and Lt. Auton, who pilots the plane in which the party is making the tour.

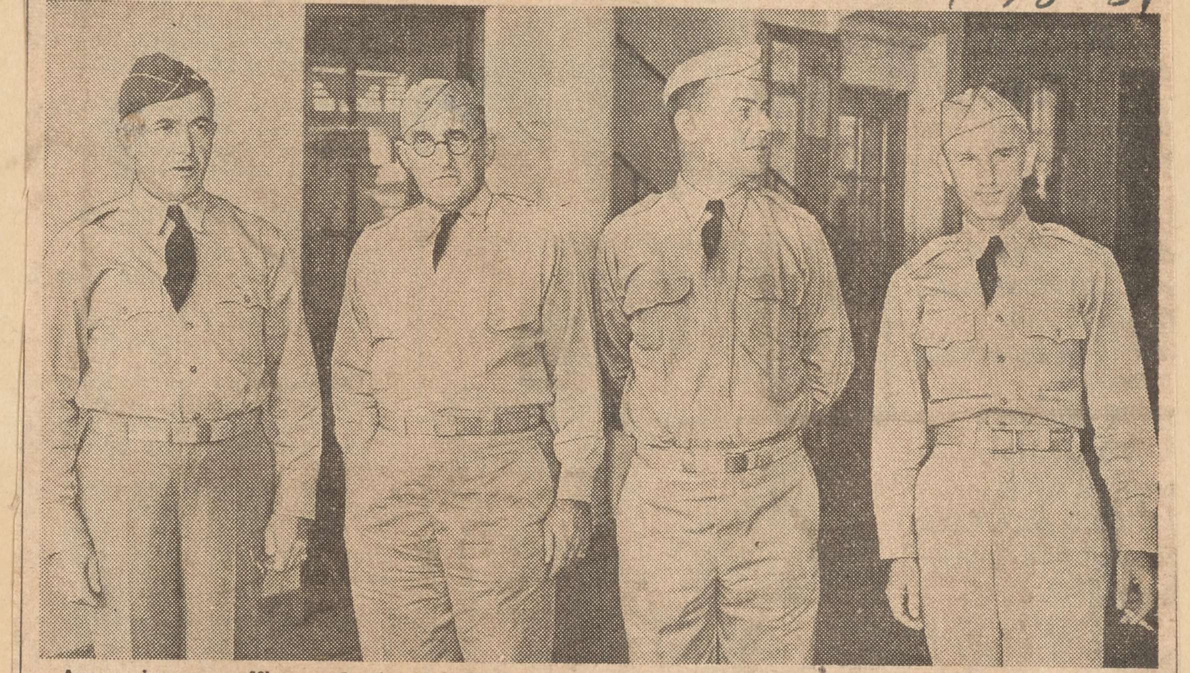
HAD GOOD TRIP

"We had a delightful trip from Helena this afternoon and evening," Johnson said. "Everything was clear until we ran into a haze about eight miles from San Diego. But we got through without any trouble."

Johnson said he was glad to be able to visit San Diego, of which he has heard much. When his plane landed at Lindbergh field last night at 9:35 he was met by T. C. Ryan and the army officers in charge of the cadet training school at Ryan school — Capt. J. C. Horton and Lt. L. P. Hopwood.

Brig. Gen. Barton K. Yount and other air corps leaders were here yesterday. See Page 1, Section B.

Union INSPECT ARMY AIR CADETS HERE 7-18-39



Army air corps officers who inspected air corps cadets at Lindbergh field yesterday (left to right) Brig Gen. Barton K. Yount, Col A. W. Robins, Col. E. B. Lyon and Maj. J. R. Morgan.

* * *

San Diego Pilot Classes Win Approval

From 2500 to 3000 American youths seeking second lieutenant commissions in the army air corps will receive preliminary flight training in the nine technical schools throughout the U. S., Brig. Gen. Barton K. Yount, assistant chief of the army air corps, announced here yesterday.

Gen. Yount, with the following group of officers, landed at the municipal airport from Washington Sunday: Col. A. W. Robins, air corps training center commander; Col. A. B. McDaniel, attached to office of Maj. Gen. Henry H. Arnold, air corps chief; Col. E. B. Lyon, in charge of primary flight training; Maj. J. R. Morgan, director air corps training center; Capt. W. T. Hefley, on duty at the army experimental depot, Wright field; Capt. K. McNaughton, district supervisor of elementary flight training; Lt. C. R. Storey, training center adjutant, and Lt. L. Raney of the army air post at Bolling field, Washington.

America's air defense activities are stressed by Louis Johnson of the war department. Page 2-B.

WILL VISIT 9 SCHOOLS

The officers are making a tour of the nine training schools in three new army bombers.

Gen. Yount complimented T. C. Ryan on the splendid progress made by the 35 cadets who have been undergoing flight training at the Ryan school. The 12-week course includes 65 hours flying and 225 hours technical instruction. On completion of the course at Lindbergh field the cadets go to Randolph field, San Antonio, Tex., for three months basis training and then to Kelly field for a final course in combat flying. The attrition list is reported extremely heavy in the last rigorous phases of the instruction period. Only 2200 are to receive commissions.

A new class of students will report at the Ryan school in August and additional classes every three months until 1941.

LEAVE FOR GLENDALE

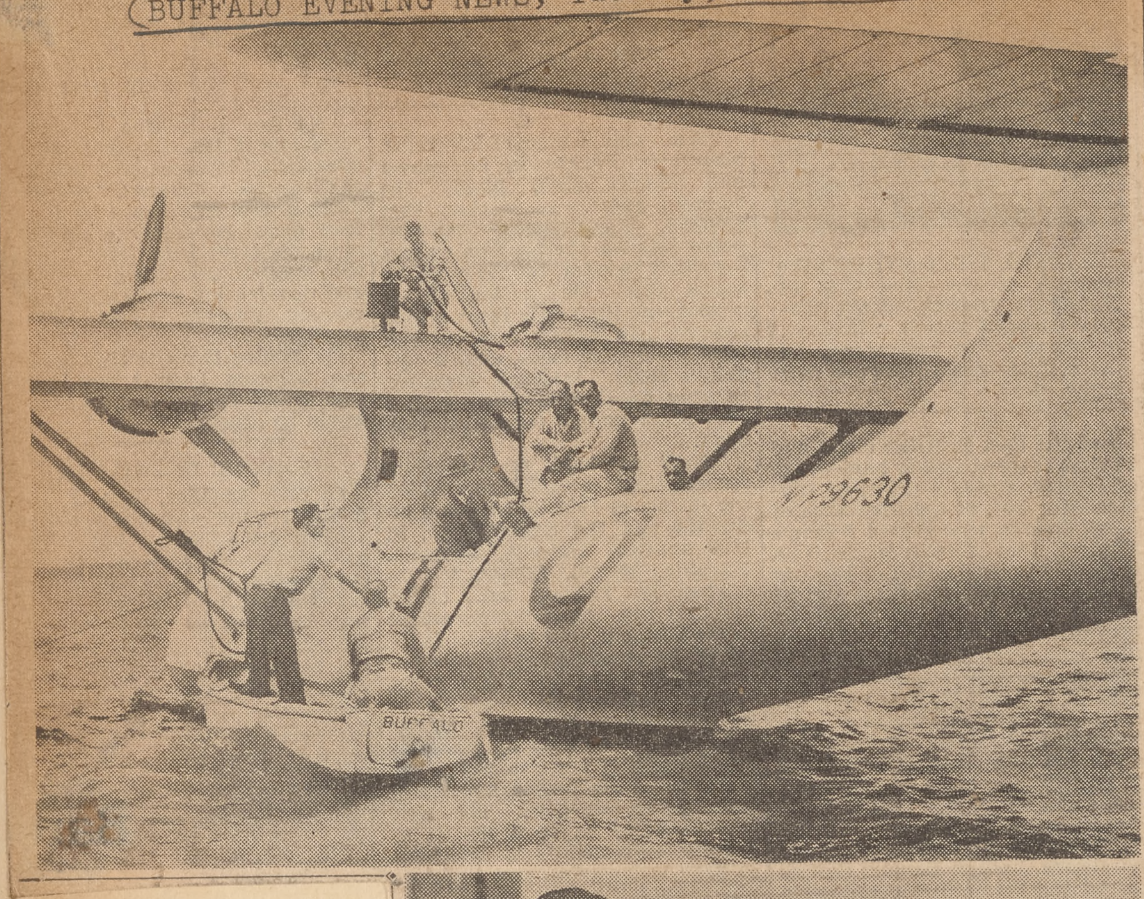
Before arriving here the army air officers visited training schools at Tuscaloosa, Ala.; Dallas, Tex., and Tulsa, Okla. They left yesterday for Glendale, and before returning to Washington will inspect cadets at Santa Maria, Lincoln, Neb., St. Louis and Chicago.

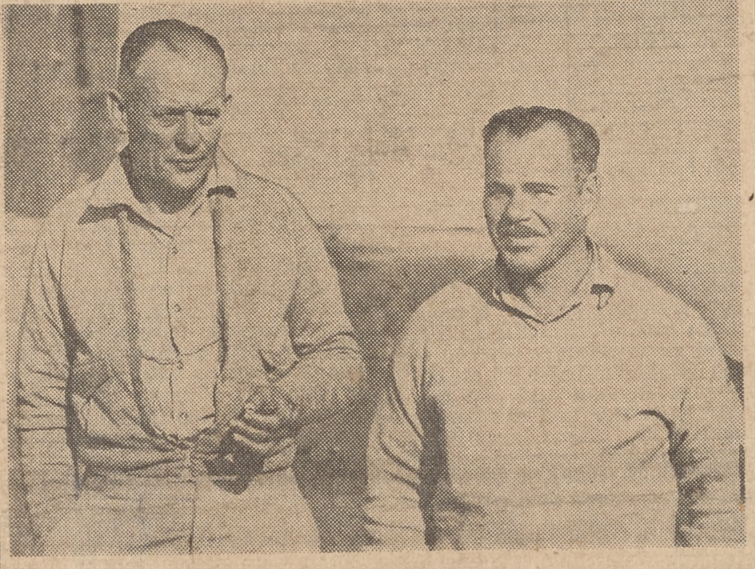
Gen. Yount said that Gen. Arnold will not leave Washington for an inspection trip of western air posts until after adjournment of congress.

Gens. Arnold and Yount are former commanders of Rockwell field, North Island, abandoned last year and turned over to the navy.

Plane Refueling After Forced Landing and 2 of Crew

BUFFALO EVENING NEWS, Tuesday, July 11, 1939





Members of the crew and Coast Guardsmen began refueling operations this afternoon on the Consolidated Aircraft Corporation flying boat forced down here this morning from lack of gasoline on a flight from San Diego to England. The refueling is shown at top. Below are two members of the four-man crew—Lewis A. Yancey, left, navigator, and Pilot Russell R. Rogers.

England-Bound Flying Boat Delayed Here by Refueling

First U. S. Military Plane to Be Delivered by Air Abroad Will Remain Overnight.

After a six-hour delay in getting gasoline needed for refueling, four fliers bound from San Diego with the first Amercian military plane to be delivered by air to Great Britain were compelled today to postpone until tomorrow at daylight their takeoff for Botwood, Newfoundland, en route to Felixstowe, England.

Fearing a fuel shortage before they could reach Botwood, the fliers alighted here early this morning at the Marine Airport after an overnight hop from the plant of the Consolidated Aircraft Corporation at San Diego, where the plane, a navy patrol bomber, was made.

The airmen planned to take off again for Botwood, which had been their only scheduled stop on their 5900-mile flight to England, as soon as the plane was refueled, but they had to abandon this idea when it took so long to get gas.

Left San Diego Monday.

Piloting the plane is Capt. Russell R. Rogers. Lewis A. Yancey is navigator and relief pilot; Raymond Booth, radioman, and Gerald Brown, engineer.

Capt. Rogers said he took off from San Diego at 8:30 o'clock Monday morning (12:30 P. M., Buffalo time), but bucked heavy headwinds virtually all the way.

"We flew over Chicago a little after 4 o'clock this morning, about two hours behind schedule," Capt. Rogers said. "We figured we had enough fuel to reach Botwood if conditions were favorable but we didn't want to take any chances on fog as we neared the coast. So we decided to come down at Buffalo and take on more gas."

Alighted In Harbor.

The 15-ton ship was brought down just outside the Buffalo Harbor gap about 6:45 o'clock.

Plenty of difficulty then arose over the problem of refueling. Capt. Rogers said he had wired New York headquarters of the Shell Oil Company to arrange for gasoline here, but there was none on hand when he landed.

F. Leslie Marsden, manager of the Buffalo Aeronautical Corporation, said he was called from the Shell Company in New York at 7:30 and asked to refuel the plane. He found the ship but did not locate the crew at the Coast Guard Station until 10 o'clock. Then he sent a special driver out to the airport to get the airport gasoline truck and bring it to the foot of Georgia st.

965 Gallons Pumped Aboard.

The truck finally reached the airport at 11 o'clock, but then it was discovered the gasoline was in bulk, not in drums. Coast Guard Capt. John J. Daly and his men finally hauled the plane within reach of a 100-foot hose and the refuelling began at 1 o'clock, ending at 1:55 o'clock. In all 965 gallons were pumped aboard, 495 gallons in the left wing tank and 470 in the right.

Capt. Rogers had planned to be in England in time to keep a dinner engagement at Claridge's tomorrow evening. This is out of the question now. He said he would finish the trip to Botwood, refuel and take off for Felixstowe, about 60 miles north of London.

The plane in which the men are flying is a new twin-motored flying boat, model PBY-4. It has been sold to the British Air Ministry.

The four fliers just got back to New York July 1 after a round-the-world flight for the American Museum of Natural History under the leadership of Richard Archibald of the museum staff.

Sun 7-18-39

SECRETARY OF WAR ENDS VISIT TO S. D.

Hustling through a tight schedule of inspection and official visits with local aviation offcials, Assistant Secretary of War Louis Johnson left by plane for Los Angeles this morning after a 12-hour stay.

Mr. Johnson inspected the Ryan School of Aeronautics, where 35 Army cadets are receiving primary flight training, and the Ryan and Consolidated [illegible]ies. He interviewed T. Claude Ryan and Maj. Reuben H. Fleet, president of the concerns.

The assistant secretary of war, who flew here yesterday from Helena, Ark., where he addressed the Arkansas convention of the American Legion, said that he wished to observe at first hand the facilities for expansion of American aircraft factories.

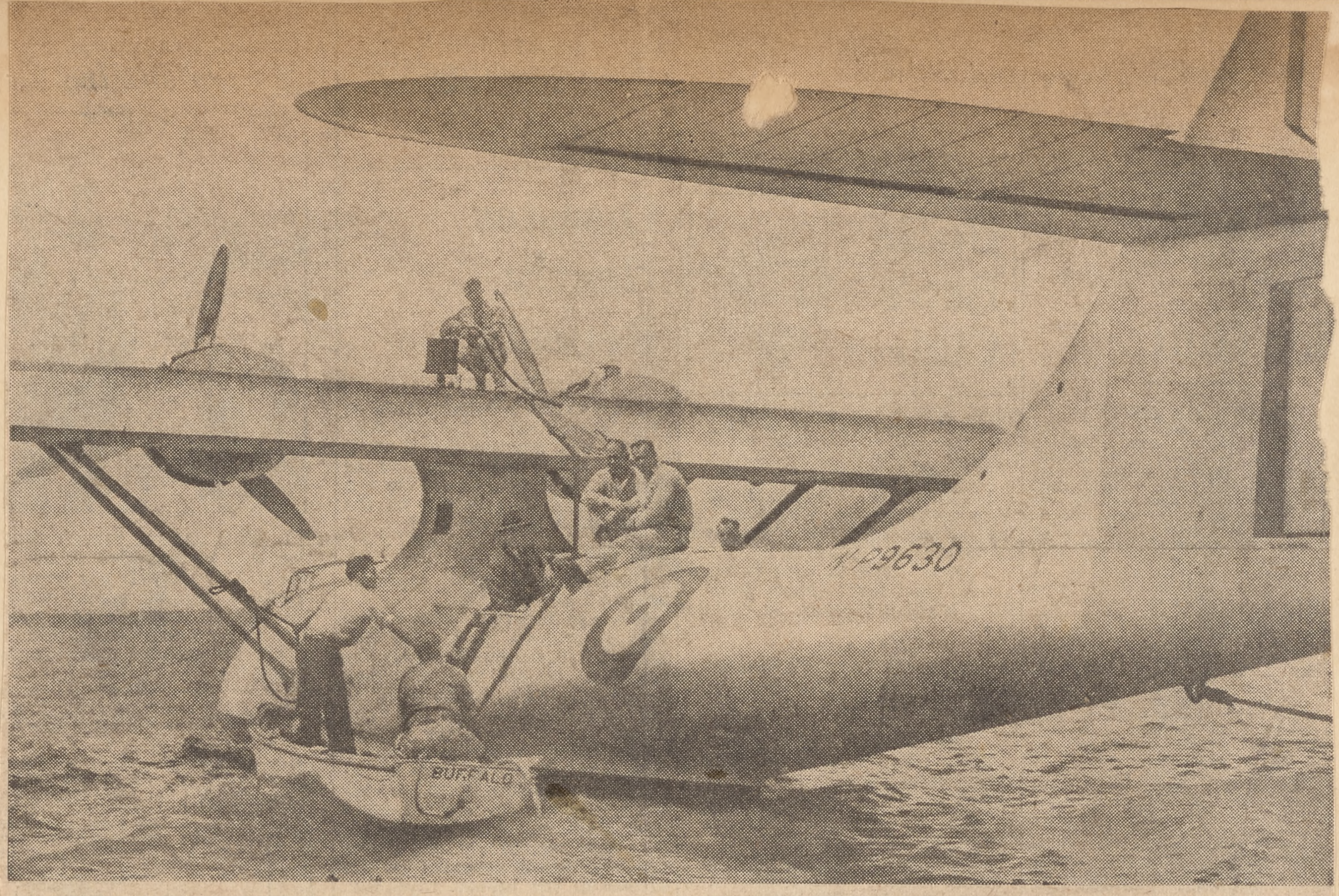
The War Department is checking on bids by the nation's leading manufacturers for contracts to build eight different types of Army planes. Consolidated Aircraft Corp. submitted estimates on two and four-motored bombers.

Mr. Johnson is accompanied by three Army officers of his staff and travels in a specially fitted Douglas DC-2 transport.

7-20-39 Sun

CONSAIR PLANE LANDS FOR FUEL IN HALIFAX

HALIFAX, N. S. — A twin-engined flying boat of the American Export Lines landed at the Royal Canadian Airforce base today to refuel. The ship was completing an experimental round trip to Europe. The plane was built by Consolidated Aircraft Corp. of San Diego.



TRANS-ATLANTIC PLANE STOPS HERE.—Shown refueling late Tuesday in Buffalo harbor is the Consolidated Aircraft Corporation navy patrol bomber bought by the British Air Ministry. The plane, short of gasoline on its flight from San Diego to Botwood, N. F., stopped here 25 hours when a misunderstanding concerning fuel made it impossible to leave Tuesday. It left early Wednesday morning. The final destination is Felixstowe, Eng.

THE SAN DIEGO UNION: WEDNESD

Union 7-19-39

CONSAIR, RYAN FACTORIES VIEWED

T. C. RYAN LOUIS A. JOHNSON CAPT. J. C. HORTON

. . . Johnson, assistant secretary of war, and aid, confer with head of Ryan school relative to training of air corps cadets. (Bill Wagner photo.)

War Secretary Visits Plants At San Diego

Completing a brief inspection of the Consolidated and Ryan aircraft plants at Lindbergh field, Louis A. Johnson, assistant secretary of war, left by military plane at 9:20 a. m. yesterday for Los Angeles.

Johnson landed at the municipal airport Tuesday night from Washington via Helena, Ark., where he addressed the Arkansas convention of the American Legion. He is accompanied on his tour of air corps training centers by Col. J. H. Burns of the army general staff.

From Los Angeles Johnson traveled by plane to Hamilton field, San Rafael, where he inspected plane building and training schools and remained over night as guest of Col. John F. Curry, commanding officer of the field, The Associated Press reported.

Yount Continues Trip

LOS ANGELES, July 18 (A.P.)—Brig. Gen. Barton K. Yount, assistant chief of the army air corps, and party left for Santa Maria today after inspecting the civilian flying school at Burbank today and the Ryan school at San Diego yesterday. He is inspecting nine similar schools recently established over the country.

"This new chapter in aviation training," he said, "is proving civilian flying schools can work with the government.

"We know now that in case of emergency, all we would have to do would be to notify such school its assignment of cadets would be increased. There would be none of the delay in organization that held us back for six months when the World war created a sudden demand for military fliers."

7-19-39 Sun

GOTT IN L A. WITH WAR SECRETARY

Edgar Gott, assistant to the president of Consolidated Aircraft Corp., accompanied Asst. Secy. of War Louis Johnson to Los Angeles when he left San Diego after a short inspection visit here.

Others with Mr. Johnson were Maj. J. L. Stromme, chief of the procurement section of the Army Air Corps' western division; Col. J. H. Burns, executive assistant to Mr. Johnson; Capt. R. F. C. Vance, and Maj. Lowell Smith, former Rockwell Field aviator who led the Army's famed round-the-world flight. The group's Douglas transport plane was piloted by Lieut. Jesse Auton.

After a tour of factories of North American Aviation Co., the El Segundo and Santa Monica divisions of Douglas Aircraft Co., Vultee and Lockheed Aircraft Cos., and the Army cadets' new primary training school at Grand Central Air Terminal, Mr. Johnson and the Army officers flew to San Francisco.

Gets Higher Rank

BRIG. GEN. D. C. McDOUGAL . . . promoted by President Roosevelt.

Union 7-19-39

Gen. McDougal Wins Promotion

Acting on the recommendation of a selection board headed by Rear Adm. W. R. Sexton, President Roosevelt yesterday approved promotion of Brig. Gen. Douglas C. McDougal, now in command of the marine base at Parris Island, S. C., to major general.

Gen. McDougal relinquished command of the fleet marine force here May 18, 1937, going to duty as temporary commander of the department of the Pacific, then to Parris island. Prior to that he was for two years in command of the local marine base.

Gen. McDougal was born April 23, 1879, at San Francisco. Prior to entering the marine corps he served at the naval academy as a midshipman. He was a volunteer ensign in the navy in the Spanish-American war and saw service as a cadet in the revenue cutter service. He was commissioned a second lieutenant in the marine corps March 12, 1900, and has served continuously.

He participated in the following expeditions: China relief expedition, 1900; Philippine insurrection; occupation of Vera Cruz; Haitian and Santo Domingo expeditions. He was with the 13th regiment of marines in France from September, 1918, to August, 1919. He commanded the Gendarmerie d'Haiti from 1921 to 1925 and was in command of the Guardia Nacional in Nicaragua from 1929 to 1931.

San Diego ~~Club~~ Life

Maj. Gott Returns From Capital Stay

7-19-39

Predicting a slowly improving market in the aircraft business generally, Maj. Edgar V. Gott, vice president of Consolidated Aircraft, returned to San Diego last week after a winter in Washton where he contacted government officials regarding the service's contracts for Consair planes.

War talk infests Washington, he said, but he expressed the hope it gets no further than talk, at least as far as this nation is concerned.

Consolidated is working on new contracts for the Navy and Army, details of which are not being divulged.

Maj. Gott is a prominent member of The San Diego Club.

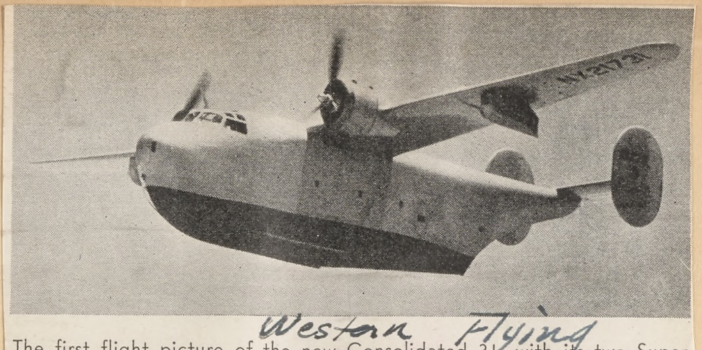
Sun 7-19-39

Walking into the horse show grounds are, left to right, MISS MARCELLA LADDON, MR. and MRS. I. M. LADDON and MAJ. and MRS. RUEBEN FLEET.

July 21 - 39 THE SAN DIEGO UNION: FRI

LOT GREETED AFTER FLYING BOMBER TO ENGLAND

Russell Rodgers, pilot who flew a Consolidated Aircraft Corp. bomber from San Diego for delivery to the British Royal Air force, shakes hands with Wing Comdr. Wigglesworth, R.A.F. (in uniform), after landing at Felixstowe, England. Other crew members looking on are Capt. Lewis A. Yancey (left), Raymond Booth (second from right) and Gerald Brown (right). The plane crossed the Atlantic in 15 hours. (Associated Press photo.)



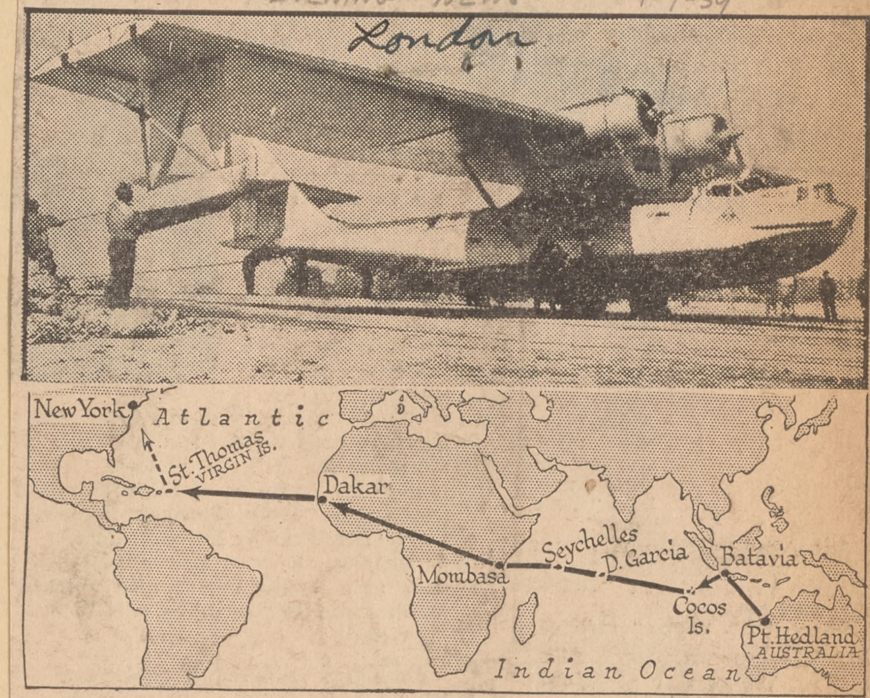
Weston Flying

The first flight picture of the new Consolidated 31, with its two Supercyclones, rated at 2000 h.p. each. Note the size of the wing.

Consolidated Aircraft Corporation has got **Gott** back. **Edgar N. Gott,** who was loaned by Consolidated to assist in reorganizing the Aeronautical Chamber of Commerce last February, is back on the job at San Diego as vice president.

"Evening News" 1-7-39

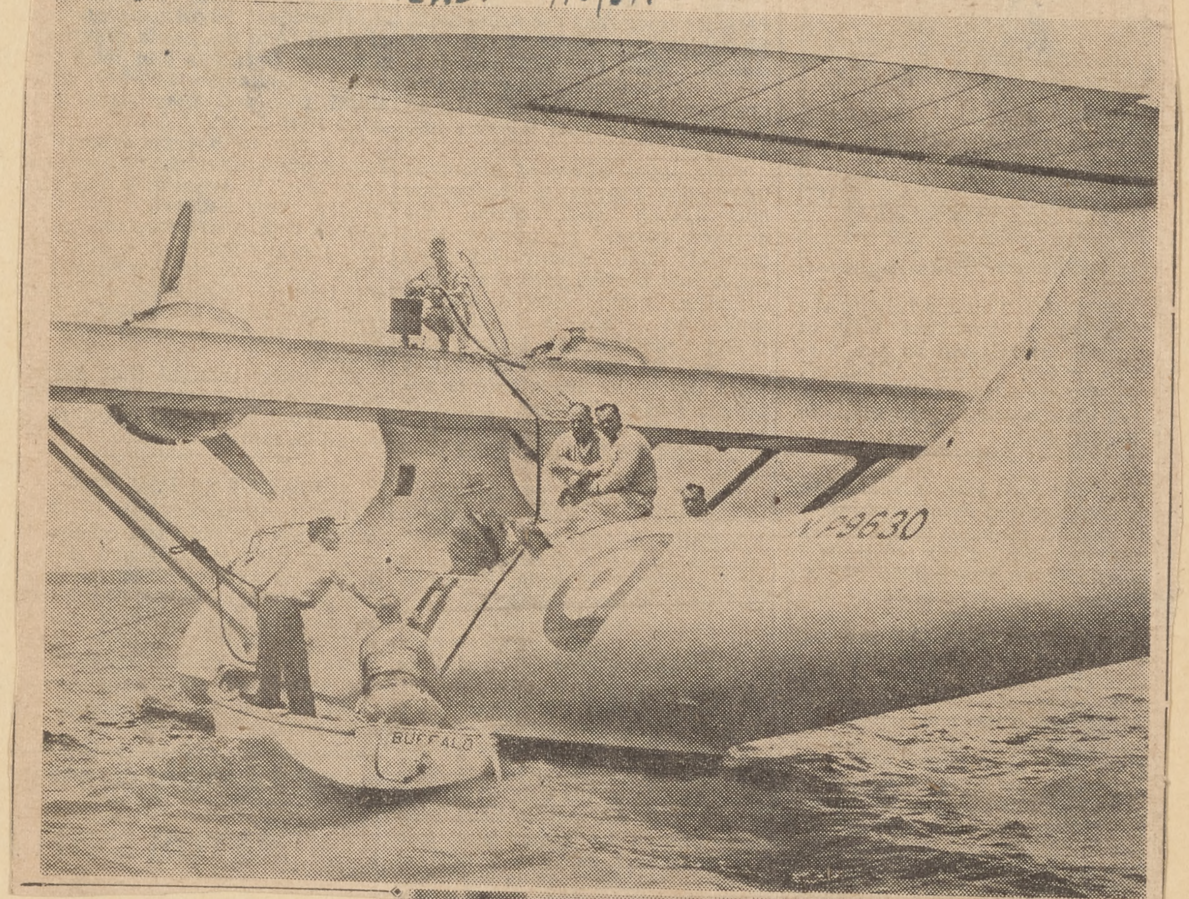
London

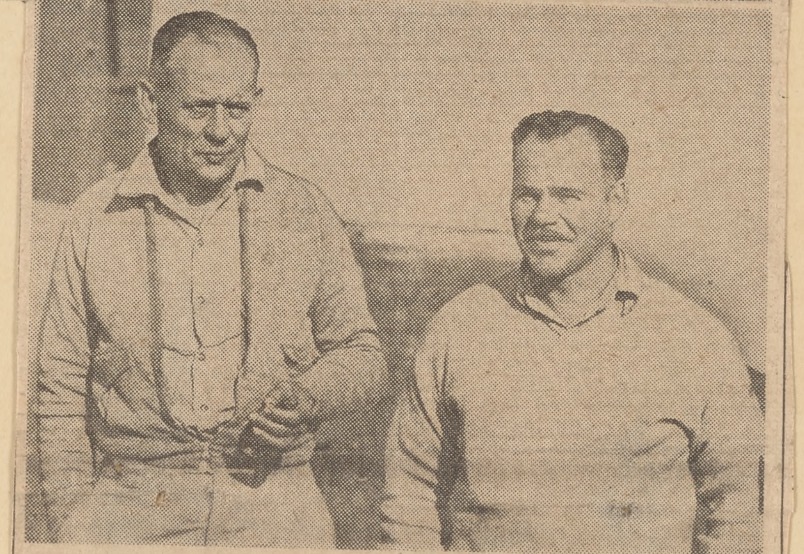


The Australian flying boat Guba, and the unusual route she has taken more than half way round the world. Leaving Port Hedland, W. Australia, with the purpose of exploring the possibilities of an alternative England-Australia air route, the Guba made stops at Batavia, Cocos Islands, Diego Garcia (Chagos archipelago) and the Seychelles. Flying across Africa from Mombasa she halted at Dakar, Senegal, and yesterday arrived from there at the Virgin Islands. Her next stop, according to schedule, is New York.

Plane Refueling After Forced Landing and 2 of Crew

Buffalo Eve. News. 7/10/39.





Members of the crew and Coast Guardsmen began refueling operations this afternoon on the Consolidated Aircraft Corporation flying boat forced down here this morning from lack of gasoline on a flight from San Diego to England. The refueling is shown at top. Below are two members of the four-man crew—Lewis A. Yancey, left, navigator, and Pilot Russell R. Rogers.

England-Bound Flying Boat Delayed Here by Refueling

~~Buffalo Eve News.~~

First U. S. Military Plane to Be Delivered by Air Abroad Will Remain Overnight.

After a six-hour delay in getting gasoline needed for refueling, four fliers bound from San Diego with the first Amercian military plane to be delivered by air to Great Britain were compelled today to postpone until tomorrow at daylight their takeoff for Botwood, Newfoundland, en route to Felixstowe, England.

Fearing a fuel shortage before they could reach Botwood, the fliers alighted here early this morning at the Marine Airport after an overnight hop from the plant of the Consolidated Aircraft Corporation at San Diego, where the plane, a navy patrol bomber, was made.

The airmen planned to take off again for Botwood, which had been their only scheduled stop on their 5900-mile flight to England, as soon as the plane was refueled, but they had to abandon this idea when it took so long to get gas.

Left San Diego Monday.

Piloting the plane is Capt. Russell R. Rogers. Lewis A. Yancey is navigator and relief pilot; Raymond Booth, radioman, and Gerald Brown, engineer.

Capt. Rogers said he took off from San Diego at 8:30 o'clock Monday morning (12:30 P. M., Buffalo time), but bucked heavy headwinds virtually all the way.

"We flew over Chicago a little after 4 o'clock this morning, about two hours behind schedule," Capt. Rogers said. "We figured we had enough fuel to reach Botwood if conditions were favorable but we didn't want to take any chances on fog as we neared the coast. So we decided to come down at Buffalo and take on more gas."

Alighted In Harbor.

The 15-ton ship was brought down just outside the Buffalo Harbor gap about 6:45 o'clock.

Plenty of difficulty then arose over the problem of refueling. Capt. Rogers said he had wired New York headquarters of the Shell Oil Company to arrange for gasoline here, but there was none on hand when he landed.

F. Leslie Marsden, manager of the Buffalo Aeronautical Corporation, said he was called from the Shell Company in New York at 7:30 and asked to refuel the plane. He found the ship but did not locate the crew at the Coast Guard Station until 10 o'clock. Then he sent a special driver out to the airport to get the airport gasoline truck and bring it to the foot of Georgia st.

965 Gallons Pumped Aboard.

The truck finally reached the airport at 11 o'clock, but then it was discovered the gasoline was in bulk, not in drums. Coast Guard Capt. John J. Daly and his men finally hauled the plane within reach of a 100-foot hose and the refuelling began at 1 o'clock, ending at 1:55 o'clock. In all 965 gallons were pumped aboard, 495 gallons in the left wing tank and 470 in the right.

Capt. Rogers had planned to be in England in time to keep a dinner engagement at Claridge's tomorrow evening. This is out of the question now. He said he would finish the trip to Botwood, refuel and take off for Felixstowe, about 60 miles north of London.

The plane in which the men are flying is a new twin-motored flying boat, model PBY-4. It has been sold to the British Air Ministry.

The four fliers just got back to New York July 1 after a round-the-world flight for the American Museum of Natural History under the leadership of Richard Archibald of the museum staff.

15/7

BOMBER'S ATLANTIC TRIP

London Times 7-15-39

CALIFORNIA TO ENGLAND WITH ONE STOP

FROM OUR AERONAUTICAL CORRESPONDENT

The Consolidated flying-boat, of the type used as a long-range bomber by the United States Navy, which has been bought by the Air Ministry, left Botwood, in Newfoundland, at 2.29 B.S.T. on Thursday afternoon and, flying non-stop, reached Felixstowe, 2,450 miles distant, at 6 a.m. yesterday. The boat has been delivered by air, with only one intermediate descent, from San Diego, California. It was flown the 3,300 miles from San Diego to Botwood some days ago and is the first military aircraft to be delivered by air across the Atlantic.

This twin-engined flying-boat has been bought, as other foreign aircraft have been bought by the Air Ministry, in order that the outstanding products of other lands might be tested and examined in British conditions of service. The type is reported to have a range with a fair military load of 4,200 miles. One of its interesting features is a type of wing-tip float which can be retracted during flight.

AIR GIANT HALTS HERE TO REFUEL, STAYS 24 HOURS

Huge flying boat, on hop from West Coast to England, finds facilities lacking here

Buffalo was an unexpected and unprepared host to a famous giant of the air yesterday, when a fifteen-ton Consolidated Aircraft patrol bomber, en route to England, nosed down into Buffalo Harbor "just to refuel" and remained for 24 hours.

First of the huge planes to visit Buffalo, the big flying boat was an immediate center of attention. Crowds began flocking to the foot of Georgia Street early in the afternoon to see a plane which was on its way to a new distance and time record until it bumped into the snag of the complete lack of facilities constituting this city's so-called Marine Airport.

Pilot Annoyed

Capt. Russell R. Rogers of New York City, pilot of the huge plane, was decidedly annoyed at the "various unexpected circumstances" that transformed the projected one-stop flight from San Diego to Felixstone, England, into a two-stop journey with a 24-hour "interesting but irritating" stopover in Buffalo. The delay was caused because of a mix-up in ordering gas to refuel the plane, because of a delay caused by Rogers' disappearance for several hours yesterday morning, and because of temporary difficulty in locating enough of the right kind of gasoline for the big plane.

All of these incidents, however, hinged on and were directly related to the complete lack of facilities for such emergencies at the marine air base.

The refueling was accomplished by 1.30 o'clock yesterday afternoon, but Pilot Rogers decided against taking off at that hour for the trip to Botwood, Bay of Exploits, Newfoundland. Instead, the ship will leave for Botwood, its original first-stop destination, at dawn today. This will eliminate any possibility of the big plane landing in the unfamiliar Newfoundland territory after dark.

R. Leslie (Doc) Marsden of the Buffalo Aeronautical Corporation was in charge of refueling the big plane, in accord with the current procedure of that company gas-

FLYING BOAT
Continued on Page Twenty

servicing all planes at Buffalo Airport other than Curtiss and Bell craft, which have their own private supplies. This service formerly was operated by the city, but was turned over to the private company on July 1st. Marsden reported receiving a call from New York City, asking that the plane be refueled at 7.30 o'clock yesterday morning. The fifteen-ton plane landed in Buffalo harbor at 6.45 a. m.

Capt. Rogers was under the impression that refueling arrangements had been made and expected a gas truck to meet the big boat, but none was on hand. He reported to New York and the New York office of the flight in turn called the Buffalo Aeronautical Company.

Marsden promptly hastened to locate a supply and made arrangements for refueling the plane. He arrived at the marine air base at 8.30 o'clock, but it was 10.30 before he could find the pilot and have the big plane towed close to the concrete "apron."

The plane was fueled from the big army truck based at the Buffalo Airport, by use of an extra 100 feet of hose. Into its tanks went 965 gallons of gasoline. The refueling took 55 minutes.

Wanted to Be "Sure"

Capt. Rogers said that the ship's fuel capacity was 1,750 gallons and stated his belief that he had had enough to reach Botwood, but that he had "just wanted to be sure." On the flight from San Diego the plane bucked heavy head winds.

The flight delay blasted the flight captain's plan to dine at Claridge's in London, England, this evening.

Welcome as the unexpected visitors were, the emergency landing of yesterday is expected to "bust wide open" the old Marine Airport situation which has been a center of many Council fights and much civic propaganda. It is a subject that reached fever pitch in the days of the famous Balbo flight from Italy to Chicago five years ago, when Buffalo was skipped because it had no place to house flying boats.

It was pointed out then, as it was yesterday, that although the city spent $123,000 for a Marine Airport, it has at the foot of Georgia Street a vast expanse of concrete, and nothing more. There is no building of any kind at the base. There is no telephone or any means of communication with the Municipal Airport. There are no gas tanks, not even a rowboat, in fact not even a tow rope. No effort is made to keep the water near the airport free of logs or other floating objects that might endanger flying boats.

The Marine "Airport" is a concrete platform 300 feet wide by 460 feet long, with a ramp into the water 90 feet wide by 149 feet long. It is reached by climbing over railroad tracks and after coming to the impasse of a dead end street. Many citizens have been unable to find it at all. In recent years it has been used as a "swimming hole" for citizens, disastrously so on Monday.

"Capt. Rogers evidently contacted the Coast Guard on arrival and was rowed to shore," Marsden said in reviewing the refueling delay. "We had no advance information of his stop here. He called his New York office and they called us. I went immediately to the marine base, hired a boat and went out to the plane, but the pilot was not on board and we spent the next three hours trying to locate him. I tried all the hotels, clubs and restaurants and finally thought of the Coast Guard base, where I found him. I made arrangements for him to move the plane in, and got the truck down. The whole maneuver then took less than an hour."

The crew of the big plane includes Capt. Rogers, Lewis A. Yancey, navigator; Raymond Booth, radio man, and Gerald Brown, engineer. The four fliers returned July 1st from a round-the-world flight for the American Museum of Natural History.

Brief Stop at Botwood

In discussing continuation of his flight last night, Capt. Rogers estimated the plane will travel at a cruising speed of 125 miles an hour today and should make the 1,150-mile hop from here to Botwood in eight or nine hours. Rogers said he would stop at Botwood only to refuel and check his ship, and then take off for England immediately.

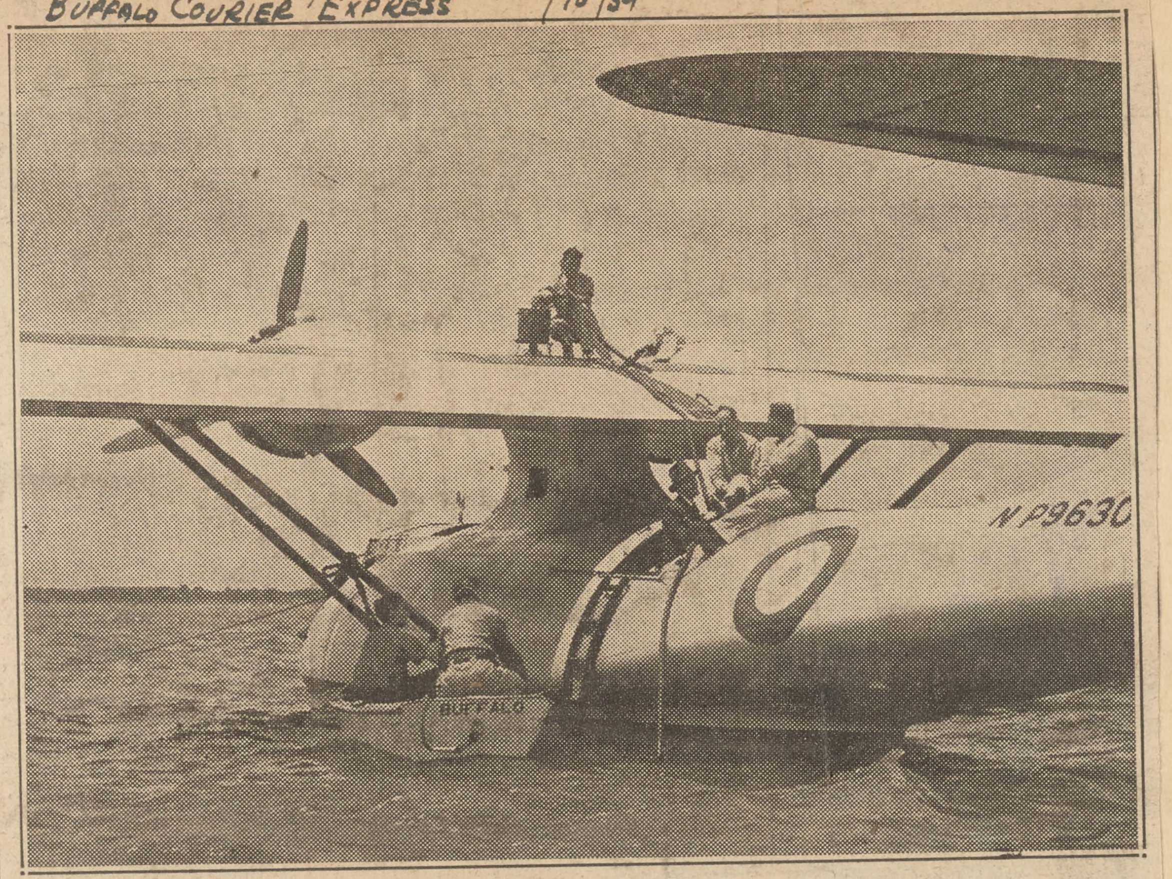
Capt. Rogers planned to spend the night as the guest of George Cobb, aeronautical engineer, with whom he flew for Pan-American Airways several years ago. The remaining members of the crew, with the exception of the mechanic, who spent the night on the plane, stopped at Hotel Statler.

---

c/

Unexpected Visitor Finds City Unprepared

Buffalo Courier 'Express 7/10/39



Dropping in at Buffalo's Marine Airport for a refueling stop, the huge Consolidated flying boat pictured above remained for 24 hours because of the city's lack of facilities at its harbor air base. The huge patrol bomber was on what was scheduled to be a one-stop flight from San Diego, Cal., to Felixstowe, England.

July 28-39

Aeronautical Group To Meet Tomorrow

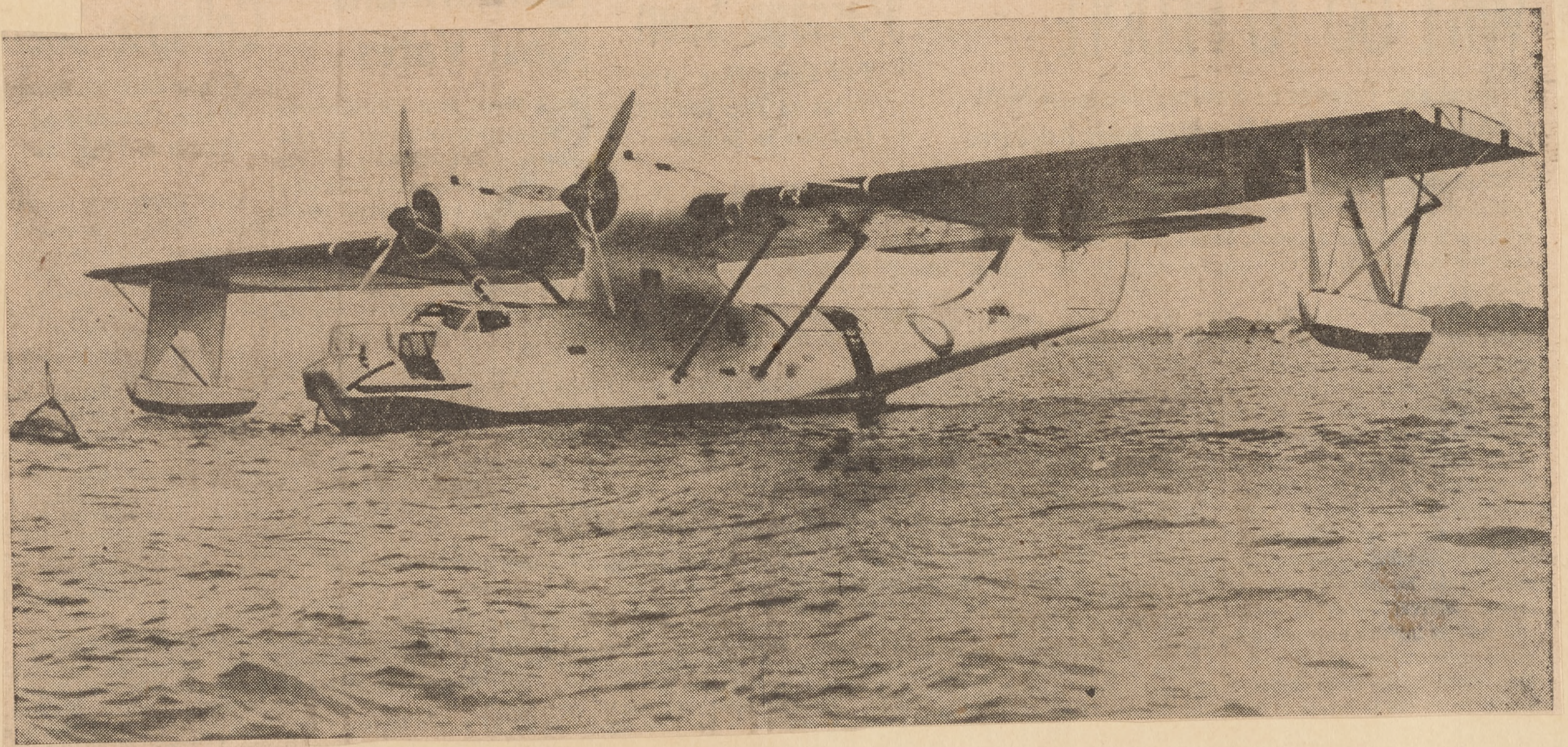
Union

The Women's National Aeronautical association will meet tomorrow night at the home of Mrs. Ray Booth, 3319 Tennyson st. The association meets once a month to discuss and enjoy talks on aviation.

Members of the group are Mmes. Ray Booth, George Benter, Cynthia Crettenden, Georgia Murray, Grace Prescott, Olive Rucker, Shirley Rohr, Evelyn Speer, Ethel Stout, Genevieve Westhave, E. Stackhouse, Adrian Clark, Kathleen Rooks, Lucille Goodale, Beatrice Kaiser, Helen Nelson, Kae Griffith; Misses Kay Fiedeke, Catherine Gnozzo, Mildred Fleming, Helen Mannix, Jessie Ostrander, Helen Walker, Aneita West, Catherine Applewhite, Sally Wescott, Bernice Minucci and Dr. Sunya Underhill.

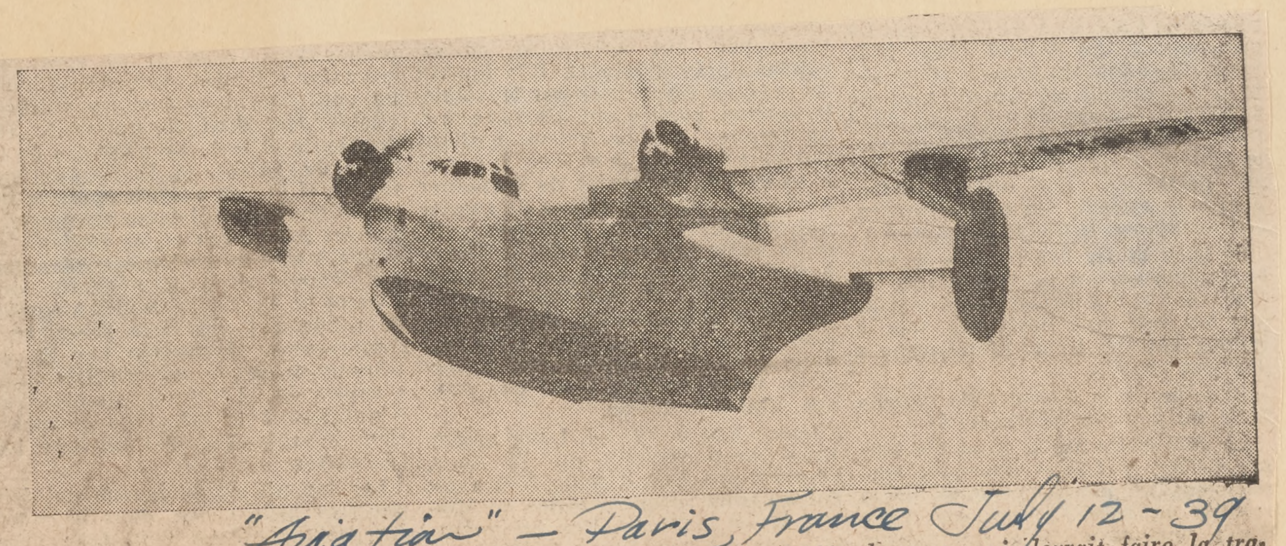
Los Angeles Times ★ JULY 24. 1939 B

—U.S.-Built Bomber Reaches England Safely



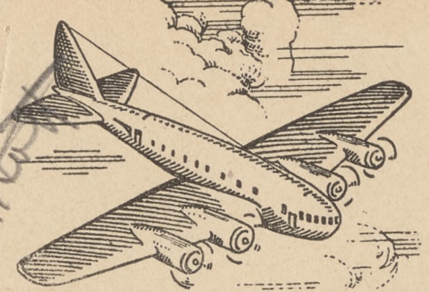
FLIGHT'S END—England's new 15-ton bomber which was built in San Diego, Cal., and flown to Felixstowe, Eng., is shown riding serenely at anchor after arrival. Flight was made from West Coast to England with stops at Buffalo and Botwood, N.F.

Wide World photo

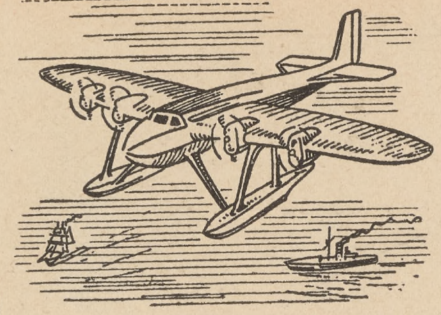


"Aviation" – Paris, France July 12-39

Le « Consolidated », dernier modèle bimoteur de 25 tonnes et 4.000 chevaux, qui devrait faire la traversée à 350 km.-h. de moyenne



JUL 25 1939



~~E. H. Scott~~

NOVA AIR REVUE

INTERNATIONAL AIR PRESSE SERVICE
Tél. Genève 29922 et 27743 ◆ Telegram.-Adr.: Nova-Genève

N. Davidson

GENÈVE
14, Place Cornavin

No.43. July 1939.

Consolidated passenger flying boat. (AIR). The Consolidated Aircraft Co. still surrounds its new passenger flying boat with a veil of secrecy. The flying radius is given as 10,000 miles(!), so that a trans-oceanic flight would be possible in 15 hours. The trial flights are said to have shown the possibilities of military uses, In this case the 52 passenger flying boat would become a long range bomber. New constructional principles involved are stated to be the 110-ft. long Davis "Perfect-curve" wing and the 2000 H.P. Wright 18 cylinder engines. The air screws are three-bladed with a diameter of 16-ft. The fuel capacity of the type 31 is given as 5000 gals. Its predecessor, the P.B.Y. Navy Bomber could only take 1760 gals. A possible purchaser is the American Export Air Lines.

Towing equipment for marine aircraft.
------------------------------------(AIR). The British Air Ministry is arranging that all marine aircraft in British aviation shall be fitted with equipment which will make it possible for them to be taken in tow by vessels. In this way it is hoped to reduce the number of total losses.

WEDNESDAY MORNING, JULY 19, 1939.

L.A. TIMES

Army Air Plans Year Ahead of Schedule

Louis A. Johnson, War Secretary Aide, Visits Plants Here

Illustrated on Page B

Assistant Secretary of War Louis A. Johnson, the husky, bespectacled reserve colonel who controls the $300,000,000 purse for building America's Army Air Corps to 6000 ships, yesterday stood beside a formidable-looking bomber in a Los Angeles factory and announced:

"Our program is exactly one year ahead of schedule."

In an exclusive interview with The Times Col. Johnson disclosed that the War Department's race to strengthen its present fleet of 2300 aircraft has surpassed gloomy predictions of generals who last fall said two years must elapse before the nation could reach satisfactory production levels.

BUSY — Louis A. Johnson, aide of War Secretary, shown in "flying office."

Wide World photo

ORDERS ARRANGED

"Ordinarily," Col. Johnson explained, "it would take six months before plans could be prepared, bids accepted and contracts let for such a huge complement of machines. Today we have completed arrangements for all but two of 10 major orders.

"My trip to Los Angeles is a last-minute check-up before final awards are made."

Col. Johnson was interviewed at the Lockheed Aircraft Corp. plant at Burbank, scant hours after he had descended on Los Angeles in his "flying office" transport. Like a whirlwind the War Department executive tore through Douglas, North American and Vultee factories, then sped to Burbank before departing in his private ship for San Francisco and Seattle.

MISSES OFFICER

He missed by a few minutes greeting his staff officer in charge of training 2200 Army pilots before 1941—Brig. Gen. B. K. Yount—who had flown into Los Angeles in a twin-engined bomber.

"In June," Col. Johnson said, "we started with $50,000,000. This was the forerunner of the larger program. With this I went out and 'bought' airplanes.

"Bids were let for educational orders at once. The Army knew exactly what type of machine it wanted; factories were ready to serve us; everything was prepared. We spread the $50,000,000 pretty evenly over the industry."

BUY FAST PLANES

These ships, he said, the Army has bought: four-engined bombers that fly faster than 250 m.p.h., carry six to nine men, fire five machine guns; pursuit ships, powered with liquid-cooled in-line engines, that surpass 300 m.p.h.

At Lockheed, Col. Johnson announced, he ordered the Model XP-38 "interceptor pursuit" ship, twin-engined, which can fly "much faster than 350 m.p.h."

"But," Col. Johnson interjected, "we need men and ground equipment as well as airplanes. Our two-year $300,000,000 program is threefold. You can't use ships unless you have pilots to fly 'em and mechanics to service 'em.

"I'm interested in all these phases."

VISITS TRAINING SCHOOL

Thirty minutes earlier he had whisked through the Army Air Corps' primary training school—maintained through contract with Curtiss-Wright Technical Institute at Glendale—and pronounced it "a grand setup."

He added: "In September the Civil Aeronautics Authority's project of developing 15,000 private flyers will begin. This we regard as our 'backlog.' It'll help supply men for our forces. You see, we plan to train 2200 Air Corps men during the same months we are building 6000 airplanes."

FIVE IN PARTY

Col. Johnson was accompanied by his aide, Col. J. H. Burns; B. H. Simpson, West Virginia highway official, and his two pilots, Capt. R. F. C. Vance and Lieut. Jesse Auton.

In an all-metal bomber, earlier, Gen. Yount had arrived for a brief conference with Maj. C. C. Moseley, president of Curtiss-Wright, and the officers who are currently engaged in giving neophyte airmen—in staggered batches of 35—three months of intensive primary training preparatory to basic and advanced military flying at Army fields in Texas.

Gen. Yount said 4400 young men will start the course. From these will come the eventual 2200 second lieutenants who will help staff the increased air force.

POTENTIAL FORCE

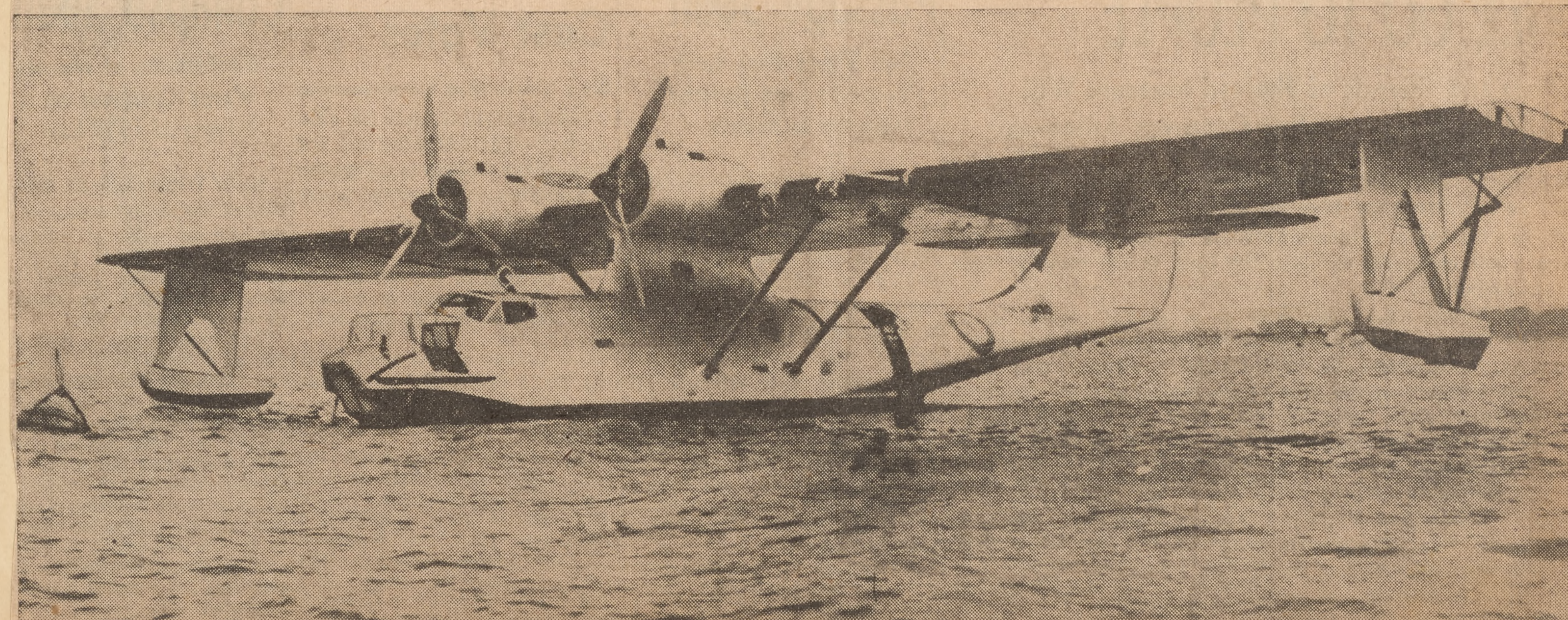
Enlisted for a three-year hitch, they will "constitute a strong potential force in the event of a national emergency," Gen. Yount explained. On the waiting list today are 1300 names, enough to carry the program until Jan. 1, 1939, he said.

Last night Gen. Yount, with his squadron of three bombers, left for similar inspection tours of training centers at Santa Maria, Lincoln, Neb.; East St. Louis and Chicago. They have already visited Tuscaloosa, Dallas, Tulsa and San Diego bases.

Gen. Yount's party includes Col. A. W. Robins, commanding officer of the training schools at Randolph and Kelly fields at San Antonio, Tex., and Cols. A. B. McDaniel and E. B. Lyon, War Department training officers from Washington, D.C.

Los Angeles Times ★ JULY 24, 1939 B

lu — U.S.-Built Bomber Reaches England Safely



FLIGHT'S END—England's new 15-ton bomber which was built in San Diego, Cal., and flown to Felixstowe, Eng., is shown riding serenely at anchor after arrival. Flight was made from West Coast to England with stops at Buffalo and Botwood, N.F.

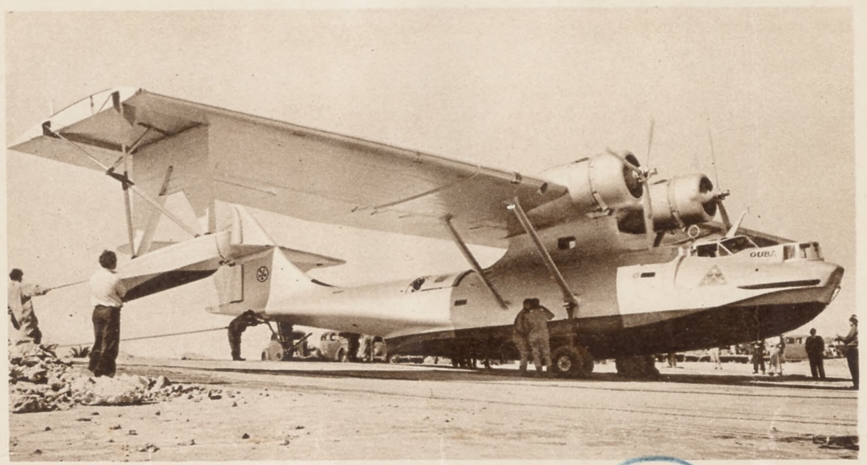
Wide World photo

Aug 1 '39 Chamber of Commerce News.

Picture Wins Favor Business and professional leaders, members of service clubs throughout the city, are warm in their praise of Consolidated's motion picture, "Building the PBY Record-Breaker." Consolidated officials last week voiced thanks to San Diegans for the favorable way in which the picture has been received. The film will be sent to eastern cities for showing.

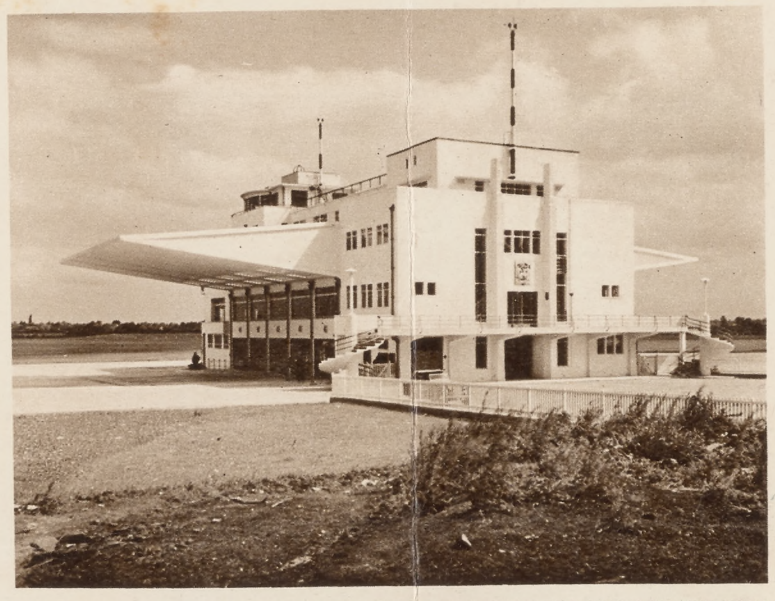
NEWS FROM TWO CONTINENTS—

INCLUDING THE CENTENARY ROYAL SHOW AT WINDSOR, AND AN AMERICAN TORNADO DISASTER.



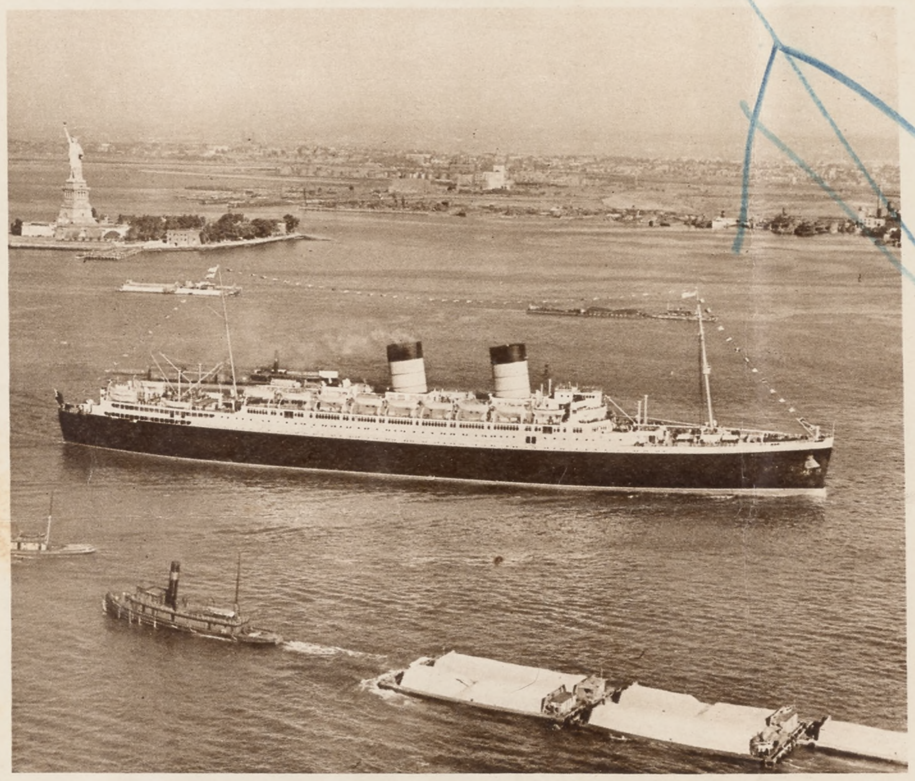
THE GREAT FLIGHT OF AN AUSTRALIAN FLYING-BOAT: THE "GUBA," WHICH HAS NOW CROSSED BOTH THE INDIAN AND ATLANTIC OCEANS, AS WELL AS AFRICA.

The American flying-boat "Guba," chartered by the Australian Government, arrived at St. Thomas, Virgin Islands, on June 30, after a 3200-mile non-stop flight across the Atlantic from Daccar, Senegal. It will be recalled that the "Guba" had just completed a survey flight across the Indian Ocean from Port Hedland, Western Australia, to Mombasa, Kenya. After refuelling at St. Thomas, the "Guba" flew on to New York. (*A.P.*)



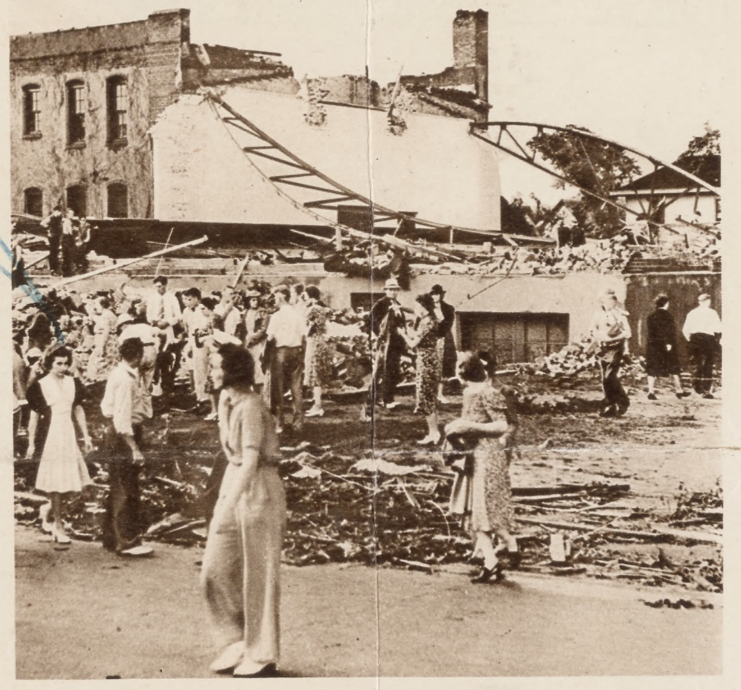
THE FIRST CIVIL FLYING FIELD TO BE OPENED BY ROYALTY: THE NEW AIR PORT AT BIRMINGHAM, WHICH THE DUCHESS OF KENT ARRANGED TO INAUGURATE.

The Duchess of Kent arranged to perform the opening ceremony of Birmingham's new air port at Elmdon, on the Coventry Road, to-day, July 8. This has been constructed at a cost of £350,000. It is believed to be the first time that any member of the Royal Family has opened a civil flying ground. Mr. Chamberlain, Sir Kingsley Wood, and Air Marshal C. L. Courtney have also arranged to be present at this function.



THE NEW "MAURETANIA" MAKES HER FIRST VISIT TO NEW YORK: PASSING THE STATUE OF LIBERTY AT THE END OF HER MAIDEN VOYAGE.

The new Cunard White Star liner "Mauretania" was given a great welcome when she entered New York for the first time on June 24. Her maiden voyage from Liverpool had been made at an average rate of 20·6 knots, though 25 knots is well within her capacity; and from dock to dock her time was 6 days, 19 hours. Sir Percy Bates, Chairman of the Cunard White Star Line, who crossed in the ship, expressed himself as highly pleased with her performance. (*Keystone.*)



THE DISASTROUS EFFECTS OF THE TORNADO IN MINNESOTA: AN ARMOURY WHICH WAS WRECKED, THE OCCUPANTS NARROWLY ESCAPING DEATH.

Ten deaths and many casualties were caused by a tornado which swept Anoka, Osseo, Maplegrove, and other towns near Minneapolis in Minnesota, on June 18. The tornado cut a path two blocks wide and between two and three miles long through the towns, levelling dozens of buildings. Heavy rain accompanied it. National Guardsmen had to be sent to the afflicted areas to help maintain order and extricate the dead and injured from wrecked buildings. (*Planet.*)

PREPARATIONS FOR THE CENTENARY SHOW OF THE ROYAL AGRICULTURAL SOCIETY AT WINDSOR: HORSES BEING LED TO THE EXHIBITION STANDS PAST WINDSOR CASTLE.

THE CENTENARY ROYAL AGRICULTURAL SHOW ATTAINS A RECORD IN EXTENT: A GENERAL VIEW OF THE HUGE EXPANSE OF SHEDS AND STANDS.

The centenary show of the Royal Agricultural Society, which opened on July 4 in Windsor Great Park, is the largest agricultural show ever held in this country. Covering 120 acres, on which 4000 tons of timber have been used for stands and sheds, it illustrates a century of farming progress. Final entries of livestock totalled 4548, compared with 4014 in the Windsor Show of 1889, and 2958 at Cardiff last year. Among them are 32 animals entered by the King from the royal farms at Windsor, Sandringham, and Stoke Climsland, Cornwall. The King and Queen arranged to visit the Show on July 5 and again on July 7, when it was understood they would be accompanied by Princess Elizabeth and Princess Margaret. Queen Mary arranged to attend on July 6. Among the 430 stands is one erected by the Ministry of Labour showing the services which the Ministry provides for farmers, and in co-ordinating labour. (*Photos.: Fox and N.A.P.*)

---

go, Calif., Wednesday, July 26, 1

39

Bomber Fails To Equal Old World Marks

WASHINGTON, July 26 (A.P.)—Air corps officers today held the belief American military planes are at least the equal of the best abroad despite the failure of the army's prized "flying fortress" bombers to equal German and Italian records. They hinted that higher standards might be expected from faster and more powerful planes nearly ready for initial tests.

Carrying a load of 11,023 pounds, one of the big bombers yesterday averaged 204 miles an hour for one lap over an official test course. On the second 1000-kilometer (621.4 miles) lap, it made 200.9 miles an hour. Under the same conditions, an Italian plane last year averaged just under 251 miles an hour for both laps.

Three days earlier another of the 16-ton four-motor army bombers carried the same load to an altitude of 23,800 feet, contrasted with the international record of 30,551 feet set with a German Junkers plane last year.

Further, though there was no direct comparison, several score British army Blenheim bombers averaged some 250 miles an hour in a flight over France which almost coincided with the American speed trials.

Without undertaking to apologize for the performance of the planes, which last year made a spectacular round trip to Buenos Aires, aviation experts noted:

The flights were under "routine service conditions" to test planes that were not prepared in any way for an assault on records. There is widespread belief among American fliers that some of the foreign records were hung up by special racing planes which could not be classified as strictly service types.

LONDON TEL. & POST.

A SIGNIFICANT FLIGHT

As she touched the waters of the Orwell yesterday, in what is described as "a beautiful landing," the bombing aircraft flown from America added a new page to the accumulating history of flying. She was the first military machine to fly the Atlantic, but the crossing of the ocean was only the final episode in a journey of over 5,000 miles from California under her own power. To the makers of a great machine capable of such performance congratulations are due, as well as to the four British officers who acted as pilots and crew. Together they have enlarged the boundaries of imagination regarding the possibilities of military aviation in the near future.

This vessel is the first of six, of a type now working with the American Navy, bought for experimental purposes on this side of the Atlantic. Splendidly successful as has been the flight, it has been treated by all concerned as an episode in the process of delivery. Yet it demonstrates the practicability of maintaining across the Atlantic a great reserve of machines remote from dangers of attack, and its performance is convincing evidence of the possibility of reinforcing within a few hours the more distant corners of the Empire should they be subjected to assault. Much of the progress made in military aviation must remain secret, but the landing of Consolidated Model 26 at Felixstowe yesterday enables the least expert to appreciate the new power that is made available when 15-ton bomber flies from the West Coast America with less of incident than attend rossing of the Channel 25 years ag

---

ARRIVAL OF U.S. FLYING-BOAT FOR R.A.F.

London Telegraph & Post July 15 1939

NON-STOP FLIGHT OVER ATLANTIC

FIRST MILITARY 'PLANE TO CROSS

LANDING DELAYED BY MANŒUVRES

From Our **SPECIAL CORRESPONDENT**
FELIXSTOWE, Friday.

Secret Air Force manœuvres over Suffolk early this morning, in which machines were flying without lights, held up the arrival here of the 15-ton American flying-boat bought by the British Government for the Air Ministry by 2½ hours.

The twin-engined flying-boat, the latest type of the Consolidated Aircraft Co.'s Model 28, had flown from San Diego, California, in three hops, a total distance of 5,750 miles. It is the first military aircraft to fly non-stop across the Atlantic.

From Botwood, Newfoundland, which was left yesterday afternoon, the machine had maintained a speed of about 180 m.p.h. for 1,800 miles with the aid of a following wind. It flew through a storm at 13,000ft with ice forming on its wings.

Two hundred miles from the Irish coast the flying boat encountered a cross wind which reduced its speed. Even then it was passing over England 11 hours after leaving Botwood.

LANDING LIGHTS PREPARED

As reported in later editions of THE DAILY TELEGRAPH this morning, it crossed the Irish coast at Foynes at two a.m.

At the R.A.F. Experimental Station at Felixstowe, where it will undergo tests, a group of officers were awaiting its arrival. Preparations for placing landing lights on the water were put in hand.

Messages of the machine's progress had been received hourly by radio, via Croydon, and her course had been plotted in the offices of the station. Then, when it was believed to be but half an hour's flight away, there came a message from Capt. Russell Rogers, the pilot, "Vicinity of Felixstowe, 4.15 G.M.T., 5.15 B.S.T."

There followed a series of somewhat mystifying messages giving the boat's progress as follows: 4.25 a.m., near Norwich; 4.30, Pulham; 4.45, Nottingham; 5.0, near the Wash; 5.15, off Hunstanton.

STORM OVER ATLANTIC

By this time the sun was rising, and at 5.53 a.m. the flying-boat was suddenly seen approaching at a high speed from the north-west, following the course of the River Orwell. Her symmetrical proportions were clearly outlined in the clear sky.

Capt. Rogers circled the town at 1,000 feet and as he came round again the retractable floats came down, and the flying-boat swept down to the water three minutes after being sighted. An R.A.F. officer standing by my side exclaimed, "A beautiful landing."

Capt. Rogers explained to me afterwards that the reason why he did not make straight for Felixstowe was that he had heard there were machines flying without lights in the neighbourhood and he thought it better to wait for daylight.

"We had an uneventful flight," he said. "With a following wind we made excellent progress, although we met one storm."

BENEFITS OF WIRELESS

He illustrated the benefits of wireless when he added: "We were able to keep to our course across the Atlantic.

"Mr Booth, our radio operator, was in constant communication with Botwood, Foynes and Croydon, and every now and then an amateur from Georgia broke in with a little chat."

Capt. Rogers had the same crew of three who took part with him, under Capt. P. G. Taylor, in the Indian Ocean survey by the flying-boat Guba a month ago. It consisted of Capt. Lewis A. Yancey, co-pilot and navigator; Mr. R. Booth radio operator; and Mr. G. Brown, mechanic.

The flying-boat has a radius of at least 4,000 miles, but the actual figure is still a secret. More than 200 similar machines have been sold to the United States

---

Tribune 7-31-39

Flight, Dinner To Be Features Of Army Air Corps Birthday Fete

Thirtieth anniversary of the start of the United States army air corps will be observed here Wednesday in a flight of army planes over the city and at a dinner at 6:30 p.m. in Casa Del Rey Moro, Balboa park, sponsored by the Aero club, the chamber of commerce military affairs and aviation committees, the city and county and the Air Reserve association.

At the same hour as other army craft take off in similar flights all over the nation, the planes will leave March field at 2 p.m. Exact arrival time was not known here today, but an announcement concerning this was expected later from March field.

The observances will commemorate the formal approval, Aug. 2, 1909, by Brig. Gen. James Allen, then chief signal officer of the army, the recommendation of a board of officers that the army purchase a plane built by Orville and Wilbur Wright.

Earl Prudden, Aero club president, said that among celebrities expected to attend the dinner are Brig. Gen. Jacob E. Fickle, commanding first wing, GHQ, March field; Col. Robert Guthrie, commanding Ft. Rosecrans; Maj. Lowell H. Smith, leader of the first round-the-world mass flight, and Maj. Oakley Kelley, who completed the first nonstop flight from New York to San Diego.

San Diego's part in the development of this nation's army air corps constitutes a thrilling chapter in the progress of aviation. The first aero squadron of the army, comprising 16 officers, 77 enlisted men and eight planes, was organized Sept. 1, 1914, in this city. Three years later at this station situated on North Island, the army air corps commissioned one of its members a junior military aviator. He was just 30 at the time and destined to play a large part in air corps affairs. He was Maj. Reuben H. Fleet, president of Consolidated Aircraft Corp.

Lt. Roy T. Kirtland, at College Park, Md., in 1912 piloted a plane taking aloft a machine gun for the first time in army history. Today Kirtland, a retired colonel, resides in San Diego. This historical flight came one year after congress for the first time specifically appropriated money for aviation. After this allocation of $125,000 the air corps began to grow and in 1913 it boasted 17 planes with a personnel of 23 officers and 91 enlisted men.

Notables Invited

Among other air corps officers residing in San Diego who played important roles in army aviation history and who will attend the dinner include Col. Edward L. Hoffman, who developed the air corps parachute and who issued orders for all pilots and passengers to wear 'chutes; Maj. T. C. Macauley, who made the first night flight in 1913 and who broke many other national and world records, and Col. H. A. Erickson, who made the first aerial photos in 1911.

Prudden yesterday announced the names of others to whom invitations have been extended to participate in the San Diego celebration. They are Col. Rush B. Lincoln, commanding post, March field; Col. Benjamin Weis, executive officer, March field; Col. Harvey Burwell, commanding bombardment group; Col. Carlyle Wash, commanding attack group; Maj. Frank H. Hackett, engineering department head; Maj. Joe Stromme, Pacific coast air corps representative in charge of procurement division; Maj. Leland Hurd, Pacific coast chief of air corps traffic inspection; Capt. W. W. Gross, commanding air reserve base here; Maj. E. N. Gott, Consolidated vice president, and more than 50 active, reserve and retired officers of army, navy and marine corps aircraft divisions.

Daily Telegraph and morning Post. Sat. July 15.

ARRIVAL OF U.S. FLYING-BOAT FOR R.A.F.

(London)

NON-STOP FLIGHT OVER ATLANTIC

FIRST MILITARY 'PLANE TO CROSS

From Our **SPECIAL CORRESPONDENT**
FELIXSTOWE, Friday.

Secret Air Force manœuvres over Suffolk early this morning, in which machines were flying without lights, held up the arrival here of the 15-ton American flying-boat bought by the British Government for the Air Ministry by 2½ hours.

The twin-engined flying-boat, the latest type of the Consolidated Aircraft Co.'s Model 28, had flown from San Diego, California, in three hops, a total distance of 5,750 miles. It is the first military aircraft to fly non-stop across the Atlantic.

From Botwood, Newfoundland, which was left yesterday afternoon, the machine had maintained a speed of about 180 m.p.h. for 1,800 miles with the aid of a following wind. It flew through a storm at 13,000ft with ice forming on its wings.

Two hundred miles from the Irish coast the flying boat encountered a cross wind which reduced its speed. Even then it was passing over England 11 hours after leaving Botwood.

LANDING LIGHTS PREPARED

As reported in later editions of THE DAILY TELEGRAPH this morning, it crossed the Irish coast at Foynes at two a.m.

At the R.A.F. Experimental Station at Felixstowe, where it will undergo tests, a group of officers were awaiting its arrival. Preparations for placing landing lights on the water were put in hand.

Messages of the machine's progress had been received hourly by radio, via Croydon, and her course had been plotted in the offices of the station. Then, when it was believed to be but half an hour's flight away, there came a message from Capt. Russell Rogers, the pilot, "Vicinity of Felixstowe, 4.15 G.M.T., 5.15 B.S.T."

There followed a series of somewhat mystifying messages giving the boat's progress as follows: 4.25 a.m., near Norwich; 4.30, Pulham; 4.45, Nottingham; 5.0, near the Wash; 5.15, off Hunstanton.

STORM OVER ATLANTIC

By this time the sun was rising, and at 5.53 a.m. the flying-boat was suddenly seen approaching at a high speed from the north-west.

Capt. Rogers circled the town at 1,000 feet and as he came round again the retractable floats came down, and the flying-boat swept down to the water three minutes after being sighted. An R.A.F. officer standing by my side exclaimed, "A beautiful landing."

Capt. Rogers explained to me afterwards that the reason why he did not make straight for Felixstowe was that he had heard there were machines flying without lights in the neighbourhood and he thought it better to wait for daylight.

"We had an uneventful flight," he said. "With a following wind we made excellent progress, although we met one storm."

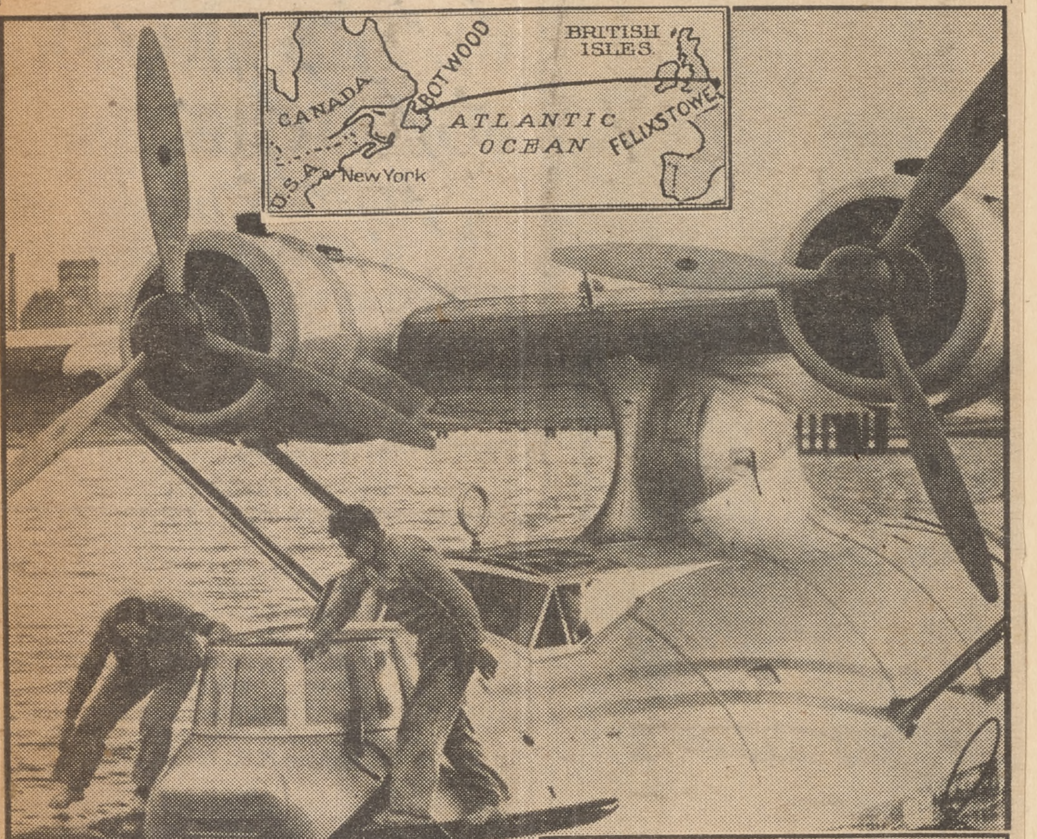
He illustrated the benefits of wireless when he added: "We were able to keep to our course across the Atlantic.

"Mr Booth, our radio operator, was in constant communication with Botwood, Foynes and Croydon, and every now and then an amateur from Georgia broke in with a little chat."

The flying-boat has a radius of at least 4,000 miles, but the actual figure is still a secret. More than 200 similar machines have been sold to the United States.

Evening Standard, Friday, July 14, 1939

Bomber Flies Atlantic in Fifteen Hours



THE first giant bomber flying boat ever to be flight-delivered across the Atlantic arrived at Felixstowe to-day from Botwood, Newfoundland.

She is the first of six of similar-type machines, built by the Consolidated Aircraft Company at San Diego, California, to be delivered to the Air Ministry for experimental purposes.

The flying boat took off from Botwood yesterday at 2.30 p.m. (B.S.T.) and made Felixstowe at 6 a.m. to-day.

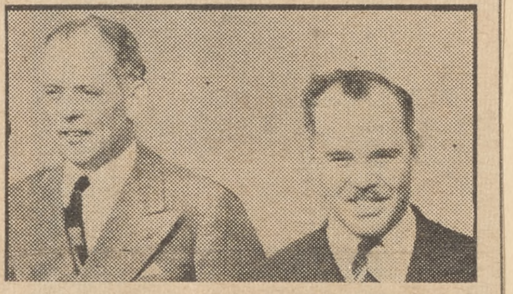
She is a 15-ton machine, has a cruising radius of 4000 miles and will be tested by the R.A.F.

This type of flying boat has now replaced destroyers in the U.S.A. navy for scouting and reconnaissance duties.

The pilots of the bomber were Captain Russell Rogers and Captain Lewis A. Yancy, with Flight-engineer G. B. Brown and Radio-engineer Raymond Booth.

Captain Rogers's first words on coming ashore were: "Good morning, glad to meet you, folks."

Radio-engineer Booth and Flight-engineer G. B. Brown.



Captain Russell Rogers and Captain Lewis Yancy.

The flying boat could have arrived at Felixstowe at 3.30 a.m., but while it was speeding across England Captain Rogers received a message advising him that aircraft without lights were flying in the vicinity of Felixstowe. He then altered his course and cruised along the coast for two and a half hours until all was clear.

AIR NEWS:

Secret of a New Super-Fast Fighter

By ROBERT WALLING

DESIGNED: An out-of-the-ordinary British fighter. It will have two speeds, fast and super fast. Flying fast it will make the experimental Spitfire's 367 miles an hour seem slow.

* * * *

When it flies super fast, designers of orthodox fighters will gasp. Seasoned pilots watching it will shudder

Its secret is the most official of Official

So now you know why the R.A.F. were voted yesterday an extra sum of £3,705.243 for "research, design, inspection."

* * * *

LIGHT AIRPLANE CLUBS boomed last year; flying members of approved organisations rose from 7157 to 9100.

The response to the Civil Air Guard was immediate and enthusiastic. There were 30,000 applicants by the end of the year; 6400 were women.

ACCIDENTS on Empire air lines fell last year to the lowest since 1933. The figures 4,500,000 passenger miles flown per

---

e coming from Belgium.

The entries exceed 40, among them Mlle. eanteur, who recently broke the European out-fly record with a cast of over 33 yards Paris. Last year she made a cast of over yards with a salmon rod.

The spacious and beautiful grounds at anelagh form an ideal setting for this ort. The entrants will find in the lake nditions as natural as in the wildest untry

The competition will be held under atural fishing conditions and competitors ill be called upon to cast right and left nder overhanging branches and round atural obstacles.

half miles from the submarine.

"I started to fire twelve underwater charges," said Commander Mills. "Within about ten minutes Captain Oram and Lieut. Woods came up. Stoker Arnold and Mr. Shaw followed at about 9.50.

"Arnold told the First Lieutenant of the Brazen that the remainder were going to come up now. I remained close to the submarine, expecting them to escape at intervals of about half an hour.

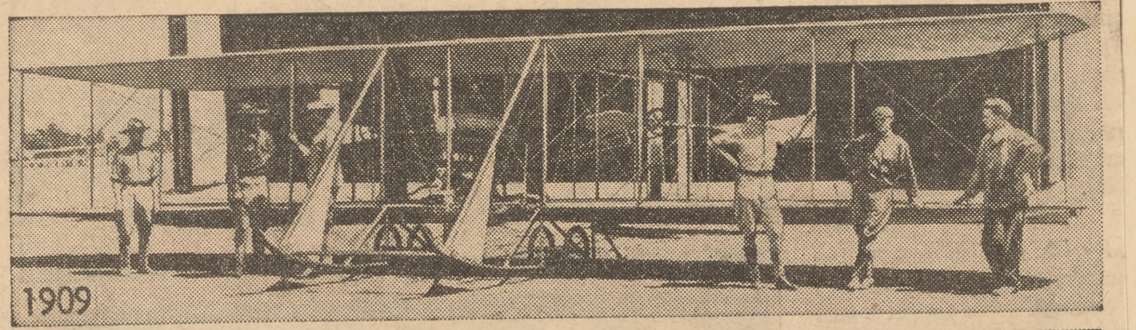
"I did not take any part in the salvage work; but I had prepared about 150ft. of air hose in case it was wanted."

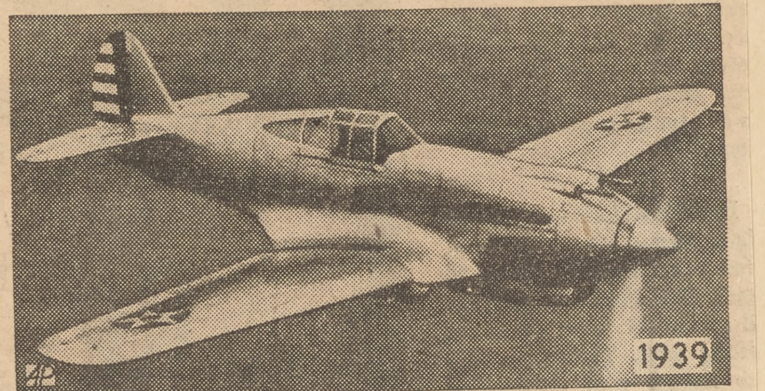
He noticed close to the stern of the Thetis a small red indicator buoy

---

Observing Anniversary of First Flight in 1909

Tribune Aug 1 1939





On Aug. 2, 1909, the army bought from Orville and Wilbur Wright the flying machine pictured above. That was the beginning of United States and world military aviation. Now the army has more than 2000 fighting aircraft and building of 3500 more has been authorized. The 1909 ship took off with two passengers, hit 42 miles an hour and set a world endurance record of 1 hour, 12 minutes. The new army pursuit ship, lower, Curtiss P-40, equipped with two machine guns, carries oxygen apparatus for high altitudes and is said to do better than 400 m.p.h.

San Diegans tomorrow will be given an opportunity to observe two phases of Army Air corps activities when "open house" periods will be held at the air corps reserve base, Lindbergh field, from 9 a.m. to 4 p.m. and at the Ryan School of Aeronautics, where 35 young men are being trained for the air corps, from 8 a.m. to 11 a.m. The open house periods are part of the program commemorating the 30th anniversary of the start of the Army Air corps.

In addition to the invitation to the public to visit the Lindbergh field activities, citizens here also will be afforded an opportunity to view army planes from March field, according to plans announced for a nation-wide army flight program. Promptly at 11 a.m. (E.S.T.) planes from all air bases in the United States will take off for a national demonstration of America's military aviation power. The March field

(Continued on Next Page, Col. 4)

PLAN OPEN HOUSE FOR SAN DIEGANS AT FIELD, SCHOOL

Trib 8-1-39

CONTINUED FROM PAGE ONE

planes will take off from the Riverside base at 2 p.m. (P.S.T.), and after a flight over the Los Angeles area, are scheduled to fly to San Diego, air corps authorities report.

Climaxed by Dinner

Tomorrow's ceremonies will be climaxed here by an aviation dinner at the Casa del Rey Moro cafe, Balboa park, to which the public is invited. Reservations may be made at the chamber of commerce. The dinner is sponsored by the Aero club, the chamber of commerce military affairs and aviation committees, the city and county and the Air Reserve association. Many persons prominent in local and national aviation will attend.

Work of training the army's fledgling pilots at the Ryan school is progressing rapidly. The enrollees began their training period just a month ago, and the present class has two weeks more of training before its members are transferred to Texas for advanced training. Another class will convene in mid-August.

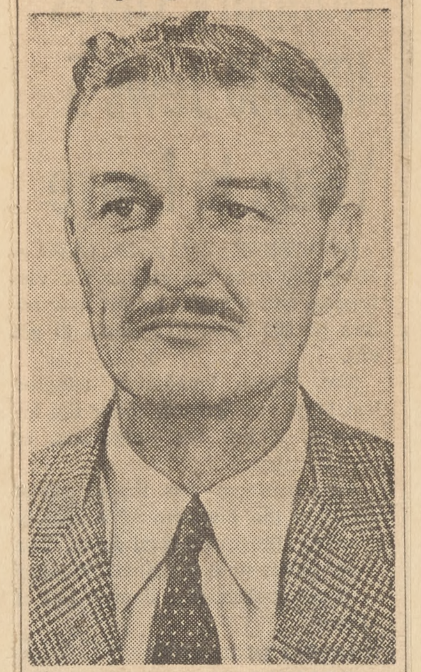
Visitors to the air corps reserve base, located on the south end of Lindbergh field near the coast guard air base, will find air corps reservists in active duty training. The two-week active duty period is packed with an intensive program which includes formation flying, cross-country flying, radio work, night flying, etc., carried on under the direction of Capt. W. W. Gross, unit instructor and commanding officer of the station. H. B. Duckworth, formerly on duty here with the department of air commerce, has reported for a year's duty as assistant to Gross.

San Diego's 91st group, air corps reserve, now has approximately 50 pilots. Its planes includes three BT-9s and one BT-2, and a Martin bomber has been assigned for use by Gross, Maj. E. R. MacReynolds, army inspector for the Consolidated, Ryan and Solar aircraft plants, and Capt. J. C. Horton, in charge of the training of new army pilots at the Ryan school. Eleven enlisted men are on duty. San Diego has had an air corps reserve group since 1924, and it has been based at Lindbergh field, where two hangars now are in operation for its planes and equipment, the last four years.

Union 7-30-39

UNDAY MORNING, JULY 3

Flying Veteran



MAJ. E. R. M'REYNOLDS ...will discuss "The Army Air Corps."

* * *

Army Air Corps Address Topic

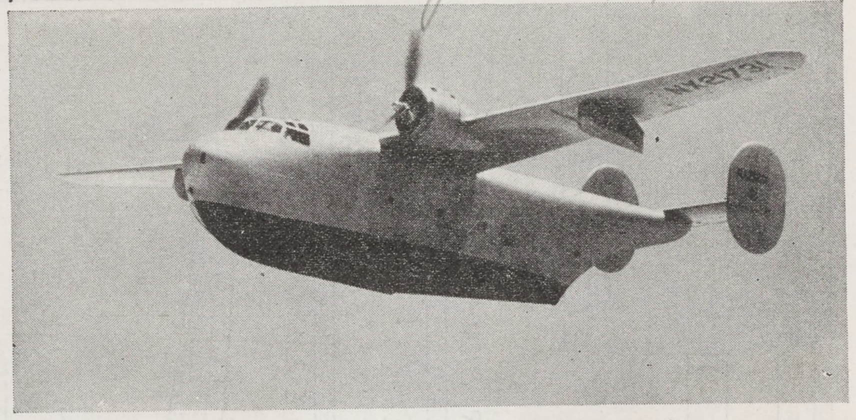
Maj. E. R. McReynolds, new army air corps inspector at Consolidated Aircraft Corp., will discuss "The Army Air Corps" in addressing Hammer club members in Plata Real, U. S. Grant hotel, tomorrow

---

Model Airplane News Sept '39

Ocean Spanning Razor Blade

The Plane On The Cover



The Consolidated 31 shaving the air at 275 m.p.h.

By ROBERT McLARREN

HE IS not a tall man. He is thin, suave, now middle-aged. He is an aviation pioneer for he furnished young Donald Douglas with financial backing for his first airplane factory: a tiny room next door to a barber shop in Los Angeles, almost twenty years ago. He was wealthy, young and handsome; but he was never a playboy. And he has made money, lots of it, from his original inheritance; for he is a hard worker, a clear thinker and above all a courageous man. For the courage of David Richard Davis has made this story possible: the story of our Plane on the Cover, the Consolidated Model 31 Flying Boat.

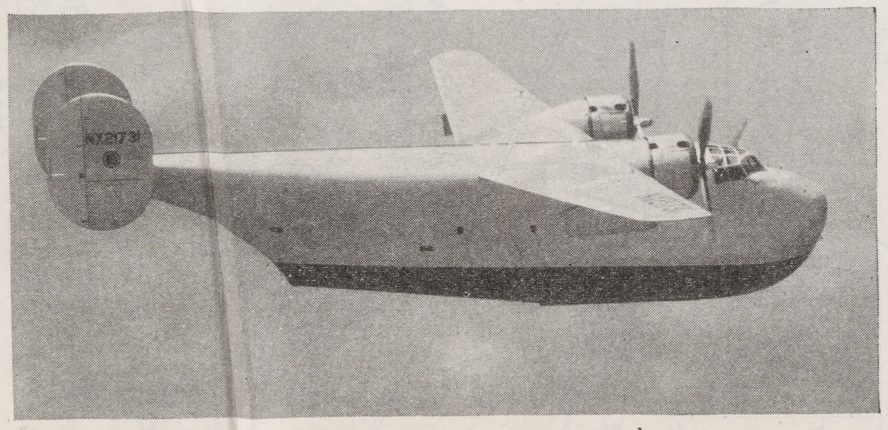
No other single ship in modern aviation history has represented such a complete abandonment of conventionality. As new as the dawning sun which glanced with a dazzling radiance off its sleek metal sides, this astounding sea-going hotel was unveiled a few short weeks ago with the smell of salt sea air from San Diego Bay mingling with the rhythmic staccato bark of the rivet guns at work on another of its kind in the mammoth factory of its birthplace. It is such an unparalled aviation triumph that those of us who witnessed its debut gasped in awed astonishment at first sight of the monsterous yet lithe creation.

David R. Davis had waited ten years for that morning. Years, not of idle anticipation, but a decade of hard, nerve-wracking toil on a formula for a wing section. Aviation needed that set of coordinates, has needed them for a long time. For since Col. V. E. Clark's famous "Y" airfoil was introduced in the middle twenties, few designers have dared use anything which departed too much from its basic principles. But now they need wait no longer for Consolidated has dared to prove that an aerodynamically "perfect" wing is not completely theoretical; it is practical and sensible.

Fundamentally, Davis' wing is a practically perfect wing curve. Its maximum lift is developed at its minimum positive angle of attack which means two things: the wing will fly at a minimum drag and the hull will take off and alight horizontally on the water, not bucking and pitching with its nose high in the air as to-day's seacraft are prone to do.

And what does having this "perfect wing" mean to aviation? Consolidated has answered that question with their twenty-five ton model 31: a greater lifting power

(Continued on page 59)



With its 4000 h.p. it carries 57 passengers and crew

7/14/39

The Star

SPECIAL EDn

THE LONDONER'S EVENING PAPER

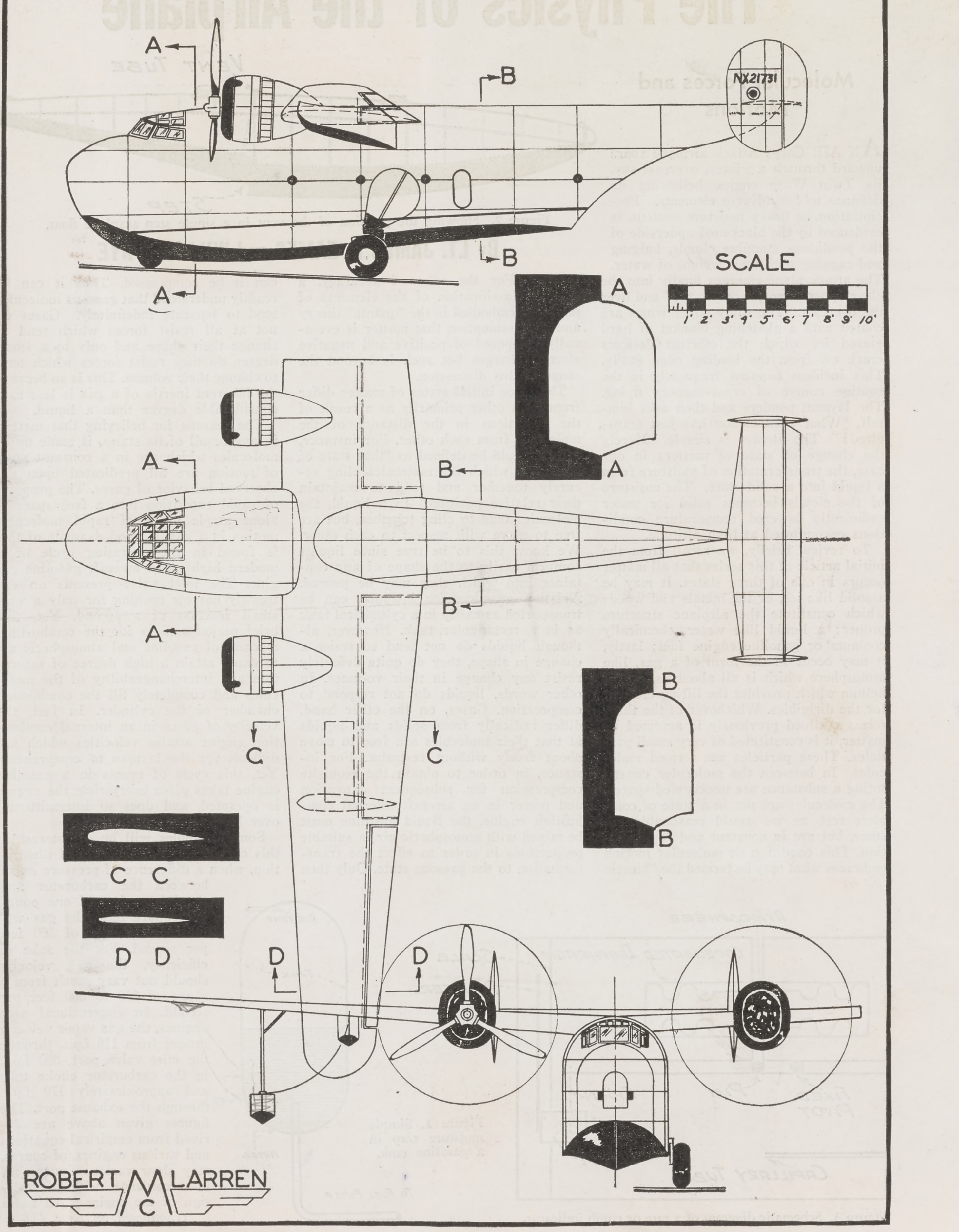
No. 15,941. ONE PENNY. FRIDAY, JULY, 14, 1939. RADIO : Page Six. WEATHER : Unsettled.

ty Armed Parade

xstowe to-day after flying the

Model Airplane News - Sept - 39

CONSOLIDATED MYSTERY FLYING BOAT



Survivors of the Bokuyo Maru, Japanese freighter which burned an hama, have just reached San Francisco. This picture made from tl tanker, Associated,' shows a woman survivor climbing to safety on had sunk. The Associated picked up 209 of those aboard from boats.

Union 7-31-39

Leahy Sees U. S. Navy Supremacy

Beat Any Fleet, Admiral Asserts

WASHINGTON, July 30 (A.P.) — Plain-spoken Adm. Wiliam Leahy predicted in his final annual report today that the reinforced fleet the United States is building would be able "to defeat the fleet of any single naval power wherever it can be brought into action."

"The battle efficiency of our fleet and the training and morale of our men are believed to be unequaled by any major naval power," said the chief of naval operations, who ends a 46-year career by retirement Tuesday.

With the proviso that other nations do not accelerate their pace in the race for sea power, he expressed belief that the expanded navy and new bases authorized by congress "will provide sufficient protection for the vital sea frontiers of the United States."

Leahy observed that "while the naval policy of the United States is defensive, it is imperative in the event war is forced upon us that we limit the damage from an enemy to a minimum and that our fleet bring the enemy to terms as quickly as possible and at a safe distance from our shores."

"If peace can not be preserved our broad naval strategy must be offensive and the U. S. fleet should engage and defeat the enemy fleet wherever it can be brought to action," he continued.

"To accomplish this mission, our navy must be sufficiently strong in every essential element and it must be adequately trained." Top - (OVER)

As his foremost recommendation,

(Continued on Page 2, Col. 7)

REBELLIOUS CON

GUBA'S LAST HOP

(Continued from Page 1.)

MELBOURNE "HERALD", 21/6/39.

Petrol For Double The Distance

From J. Percival, Junr., Official Press Correspondent aboard the Guba.

MAHE, Seychelle Islands, Wednesday.—When the flying-boat Guba took off from Port Victoria, Mahe, in the Seychelles, for Mombasa, she took with her sufficient fuel for twice the distance to be flown.

This was because of the possibility of headwinds due to the proximity of large masses of the African continent.

Before the departure a favorable weather report was received from Mombasa, and Captain Taylor expected the flight to take approximately eight hours.

The flight personnel was astir at 4.15 a.m. (local time), and after breakfast equipment and luggage were stowed aboard the aircraft.

The Gub was taxied over the runway to warm up the engines, and after a comparatively short run its great wing was circling Mahe and the surrounding islands, where broad pieces of eight, gold chalices and crosses and ingots of gold and silver were buried by pirates years ago.

Radio Link

During the Guba's stay, several families showed treasure charts which they were unable to decipher, and during a visit to the north island pirate signs were found cut in the rocks. These, too, are undecipherable.

In the last six months of 1808, it is recorded in Mahe, Corsairs frequenting the Seychelles and Hauritius captured 22 English merchant ships, and their sale returned 8,000,000 francs.

As the first rays of the morning sun illuminated these pirate islands, the Guba was lined up on the course for Mombasa. Its wing was dipped in salute as it passed over H.M.S. Liverpool, anchored in the stream.

During the flight an endeavor will be made to maintain wireless communication with Sydney and Perth.

OCEAN SURVEY COMPLETED

MELBOURNE "SUN", 23/6/39.

Result Considered Satisfactory

(From J. Percival, jun., official correspondent aboard the flying boat Guba)

MOMBASA, Thursday. — When the Guba arrived at Mombasa yesterday the survey flight across the Indian Ocean was completed with satisfactory results.

It is now believed that the Indian Ocean will become the most logical fast line between Britain and Australia.

Captain P. G. Taylor said the Guba had behaved excellently throughout the entire flight, the most impressive feature being the reliability of the Pratt and Whitney engines.

Captain Taylor thanked Mr. R. Rogers, pilot; Captain Yancey, navigator, and Messrs. R. Booth, radio operator, G. Brown and S. Barrinka, flight engineers, for their parts in the flight.

He also thanked Mr. Richard Archbold, owner of the Guba, for making the plane available to the expedition.

GUBA'S LAST STAGE IN OCEAN FLIGHT

MELBOURNE "HERALD",

The flying-boat Guba left the Seychelles Islands at noon (Melbourne time) today on the last stage of Captain P. G. Taylor's Indian Ocean flight.

21/6/39.

When the eight men step ashore at Mombasa, Kenya, tonight, after a mere 1100 miles of flying toward a target as big as Africa, the last ocean in the world will have been crossed by air.

In 18 days, most of which have been spent at the island stepping-stones on the route from Port Hedland to Mombasa, the Guba will have flown almost 10,000 miles.

Stages have been:—

	Miles.
June 3-4—Sydney-Port Hedland	2600
June 4-5—Pt. Hedland - near Cocos-Batavia . . . . (approx.)	2200
June 7—Batavia-Cocos	1000
June 13-14—Cocos-Chagos	1720
June 16—Chagos-Seychelles	1200
June 21—Seychelles-Mombasa . .	1100
Total Distance	9820

Dakar-New York

Captain Taylor, satisfied with the accomplishment of a flight he has planned for years, will wait in Africa for a week or two for a ship to bring him to Australia with Mr J. Percival, jun., press correspondent on the flight.

It is expected that he will have completed his report on the suitability of the various islands for use as flying-boat bases before his return.

Dr. Archbold and his crew will leave as soon as possible for Dakar, West Africa, probably the first stopping-place on their way to New York.

Because they are anxious to reach San Diego before July 1, if possible, they will probably attempt to fly non-stop from Dakar to New York, more than 4000 miles.

At San Diego, Captain Russell Rogers (chief pilot), Commander Lewis Yancey (navigator), and the other members of the Guba's crew, will take over a flying-boat similar to the Guba and fly it to England for the British Air Ministry, which has bought it.

Dr. Archbold and the crew expect to fly back to New Guinea in the Guba, or another flying-boat, to continue the research carried out on previous expeditions.

Guba's Flight

Continued from Page One

FLYING ABOVE CLOUDS

MELBOURNE "ARGUS", 14/6/39.

Messages from Guba

The progress of the Guba on her long flight across the Indian Ocean, from Cocos Island to the Chagos Archipelago, was told in messages received from Mr. J. Percival, jun., official correspondent aboard the flying-boat.

The messages were (the times given being Melbourne times):—

9.15 p.m. — Aircraft's dead-reckoning position, 78 miles, 281deg. true, from Direction Island. Weather fine.

9.21 p.m.—Flying in still air, with clear sky, over top of scattered cumulus clouds, typical of fine weather, south-east trade wind; altitude 6,700 feet, air speed 97 knots.

9.45 p.m.—Position 133 miles 281deg. true from Cocos. Flare just dropped on sea for drift observation.

10 p.m. — Just dark. Perfectly clear night, still air, all well. Two flares dropped on sea and sighted through telescope over rotable plate marked in degrees. Drift estimated at 3deg. to port.

10.25 p.m.—First sights of stars taken. Dead-reckoning position, 188 miles 281deg. true from Cocos.

11.10 p.m.—Position by observation at 12.12 GMT 11 degrees 45 minutes south, 93 degrees 40 minutes east. Distance run from Cocos, 190 nautical miles; speed, 112 knots; altitude, 8,500 feet. Both just in communication with Barney Boyd Station, W6LYY, San Diego, California.

11.30 p.m. — At 1,300 GMT course changed to 283 degrees true, as it was found from observation that the wind had shifted to north-east. There is cloud below, but as there is no moon it is impossible to tell how thick it is. Dead reckoning position at G.M.T., 13.15 latitude, 11 degrees 26 minutes south, longitude, 92 degrees 00 minutes east.

12.7 a.m.—More sights just taken for another position, which is now being worked out in the chart room. Dead reckoning position at 11.45 p.m., latitude, 11deg. 15min. south; longitude, 91deg. 05min. east.

12.45 a.m.—Position, latitude 10deg. 46 min. south; longitude, 89deg. 20min. east.

MELBOURNE "HERALD", 16/6/39.

GUBA'S 1192-MILE HOP TO ISLAND

By Radio from J. PERCIVAL, jun., Official Correspondent aboard the Flyin-boat, Guba.

DIEGO GARCIA, Friday. The survey at Diego Garcia having been completed, the Guba took off in the semi-darkness of 5.40 a.m. (10.40 a.m. Melbourne time) on the last island hop of the trip—1192 miles—to Seychelles.

It was decided to fly at a speed calculated to reach Port Victoria, in the Seychelles Group, after noon.

Soon, the pear-shaped coral enclosure was only a dark smudge on the surface of the sea.

After a few minutes in the air, the sun came up. The Guba was flying in clear air over a smooth sea on a course of 270 true from Diego Garcia.

FLYING-BOAT BASE

The possibilities of Diego Garcia as a flying-boat base were realised after a short inspection.

It was apparent from the nature of the narrow ring of land which encloses Diego Garcia lagoon that similar conditions existed as at Cocos for the preparation of a land aerodrome.

The coral rock and sand, which would form the basic foundation of runways, is easily obtained from certain portions of the shore, which have been examined for the purpose.

A small lagoon, about 200 yards in diameter, lies half a mile from the selected mooring site, the bottom of which consists of coral sand which could easily and cheaply be pumped out to gave adequate depth, as a sheltered mooring site.

IDEAL SITE

Diego Garcia can be described as an ideal natural flying-boat base, says Captain Taylor.

Practically no preparation, beyond the placing of slipways, mooring and any shore facilities required, would be necessary.

BIGGEST "TARGET"

The Seychelles Group, with its 10 islands of a total area of 156 square miles, are the biggest "target" in the Indian Ocean.

Once the Guba has reached them, she will have to fly only 1100 miles to Mombasa, Kenya—the African terminus of the proposed reserve air route.

GUBA HAD BIG TARGET

MELBOURNE "ARGUS",

Flight To Africa

MOMBASA (Kenya), Wednesday.

22/6/39.

Completing her survey flight across the Indian Oceon, the flying-boat Guba arrived here at 12.32 p.m. (local time) from the Seychelles Islands.

It was 6 a.m. at Mahe (Seychelles) when the Guba set out on her flight of 1,100 miles, with the coast of the African continent as her target.

Since she left Sydney 18 days ago the Guba has flown nearly 10,00 miles. Captain P. G. Taylor, chie Commonwealth representative c the flight, and Mr. J. Percival, ju official correspondent, will retu to Australia by ship. The Gu with her American crew, will fly Dakar, West Africa, on her way New York. A non-stop flight 4,000 miles from Dakar to N York may be ttempted.

(Message from Guba—Page 13

Guba's Flight

Fro Page

LEFT MAHE AT DAWN

MELBOURNE "ARGUS", 22/6/39.

Flew Above Clouds

(Message from J. Percival, Official Correspondent aboard the Guba.)

MOMBASA (Kenya), Wednesday.

While the beautiful island of Mahe still slumbered the Guba took off at dawn to-day on the last leg of the Indian Ocean survey flight.

As the first light of dawn came over the horizon the flying-boat's motors burst into life, and as soon as the aircraft reached the end of its runway the 2,100 horse-power of engines was unleashed, and in 26 seconds the Guba was in the air. Assisted by a slight following wind, she was soon under way at 128 knots.

The aircraft flew most of the time over scattered cumulus cloud. Weather conditions remained constant to within 200 miles of Africa, when the Guba was flying in cloud for about 50 miles, but this broke up again to scattered cumulus at a flying level of 8,000ft.

Soon after the Guba left Mahe the wireless operator exchanged signals with V.I.P., Perth, but later attempts to communicate with this station and V.I.S., Sydney, were unsuccessful. Continuous wireless watch, however, was kept by the station at Mombasa, which reported any changes in the weather there.

GUBA OFF AGAIN

MELBOURNE "ARGUS", 14/6/39.

OCEAN FLIGHT AT NIGHT

1,700-MILE JOURNEY

(Messages received by the Commonwealth Government from J. Percival, jun., official correspondent aboard the Guba.)

Flying above clouds, the flying-boat Guba was speeding last night across the Indian Ocean on her flight of 1,700 miles from the Cocos Islands to Diego Garcia.

At 10.12 p.m. Melbourne time the Guba was 190 nautical miles from Cocos.

This journey is the longest stage of the Guba's survey flight, and the flying-boat's destination is an island in the Chagos Archipelago.

It was 5 p.m. at Cocos (8.30 p.m. Melbourne time) when the Guba took off from the clear waters of the lagoon after a run of 600 yards. The Governor (Mr. Clunies Ross) and the wireless and cable staff farewelled members of the crew at the jetty before they were taken out to the flying-boat in a motor-launch.

Fine Weather Ahead

Before the Guba left Captain P. G. Taylor received a message from the naval wireless station at Aden stating that a forecast from H.M.S. Manchester, stationed at Diego Garcia, promised fine weather.

A 24-hour forecast from Diego Garcia stated that the weather was continuing fine. At 2,000ft. visibility was 15 miles and the sea was calm.

With a south-east trade wind behind her the aircraft was lined up on a course 280deg. true from Cocos at an estimated speed of 112 knots.

When the Guba left Cocos she had a south-east trade wind behind her, but later it changed to the north-east, necessitating a slight alteration in her course.

(Messages From Guba — Page 2.)

GUBA MAKES COCOS IS. IN 8½ HOURS

MELBOURNE "SUN", 8/6/39.

Australian Associated Press

COCOS ISLAND, Wednesday. —Just 8½ hours out from Batavia, the flying-boat Guba, in which a survey of the Indian Ocean air route is being made, alighted under Direction Island at 3 p.m. today.

Flying into thick weather, the Guba passed over Christmas Island, a British possession about 275 miles from Java Head, where the population had turned out to greet the expedition.

At the jetty a small steamer was moored and nearby were tiny figures waving to the first aeroplane seen from the island.

In the final stages of the flight the weather closed in and visibility was only two miles. The plane was brought to within a few miles of Cocos by dead reckoning.

It has not yet been decided when the next stage to Chagos Islands (1500 miles) will begin.—From J. Percival, Jun., official correspondent aboard the Guba.

(Report of Flight — Page 47)

MELBOURNE "SUN".

CLOUDS AND RAIN GREET FLYING-BOAT AT COCOS

From J. Percival, Jnr., Official Correspondent Aboard the Guba

COCOS ISLAND, Wednesday.—The descent to Cocos Island was made through clouds. The sea was not seen until we reached 1000 ft., when visibility was still very short.

THE wireless-direction finding equipment was then used to bring the plane into the islands which appeared immediately ahead as the machine drove through a squall of rain.

The Guba was flown low over the island and the circular lagoon to select an alighting run free from coral outcrops.

The water in the lagoon was very clear and it was not difficult to see from the air any coral which might hole the hull.

When the Guba had alighted a launch from Direction Island showed us the way to close inshore, where the machine was moored a few yards from the jetty.

It is riding at its own anchor under a corner of the island.

The Guba made an excellent flight from Batavia to Christmas Island, picking it out of the ocean

Christmas Island was surveyed from the air and its possibilities as a flying base will be dealt with by Captain Taylor in his reports to the British and Australian Governments.

Reasonably clear weather followed, but later the ocean was blanketed by cloud and was not visible again except through occasional breaks until we descended for Cocos Island.

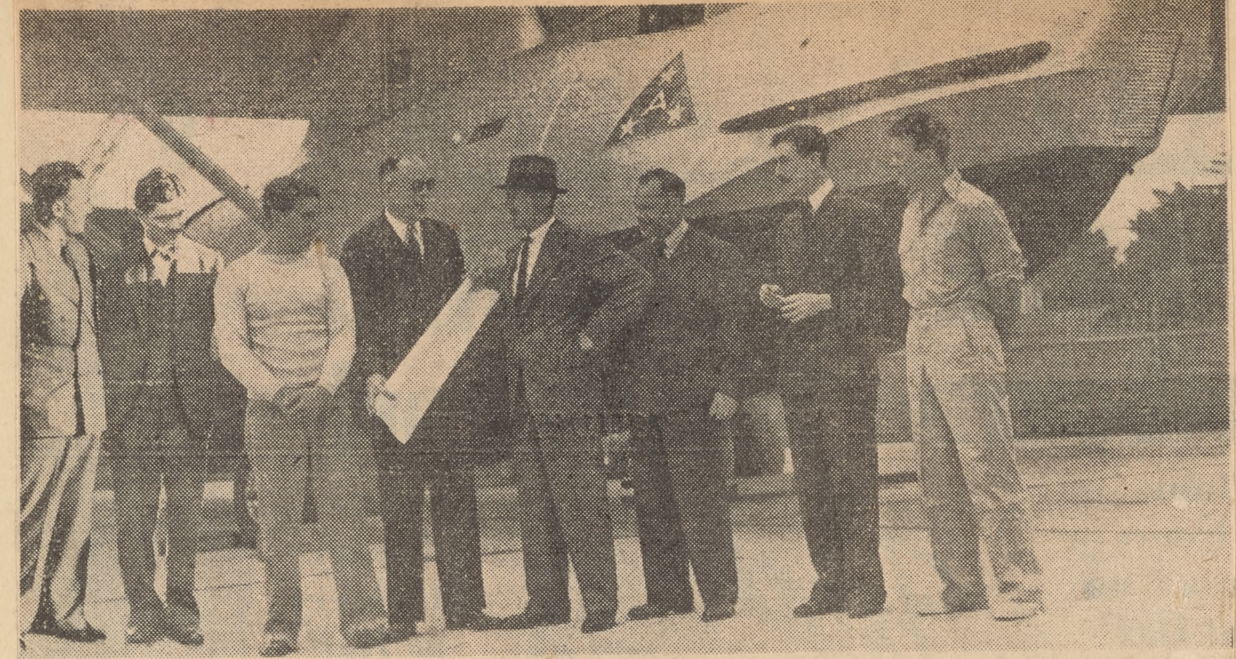
Captain Taylor will begin a survey of the island today and probably will thoroughly examine the lagoon.

WHY GUBA

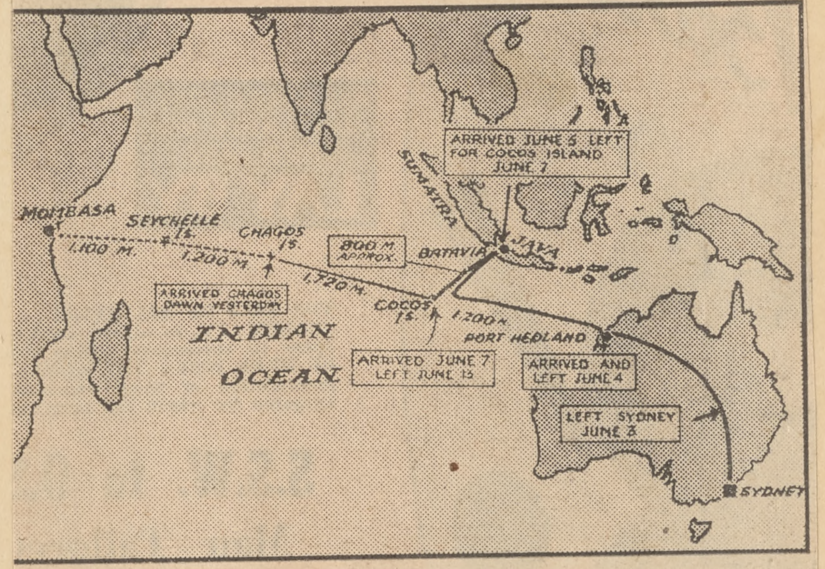
GUBA is the native name for a severe tropical windstorm of the sort that capsized the Guba's predecessor, also owned by Dr. Archbold, on an expedition to New Guinea in 1936.

MELBOURNE.

THE ARGUS, THURSDAY, JUNE 15,



GUBA SAFE.—After a long silence during the day news reached Melbourne last night that the survey flight flying-boat Guba had landed at Chagos Island, in the Indian Ocean, at dawn yesterday. Above are the members of the crew. (From left) R. Booth (radio engineer), R. Archbold (owner of the plane), J. Brown (mechanic), Captain L. A. Yancey (navigator), Captain P. G. Taylor (in charge of the survey for the Commonwealth Government), R. Rogers (pilot), J. Percival, jnr. (second representative of the Commonwealth Government and official newspaper correspondent), and S. Barrinka (wireless operator).



MAP showing the route taken by the Consolidated flying-boat Guba since it left Sydney on June 3 on a survey flight of the Indian Ocean for the Commonwealth Government.

GUBA MAY FLY ON TO-DAY

MELBOURNE "ARGUS", 7/6/39.

800 Miles to Cocos

Messages received by the Commonwealth Government from J. Percival, jun., Official Correspondent aboard the Guba.

BATAVIA, Tuesday.

If the weather permits, the flying-boat Guba will leave here tomorrow for the Cocos Islands, 800 miles away, in continuation of its Indian Ocean survey flight.

Captain P. G. Taylor communicated with the Cocos Islands tonight, and found that the weather was unpromising. A further report will be sought at 4.30 a.m. If it leaves at 6.30 a.m. (Java time), it is expected to reach the Cocos Islands at 2.30 p.m.

The wave lengths most suitable for the reception and transmission of messages between the ship, the City of Manchester, which will stand by at the Chagos Archipelago, the island base after Cocos Islands, and the Guba have been notified to the commander-in-chief, East Indian station, Colombo. The Guba will maintain contact on the flight with the coastal radio stations VIS and VIP at Perth and Sydney.

When the Guba takes off to-morrow, her tanks will be full, giving her a range of about 4,000 miles. Stores and water sufficient for a fortnight will be carried. Probably the Guba will remain for three or four days at the Cocos Islands before tackling the longest ocean stage of 1,470 miles to the Chagos Archipelago.

GUBA SAFE AT CHAGOS

MELBOURNE "ARGUS", 15/6/39.

Longest Stage Completed

DAWN ARRIVAL

Anxiety about the flying-boat Guba, from which no message was received between 11 a.m. Melbourne time and 9 p.m. yesterday, was allayed by a message received by the Director-General of Civil Aviation (Mr. Corbett) last night, stating that the Guba had arrived safely at the Chagos Group.

The Civil Aviation Department received a cable message from Aden stating that H.M.S. Manchester, which was waiting for the Guba at Diego Garcia, in the Chagos Archipelago, had announced the arrival of the flying-boat from Cocos Islands shortly after dawn. The Guba was unable to use her radio while she was on water.

At 11 a.m. (Melbourne time) yesterday, the Perth radio station reported that a request had been picked up asking the station to request the Manchester to play her searchlights into the sky. The Guba's radio operator suggested also that the Manchester be asked to work on a wave length of 600 metres.

Radio Interruptions

Interruptions to radio communications had occurred on earlier stages of the Guba's 1,725-mile flight from Cocos, when the flying-boat was in touch with naval vessels.

After leaving Cocos, according to early messages received from J. Percival, jun., official correspondent, the Guba made steady progress in relatively favourable conditions. It was still dark when a message at 6 a.m. (Melbourne time) said that the flying-boat had broken through the clouds at 10,000 feet, enabling the navigators to fix their position by star-observation.

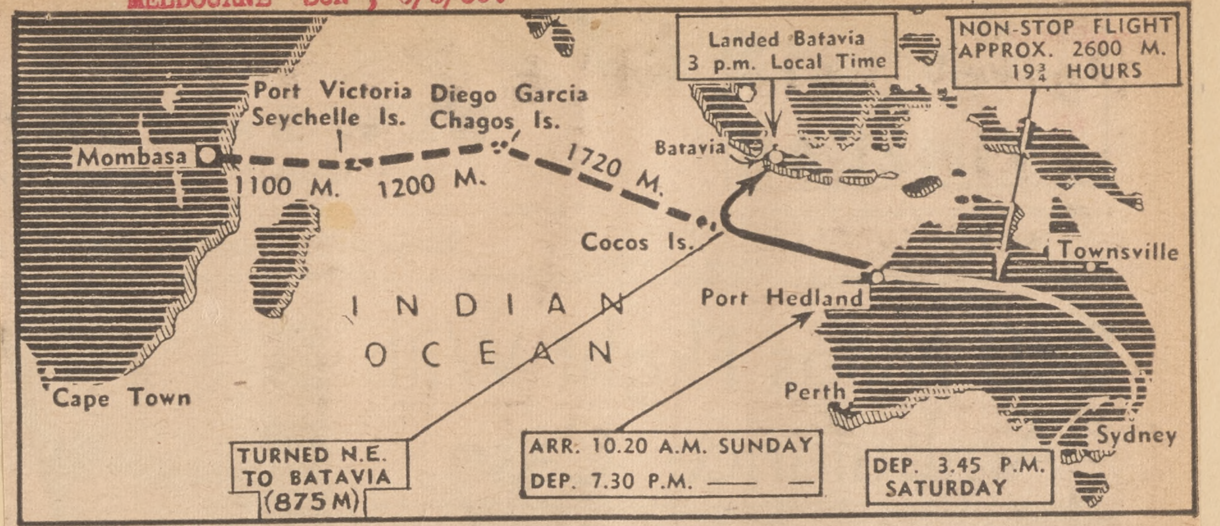
Mr. Percival's message at 9 a.m. (Melbourne time) was:—"We are now 170 miles from the Chagos. Throttled back to 100 knots as we wait for dawn. Navigators are getting a 'fix' now while the rest of us are having our hot chocolate."

At 10 a.m. (Melbourne time) Mr. Percival sent a message reporting the safe landing of the flying-boat. He added:—"The lagoon at Diego Garcia has basic requirements fo the operation of existing flyin boats and those of the proba future. The foresight of the A tralian Government in suppor the survey of the Indian Ocean's serve route has, therefore, fully justified in both group islands already visited."

(Picture and Map on Page 3)

GUBA TURNS BACK TO BATAVIA

MELBOURNE "SUN", 6/6/39.



RESUMPTION OF FLIGHT EXPECTED TOMORROW

Australian Associated Press

BATAVIA, Monday. — Unable to reach the Cocos Islands, in the Indian Ocean, the first stage of its flight to Africa, because of thick clouds and bad weather, the Guba flying boat turned off its course and alighted at Batavia at 3 p.m.

The commander of the expedition (Capt. P. G. Taylor) said they expected to leave Batavia in another attempt to reach the Cocos Islands on Wednesday.

(From Mr. Jack Percival, jun., official correspondent aboard the Guba)

BATAVIA, Monday. — After flying through Sunday night, the Guba alighted at Batavia this afternoon, 22 hours after leaving Port Hedland.

Cloud and weather conditions, which made determination of position by astronomical methods extremely difficult, placed the aircraft in a situation early this morning when it was considered advisable to alter the course for Batavia, in the Netherlands Indies.

Star Observations

ON departure from Port Hedland, the Guba proceeded on a course for Cocos Island, climbing above the scattered trade wind cloud to enable the navigator to fix position from star observations.

Flying at 13,000 feet the Guba ultimately passed into cloud, rain and turbulent air conditions. The machine was able to maintain perfectly normal flight but it had to be navigated on dead reckoning right through to the early morning when better conditions were experienced after sunrise.

Sights of the sun were taken and the aircraft placed on position lines which resulted from them. The single line obtainable, however, from the sun, as opposed to the intersection of lines taken from several stars, does not give an actual position but merely places the aircraft on a line.

Right Decision

IT was necessary, therefore, to consider the advisability of remaining in the air in an endeavor to locate Cocos Island in adverse conditions of cloud and visibility or using the remainder of the aircraft's fuel range to reach Batavia. The latter decision was obviously the right one in the circumstances and was accordingly made. At 6.25 (Greenwich) the Guba alighted in Batavia Harbor.

It is proposed to refuel tomorrow, and if weather reports from Cocos Island are satisfactory, to proceed there on Wednesday.

Captain Taylor said today that Captain Yancey, the navigator of the Guba, made the very best of extremely adverse conditions and a difficult situation. He brought the machine from a position, which was necessarily of some uncertainty, straight into Batavia.

Safety Factor

"THE long range of the Guba," added Captain Taylor, "has already proved itself of great value as a safety factor on a flight over an unknown route where unreported weather conditions must inevitably be encountered."

"Already Mr. Richard Archbold's co-operation and the conduct of his aircraft indicates a satisfactory carrying-out of the expedition."

(Flyers' Messages—Page 43)

REMARKABLE FEAT, SAYS MINISTER

CANBERRA, Monday.—The Minister for Civil Aviation (Mr. Fairbairn) said tonight that, although he was disappointed that the Guba did not locate Cocos Islands at the first attempt, the crew had performed a remarkable feat of navigation in later placing themselves accurately and landing successfully at Batavia.

The flight was also a striking example of the possibilities of long-range flying boats on trans-ocean flights.

It was interesting to note that the Guba was in the air for 22 hours during the flight towards Cocos Islands and the dash to Batavia. On the preceding day th Guba had crossed Australia in hours and within another seven hours had set out for Cocos Islands. The crew was therefore in the air 41 hours in the 48 hours.

The Sun News-Pictorial MELBOURNE. *Tuesday, June 6, 1939—Page 43*

GUBA'S SILENCE CAUSED SOME ANXIETY

CONTINUED FROM PAGE 2

WAS OUT OF RADIO COMMUNICATION FOR SEVERAL HOURS

OUT of touch with Australia and unable to make contact with Indian Ocean shipping or Cocos Island radio station, the flying boat Guba caused anxiety in official circles for some hours yesterday.

At that time the flying boat was cruising at a high altitude, attempting to get an astronomical bearing on the islands, but at no time were the flyers in any danger, as an immense reserve of fuel was still available.

Cocos Island, replying to a wireless message from the Civil Aviation Department finally removed anxiety when it reported that it had been in touch with the expedition.

WHEN it became evident that the weather would not clear, it was decided not to risk an attempt to land at Cocos Island, and the Guba was headed for Batavia, where good anchorage and a plentiful supply of fuel were assured.

About 4.30 a.m. (local time) the Guba got into radio communication with the Cocos station and spoke to it at intervals.

At 9 a.m. the Guba stated that it required cross-bearings from any ship in the neighborhood. Cocos endeavored to make contact with such a vessel, but apparently without success, which was unexpected as there should have been several vessels in the vicinity.

Cocos radioed Australia that the position then of the Guba was unknown to it. Later Cocos stated that the Guba was changing its course and was not far away.

Messages From Flying-Boat

ESSAGES received by the Commonwealth Government from Mr. Jack Percival, Jnr., official correspondent aboard the Guba, were:—

.14 a.m. Greenwich Mean Time (9.14 p.m. Sunday, Melbourne time): The Guba is making 117 knots and has run into turbulent air conditions. There seems to be some rain ahead.

2.35 G.M.T. (12.35 a.m. Monday, Melbourne time): We have run about 420 nautical miles from Port Hedland. Russell Rogers just came down from the cockpit to report that the rain has cleared and it looks fine ahead. The ship is heavily loaded so the engines are being run at 1800 to 1900 rev. Yancey has a splitting headache and has turned in for an hour. Steve Barrinka, engineer, who has had little rest since the Guba left Rose Bay, and had a busy day fuelling at Port Hedland, is also in his bunk. Brown, the other engineer, will wait for Barrinka to wake before going off duty. By the time the Guba arrives at the Cocos early in the morning it will have flown well over 4000 miles since the take-off from Sydney on Saturday afternoon. We are flying at about 10,000ft. between drifting, scattered clouds below and a thicker layer above, although we can see the stars through breaks. The air is still turbulent.

Untimed Message: We have run into a severe tropical rainstorm. There has been no sight of the stars for two hours. Our course is 292 deg. true, speed 116 knots, height 10,000ft. It is very bumpy and cold. As I write, the cloud has just broken and the moon is showing through.

3.25 p.m. G.M.T. (1.25 a.m. Melbourne time): Russell Rogers is climbing the ship, endeavoring to get above the clouds so that the navigators can get a sextant shot of the stars. Height 15,500ft.; air speed, 106 knots.

Untimed Message: The Guba is now flying through light haze, with enough breaks for Yancey to take sights of Vega and Riegal. He has just returned from the galley hatch and reports success.

Untimed Message: During the night communication has been maintained by Ray Booth (the Guba's St. Kilda-born radio operator) with Stations VHPD, Port Hedland; VIO, Broome; VIS, Sydney, and VIP, Perth. Early in the evening he had a hunt for a loose wire in the transmitter which, of course, he found. He may have to use the Guba's own direction-finder on the wireless station at Cocos in the morning. The Cocos station has a range of 300 miles.

4.36 p.m. G.M.T. (2.36 a.m. Melbourne time): Our distance from Cocos is 530 nautical miles (about 640 land miles), and the distance run 830 nautical miles (about 1000 land miles). Our position is 14 deg. 10 min. South, 105 deg. 20min. East. The ship is again in smooth air.

Untimed Message: The Guba is now flying on a course of 32 degrees for Sunda Strait, between Java and Sumatra, in conditions which, at the aircraft's position, are overcast with considerable haze. This procedure is in accordance with the decision to proceed to Batavia rather than use surplus fuel in an endeavor to reach Cocos Island in the existing conditions.

Change Of Plans

MR. PERCIVAL explained the change of plans in this message:—

"Because of cloud obscuring the stars and turbulent air conditions at a critical time, which made the fixing of position from star sights impossible, it has been decided to fly to Batavia and await conditions which will enable the Guba to be navigated to Cocos Island by astronomical methods. The long range of the machine makes this possible."

GUBA FLIGHT MELBOURNE "HERALD", 3/6/39. FROM PAGE 1

EMERGENCY RATIONS OF TINNED FOOD

Enough To Last For Month

SYDNEY, Saturday. — Emergency rations, consisting of a month's supply of ordinary tinned foods, are stored in the American Flying Boat Guba, which left this afternoon for Port Hedland (W.A.), from where she leaves tomorrow on an airmail survey flight of the Indian Ocean.

In addition to bacon and other food easily cooked on the Guba's range, a hamper containing food specially designed to tickle jaded palates on the long 19-hour flight to Port Hedland, was taken.

The personnel of the Guba is:—Captain P. G. Taylor (in charge); Captain R. Rogers, pilot; Dr. Richard Archbold, scientist-owner of the Guba; Messrs S. Barrinka and G. Brown, flight engineers; L. A. Yancey, navigator; R. E. Booth, radio operator; Jack Percival, Jnr., official correspondent.

Arrangements have been made for the maintenance of constant radio communication between Guba and stations in Australia throughout the entire flight.

Amalgamated Wireless (Aust.) will provide special watches at its Sydney transmitting centre, Pennant Hills, and at receiving stations at La Perouse (VIS) and Applecross, Perth (VIP).

Captain Taylor will spend up to a week at each landing point, carrying out exhaustive examinations of the harbors, possible landing areas, and sites for aerodromes for landplanes.

Copious notes will be taken of prevailing weather conditions. A long study of the conditions has led Captain Taylor to believe that he will find that a following wind at one altitude will be a head wind higher up.

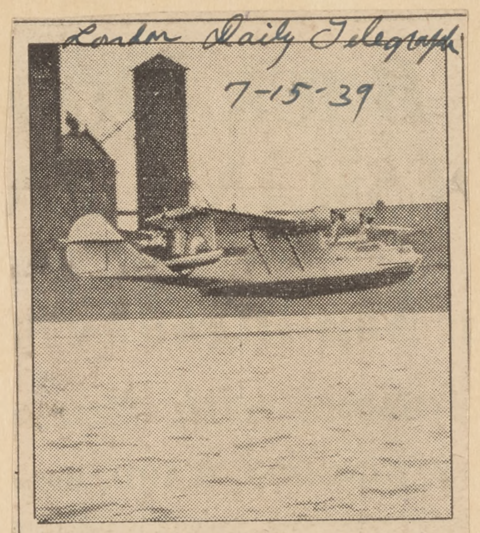
A long list of questions has been prepared by the Civil Aviation Department, which Captain Taylor will answer in the form of a report when he returns. Arrangements have been made for a complete cinematographic and "still" camera record of the trip.

From Mombasa, where the survey will end, the Guba will fly across Africa to Dakar (about 4000 miles), thence to the Virgin Isles (3400 miles) and then north to New York (1500 miles).

Given very favorable weather, she might fly non-stop from Dakar to New York. Her course from Sydney to New York will cover about 12,000 miles. There will be only seven intermediate stops.

Thus the average hop will be about 1700 miles. The whole trip will take about four weeks, giving an average daily mileage of 400 miles.

London Daily Telegraph
7-15-39



BOMBER FLIES ATLANTIC.—The first bomber ever to be flight-delivered across the Atlantic about to alight at Felixstowe yesterday after her journey from Botwood, Newfoundland.

Another record aircraft development achievement was presented in the second paper of the evening—the story of Consolidated Aircraft Corp.'s sensational Model 31 flying boat. The discussion was presented by B. W. Sheahan, engineer in charge of drafting and personnel at Consolidated and related the phenomenal 10-month progress from authorization to test flight.

The talk of the industry, Consolidated's Model 31 stood revealed by Mr. Sheahan as the first plane to use the new Davis airfoil in its wing; the first plane to fly the Wright 18-cylinder, double-row, 2000 h.p. engines; and far superior to the Consolidated PBY series in performance. A brief table of dimensions in his talk revealed the ship's weight empty as 25,000 pounds and "approximately" 50,000 pounds gross.

Much of Mr. Sheahan's paper discussed the development of the Model 31 in less than a year's span as compared to the two to three year development of big flying boats under the standard prototype procedures of government practice.

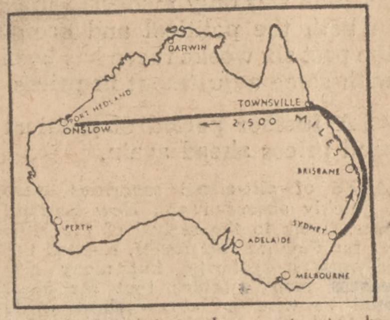
Motion pictures were shown of the Model 31's first test flight.

Nov. -39

GUBA HOPS OFF ON GREAT FLIGHT

MELBOURNE "HERALD", 3/6/39.

Over Sea To Africa



MAP illustrating the route to be taken by the Guba on her flight to Port Hedland today.

SYDNEY, Saturday.—The American flying-boat Guba left Sydney at 3.45 this afternoon for Port Hedland (W.A.), from where she leaves tomorrow on an air mail survey flight of the Indian Ocean.

Captain P. G. Taylor, who is in charge of the flight, expects to reach Port Hedland at 11 a.m. tomorrow, and to leave for Cocos Islands (1200 miles away) shortly before dusk.

A crowd of several thousands gathered at Rose Bay and cheered as the Guba roared down to take off.

From Cocos Islands the Guba will be flown to Diego Garcia (1470 miles), Mahe, in the Seychelles Group (900 miles), and Mombasa (Kenya), where the survey ends.

From Sydney, the Guba will fly about 7000 miles to Mombasa. The ocean crossing from Port Hedland will be about 4500 miles.

All flying will be done at night and so timed as to make the arrival at each point coincide with sunrise or a little later.

EIGHT ON BOARD

The machine has been lent free of charge to the Federal and British Governments by her owner-pilot, Dr. Richard Archbold.

In a farewell message Dr. Archbold said that flying-boats were now being built that could fly from Port Hedland to Mombasa in one hop.

He was glad to be able to render a service to Australia in return for the many favors granted him during his stay.

The Guba has eight aboard, including two engineers.

Yesterday afternoon, the boat went on its last trial flight. The compass was swung and the wireless, one of the most powerful aircraft sets in the world, was calibrated.

Early today she was beached for the last time for more than a month and will take on a capacity load of nearly 2000 gallons of petrol.

Emergency rations—Page 3.

Modern Transport

COMMERCIAL AVIATION.

7-8-39

Transatlantic Progress.

MAIL AND PASSENGER SERVICES.

PAN-AMERICAN Airways last week inaugurated the North Atlantic service by the northern route, and at the same time carried paying passengers by the southern route viâ the Azores. These were the first paying passengers to be carried across the North Atlantic by a heavier than air machine, although the German airship company, Deutsche Zeppelin Reederei, maintained a regular Atlantic service for some considerable time. Details of Pan-American Airways' services, on both routes, have been included in the July issue of Bradshaw's International Air Guide. The passenger service, by way of Marseilles and the Azores, links Marseilles and Port Washington on a two-day schedule. There is one service weekly on each route in each direction. The inaugural service along the northern route was flown by the Yankee Clipper, and 16,000 lb. of mails were carried. In addition, there were 19 passengers and a crew of 12. Among the passengers were Mr. Juan T. Trippe, president of Pan-American Airways, and five other officials and representatives of the company, and also officials of the Civil Aeronautics Authority and of U.S. Government Departments. The other American company interested in transatlantic service, American Export Lines, made its first transatlantic flight this week. American Export Lines is a shipping concern, and the company proposes to use flying-boats, operating between New York and Marseilles, to supplement its shipping services. A Consolidated PB2Y flying-boat is being used at present for carrying mail and freight, but later passenger-carrying boats will be used.

The British Service.

That the United States was ready to open the North Atlantic service before this country is not really surprising, as the British aircraft industry has been so preoccupied with the rearmament programme. However, there should not be much delay now, and the British service is expected to become a fact early in August. This was announced by Sir Kingsley Wood, Secretary of State for Air, at a luncheon last week, when the Government officially welcomed the visitors who landed in England after crossing the Atlantic in the Yankee Clipper. Sir Kingsley said that the British service would begin with Short flying-boats developed from the standard Empire type. They had hoped to start alongside the U.S.A. service. He also hoped that next year we should have comparable equipment with the American company when the new Golden Hind class of flying-boats would be running alongside the Clippers.

Flying-Boats or Landplanes?

So far, development of the North Atlantic services has centred round flying-boats, but the possible use of landplanes has not been forgotten. In this country, Short Brothers have under construction a four-engined landplane designed for transatlantic service, while the French four-engined Farman 2231's are expected to make experimental flights this summer. In the United States, too, a landplane suitable for the North Atlantic service has been built. This is the Boeing Stratoliner, and it is now undergoing flying trials. Development of flying-boats for long sea routes is probably associated largely with passenger comfort, as a larger craft can be built than would be possible with a landplane, the limiting factor here being the length of airport runways. A landplane, however, would be considerably faster, and would be more adaptable to the use of a pressure cabin for high altitude flying. What is more, a landplane fitted with flotation gear would probably have as high a safety factor as a flying-boat, particularly as present day flying-boats cannot make a forced landing in heavy seas without sustaining considerable damage. The time is now rapidly approaching when a choice between landplanes or flying-boats for long sea routes will have to be made. Both types of aircraft are valuable, and on long ocean crossings it may be found more economic to use rapid landplanes for mail services and large flying-boats for passenger flights.

GUBA'S 2,600 MILE FLIGHT

MELBOURNE "ARGUS", 5/6/39.

SYDNEY—PORT HEDLAND IN 19¾ HOURS

NOW ON WAY TO COCOS

By J. PERCIVAL, Jun., Official Representative Aboard the Flying-boat Guba.

Alighting yesterday at Port Hedland (W.A.) at 9.20 a.m. West Australian time (11.20 a.m. Melbourne time), the Indian Ocean survey flying-boat Guba completed its 2,600-mile flight from Sydney in 19 hours 45 minutes.

At 5.30 p.m. the Guba, after taking aboard 1,245 gallons of fuel, took off for Cocos Islands, the first stage of the ocean flight. The distance is 1,200 miles, and the Guba is due at Cocos early this morning.

There was a thrill as the flying-boat took off, and it appeared for some moments that she would not rise from the water in time to clear Sandy Island. After a run of about 50 seconds, however, she rose, circled over the harbour, and roared out over the ocean to the westward.

Radio reports received by the radio operator on the Guba (Mr. R. Booth) at 7.14 p.m. (W.A. time) indicated that the conditions at Cocos were good. The weather over the route is expected to be generally favourable, though there may be some rain. The Guba is making 117 knots.

Flight Across Australia

Throughout Saturday night, on the flight from east to west across Australia, the stars were used for navigation, and they were standing out of the moonlit sky as if to invite sextant sights.

With its great load of more than 30,000lb., the Guba had to be flown farther north than was at first planned, because she would have ncountered severe headwinds if course had been laid direct to Hedland. The longer the was in the air, however, it sed its load pro rata with the al consumption of fuel and Its all-up weight decreased e air at the rate of approxi- ly 500lb. an hour.

though it was in the air for t 19 hours there was still an ample margin of fuel left in the tanks when it alighted at Port Hedland.

Intensely cold conditions were experienced during the night. On several occasions the temperature was well below zero in the cockpit, and full-length wool and fur-lined flying suits and sheepskin boots could not keep the biting cold out.

For hours on end Mr. Booth sat cramped in his chair endeavouring to maintain radio contact with numbed fingers. The cold was so intense that it was impossible to sleep under three blankets over a flying suit. Captain Yancey shivered at his work in the navigation cabin. When Captain Taylor opened the hatch in the galley to secure a number of sextant shots the chilly blast was almost unbearable. Even hot coffee and chocolate and food did not relieve the severity of the cold.

Rising Sun Welcomed

The first warm rays of the morning sun were welcomed by all. They seemed to thaw out the aircraft.

Mr. Rogers cooked breakfast about an hour after sunrise. He prepared a welcome meal of fried sausages and bacon, after having first to thaw out the sausages in the pan before they could be removed from their container.

(Log of Flight—Page 2. Pictures on Page 9)

GUBA'S FLIGHT *Continued From Page 1*

CROWDS WAIT AT PORT HEDLAND

MELBOURNE "ARGUS", 5/6/39.

THRILL IN DEPARTURE FOR COCOS

MACHINE JUST CLEARS ISLAND

PORT HEDLAND (W.A.), Sunday.—The shore and jetty were lined with people this morning to witness the arrival of the flying-boat Guba after its non-stop flight of 2,600 miles from Sydney.

A great crowd also witnessed the Guba's take-off at 5.30 p.m for Cocos Island on the first stage, 1,200 miles, of the Indian Ocean survey flight. There was a moment of anxiety when it was feared that the heavily laden Guba would not clear the low shores of Sandy Island.

However, daylight eventually appeared between hull and water, and the Guba climbed easily. It must have been as alarming to those aboard the flying-boat as it was to the dozen Royal Australian Air Force, commercial, and civil pilots who gathered on the deck of the motorship Koolama to watch the beginning of the historic flight. They held their breath as the Guba swept past, still sitting heavily on the water, and their relief was evident as the Guba at last lifted.

The Guba circled the town in a wide sweep, and then turned into the setting sun on its 1,200-mile hop to Cocos.

On the Guba are Mr. Richard Archbold, the owner, Captain Taylor, and Captain L. A. Yancey (navigator), Mr. Russell Rodgers (pilot), Mr. R. Booth (radio operator), Messrs. Barrinka and Brown (mechanics), and Mr. J. Percival, junior (newspaper representative).

Little Warning of Arrival

There was little warning early this morning of the Guba's approach to Port Hedland. Although elaborate arrangements had been made for radio contact between the flying-boat and the various radio stations between the terminals, the Guba's radio was directed towards Sydney almost throughout the flight, while static badly affected reception of the signals at the western end of the route until early this morning.

While the signals of airliners operating on various air services were easily heard, the signals of the rapidly approaching Guba were comparatively weak, and the first indication of her arrival was when the roar of her engines was heard.

Presently the great yellow and silver flying-boat was circling overhead, and turning into the stiff easterly breeze, the Guba swept in over Sandy Island, which is the western boundary of the harbour, and alighted.

Cold, Weary Fliers

In a few moments the Guba was moored 500 yards from the jetty. The first to come ashore in an outboard motor dinghy were the owner, Mr. Richard Archbold, Captain P. G. Taylor, the Commonwealth Government's representative; Captain L. Yancey, the navigator and the official newspaper representative, Mr. J. Percival.

No ceremony attended their landing at the jetty. Fatigued and still bitterly cold and unkempt, they climbed from the landing stage and waited to be directed to an hotel.

"No sleep for 20 hours, and I've never been so cold for so long," said Captain Yancey.

Soon they were breakfasting, and in a few minutes more Captain Yancey and Mr. Booth (radio operator) were asleep in the hotel.

Captain Taylor and Mr. Percival dealt with official business, and the chief pilot and two flight engineers remained aboard the flying-boat to begin as soon as possible the refuelling.

Refuelling Task

Refuelling proved simpler than was expected by the oil company. Two dinghies with outboard motors took out from the wharf relays of four-gallon drums, returning with the empties, and in this way 1,245 gallons were taken into the Guba's capacious tanks in about six hours.

The refuelling had not long been finished when the drone of engines was heard in the air, and three Avron Ansons, in perfect formation, came out of the south, dipped over the Guba's anchorage, and flew inland to the aerodrome.

Crowd Waits All Day

Despite the great interest taken locally in the flight, the flying-boat, and its distinguished personnel, no one could obtain exact information about the proposed time of departure. It was reported that part of the personnel were in favour of continuing the flight as soon as fuelling was done, and that the others argued in favour of delaying until to-morrow.

However, the residents were taking no chance of missing the spectacle, and all day the jetty was thronged with people, many of whom prevailed on those in charge of the fuelling dinghies to take them to view the Guba at close quarters.

At 5 p.m. the personnel left their hotel and boarded the dinghies. Soon after the engines sprang to life, and after they were warmed up and the crew slipped the moorings the engines roared and the Guba swung into the take-off channel. The Guba's path lay parallel to the jetty, and provided the onlookers with a fine view. With a full normal load the Guba takes off in 38 seconds. To-day, however, well over 50 seconds elapsed before there was sufficient lift.

OVER CONTINENT BY NIGHT

Graphic details of the flight from Sydney to Port Hedland are contained in messages received by radio from the Guba while in flight.

The following messages were received from Mr. Percival, all the times given being Melbourne time:—

4.15 p.m.—Guba's performance in becoming airborne after run of only 36½sec. remarkable for a craft loaded with 1,750 American gallons of fuel, in addition to oil, a personnel of eight, and equipment. We are now flying at 4,000ft., and steadily climbing.

4.48 p.m. — Flying on automatic pilot at 8,500ft. and making air speed of 120 miles an hour. The route is within easy distance of the coast. Mr. Archbold and Mr. Rodgers, who handled the take-off, are now aft, Mr. Rodgers supervising the arrangement of cabins in preparation for the night shakedown. Captain Yancey, the Guba's navigator, is in the chartroom with Captain Taylor. Mr. Booth is in radio communication with the United States.

6.25 p.m.—Now 260 nautical miles north from Sydney. We expect to see lights of Moree soon. Altitude 5,300ft. and air speed 120 miles an hour. The engines are trailing sheets of blue incandescent flame. The lights of farm houses present an intriguing sight. The brilliant golden sunset was followed by an equally attractive rising moon. The evening meal is now being prepared on the three-ring stove in the galley.

7.30 p.m. — We are now 50 nautical miles from Roma (Q.). The Guba will be flown north for 150 nautical miles to get the advantage of winds from the east for the night flight across Australia. The weather is bitterly cold at an altitude of 6,500ft. Mr. Archbold, Captain Taylor, and Captain Yancey are in full-length wool and fur-lined flying suits. Mr. Rodgers is asleep in his bunk in a leather flying suit, and also covered with blankets. In about 70 minutes the Guba's course will be laid toward the west coast, and she will begin her long overland flight. The clear moonlight makes conditions ideal for sextant shots.

8.45 p.m. — We have run into slightly turbulent air. Captain Yancey has just turned in, giving instructions to be called in an hour. Captain Taylor in the chartroom and Mr. Archbold at the controls. Mr. Rodgers awoke, got out of his bunk, and fully awakened himself by eating ice-cream so hard that the block had to be slightly thawed on the stove.

9.50 p.m.—Mr. Booth has received the wind reports for levels up to 13,000ft. from Rockhampton and Townsville, and because of the westerlies it has been decided to fly farther north than originally intended. The Guba is now flying on a course which passes close to Blackall, Longreach, Winton, and Cloncurry, and will be headed on a direct course to Port Hedland from Cloncurry. Port Hedland is 2,600 land miles from Sydney by our route, and unless there is assistance from a tail wind we will arrive at about noon to-morrow. Mr. Archbold has turned in for a sleep.

11.15 p.m. — Blackall was in sight at 10.30 p.m. We are now flying at 6,400ft. at a ground speed of 106 knots. Captain Yancey awoke at 10 p.m. local time and Mr. Archbold got up at 11 p.m. It is still intensely cold.

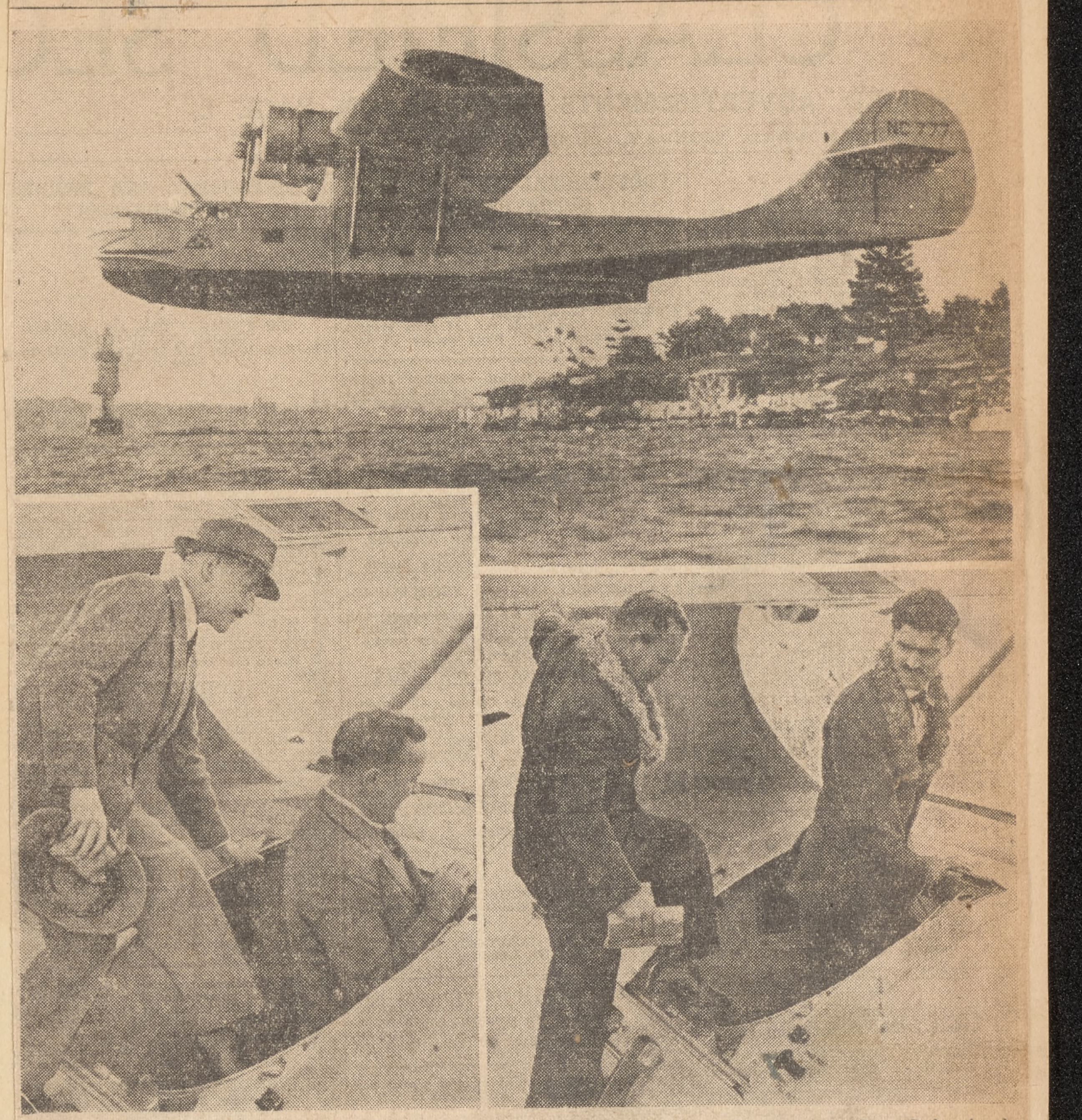
12.15 p.m.—We were 50 nautical miles, 270deg. true, from Longreach at midnight. Mr. Booth has been requested to obtain a wind report from Darwin. Captain Yancey took sextant shots of Altair and Vega, two bright stars, through the starboard hatch in the galley.

12.50 p.m.—The Guba is now flying in slight easterly winds, for which the machine was flown north beyond Roma. It is expected that favourable winds, between south-east and north-east, will be held through to Port Hedland. At the height at which the Guba is flying, above 6,000ft., the force of the favourable winds decreases, and at higher altitudes there is a reversal to west.

4.30 a.m. (Sunday).—At 3.40 a.m. we were still at 6,000ft., and the cabin temperature was two degrees above zero.

6.15 a.m. — The time of our probable arrival at Port Hedland is 11 a.m. (Melbourne time). The speed is now 112 knots.

MELBOURNE. THE ARGUS, MONDAY, JUNE 5, 1939.



ON THE FIRST STAGE of the airmail survey flight across the Indian Ocean, the flying-boat Guba (top) took off from Sydney on Saturday afternoon for Port Hedland (W.A.). (Bottom, left) Captain P. G. Taylor, the Commonwealth Government's representative, and Mr. R. Booth (right), the radio operator, boarding the machine. (Bottom, right) The owner of the Guba (Mr. R. Archbold), right, and the chief pilot (Mr. R. Rogers) were decorated with leis before they stepped aboard.

BOMBER'S FLIGHT FROM NEWFOUNDLAND

Exeter Express & Echo.

Breakfast Arrival at Felixstowe

7-4-39

ONLY 15 HOURS IN THE AIR

The first giant bomber flying boat ever to be flown across the Atlantic arrived at Felixstowe to-day, from Botwood, Newfoundland.

She is the first of six of similar type machines built by the Consolidated Aircraft Company at San Diego, California, to be delivered to the Air Ministry for experimental purposes.

The machine took off from Botwood on Thursday at 2.30 p.m. (B.S.T.) and made Felixstowe before 6 a.m. to-day.

Our special reporter was told that the arrival was "O.K."

Known as the model 28, this twin-engined flying boat is similar to the long-range patrol bombers, of which 200 are already in service with the United States Navy.

She is a 15-ton machine, has a cruising radius of 4,000 miles, and will be tested by the R.A.F.

The machine was brought over by the same crew that recently flew a sister 'plane on Captain Richard Archbold's Indian Ocean survey. The pilots were Captain Russell Rogers, and Captain Lewis, A. Yanky, with Flight-Engineer G. B. Brown, and Radio Engineer Raymond Booth.

Officers at Felixstowe were ready waiting on the pierhead at three a.m. when news came through that the boat was over England.

The bomber shifted her course and delayed landing to avoid 'planes flying in the vicinity. The P.B.Y. came into sight from the north-west over the River Orwell. The sun picked out

(Continued in Next Column.)

(Continued from Preceding Column.)

her splendid lines in clear relief as she circled overhead, and then taxied to a buoy.

"It was a splendid trip, and although we had some rough weather we were only 15 hours in the air, when we expected to be at least 17," said Captain Rogers.

The crew of the flying boat went straight to the R.A.F. Officers' Mess at Felixstowe.

"The crew were very, very tired when they came in, and are now sleeping soundly," said an official later.

o, Calif., Thursday, August 3, 1939 PAGE ELEVEN—A

Trib. 8-3-39

Fleet Sees Aviation as Peace Factor; Park Fete Honors Army Air Corps

Honoring early day fliers and voicing tribute to the men who have developed aviation since 1909, more than 150 persons attended a dinner last evening in the Casa del Rey Moro cafe, Balboa park, in commemoration of the 30th anniversary of the army air corps.

Those present heard Maj. Reuben H. Fleet, head of the Consolidated Aircraft Corp., declare that aviation progress during the next 30 years will make for world peace.

Sees Boon in Plane

"If we should enter into a world peace pact, we shall do so because of the airplane," declared Fleet. "I firmly believe that I am engaged in a line of endeavor which will bring to mankind the boon of enduring peace."

Col. Harvey S. Burwell, who was in command of Rockwell field during the World war and who is commander of the bombardment group stationed at March field, paid tribute to Maj. T. C. Macaulay, chamber of commerce executive secretary; G. Aubrey Davidson, civic leader; Col. Ed Fletcher; and the late George Burnham; for the aid they gave him while he was in command of Rockwell field. He also discussed the development of accident prevention in the army air corps.

Pioneers Present

Other army aviation pioneers present were Col. E. L. Hoffman, who developed the air corps parachute; Maj. Macaulay, who made the first night flight in 1913 and flew the first twin-motored seaplane; Maj. Fleet, who learned to fly at Rockwell field; Col. Roy C. Kirtland, U. S. A. ret., who was the first graduate of the signal corps aviation school at College Park, Md., and who flew the tractor plane in 1912 for the first time; Col. H. A. (Jimmy) Erickson, who took the first aerial photograph in 1911, and Maj. Harry A. Sutton, who won the distinguished flying cross and McKay trophy through his investigation of spinning characteristic of bombers.

Herbert E. Fish, vice mayor, and T. Leroy Richard, chairman of the board of supervisors, brought greetings from the city and county, and Jackson L. Hicklin, chairman of the chamber of commerce aviation committee, brought greetings from the chamber of commerce. Others seated at the speakers' table were Col. Robert E. Guthrie, U. S. A., commandant of Ft. Rosecrans; Adm. Joseph R. Defrees, commandant of the 11th naval district; Maj. Edgar N. Gott, vice president of Consolidated Aircraft Corp.; John Robinson, famous soaring pilot; Capt. J. C. Horton, air corps supervisor of cadet instruction at the Ryan Aeronautical school.

Capt. H. B. Porter, air corps flight surgeon at the Ryan school; Lt. Lloyd Hopwood, assistant to Capt. Horton; Capt. W. W. Gross, commanding air corps base, and unit instructor, 91st group, air corps reserve; Maj. E. R. McReynolds, air corps inspector for Consolidated, Ryan and Solar aircraft companies; Maj. Joseph L. Stromme, Pacific coast chief in charge of procurement planning division of the air corps, and Col. S. J. Heidner, unit instructor of the organized reserves of San Diego and Imperial counties, of the 35th general hospital in San Diego, the Los Angeles mobilization center and all other army reserve units, except the air corps, in San Diego.

Earl Prudden, Aero club president, was master of ceremonies.

The dinner was given by the Aero club of San Diego, the city and county and the chamber of commerce.

Clipper Crew Back After England Hop

Trib. 8-3-39

Crew members of a Consolidated Aicraft Corp. flying boat, which last month was flown from San Diego to Felixstowe, England, returned to the United States today by liner, The Associated Press reported from New York. They are Russell Rogers, pilot; Lewis Yancey, navigator; Gerald Brown, engineer, and Raymond Booth, radioman.

U.S. 'PLANE FOR R.A.F. CROSSES ATLANTIC

London
Daily Telegram & MORNING POST 7-14-39

NON-STOP FLIGHT

The twin-engined Consolidated Aircraft Co.'s flying boat, which was built in California and acquired by the British Government for the R.A.F., crossed the Irish coast near Foynes at two a.m. to-day.

It had flown non-stop across the Atlantic from Botwood, Newfoundland.

No stop was made at Foynes, but the 'plane maintained a speed of 190 m.p.h. towards Felixstowe, where it is to undergo tests.

When the 'plane passed over the Irish coast it was the first military aeroplane ever to have Atlantic.

DAILY TELEGRAPH, LONDON 7-11-39

BOMBER ON WAY TO ENGLAND

BOUGHT FOR R.A.F.

A fifth giant air liner, the new Consolidated Aircraft Co.'s flying-boat recently purchased by the British Government for the R.A.F., was about to start on a delivery flight direct to England, but stopped for adjustments to her gyroscopic pilot.

She left San Diego, California, at 4.23 p.m., G.M.T., to-day to fly 3,000 miles direct to Botwood, Newfoundland, where she is expected to land at 2 p.m. to-morrow. After refuelling she will take off immediately for Felixstowe.

The personnel is that of the seaplane Guba which recently completed a survey flight of the Indian Ocean, including Mr. Russell Rogers, pilot; Capt. Lewis A. Yancey, co-pilot and navigator; Mr. Raymond Boothe, radio operator; Mr. Gerald Brown, engineer.

Squadron Leader Addams, of the British Air Ministry, who has been superintending delivery of American aircraft in California for six months, had hoped to be in the 'plane, but was unable to leave his duties.

The flying boat, a 15-ton patrol bomber, has a cruising radius of 4,000 miles. It will be rigorously tested by the R.A.F. and if found suitable a large order may be placed, or possibly the design purchased for construction in Britain.

At 8 a.m. to-morrow, Mr. Norman Lee, a New York broker, will arrive here in the Atlantic Clipper, and will be the first man to fly round the world by commercial aeroplanes.

He will have circled the world in approximately 20½ days, all but 1,428 miles of the 24,694 being flown in American-built 'planes. 11-7-39

An Air Dream Come True—Page 16

DAILY TELEGRAPH, LONDON 15/7 7-15-39

A SIGNIFICANT FLIGHT

As she touched the waters of the Orwell yesterday, in what is described as "a beautiful landing" the bombing aircraft flown from America added a new page to the accumulating history of flying. She was the first military machine to fly the Atlantic, but the crossing of the ocean was only the final episode in a journey of over 5,000 miles from California under her own power. To the makers of a great machine capable of such performance congratulations are due, as well as to the four British officers who acted as pilots and crew. Together they have enlarged the boundaries of imagination regarding the possibilities of military aviation in the near future.

This vessel is the first of six bought for experimental purposes. Successful as has been the flight, it has been treated by all concerned as an episode in the process of delivery. Yet it demonstrates the practicability of maintaining across the Atlantic a great reserve of machines remote from dangers of attack, and its performance is convincing evidence of the possibility of reinforcing within a few hours the more distant corners of the Empire should they be subjected to assault. Much of the progress made in military aviation must remain secret, but the landing of Consolidated Model 28 at Felixstowe yesterday enables the least expert to appreciate the new power that is made available when a 15-ton bomber flies from the West Coast of America with less of incident than attended a crossing of the Channel 25 years ago.

THE DAILY TELEGRAPH AND MORNING POST, SATURDAY, JULY 15, 1939

SALVAGE DRAMA—WI

ARRIVAL OF U.S. FLYING-BOAT FOR R.A.F.

NON-STOP FLIGHT OVER ATLANTIC

FIRST MILITARY 'PLANE TO CROSS

From Our SPECIAL CORRESPONDENT
FELIXSTOWE, Friday.

Secret Air Force manœuvres over Suffolk early this morning, in which machines were flying without lights, held up the arrival here of the 15-ton American flying-boat bought by the British Government for the Air Ministry by 2½ hours.

The twin-engined flying-boat, the latest type of the Consolidated Aircraft Co.'s Model 28, had flown from San Diego, California, in three hops, a total distance of 5,750 miles. It is the first military aircraft to fly non-stop across the Atlantic.

From Botwood, Newfoundland, which was left yesterday afternoon, the machine had maintained a speed of about 180 m.p.h. for 1,800 miles with the aid of a following wind. It flew through a storm at 13,000ft with ice forming on its wings.

Two hundred miles from the Irish coast the flying boat encountered a cross wind which reduced its speed. Even then it was passing over England 11 hours after leaving Botwood.

LANDING LIGHTS PREPARED

As reported in later editions of THE DAILY TELEGRAPH this morning, it crossed the Irish coast at Foynes at two a.m.

At the R.A.F. Experimental Station at Felixstowe, where it will undergo tests, a group of officers were awaiting its arrival. Preparations for placing landing lights on the water were put in hand.

Messages of the machine's progress had been received hourly by radio, via Croydon, and her course had been plotted in the offices of the station. Then, when it was believed to be but half an hour's flight away, there came a message from Capt. Russell Rogers, the pilot. "Vicinity of Felixstowe, 4.15 G.M.T., 5.15 B.S.T."

There followed a series of somewhat mystifying messages giving the boat's progress as follows: 4.25 a.m., near Norwich; 4.30, Pulham; 4.45, Nottingham; 5.0, near the Wash; 5.15, off Hunstanton.

STORM OVER ATLANTIC

By this time the sun was rising, and at 5.53 a.m. the flying-boat was suddenly seen approaching at a high speed from the north-west.

Capt. Rogers circled the town at 1,000 feet and as he came round again the retractable floats came down, and the flying-boat swept down to the water three minutes after being sighted. An R.A.F. officer standing by my side exclaimed, "A beautiful landing."

Capt. Rogers explained to me afterwards that the reason why he did not make straight for Felixstowe was that he had heard there were machines flying without lights in the neighbourhood and he thought it better to wait for daylight.

"We had an uneventful flight," he said. "With a following wind we made excellent progress, although we met one storm."

He illustrated the benefits of wireless when he added: "We were able to keep to our course across the Atlantic.

"Mr Booth, our radio operator, was in constant communication with Botwood, Foynes and Croydon, and every now and then an amateur from Georgia broke in with a little chat."

The flying-boat has a radius of at least 4,000 miles, but the actual figure is still a secret. More than 200 similar machines have been sold to the United States.

Editorial Page.

WAS · IS · & · WILL · BE
1855
LONDON
THE DAILY TELEGRAPH
and
MORNING POST
DAILY TELEGRAPH - 29th June, 1855.
MORNING POST - 2nd November, 1772.
[Amalgamated 1st October, 1937.]
SATURDAY, JULY 15, 1939
135, Fleet-st., London, E.C. 4.
Telephone: Central 4242.

A SIGNIFICANT FLIGHT

As she touched the waters of the Orwell yesterday, in what is described as "a beautiful landing" the bombing aircraft flown from America added a new page to the accumulating history of flying. She was the first military machine to fly the Atlantic, but the crossing of the ocean was only the final episode in a journey of over 5,000 miles from California under her own power. To the makers of a great machine capable of such performance congratulations are due, as well as to the four British officers who acted as pilots and crew. Together they have enlarged the boundaries of imagination regarding the possibilities of military aviation in the near future.

This vessel is the first of six bought for experimental purposes. Successful as has been the flight, it has been treated by all concerned as an episode in the process of delivery. Yet it demonstrates the practicability of maintaining across the Atlantic a great reserve of machines remote from dangers of attack, and its performance is convincing evidence of the possibility of reinforcing within a few hours the more distant corners of the Empire should they be subjected to assault. Much of the progress made in military aviation must remain secret, but the landing of Consolidated Model 28 at Felixstowe yesterday enables the least expert to appreciate the new power that is made available when a 15-ton bomber flies from the West Coast of America with less of incident than attended a crossing of the Channel 25 years ago.

Maj. Fleet Sees Peace Via Air Lanes

Union 8-3-'39

150 Attend S. D. Dinner on Corps Anniversary

Within the next 30 years the airplane will become the greatest instrumentality for preservation and guarantee of world peace, Maj. Reuben H. Fleet, president of Consolidated Aircraft Corp., predicted last night at a dinner commemorating the 30th anniversary of the establishment of the army air corps.

More than 150 persons, including army aviation pioneers, city and county officials, military and commercial aviation leaders and chamber of commerce officers, attended the dinner in Casa del Ray Moro, Balboa park. The dinner was given by the Aero club of San Diego, the city and county and the chamber of commerce.

LAUDS 30-YEAR ADVANCE

After praising advance of army aviation in the last 30 years, Maj. Fleet said: "If we should enter into a world peace pact, we shall do so because of the airplanes. I firmly believe that I am engaged in a line of endeavor which will bring to mankind the greatest boon-enduring peace."

Col. Harvey S. Burwell, who was in command of Rockwell field during the World war and who is commander of the bombardment group stationed at March field, paid tribute to Maj. T. C. Macaulay, chamber of commerce executive secretary; G. Aubrey Davidson, civic leader; Col. Ed Fletcher; and the late George Burnham; for the aid they gave him while he was in command of Rockwell field. He also discussed the development of accident prevention in the army air corps.

PIONEERS PRESENT

Other army aviation pioneers present were Col. E. L. Hoffman, who developed the air corps parachute; Maj. Macaulay, who made the first night flight in 1913 and flew the first twin-motored seaplane; Maj. Fleet, who learned to fly at Rockwell field; Col. Roy C. Kirtland, U. S. A. ret., who was the first graduate of the signal corps aviation school at College Park, Md., and who flew the tractor plane in 1912 for the first time; Col. H. A. (Jimmy) Erickson, who took the first aerial photograph in 1911, and Maj. Harry A. Sutton, who won the distinguished flying cross and McKay trophy through his investigation of spinning characteristic of bombers.

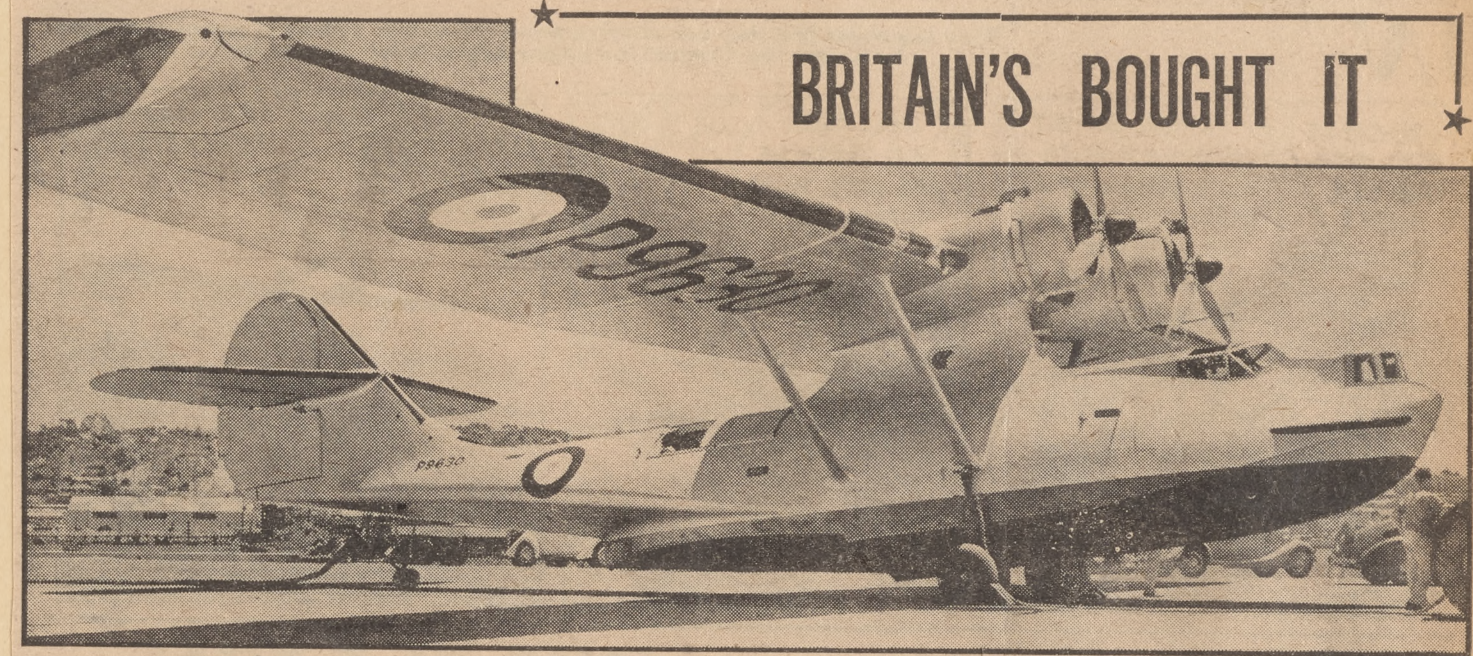
Herbert E. Fish, vice mayor, and T. Leroy Richard, chairman of the board of supervisors, brought greetings from the city and county, and Jackson L. Hicklin, chairman of the chamber of commerce aviation committee, brought greetings from the chamber of commerce. Others seated at the speakers' table were Col. Robert E. Guthrie, U. S. A., commandant of Ft. Rosecrans; Adm. Joseph R. Defrees, commandant of the 11th naval district; Maj. Edgar N. Gott, vice president of Consolidated Aircraft Corp.; John Robinson, famous soaring pilot; Capt. J. C. Horton, air corps supervisor of cadet instruction at the Ryan Aeronautical school.

Capt. H. B. Porter, air corps flight surgeon at the Ryan school; Lt. Lloyd Hopwood, assistant to Capt. Horton; Capt. W. W. Gross, commanding air corps base, and unit instructor, 91st group, air corps reserve; Maj. E. R. McReynolds, air corps inspector for Consolidated, Ryan and Solar aircraft companies; Maj. Joseph L. Stromme, Pacific coast chief in charge of procurement planning division of the air corps, and Col. S. J. Heidner, unit instructor of the organized reserves of San Diego and Imperial counties, of the 35th general hospital in San Diego, the Los Angeles mobilization center and all other army reserve units, except the air corps, in San Diego.

Earl Prudden, Aero club president, was master of ceremonies.

Thursday, June 29, 1939 THE DAILY MIRROR (London)

BRITAIN'S BOUGHT IT



Purchase of this giant American flying boat by Britain has been announced in Los Angeles.

Looks an awkward parcel to pack, doesn't it? But there won't be any freight charges.

Because Squadron-Leader J. R. Addams, of the Air Ministry, is to fly it from San Diego, California, to Felixstowe (Suffolk), next month.

★

EGO SUN

S.D. Sun 8-3-39

AVIATION SEEN AS PEACE AID

Fleet Cites Goal At Aero Club Dinner

Aviation

Another 30 years of aviation history will see the airplane used to preserve world peace, instead of to threaten war, Maj. Reuben H. Fleet, Consolidated Aircraft Corp. president, told an audience of distinguished Army fliers and local civic leaders on the 30th anniversary of the Air Corps.

A dinner sponsored by the San Diego Aero Club in Cafe del Rey Moro, Balboa Park, was attended by 150 persons, and featured talks by Major Fleet; Col. Harvey S. Burwell, Rockwell Field commander during the World War; Vice-Mayor Herbert E. Fish; Chairman T. Leroy Richards of the Board of Supervisors, and Jackson Hicklin, chairman of the Chamber of Commerce aviation committee.

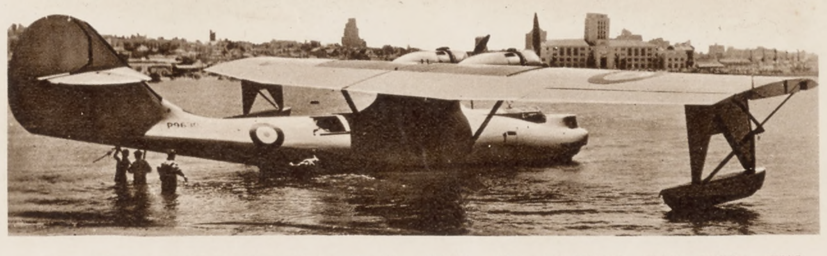
REVEALS GOAL

"I firmly believe that I am engaged in an endeavor which will bring to mankind enduring peace," Major Fleet said. "A world peace pact, if made, would be entered into because of airplanes."

Among veteran aviators present were Col. E. L. Hoffman, retired, pioneer in parachute development; Maj. T. C. Macaulay, who made the first night flight in 1913 and flew the first twin-engined Army plane; Col. Roy C. Kirkland, retired, first graduate of the Signal Corps aviation school, College Park, Md.; Col. H. A. Erickson, reserve, who made the first aerial photograph in 1911; and Maj. Harry A. Sutton, holder of the Distinguished Flying Cross and McKay Trophy as result of his studies of spinning characteristics of bombers.

MOCK RAIDS ENDING

A three-day simulated war on Southern California cities by waves of Army planes from March Field was to end today. Civilian observers, led here by the sheriff's office, tested a communication network warning adjacent cities of impending arrival of the attackers.



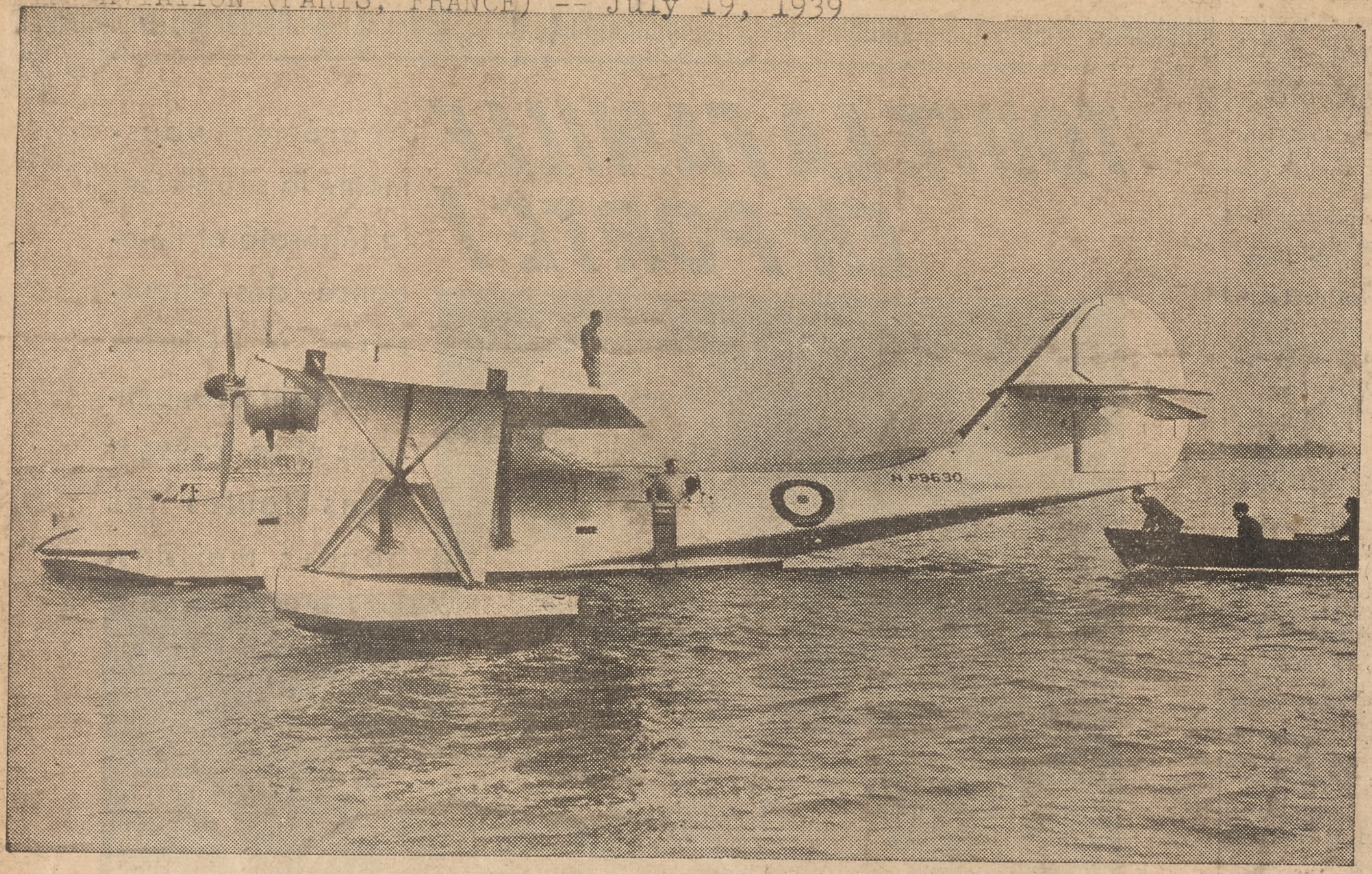
THE FIRST MILITARY FLYING-BOAT TO CROSS THE ATLANTIC, NON-STOP: THE CONSOLIDATED AIRCRAFT CO.'S "28-5" MODEL, BOUGHT BY THE BRITISH GOVERNMENT.

This machine, which has been bought by the British Government, left Botwood, Newfoundland, on July 14, and arrived at Felixstowe, Suffolk, on July 15, passing over England eleven hours after leaving Newfoundland. For 1800 miles a speed of 180 m.p.h. was maintained, and the 'plane flew through a storm at 13,000 ft., with ice forming on its wings. Our photograph is of particular interest as showing the retractable wing-tips used as floats for landing purposes.

Illustrated London News
7-22-39

ON LIVRE A TRAVERS L'ATLANTIQUE

AVIATION (PARIS, FRANCE) -- July 19, 1939



L'aviation maritime britannique ayant acheté pour essais, deux hydravions bimoteurs Consolidated, le premier de ces appar vient de lui être livré en vol, à travers l'Atlantique-Nord. Ce qui eût paru, il y a peu de temps, un exploit, devient maintenant chose normale.

Admiral Gets Giant Bomber As 'Flagship'

Union 8-9-39

One of the world's largest and most powerful long-range patrol bombers, a four-motored craft designed and built by Consolidated Aircraft Corp. and officially known as PBY-2, has been designated as the aerial flagship of Rear Adm. Arthur B. Cook, commander of scouting force aircraft.

Adm. Cook is to use the plane on inspection trips of patrol wings of his command, which extends from Panama to Alaska and Hawaii and along the Atlantic seaboard from New York to the Florida keys.

Assigned to command the PBY-2 is Comdr. Andrew Crinkley, pioneer naval flier and for the last two years assistant operations officer at Naval Air station. Comdr. Crinkley has been detached from the air station and attached to the U.S.S. Wright for special duty with the four-motored bomber. The plane is to be officially turned over to the navy today.

It is equipped with the latest safety flying appliances including hydromatic propellers and wing de-icers.

Comdr. Crinkley has been relieved as assistant operations officer by Comdr. Morton Seligman of the aircraft carrier Ranger.

Grand
Actio
RIC
ist
ed

Aircraft Chief To Inspect New Plane Bases

Union 8-9-39

By HOWARD MORIN

On a tour of inspection of new aircraft operating bases at Alameda and Sitka and patrol wings in the Puget-Sound-Alaska-Hawaii sector, Rear Adm. Arthur B. Cook, commander of scouting force aircraft, will sail aboard the flagship Memphis at midnight tonight.

The Memphis is due at Seattle Aug. 19 and will leave Aug. 23 for Sitka. From Alaska the cruiser is to proceed to Pearl harbor, returning here about Oct. 15.

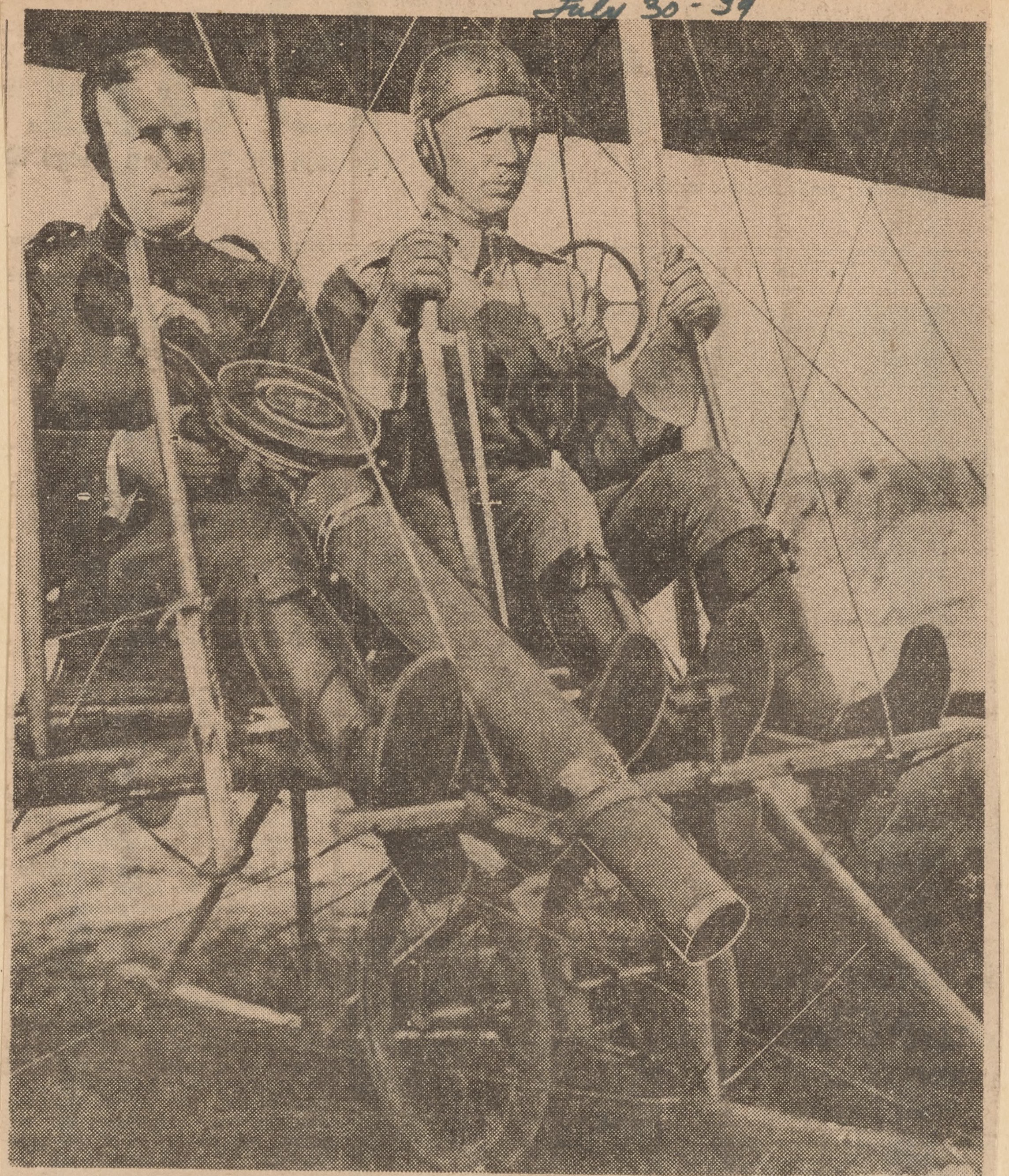
Adm. Cook announced that 27 patrol bombers of Patrol Wing 1, in command of Capt. Charles P. Mason, which flew from San Diego to Seattle Monday, will return here early next week. The tender Wright, plane-guard ship, now at San Francisco, also will return here as soon as the patrol bombers wing their way southward.

No further mass flights of navy bombers to Hawaii, Panama or Alaska are scheduled this year.

Battle force aircraft squadrons of the carriers Saratoga, Lexington, Yorktown and Enterprise will continue to base at North island until next spring. Naval authorities said they have not been advised where or when the next fleet problem will take place, indicating that the fleet will remain in the San Diego-San Pedro area until spring.

THE SAN DIEGO SUN

July 30-39



THEY MADE AVIATION HISTORY . . . . COL. ROY C. KIRTLAND, USA, ret., of San Diego, (right) as he appeared in 1912, when he piloted a plane which took aloft a machine gun for the first time in Army history. The man at the left was in charge of firing the machine gun while the plane was in the air.

☼ ☼ ☼

Army Air Corps Birthday To Be Observed In S. D.

San Diego, the city where 19 "firsts" in aviation history were made, Wednesday will join in a nation-wide observance commemorating the 30th anniversary of the Army Air Corp's founding.

It is a far cry from the $25,000 Wright plane purchased by the Army in 1909 to the modern high speed bombers which will fly over San Diego as a part of the observance.

A veritable "Who's Who" in Army aircraft history will be represented when a dinner sponsored by the San Diego Aero Club, the Chamber of Commerce, the city, the county and the Air Reserve Association is held in Cafe del Rey Moro, Balboa Park, Wednesday at 6:30.

Earl Prudden, Aero club president, said that Brig-Gen. Jacob E. Fickel, commanding first wing GHQ, March Field; Col. Robert Guthrie, commanding Fort Rosecrans; Maj. Lowell H. Smith, leader of the first round-the-world mass flight, and Maj. Oakley Kelley, who completed the first non-stop flight New York to San Diego, are among Army dignitaries who will be here for the celebration.

S. D. OFFICERS TO ATTEND

Among Air Corps officers residing in San Diego who played important roles in Army aviation history and who will attend the dinner, include. Col. Ed. L. Hoffman, who developed the air corps parachute and who issued orders for all pilots and passengers to wear 'chutes; Maj. T. C. Macaulay, who made the first night flight in 1913 and who broke many other national and world records; Col. H. A. Erickson, who made the first aerial photos in 1911; Maj. Reuben H. Fleet, Consolidated Aircraft Corp. president, who was assigned to establish the first air-mail route while he served as an air corps officer; and Col. Roy C. Kirtland, USA, ret., who piloted a plane in 1912, taking aloft a machine gun for the first time in Army history.

ORGANIZED IN S. D.

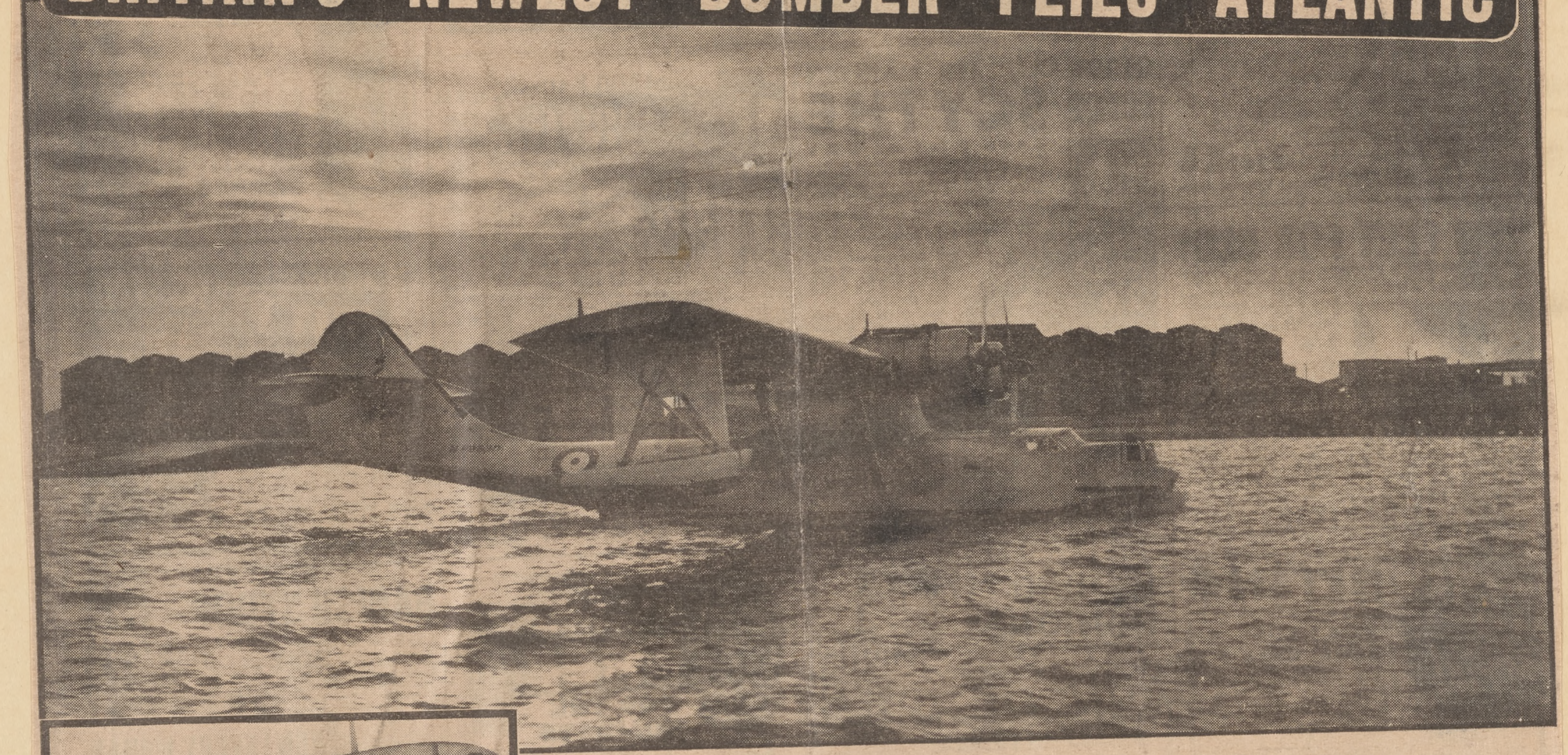
San Diego's part in the devlopment of the Army Air Corps constitutes a thrilling chapter in the progress of aviation. The first aero squadron of the Army, comprising 16 officers, 77 enlisted men and eight planes, was organized Sept. 1, 1914, in this city.

Mr. Prudden yesterday released a list of those to whom invitations have been extended to participate in the San Diego celebration. They are Col. Rush B. Lincoln, commanding post, March Field; Col. Benjamin Weis, executive officer, March Field; Col. Harvey Burwell, commanding bombardment group; Col. Carlyle Wash, commanding attack group; Maj. Frank H. Hackett, engineering department head; Maj. Joe Stromme, Pacific coast air corps representative in charge of procurement division; Maj. Leland Hurd, Pacific coast chief of air corps traffic inspection; Capt. W. W. Gross, commanding air reserve base here; Maj. E. R. McReynolds, air corps inspector, Consolidated Aircraft; Maj. E. N. Gott, Consolidated vice president; and more than 50 active, reserve and retired officers of Army, Navy, Marine Corps aircraft divisions.

Dinner reservations may be made by calling M-0124.

7-15-39

BRITAIN'S NEWEST BOMBER FLIES ATLANTIC



At dawn, the sleek bomber came to rest at Felixstowe.

FIRST bomber to be flight-delivered across the Atlantic arrived at Felixstowe yesterday from Botwood, Newfoundland.

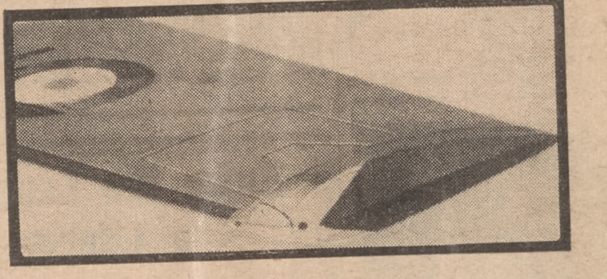
The giant 15-tonner is one of six Consolidated P.B.Y. 'planes, built at San Diego, California, to be delivered to the Air Ministry for tests.

The 'plane crossed the Atlantic in 15 hours. It had been pleasure cruising along the coast for three hours before landing. Four hours' petrol supply was still in the tanks.

Cruising speed of this war-bird is between 180 and 200 m.p.h. Range is 4,000 miles. Its twin engines develop 2,000 h.p. Construction is all metal.

Most notable feature is its clean lines. Wing span is 104ft., length 62ft. 6in., height 18ft. 6in.

● Float to stabilise 'plane in water and used for landing, retracts in flight becoming . . .



. . . a neat, streamlined wing tip.

SIMILAR machines are replacing the U.S. Navy destroyers for scouting and reconnaissance. Twelve P.B.Y.s recently flew from California to Honolulu.

The Captain said of this 'plane: "She made the Atlantic look silly." He flew it all the way.

Load the boat will carry is either 40 passengers or thousands of pounds of bombs. Details of full military equipment are still secret.

Crew (left to right): Capt. L. A. Yancy, Capt. R. Rogers (1st Pilot), R. Booth (Radio), G. B. Brown (Engineer).

This same crew recently flew a sister ship on a survey flight over the Indian Ocean. Each man is an expert and an experienced ocean flyer.

Union 8-8-39

27 S. D. Bombing Planes Land at San Francisco

Leaving here at 6:30 a. m., 27 navy bombing planes, on a maneuver flight from San Diego to the Pacific northwest, yesterday landed safely on San Francisco bay and anchored off Alameda, The Associated Press reported. Officers said the planes would leave for Seattle tomorrow.

Union 8-9-39

TREE-CLIMBING KANGAROOS SHOWN AT SAN DIEGO ZOO

Three kangaroos that climb trees, rare animals just arrived from New Guinea, may be seen at San Diego zoo—if you go within the next 10 days.

The animals, en route to New York headquarters of the American Museum of Natural History, are among the most valuable of hundreds of specimens acquired by the museum's expedition in Dutch New Guinea, led by Richard Archbold, who flew a San Diego-built craft.

William Richardson, young graduate of University of California, was a mammologist with the expedition and brought the kangaroos back to the United States. He will take them to New York when San Diegans have had an opportunity to view them.

Sun 8-7-39

27 BOMBERS ON MASS FLIGHT

Hop North Part Of Wing Maneuvers

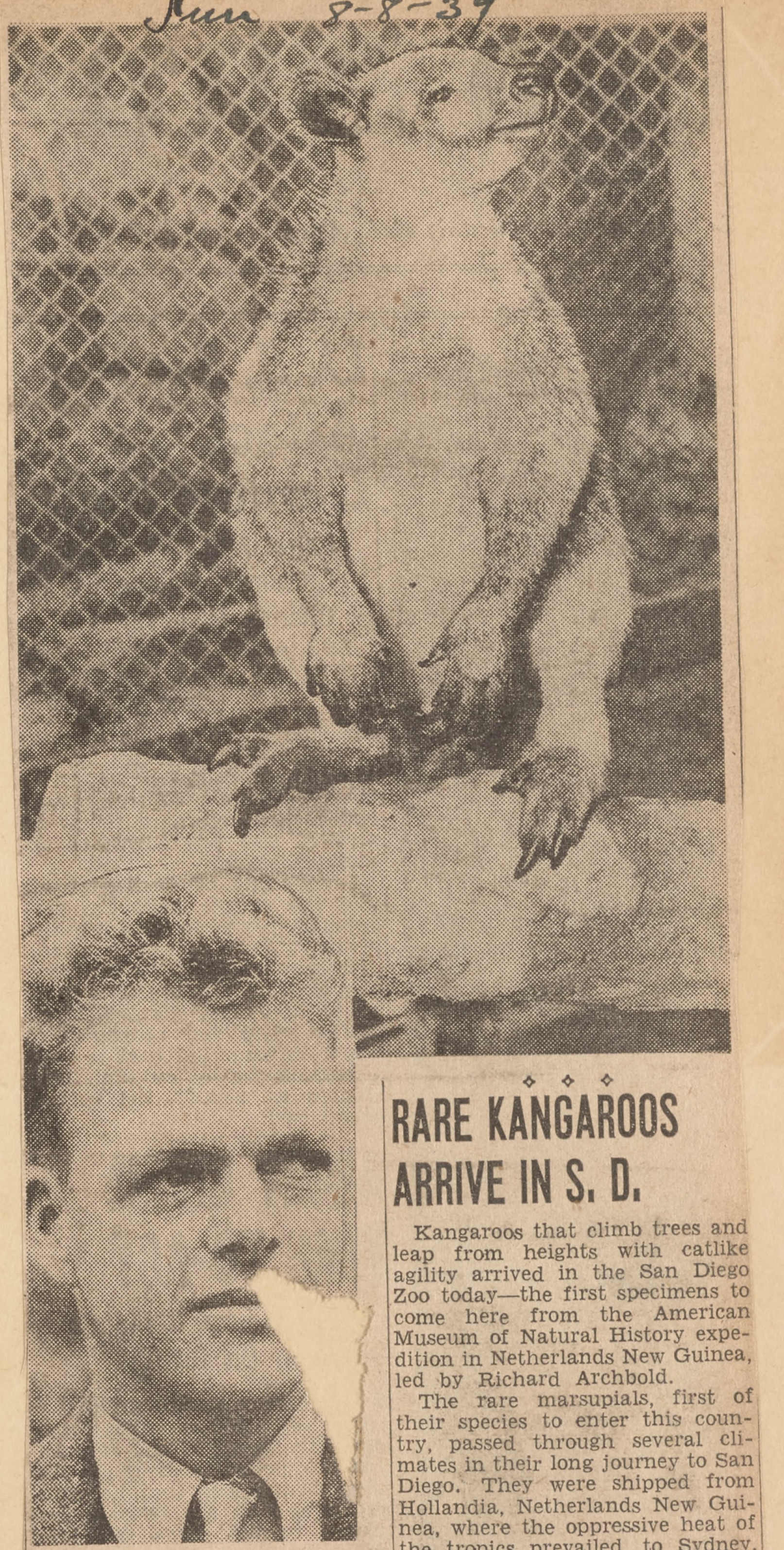
Twenty-seven Navy patrol bombers took off from San Diego harbor this morning on a mass flight to San Francisco and Seattle.

Known as wing maneuver, the hop was made by nine planes of each of the three squadrons of San Diego's Patrol Wing 1—VP-11, VP-12 and VP-13.

It was the first large scale flight operation of the wing under its new commander, Capt. Charles P. Mason, former executive officer of the aircraft carrier Yorktown. Capt. Mason, who received his commission as a four-stripe officer over the weekend in a promotion from the rank of commander, was sworn in by Rear Adm. A. B. Cook, head of the Aircraft Scouting Force shortly before the take-off. The admiral accompanied the planes as far as San Francisco and was to return here late today in a two-seater Navy plane, piloted by himself.

The boats will remain in San Francisco through tomorrow, proceeding to the Sand Point Naval Air Base in Seattle Wednesday. They will return to San Diego Saturday.

Sun 8-8-39



HOME WAS NEVER LIKE THIS . . . One of the three New Guinea tree-climbing kangaroos inspects the cage in which he will stay while visiting the San Diego Zoo. At left is WILLIAM RICHARDSON, mammologist with the Archbold expedition, who brought the animals back to the United States.

◆ ◆ ◆

RARE KANGAROOS ARRIVE IN S. D.

Kangaroos that climb trees and leap from heights with catlike agility arrived in the San Diego Zoo today—the first specimens to come here from the American Museum of Natural History expedition in Netherlands New Guinea, led by Richard Archbold.

The rare marsupials, first of their species to enter this country, passed through several climates in their long journey to San Diego. They were shipped from Hollandia, Netherlands New Guinea, where the oppressive heat of the tropics prevailed, to Sydney, Australia, in the midst of the southern continent's winter.

GUARDED CLOSELY

Trans-shipped on the Matson Line Steamer Mariposa, the kangaroos' health had to be watched closely by their "guardian," Dr. William Richardson, the expedition's young mammalogist, to enable them to survive successive weather changes in proceeding from the southern to the northern hemisphere.

In Hollandia, the kangaroos, tame, gentle creatures, became virtually domesticated pets of the scientists at the base camp, Dr. Richardson reported. They had the freedom of the camp, roaming at will and causing little trouble.

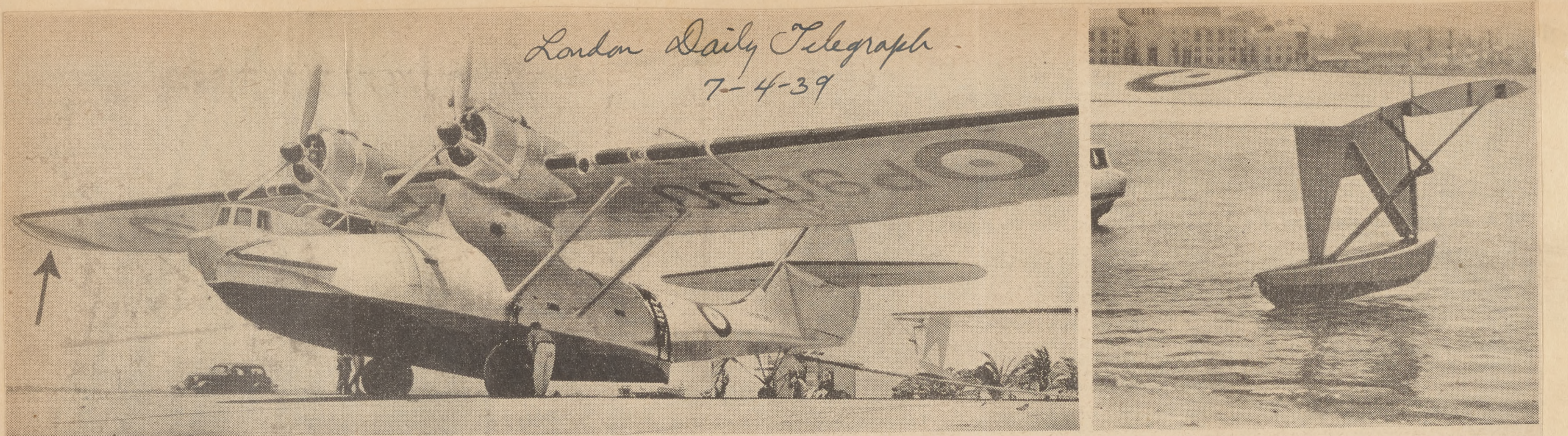
The kangaroos, whose native habitat is the mountainous area near the Netherlands New Guinea coast, climb trees much like the East Indies aborigine, according to Dr. Richardson.

Dr. Richardson said he planned to ship the animals to New York as soon as they become acclimated.

MANY SPECIMENS

Hundreds of specimens and a few live animals have been sent by the expedition, which spent 11 months in the New Guinea wilderness, to the New York headquarters of the American Museum of Natural History. Due here late this month, according to Consolidated Aircraft Corp. officials, is Mr. Archbold, whose flights in a Consolidated airboat into inaccessible jungle country with supplies and equipment, enabled the scientists to penetrate areas never before seen by white men. The plane, known as the "Guba," is in the local plant undergoing overhaul.

London Daily Telegraph.
7-4-39



U.S. FLYING-BOAT which is to leave San Diego, California, for Felixstowe shortly. It has been bought by the Air Ministry (note R.A.F. markings), and will be the first military aircraft to be "flight-delivered" across the Atlantic. A feature of the aircraft are the retractable floats, which become wing-tips in flight. The arrow shows one of the floats retracted; on the right, it is down.

CONSAIR GETS ARMY CONTRACT

Tribune 8-10-39

$8,485,000 In Order for Huge Bombers

The war department threw the expansion of air forces into high gear today with an award of $8,485,000 to Consolidated Aircraft Corp,. of San Diego, for construction of four-engine army bombers, part of a mass award of contracts through the United States totaling $85,978,000 for airplanes and engines, The Associated Press reported from Washington, D. C.

Consolidated officials, while confirming the report, stated they were forbidden by war department regulations to discuss the number or general characteristics of the planes. The Associated Press, however, stated that the new 4-motored bombers would be able at least to approach a speed of 300 miles an hour.

Another order for four-engined planes for the army also was placed with the Boeing Aircraft Co., of Seattle, for $8,090,000. In addition options were taken both with Consolidated and Boeing for possible future orders totaling $4,400,000.

The new order is the third for

(Continued on Next Page, Col. 4)

Tornado Destroys Ho

While the owner, Francis Ham
stroyed by a tornado which swept
storm struck. Hamilton's brother,

Halt Japan Aid At Once, Plea As Pact Cited

WASHINGTON, Aug. 10 (A.P.)—Sen. Schwellenbach (D-Wash), a member of the senate foreign relations committee, today urged the state department to take immediate steps to halt the flow of American war materials to Japan.

In a letter to Secy. Hull, Schwellenbach said this could be accomplished either by invoking an old wartime statute empowering the president to ban the export of any war materials in violation of law or by obtaining voluntary agreements of shippers to halt such exports.

"The object of this letter," Schwellenbach wrote, "is to suggest to you that there is available to the executive department of the government at any time the machinery by which the shipment of war supplies to Japan may be stopped."

Treaty Violation Charged

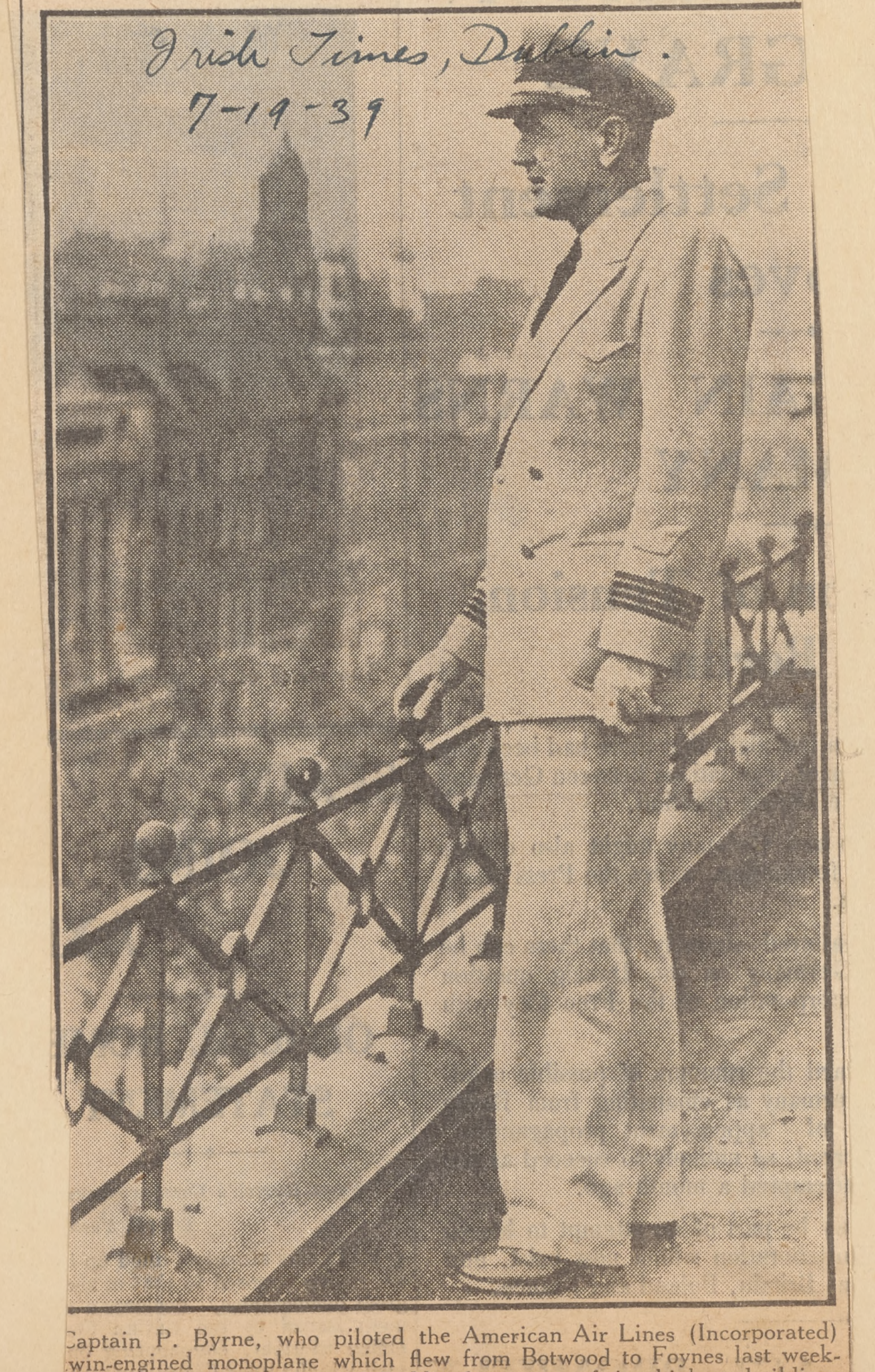
He referred to an argument which he made in the senate last week that the United States was violating the nine-power treaty, which pledges respect of the territorial integrity of China, by "supplying 70 percent of the more important materials used by the Japanese in the prosecution of the war against China."

Since a treaty becomes law, Schwellenbach said, any exportation of arms that abets the viola-

---

ATLANTIC FLYER'S VISIT

Irish Times, Dublin.
7-19-39



Captain P. Byrne, who piloted the American Air Lines (Incorporated) twin-engined monoplane which flew from Botwood to Foynes last week-end, gets an aerial view of Dublin from one of its highest buildings yesterday.

Atlantic Flight Skipper Seeks Relatives

Irish Press 7-19-39

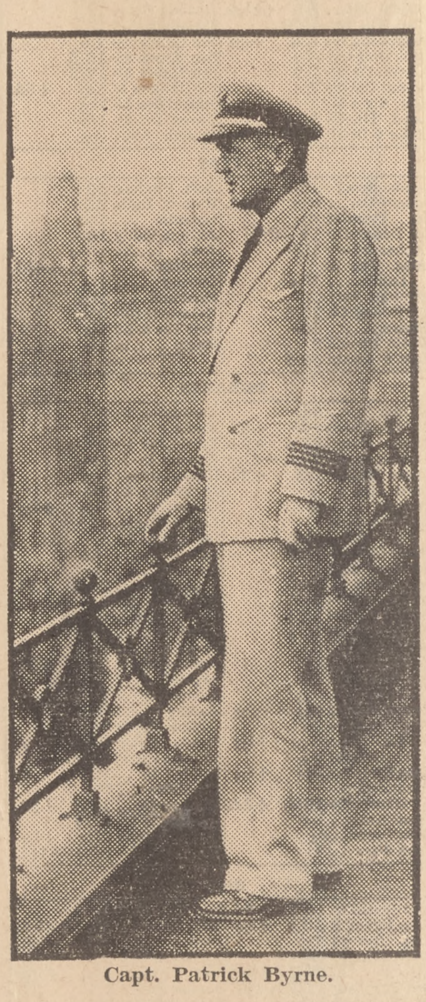
CAPTAIN PATRICK JOSEPH BYRNE, master of the American export seaplane, Transatlantic, left his vessel riding in Foynes Harbour, yesterday, and came to Dublin to search for relatives.

Seeking relatives also were two other Irish members of the crew of six—Chief Engineer Michael C. Doyle, Killarney-born, and "Mac," the radio operator—C. F. MacDonough, formerly of Galway.

The crew were received by the President at Arus an Uachtaráin.

Captain Byrne flew his plane from Botwood to Foynes on Saturday, took off on Sunday for Marseilles, and was back again in Foynes on Monday, flying along the Cork and Kerry coast.

He went to Ballygar, Co. Galway, to see his wife's uncle, Mr. Edmund Naughton. He was entertained very hospitably later, he said, by Superintendent Dunphy, Mr. Dick Kenny, Mr. O'Carroll and Mr. T. Flood, and yesterday drove to Dublin with his friend, Mr. M. J. Kelly, stopping at Athlone to attend Mass and see the new Cathedral.



Capt. Patrick Byrne.

Planning All-The-Year Atlantic Flights

The crew of the Transatlantic all belong to the United States Navy but Captain Byrne told an IRISH PRESS reporter that he is on leave from the Navy and that the present survey flights are on behalf of the American Export Line who are planning an all-the-year service to Europe to commence next spring—in the winter by the Azores route and in the summer by Foynes.

Captain Byrne's mother, who was Anna Fitzroy, came from Wexford, and his father from Ballygar. He was carrying a list of the Dublin relatives he was anxious to see: Patrick Byrne at the G.P.O.; Thomas Fitzroy, his mother's brother, of Churchtown, Dundrum; Thomas Byrne, c/o. George Dremmey, Booterstown; and Agnes Byrne, of Phibsboro' Road, Dublin.

He was preparing to make his round of visits by car. He had only a few hours to do it, he told the IRISH PRESS, because his plane would leave at 3 o'clock for Botwood and he wanted to get his quota of sleep before flying all through the night.

American firms were so busy with orders, he said, that it was impossible to get delivery of a mail plane for eight months or of a passenger plane for 18 to 20 months.

The Transatlantic, he said, could carry 16 passengers if equipped with seats and has a cruising range of 3,400 miles.

The Shannon was an ideal place for a base, he added. The Government was really looking to the future in their new scheme to make permanent air and land bases at Rhinanna. Foynes, he understood, was being used only until Rhinanna is ready.

Captain Byrne, who is 39, married Miss Margaret Howland, of Ballygar, and they have a daughter, Nancy Howland Byrne, aged 4. He is taking a copy of to-day's IRISH PRESS to give them in New York to-morrow.

Other members of the crew are; First Officer T. S. Tyrell, Third Officer W. W. Ehmer, and Fourth Officer Carlson.

SKYBRIDGE No. 1 IS GESLAGEN

Ook de Nederlandsche posterijen erkennen den nieuwen oceaandienst. Bijzonderheden over het Panair schema. American Export eveneens gestart.

rekend, en is ingericht voor nachtverblijf van 20 passagiers. Dit type moet den Oceaan in een nonstopvlucht Parijs—New-York overvliegen, en wel in geregeld dienstschema. Zoolang de groote marinebasis bij Versailles er nog niet is, leze men voor Parijs: Biscarosse. De ruk Frankrijk—Vereenigde Staten is een kleinigheid voor de Rochambeau, die immers een actieradius van 6000 km heeft.

De Franschen wagen zich echter nog niet zoo gauw aan een geregelden passagiersdienst over den Oceaan. Eerst wil men de kat, de Amerikaansche kat wel te verstaan, eens uit den boom kijken, dan zal men wel verder zien. En inmiddels zullen verschillende postvluchten gemaakt worden, waarvoor de nieuwe vloot van de kleine vliegbooten Flammarion, Jules Verne en Leverrier wordt ingeschakeld.

Stappen wij weer van de side line aan boord van de Amerikaansche clippers. Post en passagiers worden nu geregeld meegenomen. Het dienstschema is zoo ingekleed, dat men, in New York aan boord stappend in den middag, eerst aan boord luncht, het avondmaal gebruikt en den eersten nacht doorbrengt, na het horloge voor het slapen vier uur vooruit gezet te hebben. Wie getuige wil zijn van het landen bij de Azoren, moet vroeg opstaan, want om 7 uur meert de boot al in de baai van Horta. De clipper blijft hier net lang genoeg om te tanken en post af te leveren.

Wie vroeg is kan dan rustig ontbijten, wanneer de boot aan haar boei in den stralenden morgen ligt te schommelen, de lateren pellen hun ochtendeitje alweer op weg naar Lissabon. Daar moet het vliegtuig om 3 uur in den middag aankomen. Hier kan de reiziger op adem komen van den ren over den oceaan. Hij blijft overnachten in de Portugeesche hoofdstad, wat voorwaar geen kwaad werk is. Wij zijn echter geen reisbureau, maar een vliegblad, zoodat wij ons niet zullen laten gaan in beschrijvingen van het heerlijke Lissabon. Dat men hier zoolang blijft, heeft zijn goede redenen. In de eerste plaats om de reizenden niet al te zeer te vermoeien, daarbij wordt natuurlijk vooral aan de bemanning gedacht. Bovendien wordt Lissabon in de toekomst een knooppunt van aansluitende diensten op de Atlantische verbindingen. En om dergelijke aansluitingen goed te laten functionneeren, is een behoorlijke speling in het dienstschema noodzakelijk.

In den vroegen morgen, dus na een verdiende rust van rond 12 uur, vertrekt de vliegboot pas naar Marseille. Zij volgt hierbij de Spaansche kust, zoolang de regeering van generaal Franco nog geen toestemming heeft verleend om haar gebied recht over te vliegen. Dat zou een aanzienlijke besparing van tijd en van geld beteekenen, doch P.A.A. heeft gezegd: krijgen wij de vergunning nog niet, jammer, maar we vliegen toch door. En zoodoende heeft de passagier een prachtig reisje langs de Spaansche kust en in het gezicht van al de wondermooie steden langs de kust.

De terugweg duurt door den passaatwind, die in deze richting altijd tegenwind beteekent, acht uur langer. De dienst verlaat Marseille Zondagochtend vroeg, komt 's middags in Lissabon, om vandaar den volgenden morgen naar Horta te vertrekken. Daar strijkt de boot 's middags neer, blijft er maar even, en is Dinsdagochtend heel vroeg alweer in Port Washington terug.

Wie zin heeft in het reisje: enkele reis $ 375.—, retour $ 675.—, wat maar even meer is dan de eerste klas van een van de groote mailschepen.

Het eerste nieuws van American Export.

EINDELIJK is er dan nieuws van American Export! Wij hebben er lang op moeten wachten, r de Consolidated vliegboot van deze maatschappij los kwam, maar dat is dan eindelijk zoo ver. De Transatlantic, zooals deze boot heet, heeft reeds haar eerste reis volbracht. Kapitein Patrick Burne heeft de Consolidated (een zusterschip van de door ons uitvoerig beschreven Guba) van Jamaica Bay naar Biscarosse en Marseille gebracht. Het is nog niet heelemaal duidelijk, hoe de verdeeling wordt van de belangensferen der beide Amerikaansche maatschappijen. Zij zijn het er zelf nog niet over eens. Onze laatste berichten uit New York vermelden, dat American Export en Pan Air een soort status quo hebben aangegaan tot den herfst. Dan zal men de balans opmaken, want het is te gek, dat twee ondernemingen, die onder dezelfde vlag vliegen, een dienst al met concurrentie zouden beginnen. Op het oogenblik hebben zij immers beiden Marseille tot uitgangspunt. Onze berichtgevers meenen, dat het wel in de bedoeling ligt, dat American Export zich niet met passagiersvervoer zal inlaten, maar zich zuiver op vracht zal toeleggen. De post wordt dan voorloopig over beide maatschappijen gelijkelijk verdeeld, die dan tezamen twee vertrekdagen in de week zullen hebben.

Wij gelooven niet aan een zuiveren luchtvrachtdienst over een zoo groot traject; dat kan niet rendeeren, zelfs niet met een postcontract, waarvoor trouwens de Postmaster-General in New York nooit al te veel neerlegt. Dat schermen met een zuiveren vrachtdienst zal wel een manoeuvre zijn, om de publieke opinie af te leiden. Het is altijd ongewenscht, om veel gepraat uit te lokken voor een zaak in kannen en kruiken is, en het onschuldige motief van de vracht zal wel daarom gelanceerd zijn.

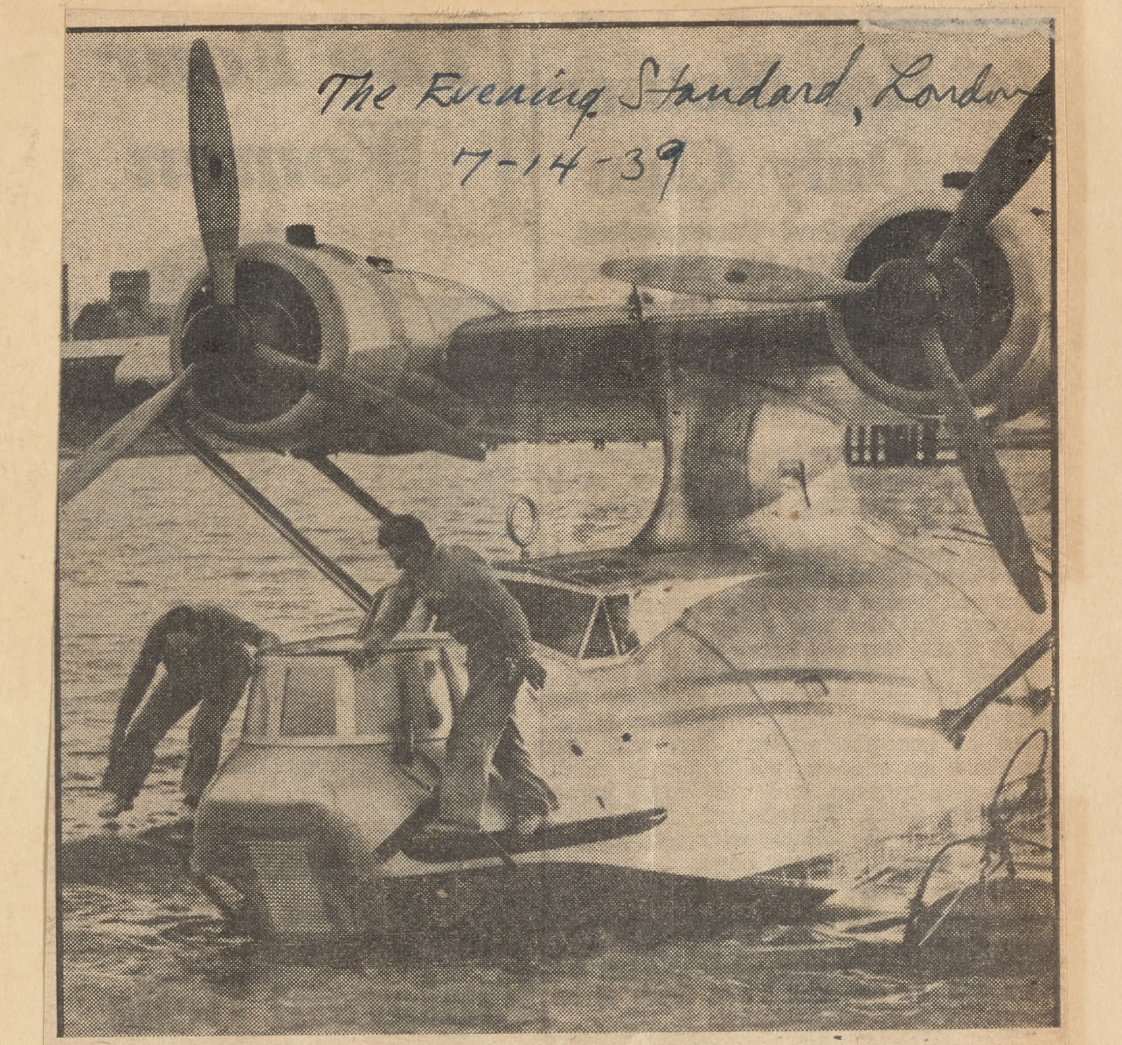
Het luchtbedrijf over den Atlantischen Oceaan is met dat al in volle gang. Amerikanen hebben de primeur van de ,,Sky Bridge'' en nu zij, als eerste ,,schapen'', over de brug zijn, zullen de Engelschen en de Franschen alras volgen.

De dienst van Pan American Airways is al ingeburgerd, hoe verwonderlijk het ook moge klinken. De Amerikanen hebben hem reeds vereerd met den naam: ,,Sky ferry to Europe''. Dat ,,inburgeren'' wordt altijd door de posterijen bepaald. Nu de Fransche en de Nederlandsche post den Pan Airdienst reeds officieel hebben ingeschakeld in haar vervoerssystemen, moet de luchtlijn New York—Marseille geaccepteerd worden. Zij is er.

AMERICAN
AIRLINES INC

Amerika's jongste luchtvaartmaatschappij, de American Export Airlines, kreeg onlangs van de Paramount filmonderneming het verzoek om haar nieuwe vliegboot te mogen leenen voor het maken van opnamen betreffende de nieuwe rolprent The Magnificent Froud. De Consolidated vliegboot diende als decor voor een scene waarin een internationaal bankier voet aan wal zet in de gefantaseerde republiek San Cristobal (zie onderste foto). Boven: een close-up van Miss Patricia Morison, de vrouwelijke hoofdfiguur uit deze film. Let op het breede luik in den romp, hetwelk ruim entree geeft tot het interieur van de vliegboot.

AMERI
EXPORT AIR



The Evening Standard, London
7-14-39

The flying boat on the water at Felixstowe after landing this morning.

Bomber Flies Atlantic in Fifteen Hours

BUILT IN U.S.A. FOR R.A.F.

THE first giant bomber flying boat ever to be flight delivered across the Atlantic arrived at Felixstowe to-day from Botwood, Newfoundland.

She is the first of six of similar type machines, built by the Consolidated Aircraft Company at San Diego, California, to be delivered to the Air Ministry for experimental purposes.

The flying boat took off from Botwood yesterday at 2.30 p.m. (B.S.T.) and made Felixstowe at 6 a.m. to-day. She had not been expected till about 7 a.m.

She is a 15-ton machine, has a cruising radius of 4000 miles and will be tested by the R.A.F.

Replacing Destroyers

This type of flying boat has now replaced destroyers in the U.S.A. navy for scouting and reconnaissance duties.

The pilots of the bomber were Captain Russell Rogers and Captain Lewis A. Yancy, with Flight-engineer G. B. Brown and Radio-engineer Raymond Booth.

"It was a splendid trip and although we had some rough weather we were only 15 hours in the air when we expected to be at least 17," said Captain Rogers.

CONSAIR GETS $8,485,000 ORDER; JOBS FOR 3000 SEEN BY JANUARY

Union 8-11-39

Bringing the total backlog of orders for army and navy bombers to $18,284,000, the war department yesterday awarded a contract to Consolidated Aircraft Corp. of $8,485,000 for construction of new-type four-motored planes which it is reported will have a speed in excess of 300 miles an hour.

NUMBER NOT DIVULGED

In awarding contracts totaling $85,978,000 for airplanes and engines to 11 American manufacturers, the war department announced options were taken with the Consolidated and Boeing companies for possible future orders amounting to $4,400,000.

While the number of planes involved was not divulged, military quarters believed it was more than 1500. Equipment to be provided by the government will increase their cost well beyond $100,000,000, the war department said.

New long range four-motor bombers to be made by Consolidated will attain speeds approaching 300 miles an hour, topping the performance of the "flying fortresses" already in service.

This is the third contract received by Consolidated this year from the war and navy departments. April 27 the Lindbergh field plant was awarded a $5,000,000 army contract for new bombers and March 22 the navy allocated $4,699,000 for the construction of long-range high-speed patrol bombers as replacements for existing PBY-type planes now in use in the various patrol wings.

3000 JOBS SEEN

Consolidated officials said a total of 1500 men are at work in the various departments. Due to difficulty in procuring material, they said it probably will be Jan. 1 before production will necessitate the employment of the maximum anticipated total of 3000 workers.

Reports from Washington are to the effect that the new army bombers will resemble the "flying fortresses" built by the Boeing plant at Seattle, but will be faster and even more heavily armed. They will be capable of flying great distances without refueling, carrying several tons of high explosive demolition bombs.

Louis Johnson, acting secretary of war, said the army's contracts awarded yesterday represent the largest peacetime arms order. Altogether the contracts represent purchases of more than 1000 planes of all types.

OTHER CONTRACTS

The largest single contract went to the Glenn L. Martin Co., of Baltimore, for two-engine bombers, costing $15,815,000.

For an undisclosed number of the same type plane, an $11,771,000 contract was awarded North American Aviation, Inc., of Inglewood, Calif.

Other orders were:

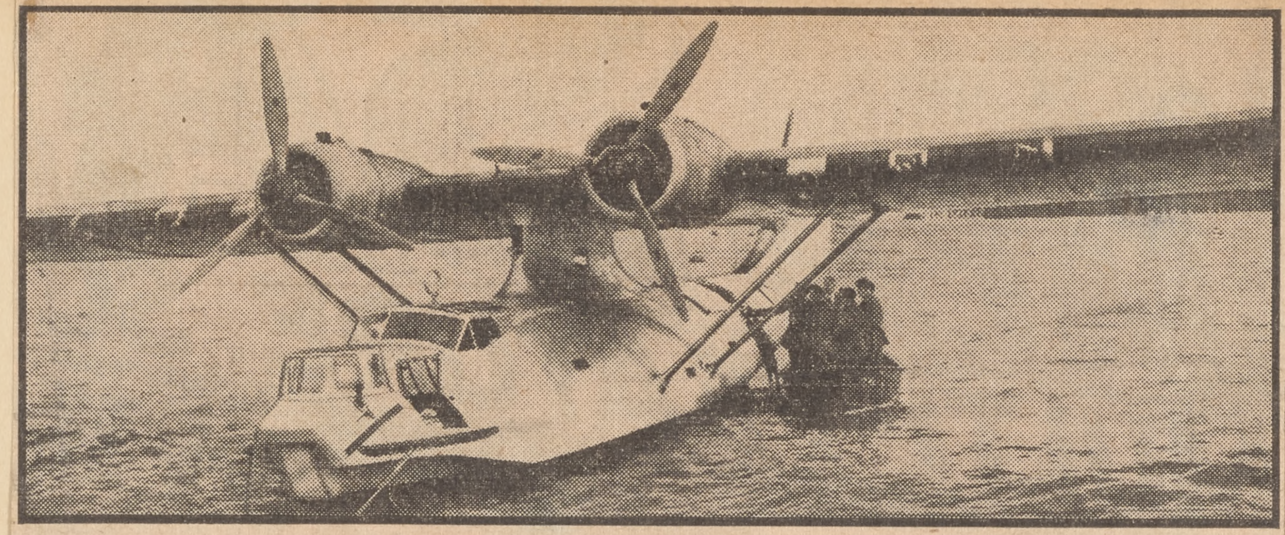
Advanced training planes—North American Aviation, Inc., Inglewood, $1,326,000.

Basic training planes — North American Aviation, Inc., Inglewood, $2,707,000; Vultee aircraft division, Aviation Manufacturing Corp., Downey, Calif., $2,986,000.

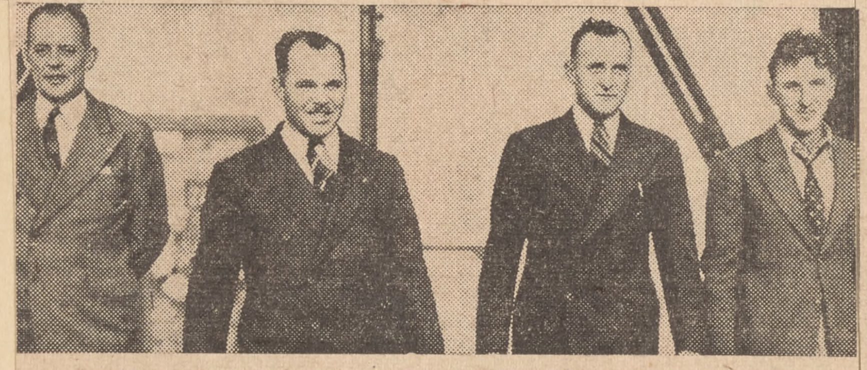
Primary training planes—Boeing Airplane Co., Stearman division, Wichita, $688,000, with option to buy $2,000,000 worth more.

Twin engine interceptor pursuit planes—Lockheed Aircraft Corp., Burbank, $4,845,000.

Orders for engines for these planes, aggregating $21,865,000 were: Pratt & Whitney division, United Aircraft Corp., Hartford, $12,320,000; Wright Aeronautical Corp, Paterson, N. J., $7,000,000; Allison Engine Corp., Indianapolis, $2,275,000; Aviation Corp, Lycoming division, Williamsport, Pa., $270,000.



The flying-boat at Felixstowe after flying the Atlantic in 15 hours.



The crew—from left, Captain L. A. Yancy, Mr. Russell Rogers, Mr. Raymond Boothe and Mr. Gerald Brown.

BOMBER-BOAT IS IN FOR BREAKFAST

The Evening News
Northcliffe House, E.C.4

FIRST DELIVERED BY AIR ACROSS ATLANTIC

7-14-39

ALL IN 15 HOURS

"WE COULD HAVE DONE IT IN ELEVEN"

FROM OUR OWN CORRESPONDENT

FELIXSTOWE, Friday.

SHORT, stocky Captain Russell Rogers, pilot of the American bomber flying boat which left Botwood, Newfoundland, 2,450 miles away at 2.30 p.m. yesterday, stepped ashore at Felixstowe to-day and said, with a broad smile: "Good morning, glad to meet you folks."

Wide awake and well groomed, Captain Rogers appeared as if he had just finished a before-breakfast spin, instead of a trans-Atlantic flight.

The plane which he, with his co-pilot, Captain L. A. Yancy, had brought from San Diego, California, is the first military aircraft to make a trans-Atlantic delivery flight.

4,000-Mile Range

One of a new type, with a flying range of 4,000 miles, it is equipped with machine guns, and is specially adapted to take the place of destroyers for scouting and reconnaissance duties, and in addition it can be used as a bomber and for torpedo purposes.

The flying-boat crossed the East Coast of Ireland at 2.10 a.m. to-day and could have reached Felixstowe at 3.30 a.m., only 11 hours after leaving Botwood.

As the morning sun came out, those who had been waiting since 3 a.m. on the pierhead at Felixstowe saw the plane make one circuit overhead before a landing which drew admiration from experienced R.A.F. officers.

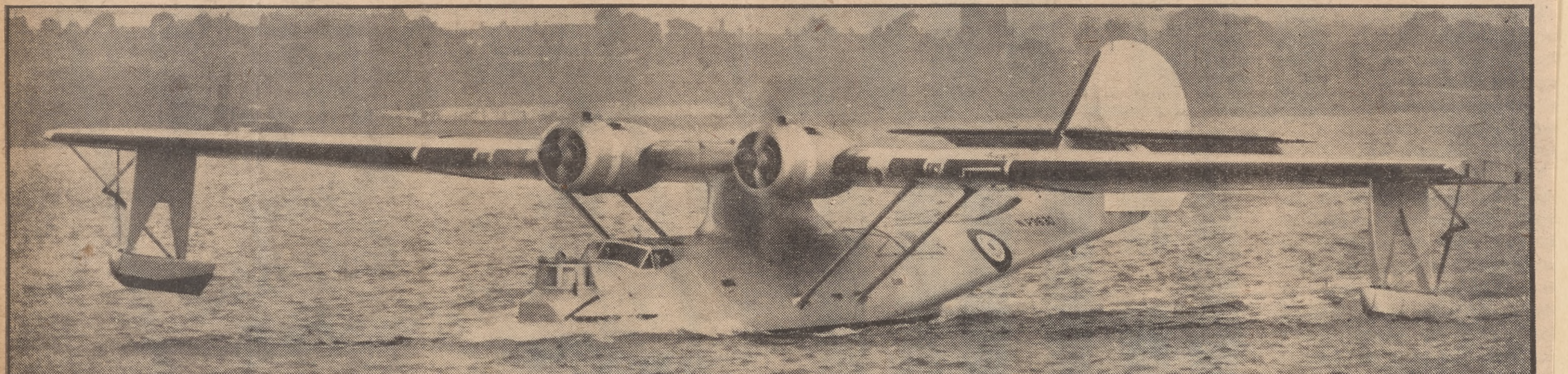
"It was a splendid trip and I am very pleased with the performance of the plane," said Captain Rogers. "She gave us no trouble at all, although we ran into one or two patches of bad weather.

"We expected to take 17 hours, but as it was we were in the air only 15 hours.

"Tired? No, but hungry, yes."

Page 24 England THE DAILY MIRROR Saturday, July 15, 1939

AMERICA DELIVERS THE GOODS



First military aircraft to make a transatlantic delivery flight. . . . The Consolidated 28-5 arriving at Felixstowe (Suffolk) early yesterday, having flown 2,450 miles from Botwood (Newfoundland) since the previous afternoon.

And she had to spend three hours cruising around the countryside before she could land because—she arrived four hours too early. Special R.A.F. exercises being carried out near Felixstowe prevented her from coming down at once.

One of six bomber flying boats which have been built for the R.A.F. in San Diego (California), this 15-ton ship has a cruising radius of 4,000 miles.

The Indian Ocean Sits and Smiles

The Aeroplane 7/19/39

BILL TAYLOR, officially Captain P. G. Taylor, late R.F.C. and R.A.F., unlike so many people who have had support from this paper, remembered as soon as he arrived in Africa after his voyage across the Indian Ocean, that THE AEROPLANE had supported his enterprise from the start. And, in his usual cheery way, he wrote from Nairobi on June 31, saying,—"Many thanks for your help and support of the job we have just done. I hope we have a chance to talk of it some day."

Unfortunately most of his letter is personal and confidential, chiefly, we imagine, because he is under contract either to the Australian Government or to the Australian newspapers not to publish anything essential about the voyage other than through agreed channels. In the meantime we can quote a few sentences which are Bill Taylor at his best.

He says of the Indian Ocean during the first stage across towards Cocos Island, thus:—

"During the day, when I *could* see it, I imagine the smile was a friendly one, and during the night, when I *couldn't*, it wasn't much use bothering about what sort of smile it was, if any. But generally the smile seems to have been one of welcome, even though at, or in the approximate vicinity of, Cocos it turned into a damned good laugh. I imagine that wasn't a bad thing, really.

"We had left Port Hedland just before sunset and ran through to midnight with good stars. Then it shut in and we got nothing worth while.

"We arrived, according to E.T.A. (estimated time of arrival) near Cocos and couldn't see much, climbed rather high and ultimately got the sun for a line. This helped, but with only one sun no source of information existed from which to fix position. We looked about for a bit in rotten visibility. Then I did some mental arithmetic, not unconnected with remaining fuel and distance to Batavia.

"The decision then had to be made whether we should go on looking for Cocos with a good chance of finding it but a possibility of further proof of the ineffectiveness of flying-boats in the open ocean if we didn't, or go to Batavia while we could. The latter seemed the right decision. Two days later when we did go to Cocos we didn't see the place till it was about two miles away."

And that, we think readers will agree, is a good enough explanation of why Bill Taylor's expedition went to Cocos by way of Batavia. Incidentally, of Cocos Island he says,—"It is an immensely interesting place, literally ruled by a King: Clunies Ross, whose great-grandfather first settled there. Their boatbuilding is the best I have ever seen for beautiful design and craftsmanship.

"We did a night run to Diego Garcia but had stars all the way. It is a marvellous natural flying-boat base. The next two runs were done in daylight, leaving in the early morning so as to bring the sun abeam for a run in from a hundred or two miles out.

"If you ever have a chance go to Mahé in the Seychelles. It is extremely beautiful, has a good climate, good health, and a comfortable place to stay." Bill Taylor makes some more interesting remarks about wind currents and climate, but they must not be quoted.

Like so many of the great feats in history the London papers have ignored this historical flight, which may in some future time save our Imperial communications, and in any case may be one of the World's great air routes.

A curious example of the lack of British thoughtfulness in contrast with the business acumen of other nations is seen in the fact that almost as soon as he arrived in Africa Bill Taylor received an invitation from the K.L.M. to fly with them to Singapore and on to Sydney by K.N.I.L.M. Could anybody refuse such a remarkable, if simple, courtesy?

Now we have to wait for Bill Taylor's book on this flight. It ought to be one of the best things that has happened for a long time.

---

8 1-2 MILLION JOB GIVEN BY U.S. TO CONSOLIDATED

Sun 8-10-39

Contract Part Of $100,000,000 Army Plane Allocation

Boosting the amount of unfilled orders at the Consolidated Aircraft Corp. to approximately $16,000,000, the War Department today awarded a $8,485,000 contract to the San Diego concern for construction of four-motored bombing planes, the United Press reported from Washington, D. C.

The award was part of a $100,000,000 allocation for expansion of the Army Air Corps—the largest for war equipment in the nation's peacetime history.

Together with previous contracts totaling $54,000,000, this is a major part of a $170,000,000 aviation development designed to bring the air corps' fighting strength to between 5500 and 6000 planes by July 1, 1941, an increase of 3000 over the present number.

BOOM DAYS RETURN

Boom days paralleling Consolidated's production peak in 1937 were anticipated at the plant. The $16,000,000 backlog was about $3,000,000 less than Consolidated's record work load since the plant was moved to San Diego from Buffalo four years ago. In May, 1937, when the factory was working night and day to keep pace with orders from the Navy for patrol bombers, 3840 employes were on the payroll.

Consolidated officials estimated that, when aluminum and other materials required for manufacture of the Army bombers are received from eastern mills, the number of employes will rise from its present total of 1600 to about 3000. It was emphasized, however, that no additional help will be needed before Jan. 1, 1940, when sufficient material has been obtained to begin production on the new contract.

TWO FORMER AWARDS

Last March Consolidated received a $4,700,000 contract to build six four-motored Navy patrol bombers. The following month the concern re-entered the Army field after several years' absence and was awarded a $2,800,000 order for an experimental prototype

Turn to Page 2, Col. 2.

LIBERATION HOUR FOR DANZIG HERE

Hitler Defense Against Poland Is Ready

By United Press

DANZIG—The "hour of liberation" is at hand when Danzig will be returned to Germany, Albert Forster, Danzig's Nazi leader, declared in a speech tonight after a conference at Berchtesgaden with Fuehrer Adolf Hitler.

Herr Forster gave assurance that Herr Hitler is ready to defend Danzig against Poland.

"Poland must understand clearly that Danzig will not stand alone and deserted in the world, but that the greater German Reich, our motherland, and our fuehrer, Adolf Hitler, are at all times determined to support and defend us in case of an attack from Poland," Forster said.

FIRMLY CONVINCED

"The Danzig population today is absolutely, clearly and firmly convinced that the hour of liberation is coming, and Danzig again will return to the Reich," Herr Forster said.

Herr Forster charged Poland with war threats and war agitation against Danzig, speaking at an open air mass meeting in the public square.

HOLD TOGETHER

In ending his speech, Herr Forster said:

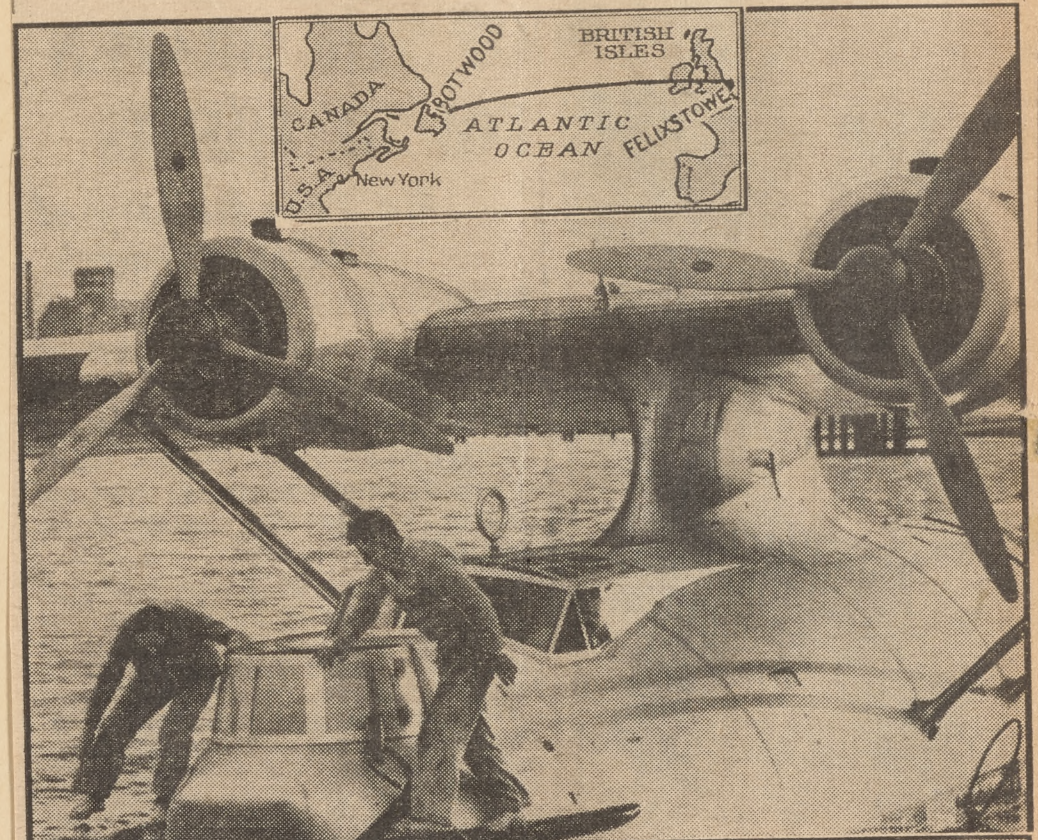
"In this hour, we can do nothing better than to swear that we will hold together, come what may, and resist every attack on this holy German soil with all means at our disposal, and will carry out

---

London Evening Standard, Fr

Bomber Flies Atlantic in Fifteen Hours

7-14-39



THE first giant bomber flying boat ever to be flight-delivered across the Atlantic arrived at Felixstowe to-day from Botwood, Newfoundland.

She is the first of six of similar-type machines, built by the Consolidated Aircraft Company at San Diego, California, to be delivered to the Air Ministry for experimental purposes.

The flying boat took off from Botwood yesterday at 2.30 p.m. (B.S.T.) and made Felixstowe at 6 a.m. to-day.

She is a 15-ton machine, has a cruising radius of 4000 miles and will be tested by the R.A.F.

This type of flying boat has now replaced destroyers in the U.S.A. navy for scouting and reconnaissance duties.

The pilots of the bomber were Captain Russell Rogers and Captain Lewis A. Yancy, with Flight-engineer G. B. Brown and Radio-engineer Raymond Booth.

Captain Rogers's first words on coming ashore were: "Good morning, glad to meet you, folks."

Radio-engineer Booth and Flight-engineer G. B. Brown.

Captain Russell Rogers and Captain Lewis Yancy.

The flying boat could have arrived at Felixstowe at 3.30 a.m., but while it was speeding across England Captain Rogers received a message advising him that aircraft without lights were flying in the vicinity of Felixstowe. He then altered his course and cruised along the coast for two and a half hours until all was clear.

8-11-39 Union

S.D. Business Upswing Noted

Plane Orders, Tourist Tide Spur Activity

A really optimistic note is being sounded in local business circles, with aircraft factory backlogs building up rapidly, store sales climbing and a swelling tide of visitors setting out in this direction, according to a general survey made yesterday.

With recent government contracts, Consolidated Aircraft's backlog is now more than $18,000,000, far above the August, 1938, mark while Solar and Ryan factories also reported orders on hand substantially in excess of those of a year ago.

JULY INCREASE SHOWN

July business figures from the department of commerce showed a 7 percent increase above the same month last year, after the first six months of 1939 had shown slow business. August sales have tended to keep up the tempo.

The increase would be greater, business leaders pointed out, were it not for the fact that a score of naval vessels, assigned here last year, have been transferred to the Atlantic fleet.

Bank debits for the week of Aug.

S. D. Business Upswing Noted

Union 8-11-39

(Continued from Page 1)

2 to 9 were $11,126,000, slightly under the $11,170,000 mark for August, 1938, but with summer now well under way the 1938 figures for the 1939 month are expected to be exceeded.

INFLUX COMES LATE

The summer tide of visitors is setting in later this year but figures compiled for July by the San Diego-California club shadowed an increase of 11 percent in out-of-town motorists. Hotels, while holding the exact figures confidential, indicated that their business was on the upgrade, also. Tourist camps and apartments have felt the effect of the increased flow of visitors, many of whom have delayed their trips until summer to visit the two expositions.

One of the large tour companies operating all-expense tours reported that July travel exceeded that of July, 1938, by 68 percent and was the biggest local business it ever had done.

The summer tourist tide is expected to continue at flood until the end of the vacation season. The fall and winter tourists then are expected to start arriving.

MORE PAYCHECKS IN VIEW

Backlogs at the aircraft plants insure a steady flow of paychecks into the pockets of an increasing number of workmen. This is being reflected in all lines of business here.

Possible effect of Works Progress Administration lay-offs is being studied but no one hazarded a guess on this yesterday. Nationally, business leaders appear to feel the lay-offs will not slacken the upward surge.

Guba Pilot Returns From Atlantic Hop

Union 8-11-39

Russell Rogers, chief pilot of Richard Archbold's "flying laboratory," the Guba, will arrive here from Felixstowe, England, today.

Rogers, with three other members of the Guba's crew, Lewis Yancey, navigator; Ray Booth, radioman, and Gerald Brown, engineer, ferried a Consolidated plane last month on a 5750-mile flight from San Diego to Felixstowe, stopping at Buffalo and Botwood, Newfoundland, en route. The plane was turned over to the British Royal air force.

Yancey returned here Tuesday afternoon and after a brief conference with Consolidated officials, left for the east on an extended vacation. Booth, Brown and Archbold are to remain east several weeks before coming here to again take off the Guba which is being overhauled at the Lindbergh field plant.

Union 8-17-39

Big Navy Plane Going to Alaska

Bound for Alaska where it will be used in extended flights, the navy's four-motored long-range patrol bomber, XPB-2Y, aerial flagship of Rear Adm. Arthur B. Cook, will leave here Sunday for Sitka.

Admiral Cook, scouting force aircraft commander, is to use the aerial flagplane on inspection flights to the navy's new and projected air bases in the Gulf of Alaska and along the Aleutian islands. The bomber, which recently was fitted up as Adm. Cook's air flagship, will be commanded by Comdr. Andrew Crinkley.

The craft made a trial flight from San Diego to San Francisco Monday, returning yesetrday.

Union 8-12-39

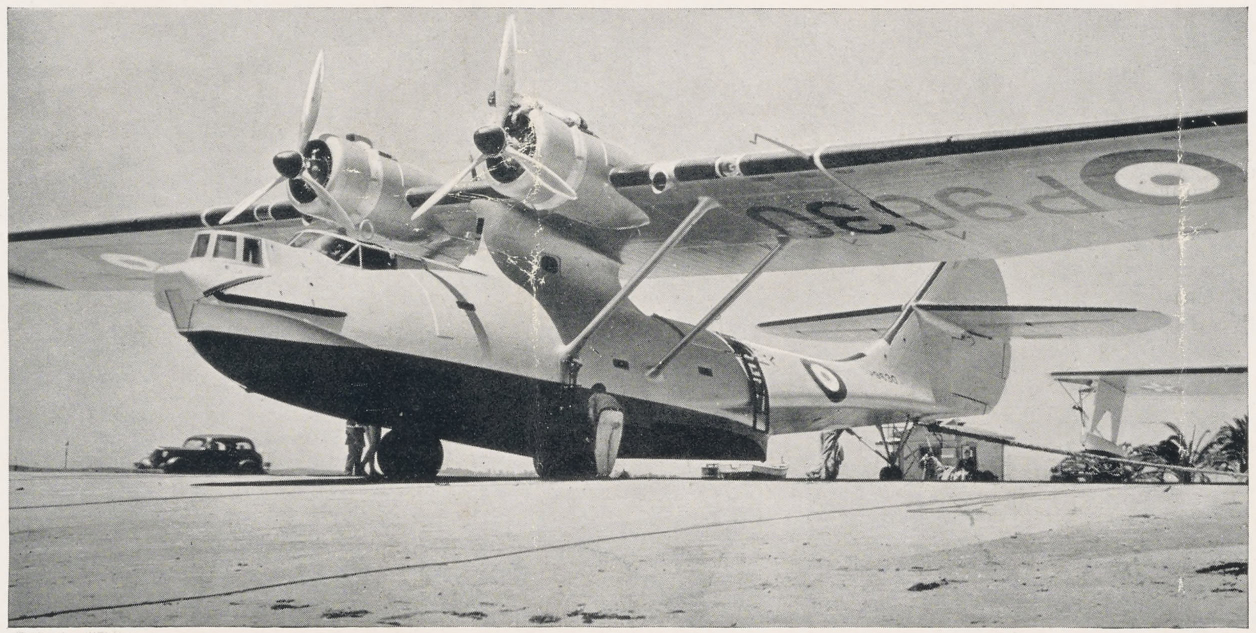
Consair Wins Contest For Bomber Designs

Brig. Gen. George H. Brett, chief of the air corps material division, announced yesterday that the Consolidated Aircraft Corp. had won a design contest for four-engine bombers conducted at Wright field, the Associated Press reported. Purchases of 2500 ships are expected to be based on results of the various contests.

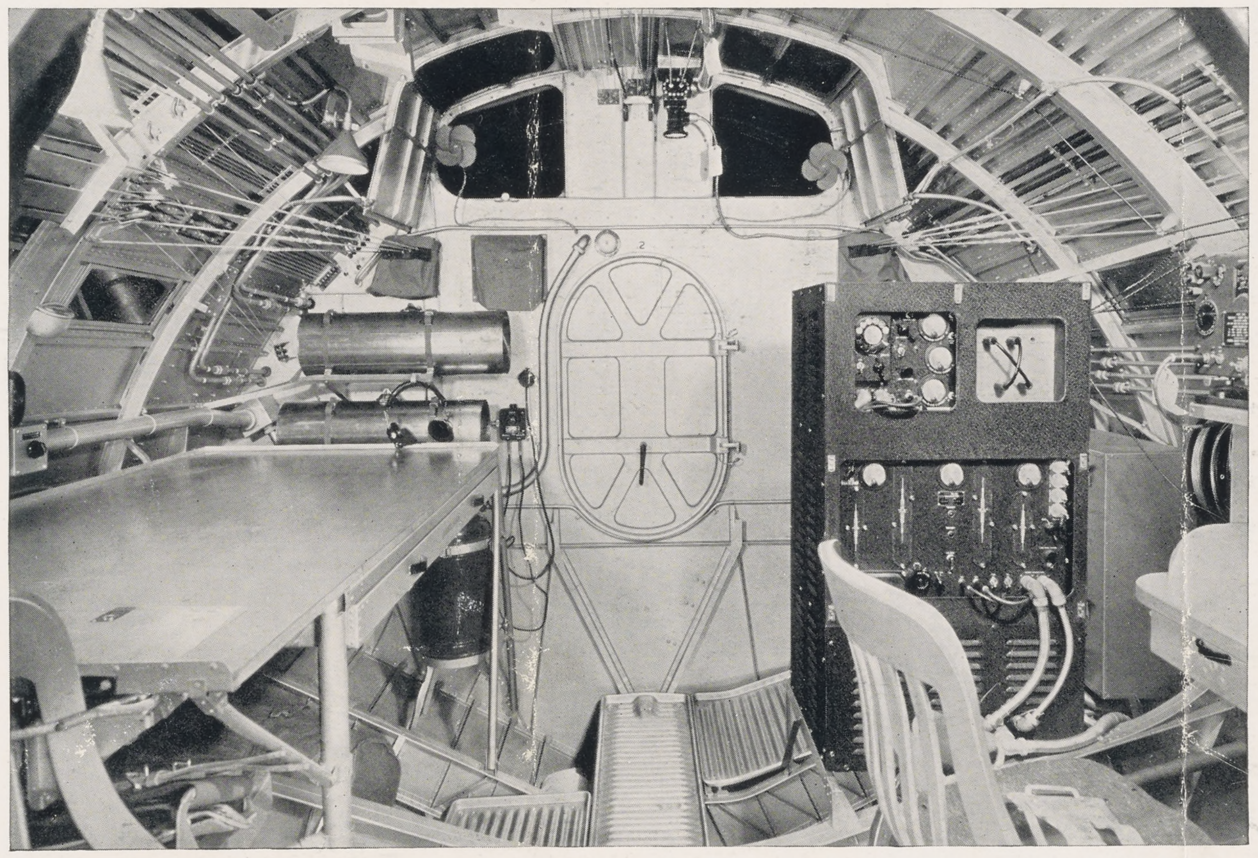
Glen L. Martin Co. of Baltimore won the twin-engine bomber competition, with the North American Aviation Corp., Inglewood, Calif.. second, and the Douglas Aircraft Corp., Santa Monica, third.

THE FIRST FLIGHT-DELIVERED WARPLANE

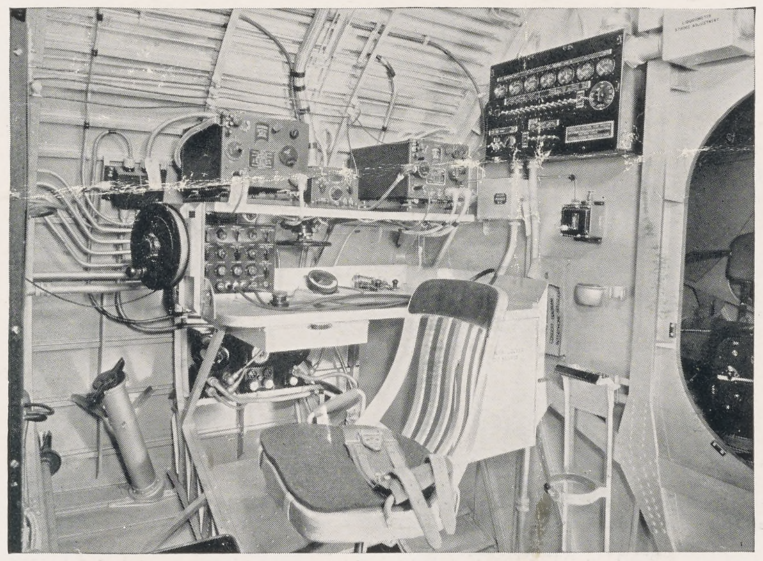
Which is to Fly 5,750 Statute Miles From San Diego to Felixstowe



READY TO MAKE FLYING HISTORY: The Consolidated Model 28-5 twin-engined flying-boat to be delivered to the Air Ministry on what will become the first military delivery flight across the Atlantic this month. The flight is from San Diego, California, to Felixstowe, Suffolk. The British designation numbers and Air Force colours have already been painted on the wings



FORWARD VIEW OF THE NAVIGATOR'S COMPARTMENT: On the left can be seen the chart table at which the navigator sits, while on the right is the radio operator's chair. In January last no less than forty-eight of these flying-boats flew in formation from San Diego Bay, California, to Coco Solo, Panama Canal zone, 3,087 miles non-stop, carrying 336 men



COMMUNICATION EQUIPMENT: A view of the radio installation aboard the Model 28 flying-boat. Strategically, the value of long-range flying-boats is more important to the British Empire than to any other group of countries in the world. One of these boats could easily be flown from England to the Persian Gulf and be in service the same day

THE COURSE OF THE FLIGHT

as officially arranged

Leave San Diego, California

Fly over Phoenix, Arizona; Albuquerque, New Mexico; Amarillo, Texas; Wichita, Kansas; Kansas City, Kansas.
Fly south of Chicago, Illinois.
Fly north of Detroit, Michigan.
Fly across Lake Saint Clare.
Fly over Toronto, Ontario; Ottawa, Ontario; Montreal, Quebec.
Fly south of Quebec, Quebec.
Land at Botwood, Bay of Exploits, Newfoundland.
Leave Botwood (55 deg. 21 mins. 27 secs. west) (49 deg. 08 mins. 30 secs. north).
Fly Great Circle course over north Atlantic.
Fly across centre of Ireland; Irish Channel.
Approach England at Cardigan Bay.
Fly across England.
Land at Felixstowe (Suffolk) England.

	Nautical Miles	Statute Miles
San Diego to Botwood	2,860	3,300
Botwood to Felixstowe	2,125	2,450
Total distance	4,985	5,750

At San Diego clear aeroplane and crew for Newfoundland and England.

At Botwood clear aeroplane and crew for England.

FLY WEST

YOU can now fly east; and you can now fly west. By air-liner you can fly east from London over Holland and Belgium into Germany, and on to Warsaw, Moscow, and beyond; or you can fly in a matter of hours right into the heart of the Balkans and on into Turkey; or you can fly as swift as an eagle over sea, mountain, and desert to India, Singapore, and Australia in time measured in days instead of the weeks of a decade ago; or, if you should so wish, you can branch off at Bangkok and fly across French Indo-China and up into Hong Kong, where, wonder of wonders, there may be a Clipper ready to fly you across the Pacific.

The air line companies who offer us these wonders can proudly proclaim achievement. We acknowledge their claim gladly. Especially do we honour those pioneer companies like Deutsche Lufthansa, Air France, K.L.M., and our own Imperial Airways who have opened up lines stretching thousands of miles away from their own national boundaries. And to Imperial Airways, who lead the way in carrying all first-class mail without surcharge as far south as Durban and as far east as Sydney (in conjunction with the Australian Qantas Company), we offer special congratulation.

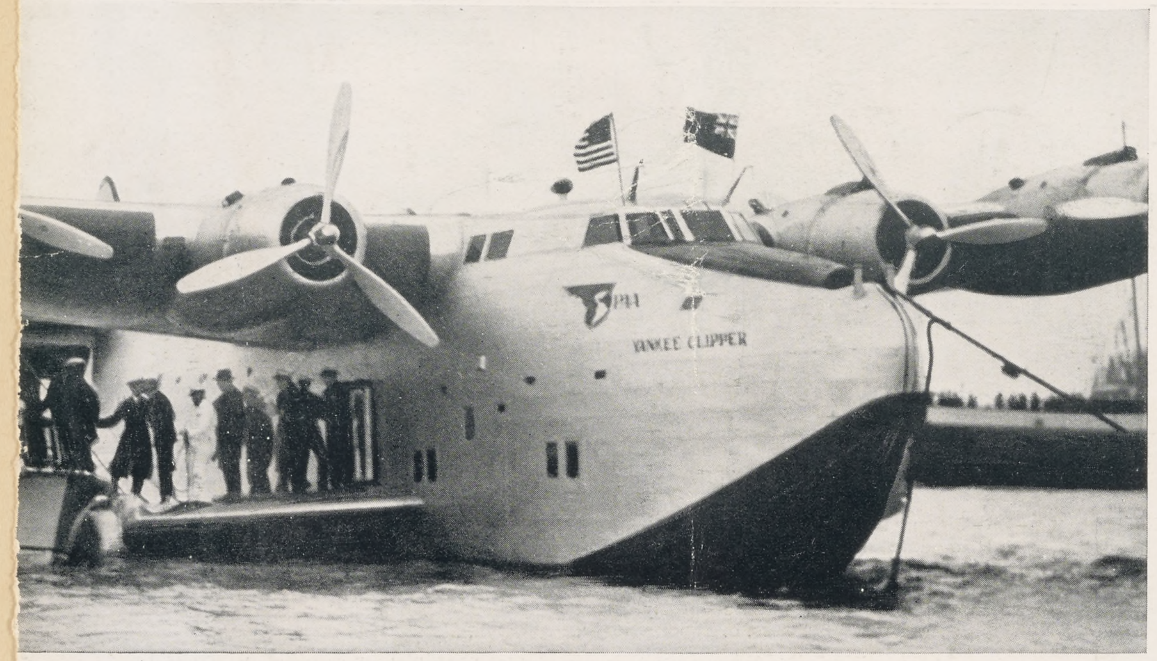
But in one important respect these air line developments have been, can one say, disappointing. From England they have stretched south and they have stretched east. We have therefore been geographically on the fringe of air transport development. Air traffic has only been able to emanate from us or to be absorbed by us. There has been no flow through us. For prosperity, just as a port at a river mouth depends on a flow of traffic for its existence, a flow of air traffic is desirable if not essential.

Now the forbidding Atlantic has been bridged by a regular air service, and the position of Great Britain in the realm of air transport is transformed. Instead of being on the outer fringe of an intensive network of international air lines, she finds herself in the position of a junction. Traffic from the United States flows into her from the west and on into Europe. And traffic from Europe flows into her from the east and on westward to the United States. At the moment, the traffic is obviously only a trickle; but can it be denied that it will be a fast-flowing stream within the next few years?

When you read of the carefree comfort that the first passengers experienced in the Clipper flying-boat the other day, of the nonchalance that came naturally to them as they flew across thousands of miles of ocean, you cannot help but wonder how the great Atlantic liners will fare in competition with the skyships in the years to come. Even to-day you can leave New York on Saturday and be in London on Monday and your ticket costs you less than cabin class on one of the big liners. Almost the worst that can be

"The Sphere"

—FLY EAST: Britain Becomes an Air Junction in Mid-1939



AN EPOCH-MAKING EVENT IN PASSENGER TRANSPORT RECORDED: July, 1939, is remarkable in the history of Anglo-American aviation, for during this month the first passenger services across the northern Atlantic were inaugurated by the American Clippers. The *Yankee Clipper* is here seen debarking her passengers on calm Southampton Water. This event transformed the air position of Great Britain

The New Geographical Situation

described by

NIGEL TANGYE

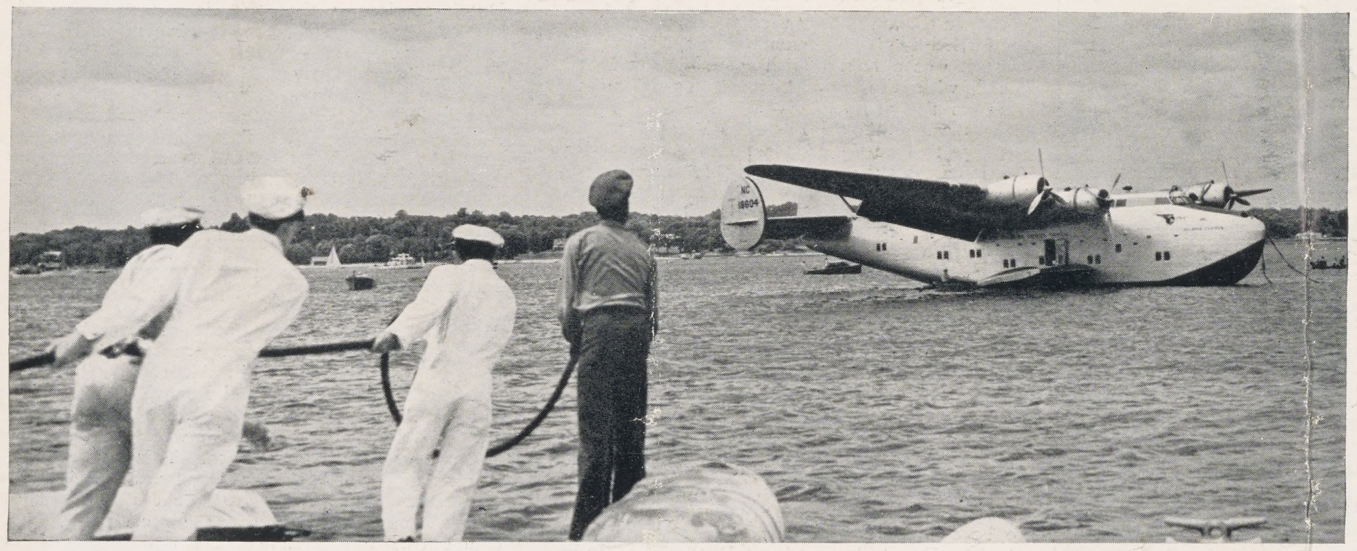
Here, unfortunately, she was held up for nearly three days, due to low cloud and fog. On such an important flight, the pilot was naturally going to take every precaution. But then she took off for Botwood and flew the 420 miles in under 3 hrs.

At Botwood she took on 3,485 gallons of petrol for the long ocean crossing of 1,920 miles. She arrived at Foynes 13 hrs. 38 mins. later and still with enough petrol in her tanks for a further flight of 1,700 miles. The average speed for the ocean flight was 144 m.p.h. If he had so desired, therefore, the pilot could have flown his heavy load of mail and passengers non-stop from Botwood to Constantinople. The flight from Foynes to Southampton was made in a little over 2 hrs.

The conquest of the Atlantic by air demonstrates, perhaps, more than any other branch of aviation activity, the tremendous pace of aeronautical science and development. It seems only yesterday when we welcomed Atlantic flyers as heroes. Indeed, it is only two or three years ago. Yet to-day we see the ocean crossed four times every week by flying-boats that carry nearly a ton of freight or mail and twenty passengers and flying to a schedule. It was twenty years ago that the Atlantic was first crossed non-stop, and the airmen were two Britishers, Alcock and Brown. So far ahead of their time were they that eight years were to pass before the feat was to be repeated. Then, in 1927, Lindbergh made his epic contribution to pioneer flight; but we are apt to forget that it was eight years after Alcock and Brown.

In retrospect eight years may not seem a very long time. But project your mind eight years ahead from to-day; do you dare to forecast where the giant strides of aviation will have led us?

> *On these pages, the success of the new* **Westward** *flying routes is emphasised. On the following double page the ease with which one can now fly* **Eastward** *is described by Michael Terry*



BACK FROM CROSSING THE NORTH ATLANTIC ON THE SOUTHERN ROUTE: While the *Yankee Clipper* was crossing the Atlantic to Foynes, Ireland, the *Atlantic Clipper* was flying from Port Washington to Marseilles via Horta and Lisbon and back to Long Island Sound, thus further connecting Europe with the United States by air

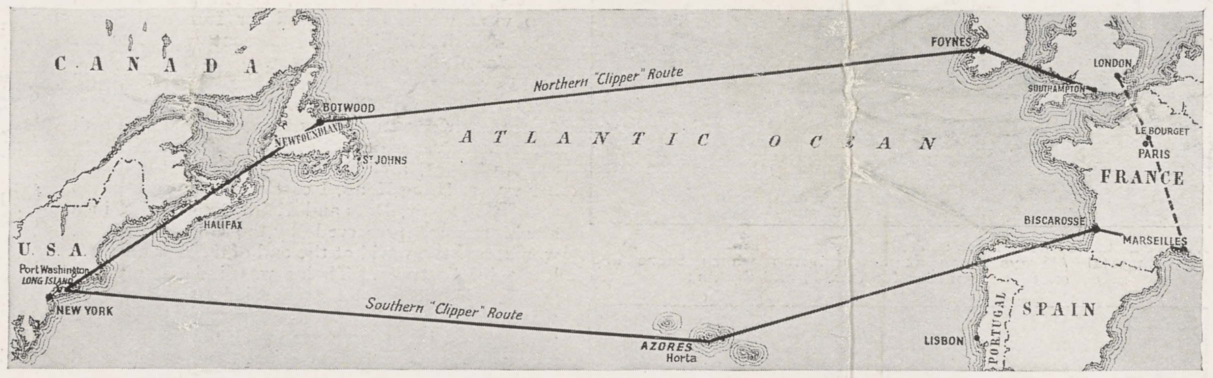
said of the Atlantic air service is that you must wait 25 mins. before your egg is boiled at the height at which you have to fly.

There are two routes that are being used by the Pan American Clipper flying-boats this summer. They are scheduled to fly a weekly return service on each, working up to two a week possibly by the end of the summer. These routes are termed the northern and southern routes. The southern route should have two services a week almost immediately.

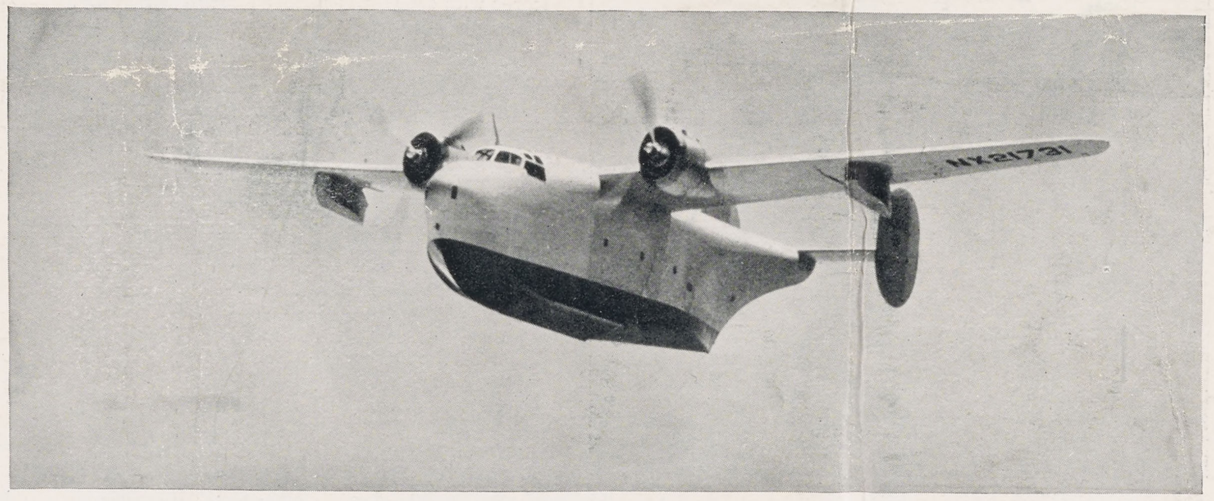
The southern route has its terminus at Port Washington, Long Island, New York. From there the Clipper flies direct to the Azores, a distance of some 2,400 miles. From there she hops the comparatively short distance to Lisbon where, after refuelling, she goes on to Marseilles which is the eastern terminus. On the first commercial flight she arrived at Lisbon 23 hrs. 15 mins. after leaving Port Washington.

The northern route is of more direct interest to us. This is the route to be flown by Imperial Airways. The Clipper flies from Port Washington to Shediac, New Brunswick, Canada. Thence she flies to Botwood, Newfoundland, and on across the ocean to Foynes where, after a short stop, she takes off for Southampton which is the eastern terminus.

For the flying time of this service, let us follow the flight of the first commercial service that reached Southampton on June 28. The *Yankee Clipper* loaded up at Port Washington with 1,734 lb. of mail, consisting of 60,000 letters, and took on board 19 passengers. Her crew numbered twelve. She flew the 620 miles to Shediac in a little under 6½ hrs.



THE TWO NEW PASSENGER AIR ROUTES ACROSS THE NORTH ATLANTIC: This is the first time that it has been possible to give such an air map of the north Atlantic. Hitherto the crossings have been sporadic, by individual effort. Now giant flying-boats, built by American skill and initiative, have inaugurated a regular passenger service across the wide and once-threatening Atlantic Ocean. The crossing of the ocean is now cut down to about a day and a half



A LONG-RANGE FLYER: A new 52-passenger long-distance flying-boat of the Consolidated Aircraft Corporation. All-metal construction coupled with high speed are the main characteristics of this craft. It is powered by two 18-cylinder, 2,000-h.p. Wright Duplex-Cyclone engines, said to be the largest and most powerful air-cooled aircraft engines in the world

---

RSDAY, AUGUST 10, 1939

ARMY ORDERS $100,000,000 WAR PLANES

WASH. D.C. TIMES HERALD

U. S. Throws Air Program Into High Gear by Biggest Award Of Peacetime Contracts

By ERIC FRIEDHEIM

In a spectacular preparedness move to keep the United States apace with the international armaments race, the War Department today awarded contracts for more than $100,000,000 worth of Army airplanes—the largest single aircraft purchase in peacetime history.

While dictator nations were placing emphasis on air might, this country, through the aircraft orders, served notice that its air expansion plan to bring this nation's first line of defense up to 5,500 fighting planes by July 1, 1941, was in high gear.

Number Not Given

The awards, made on a tentative basis, included $64,113,000 for various types of aircraft and $21,865,000 for aircraft engines. Other equipment for which separate contracts will be let will bring the orders well in excess of $100,000,000.

The War Department did not make public how many airplanes it was purchasing but the contracts awarded to various airplane companies included:

Four engined bombers: Consolidated Aircraft Corporation, San Diego, Calif., $8,485,000; Boeing Aircraft Company, Seattle, Wash., $8,090,000, and $5,400,000 additional to these two firms for planes to be ordered later.

$32,120,000 Warplanes Contracts Placed Here

L. A. Times 8-11-39

Southland Factories to Build 870 Ships in Race to Bring Air Force Up to 6000

Southern California aircraft factories yesterday took a large share of the War Department's contracts for $64,120,000 worth of military planes by booking exactly $21,120,000 of the total business—one-half of the latest awards in America's race to bring its air force to 6000 ships before 1942.

Engine orders placed with East Coast concerns bring the grand total of governmental defense expenditures yesterday to $85,978,000. Options for more near-future purchases adds another $7,400,000.

Most of the trade came to Los Angeles plants.

MORE THAN 850 SHIPS

Unofficial estimates of the total number of aircraft, ranging from mighty four-engined bombers to single-engined basic trainers, which the Southland will manufacture under this latest War Department award indicate that more than 850 ships are involved.

To North American Aviation, Inc., subsidiary of General Motors, at Inglewood, went $11,771,000 for fast-flying twin-engined bombers, $2,707,000 for basic trainers and $1,326,000 for advanced trainers.

Only the Glenn L. Martin Co., Baltimore, Md., topped this total with a single order for $15,815,000 worth of twin-engined bombardment machines.

Consolidated Aircraft Corp., San Diego, stepped squarely into the Army Air Corps picture—after years of building heavy-duty Navy patrol bombers—with a contract for $8,485,000 worth of four-engined "flying fortresses."

To Lockheed Aircraft Corp., Burbank, went a $4,845,000 order for what many experts class as the world's fastest twin-engined interceptor-type pursuit ship.

BASIC TRAINERS

For basic trainers, the Vultee division of the Aviation Manufacturing Corp., Downey, got $2,986,000.

By last night, as the War Department's allotments finished ticking over telegraph wires, Southern California's aircraft industry counted a total backlog of unfilled orders amounting to $123,500,000. Los Angeles County's four major plants alone represent $111,500,000 of this figure.

This means a 700 per cent increase over 1936's amount; 50 per cent over that of last February. More than 20,000 men now work in these factories. Hundreds more will be added to pay rolls.

Based on prices disclosed during the opening of bids recently, Los Angeles' latest contribution to the eventual 6000-plane air force will reach approximately 870 machines. This is the breakdown by companies:

North American: An estimated 100-150 Model NA-40 attack bombers powered with twin 1350-horsepower engines, tricycle landing-geared, highwinged, and capable of more than 300 m.p.h.; an estimated 300 basic trainers; an estimated 100 advanced trainers.

Consolidated: An estimated 40 four-engined Type 24 landplane bombers.

Lockheed: An estimated 30 twin-engined Model XP-38 interceptor pursuit ships capable of better than 400 m.p.h. This ship, virtually a "flying wing," boasts liquid-cooled engines and carries six heavy-caliber machine guns. Last February this single-seater streaked across America in 7h. 43m., once attaining 420 m.p.h.

Vultee: An estimated 300 basic trainers.

SCATTERED ORDERS

Other orders scattered by the War Department throughout the United States include Martin's $15,815,000 contract; an $8,090,000 order for four-engined "fortresses" from the Boeing Aircraft Corp., Seattle; a $688,000 order from that concern's Stearman division, Wichita, for primary trainers.

Engine orders totaling $21,865,000 were given to Pratt & Whitney, Hartford, Ct., ($12,320,000,) Wright Aeronautical Corp., Paterson, N.J. ($7,000,000,) Allison Engine Corp., Indianapolis, ($2,275,000,) and Lycoming division of the Aviation Manufacturing Corp., Williamsport, Pa. ($270,000.)

Some 1600 planes still remain to be purchased, it was disclosed.

LARGEST BACKLOG

Although unmentioned in yesterday's contract awards, the Douglas Aircraft Co., Inc., Santa Monica, still shows one of the nation's largest backlogs, $48,000,000, chiefly as a result of an order for approximately 150 attack-bombers totaling $15,000,000 filed last May.

Crew That Flew Ship to England Returns

NEW YORK, Aug. 3. (AP)—Capt. Lewis Yancey, American aviator, returned today aboard the liner Washington after making the first "flying delivery" of an American plane to England. He flew a Consolidated Aircraft Co. flying boat from California to the Royal Air Force base at Felixstowe, Eng. It was his fourth trans-Atlantic flight. He left San Diego July 12 and arrived in England July 15.

His crew, Russell Rogers, copilot; Gerald Brown, engineer, and Raymond Booth, radio operator, returned with him.

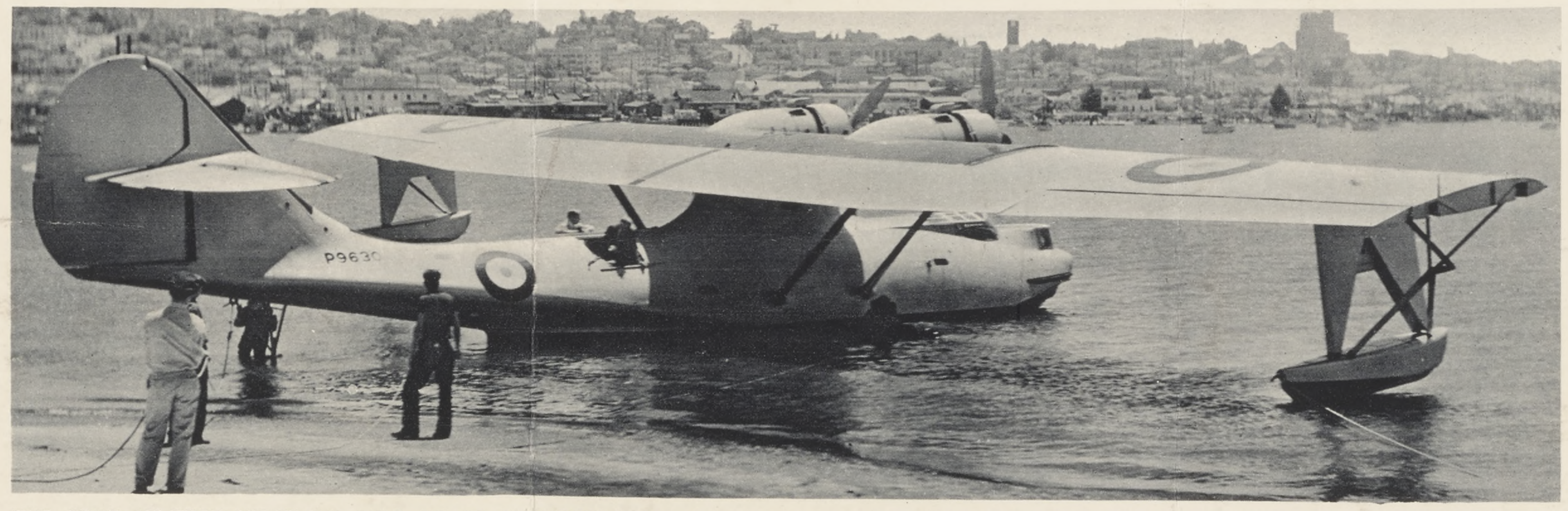
SD Times 8/4/39

Trib. Aug 17-39

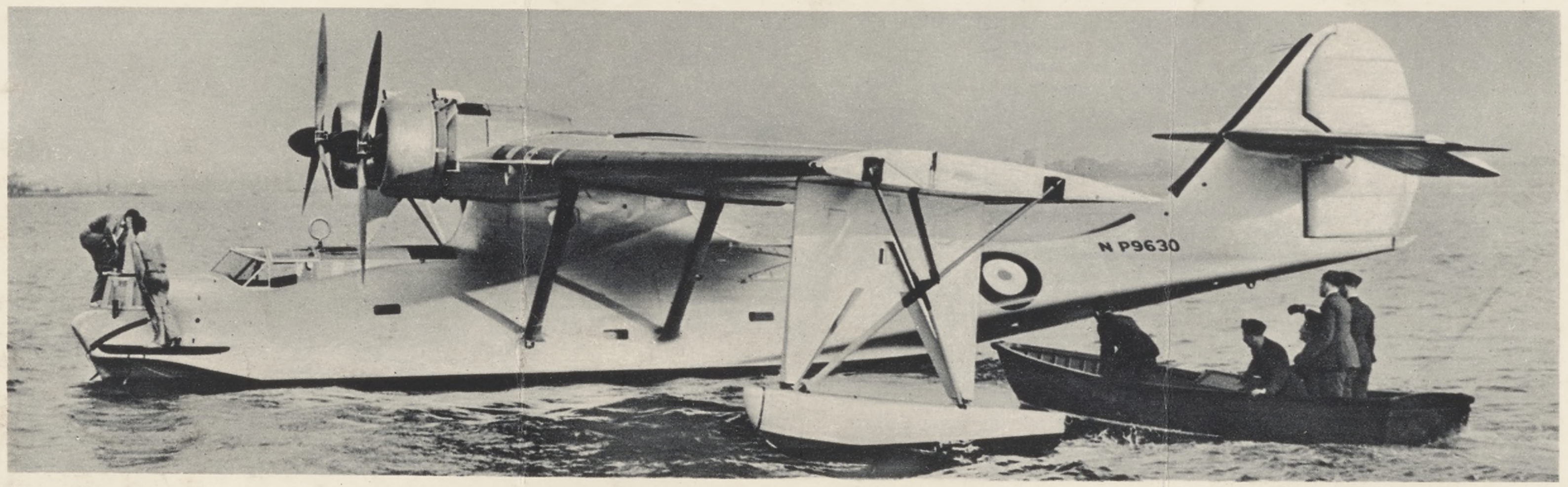
Consair Design Wins In Bomber Contest

Consolidated Aircraft Corp. has won a design contest for 4-engined bombers conducted at Wright field, The Associated Press reported. Purchase of 2500 planes are expected to be based on results of the various design contests. The Glen L. Martin Co., of Baltimore, won the twin-engined bomber competition, with the North American Aviation Corp., Inglewood, Calif., second, and the Douglas Aircraft Corp., Santa Monica, third.

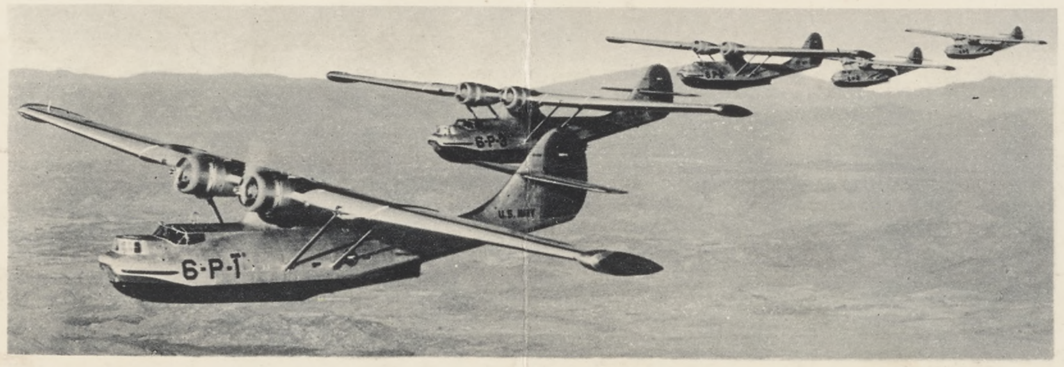
SAN DIEGO TO FELIXSTOWE: HESTON TO JERSEY



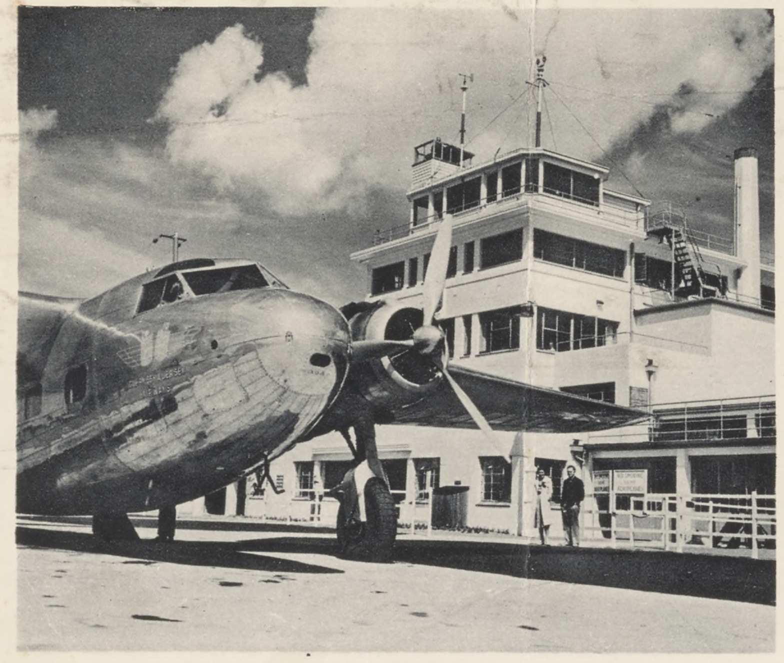
THE FIRST MILITARY AEROPLANE EVER TO BE FLIGHT-DELIVERED ACROSS THE ATLANTIC: The Consolidated flying boat Model 28-5 at rest in San Diego Harbour, California, before setting out for Felixstowe, England, via Botwood, Newfoundland. The Consolidated arrived safely at Felixstowe last week, making the long trip of 5,750 miles without mishap. She has been bought, just as other foreign aircraft have been bought by the Air Ministry, in order to be tested and examined in British conditions of service. She is largely constructed of aluminium alloy. The type has a range of 4,200 miles when carrying a fair military load

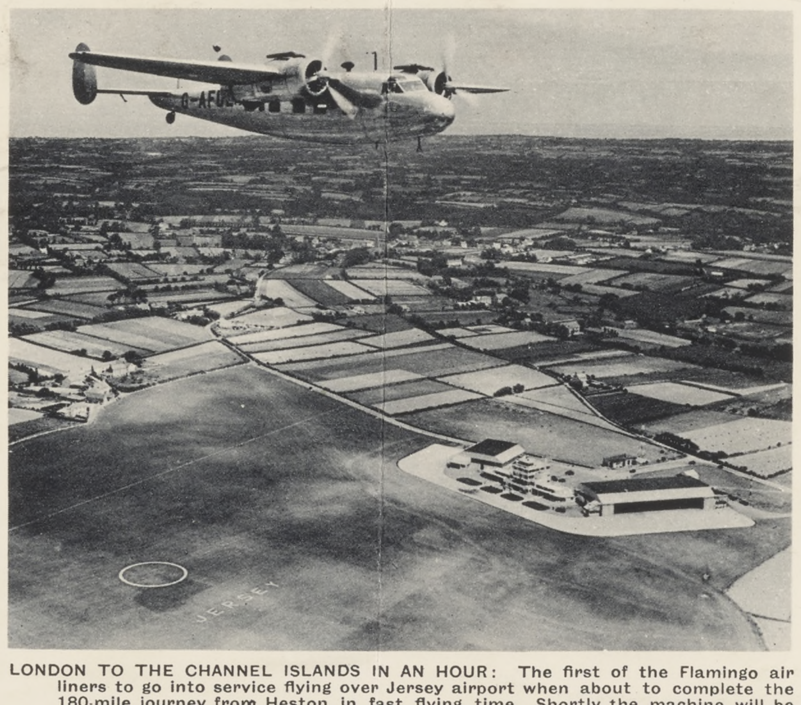


"LANDFALL" IN ENGLAND: The Consolidated flying boat at Felixstowe after completing her 5,750-mile flight from San Diego, the only halt on the way being at Botwood, Newfoundland. The Consolidated has many unusual features, including wing tips that can be retracted during flight in order to reduce wind resistance to a minimum. The U.S. Navy is now using long-range bombers of this type for patrol work and in certain respects they are supplanting destroyers. The carrying capacity is said to exceed that of any military plane manufactured in Europe, this being in part accounted for by the skilful positioning of the fuel tanks



CONSOLIDATEDS FLYING IN FORMATION: The long-range bombers seen as they set out on a delivery flight from the American mainland to Pearl Harbour, Honolulu. Many similar routine delivery flights between bases thousands of miles apart have been carried out by the makers with 100 per cent. success. *Above on right*—The crew of the Consolidated at Felixstowe





LONDON TO THE CHANNEL ISLANDS IN AN HOUR: The first of the Flamingo air liners to go into service flying over Jersey airport when about to complete the 180-mile journey from Heston in fast flying time. Shortly the machine will be making several trips every day. The saloon, fitted with twelve armchair seats, has ample headroom. *On left*—The Flamingo at rest on the concrete at Jersey airport

---

U. S. Arming Sped by Record Plane Contracts

WASH. D.C "STAR"
8-10-39

Over 1,000 Aircraft Ordered, Costing $100,000,000

By the Associated Press.

The War Department accelerated the expansion of Army air forces today with an award of contracts totaling $85,978,000 for aircraft and engines.

Acting Secretary of War Louis Johnson said they represented the largest peacetime arms orders.

Including equipment, which will be provided by the Government, for which separate contracts are to be let, more than $100,000,000 was represented, the War Department said.

The largest single contract went to the Glenn L. Martin Co. of Baltimore, for two-engine bombers, costing $15,815,000.

More Than 1,000 Ships.

For an undisclosed number of the same type plane, an $11,771,000 contract was awarded North American Aviation, Inc., Inglewood, Calif.

Altogether, the contracts represented purchases of more than 1,000 planes of all types, military circles understood, although numbers were not disclosed in conformity with the new policy of secrecy.

The War Department indicated that new four-motor bombers—$17,394,000 worth ordered in separate groups from Consolidated Aircraft Corp. at San Diego, Calif., and Boeing Aircarft Co. at Seattle—would be able at least to approach 300 miles an hour.

'Flying Fortresses' Improved.

The planes ordered from the Boeing company are an improved version of the "flying fortress" which averaged 263.8 miles an hour in a transcontinental flight last week.

Fastest of the new planes are $4,845,000 worth of new type interceptor pursuit craft ordered from Lockheed Aircraft Corp. at Burbank, Calif.

These twin-engine craft are designed to climb quickly to head off any wartime raids and are said to be similar to the experimental ships which last February attained a top speed of 420 miles an hour in a transcontinental flight which ended in a crackup at Mitchel Field, N.

OUTLAY OF ARMY FOR PLANES TO BE $100,000,000

CINCINNATI "TIMES" STAR

U. S. Awards Contracts for High-Speed Craft.

8-10-39

WASHINGTON, Aug. 10—(AP)—The War Department threw the expansion of Army air forces into high gear today with an award of contracts totaling $85,978,000 for aircraft and engines.

Louis Johnson, Acting Secretary of War, said they represented the largest peacetime arms orders.

Including equipment, which will be provided by the Government, for which separate contracts are to be let, more than $100,000,000 was represented, the War Department said.

The largest single contract went to the Glenn L. Martin Co., Baltimore, for two-engine bombers, costing $15,815,000.

For an undisclosed number of the same type plane, an $11,771,000 contract was awarded to North American Aviation, Inc., Inglewood, Calif.

Altogether, the contracts represented purchases of more than 1,000 planes of all types, military circles understood, although numbers were not disclosed in conformity with a new policy of secrecy.

The Department indicated that new four-motor bombers—$17,394,000 worth ordered in separate groups from Consolidated Aircraft Corp. at San Diego, Calif., and Boeing Aircraft Co. at Seattle—would be able at least to approach 300 miles an hour. The planes ordered from the Boeing company are an improved version of the "Flying Fortress" which averaged 263.8 miles an hour in a trans-continental flight last week.

Fastest of the new planes are $4,845,000 worth of new type interceptor pursuit craft ordered from Lockheed Aircraft Corp. at Burbank, Calif. These twin-engine craft, designed to climb quickly to head off raids, were said to be similar to the experimental planes which, last February, attained a speed of 420 miles an hour in a flight which ended in a crack-up at Mitchel Field, New York.

8-18-39 Sun

Non-Stop Hop To Seattle Planned For 'Flagship'

On its first assignment as "flying flagship" of Rear Adm. Arthur B. Cook, Aircraft Scouting Force commander, the Navy's four-motored patrol bomber piloted by Comdr. Andrew Crinkley will take off at dawn Sunday on a non-stop 1200-mile flight to Seattle.

The plane, operated by a nine-man crew, will join Rear Adm. Cook's "surface flagship," the USS Memphis, due in Seattle today for a week's visit before proceeding to the Alaska-Aleutian Islands area of Navy patrol plane operations. The four-motored bomber, biggest in the Navy, is expected to operate in the Gulf of Alaska and the Aleutian Islands, and is tentatively scheduled to return here about Sept. 5.

Just released from the Consolidated Aircraft Corp. plant, where it was refitted during the past seven months for its special use as an admiral's flagship, the plane made a round-trip test flight to San Francisco Tuesday.

Officers in addition to Comdr. Crinkley permanently assigned to the airboat are Lieut. Thomas E. Gillespie and Ensign John A. Ferguson. Remainder of the crew consists of six enlisted men.

Delivery of six sister ships of the bomber, now under construction at Consolidated in a $4,700,000 contract, probably will begin next spring, it was learned today, with the contract to be completed in the summer of 1940.

TRANS-PACIFIC MAIL

Aug. 18, from Los Angeles. Mail for Hawaii.

Aug. 18, from San Francisco. Mail for Hawaii, Japan and Hongkong.

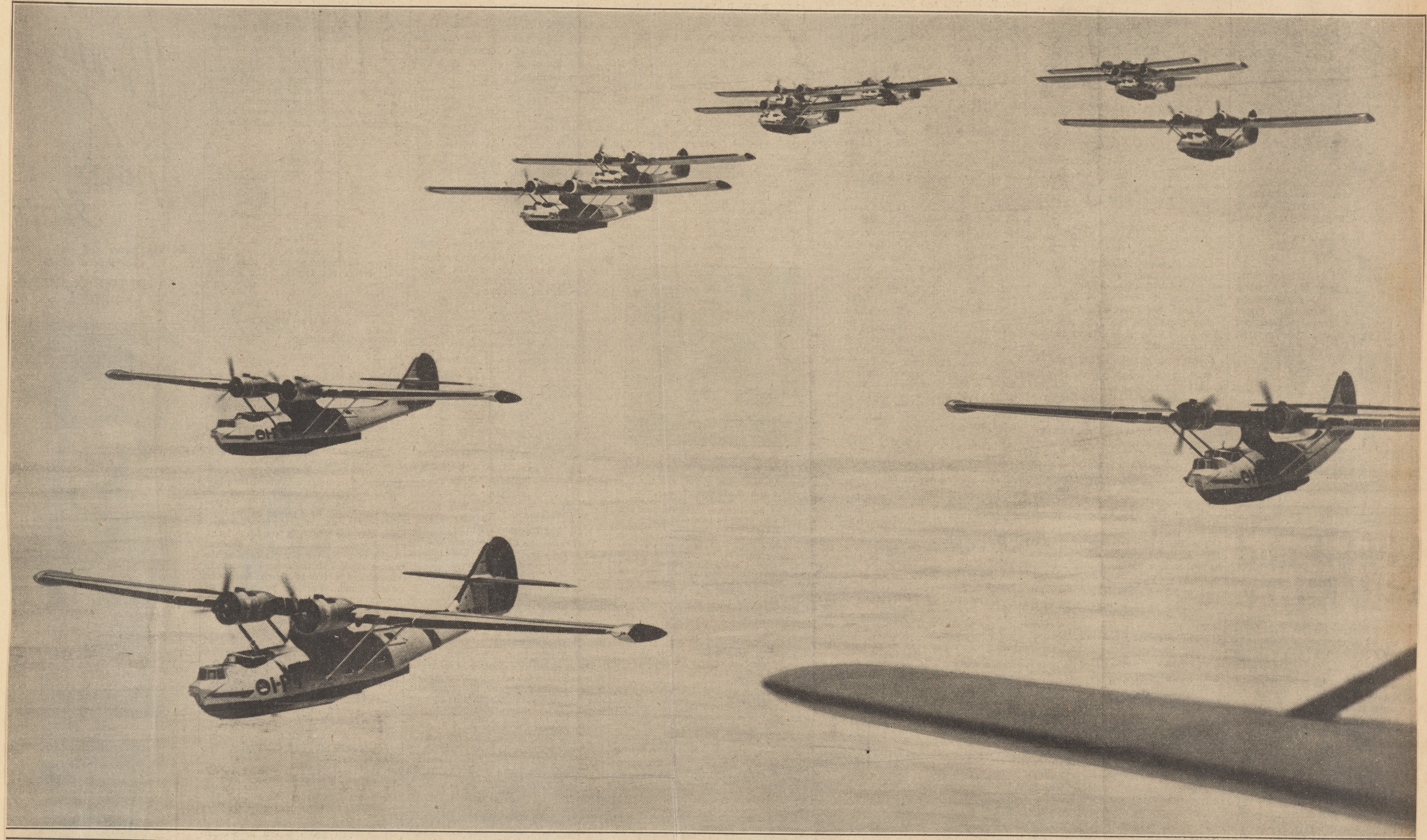
Aug. 21, from San Francisco. Mail for Hawaii.

Aug. 21, from Los Angeles. Mail for Panama and Canal Zone.

Note: Time allowances in San Diego mailing must be made for connections with sailings at other ports listed.

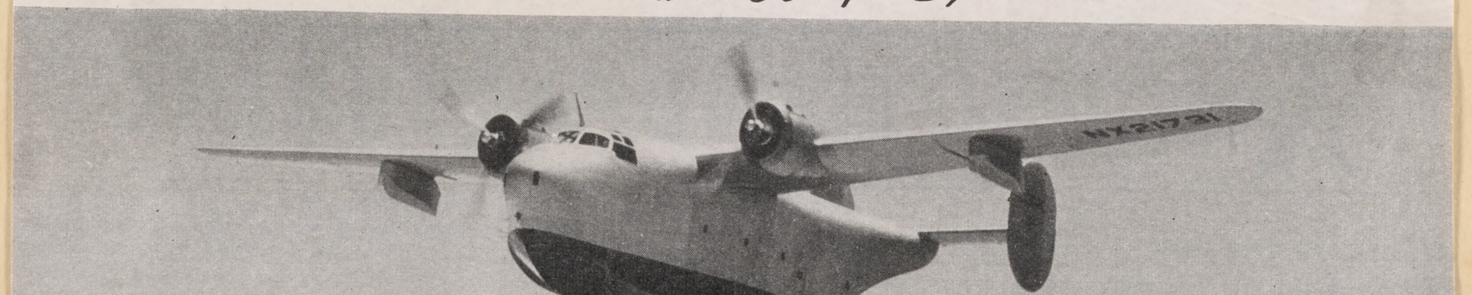
THE TIMES TUESDAY JULY 11 1939 London

UNITED STATES NAVY PATROL BOMBERS IN FLIGHT



NAVY PATROL BOMBERS of the United States air fleet preparing for a flight from San Diego to Honolulu. Machines of this type have been ordered by the British Air Ministry from the United States for experimental purposes. The first of them will be delivered by air from San Diego to Felixstowe shortly, making the journey in two hops.

AVIATION MAG. JULY '39



FIRST FLIGHT PICTURE: The new Consolidated 52-passenger, long-range flying boat shows off its paces above the factory at San Diego. Its two 2,000 hp. Wright Duplex-Cyclone engines give the 25-ton boat remarkable speed.

THE CHRISTIAN SCIENCE MONITOR, BOSTON, THURSDAY, AUGUST 10, 1939

Rare Birds, Beasts, and Orchids Found in New Guinea Search

Special to The Christian Science Monitor

SYDNEY, New South Wales—Discoveries claimed to equal those of Darwin and Wallace in importance have been reported by the Archbold expedition, which recently returned to New York after conducting an extensive survey of Netherlands New Guinea.

In an interview here before embarking for home on the expedition's flying boat Guba, Richard Archbold, leader of the expedition and an associate of the American Museum of Natural History, described some of the important "finds," including dancing birds that build hurdles to jump through, and tree rats four feet long. Animals, birds, insects, and plants—20 per cent of them new to researchers—were found in New Guinea by the expedition, he declared.

"The results of the expedition are the greatest in my experience in various parts of the world, and perhaps will never be equalled again," Mr. Archbold said. "The use of a modern flying boat, which made 168 flights from the coast to the interior and carried 568,000 pounds of food and equipment over jungle impassable on foot, helped us a great deal.

Radio Connection Invaluable

"The erection of radio stations at our three bases permitted the flying-boat crew to keep in communication and receive the latest weather reports, but great skill was required for the heavily-laden take-offs and landings in jungle rivers and on a lake 11,000 feet above sea level. We saw territory never before seen by a white man. In one large valley—we call it the Grand Valley—we estimated the native population to be from 70,000 to 80,000. One previously unknown river, the Baliem, was a large stream.

"Our expedition has made the most important and extensive discoveries since Darwin and Wallace. We have 20 new animal species, among which is a kind of giant arboreal rat. It is a thick, squat creature, four feet long from nose to end of tail, and a foot high. It has rows of long sharp teeth, and lives on green shoots. We also discovered a new bird which lives on flies in barren, rocky country 15,000 feet above sea level. It is blue-black, with a bright red spot on the breast and stands about nine inches high.

"We obtained many new plants and collected more than 40 rare varieties of orchids. The expedition made new geographical discoveries. It obtained movies of birds of paradise in action on their dance-grounds. The birds indulge in amazing dances on small velodromes or race-tracks, which they build out of moss. Sometimes they build hurdles and hoops, over and through which they jump."

Mr. Archbold has been flying since 1932, and the expedition now terminated was his third to New Guinea. He used a flying boat on his second expedition, but it was wrecked in a windstorm known by the natives as a "guba"; hence the name of his present craft.

Night Flight Over Equator

Capt. Lewis Yancey, navigator of the Guba, recalled one highlight of the expedition, a night flight over the equator. "We saw some pretty heavy stuff—clouds and rain—just ahead of us," he said. "So we went on up to climb over it. Pretty soon we ran right into it—sleet and rain and snow. Remember, we were 17,500 feet up. And was it cold! We wore fur-lined flying suits, and we were still frozen. It was snowing so hard that the windshield of the cockpit was coated thick. I had an after-hatch open, and I gathered up a snow ball, just to be able to say that I had handled snow over the equator."

Describing the hazards of establishing the initial inland base in New Guinea, after landing at Hollandia, on the north coast of Netherlands New Guinea, Captain Yancey said: "Our first trip revealed hundreds of native villages on the banks of a big river. There must have been 60,000 or 70,000 natives all told. They had never seen white people before. There was not one thing to show that they even knew of the existence of the outside world. We flew low over the river, and watched them run. They were scared by the Guba. Later we learned that every one of them was a head-hunter."

Mr. Archbold has spent almost all of the last year in hitherto unexplored territory in Netherlands New Guinea on this elaborate and intensive research expedition, with the co-operation of the Netherlands East Indies Government. The expedition cost £250,000, of which Mr. Archbold provided £100,000. He said that he had found the country so interesting that he proposed to make another visit next year, using another flying boat.

NC 777
THE CHRISTIAN SCIENCE MONITOR

Biological Explorations from Wide World

Incidents in the Research of the Archbold Expedition

The flying boat Guba (upper) is shown riding the waters of Sentani Lake, near Hollandia. Surrounding it are native canoes, so narrow that the riders often sit astride their craft, with their feet dangling in the water. The center view is of two native porters. The camp of the expedition carriers is seen in the lower picture. Mt. Wilhelmina, second highest peak on the island, is in the background.

8-21-39 Sun

BIG S. D. BOMBER REACHES SEATTLE

The four-motored, 25-ton PB2Y—the Navy's biggest bomber and "flying flagship" of Rear Admiral Arthur B. Cook, Aircraft Scouting Force commander, was in Seattle today after a flight from San Diego, to join Admiral Cook's surface flagship, the U. S. S. Memphis.

The Cruiser and bomber will leave Thursday on a cruise into Alaska waters, stopping at Sitka, Kodiak and Dutch Harbor.

The ship will proceed from Dutch Harbor to Honolulu, while it was believed the plane was scheduled to return to San Diego about Sept. 5.

CONSOLIDATED PLANES BEST

Official Places In Contest Released

Sun 8-21-39

Aeronautics

Superiority of the Consolidated Aircraft Corp. four-motored Army bomber planes over those entered in the Army Air Corps competition was officially confirmed with the announcement by Brig.-Gen. George H. Brett, chief of the Air Corps material division, that the San Diego concern won first place in the design contest at Wright Field, Dayton, O.

Tangible result of this rating was the recent award to the local firm of a $8,485,000 contract for an un-named amount of four-engined craft, on which production will get under way in about four months.

It was learned that Consolidated might have received an order double this size had not the War Department wished to take advantage of the fact that the Boeing Aircraft Co. of Seattle, developers of the original four-motored "flying fortress" was fully equipped for immediate production of additional similar planes.

Boeing received an $8,090,000 contract. The War Department reserved options totalling $5,400,000 for purchase of more multi-motored bombers from these concerns.

Glenn L. Martin Co. of Baltimore submitted the best design in the twin-engine bomber competition, followed by North American Aviation Corp., Inglewood, and Douglas Aircraft Corp., Santa Monica, in second and third places, respectively.

Union 8-21-39

Big Navy Plane On 1200-mile Hop to Seattle

SEATTLE, Aug. 20 (A.P.)—The aerial flagship of Rear Adm. Arthur B. Cook arrived at the Sand Point naval air station here late today from San Diego.

Piloting the navy's newest and largest four-motored long-range patrol bomber, Comdr. Andrew Crinkley, pioneer naval aviator, took off from San Diego bay yesterday on a 1200-mile sustained flight to Seattle.

Assigned as aerial flagship of Rear Adm. Arthur B. Cook, commander scouting force aircraft, the plane is to carry the admiral on a series of inspection flights to new and projected naval air bases in the Alaska-Aleutian island sector. From Seattle the plane is to fly to Sitka, thence to Fairbanks, Nome, Dutch Harbor. From the latter port the aerial flagship will cruise through Unimak pass into the Bering sea.

Flying with Comdr. Crinkley are Lt. Thomas E. Gillespie, Ens. John A. Ferguson and a crew of six enlisted men.

The plane, built by Consolidated, has been undergoing tests a year but was accepted by the navy department only a fortnight ago.

Adm. Cook is aboard the cruiser Memphis at Seattle. He is due to return Sept. 15.

Tuesday, August 22, 1939

'GUBA' READIED FOR NEW TRIP

New Guinea Expedition Resumes In Spring

Sun 8-22-39

Aviation

The 15-ton, twin-engined Consolidated airboat "Guba"—world's largest and most widely-travelled private plane—soon will set out on new journeys.

Capt. Russell Rogers, chief pilot of the plane, which is owned by Richard Archbold, wealthy research associate of the American Museum of Natural History, revealed here today that according to tentative plans, the "Guba" will be flown from San Diego to the east coast about Sept. 15.

ARCHBOLD EXPECTED

Mr. Archbold is expected here from New York City in about 10 days or two weeks before the takeoff. He remained in the east when the Guba was taken across the continent to San Diego last month, ending a 25,000 mile trip around the world.

The plane, which flew more than 100,000 miles since leaving San Diego in June, 1938, has been receiving overhaul at the Consolidated factory. It blazed many new air trails in its work for the American Museum expedition in Netherlands' New Guinea, its spanning the Indian Ocean on a survey flight for the Australian government, its crossing of the continents of Africa and Australia, and its making the longest over-water non-stop flight, 3300 miles from Dakar, Africa to the Virgin Islands.

NAMES DESTINATION

Capt. Rogers said the eastern destination of next month's flight will be either New York or Miami, if the weather is too cold in the north. A stop probably will be made in San Antonio en route.

The New Guinea expedition will be resumed next spring, according to present plans, he declared.

Of the original Archbold crew, only Capt. Rogers and Stephen Barrinka, assistant flight engineer, remain. Capt. Lewis Yancey, navigator, Ray Booth, radioman, and Gerald Brown, engineer, who served with Capt. Rogers in the recent delivery of a Consolidated patrol bomber to the English Royal Air Force, have left for other jobs in the east.

U. S. TO GET NEW FLYING BOAT

Plane To Be Equipped With Four Motors

Sun 8-25-39

Aviation

NEW YORK.—America's growing family of trans-oceanic flying boats, some of which are already plying on regular schedule between the United States and Europe, will soon have a new member, capable of providing overnight nonstop service to London.

With four 1000-horsepower motors hauling its 32 tons of gross weight through the air faster than any flying-boat now in commercial service, it is patterned closely after a four-motored patrol bomber delivered recently to the U. S. Navy. Builder of both the naval and commercial ships is the Consolidated Aircraft Company of San Diego.

The flying-boat has a wing span of 115 feet, a length of 79 feet and a height of 23 feet in its naval version. The Navy boat's gross weight is 57,600 pounds, but it can be loaded more heavily—probably up to 64,000 pounds—in commercial service. American Export Airlines, now making transatlantic surveys, has ordered two or more of them.

Neither speed nor load figures are given in the trade journal advertisement which revealed the new airliner's existence, as these are still confidential Navy data. The plane will be equipped with the retractable wing-tip float that has become famous in the smaller twin-engined patrol bomber the same firm has supplied by the score to the Navy.

Sun 8-25-39

S. D. 'MYSTERY PLANE' DAMAGES WING

The 50-000-pound "mystery plane," X31, of the Consolidated Aircraft Corp., gave watchers a moment of anxiety today, as it made a rough landing in the San Diego harbor, damaging a wing float.

Coast Guard officials sent Patrol Boat 442 out to give aid, but the experimental two-motored ship taxied to the landing under its own power. Pilot W. B. Wheatley reported that either an "air-bump" or a submerged object was the probable cause of the accident.

Science Service Aug. 12, 1939

NEW GIANT FLYING-BOAT FOR TRANSATLANTIC AIRLINE SERVICE ANNOUNCED

Copyright 1939 by Science Service

NEW YORK -- America's growing family of trans-oceanic flying boats, some of which are already plying on regular schedule between the United States and Europe, will soon have a new member, capable of providing overnight nonstop service to London.

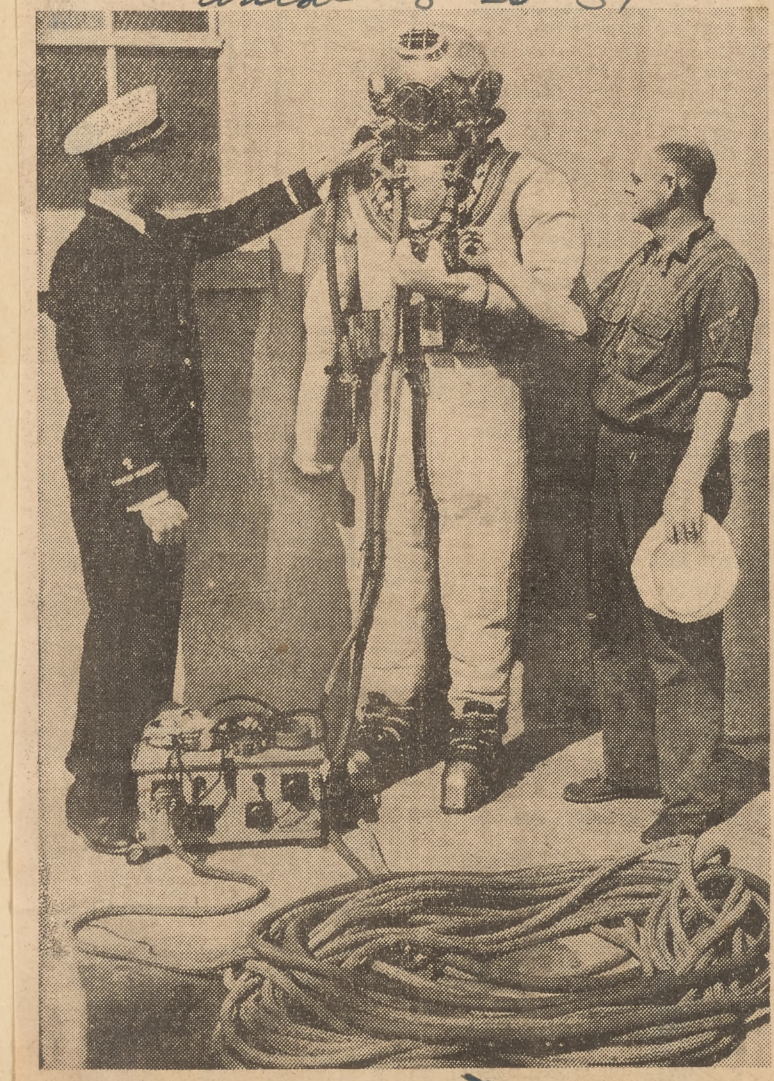
With four 1,000-horsepower motors hauling its 32 tons of gross weight through the air faster than any flying-boat now in commercial service, it is patterned closely after a four-motored patrol bomber delivered recently to the U.S. Navy. Builder of both the naval and commercial ships is the Consolidated Aircraft Company.

The flying-boat has a wing span of 115 feet, a length of 79 feet and a height of 23 feet in its naval version. The Navy boat's gross weight is 57,600 pounds, but it can be loaded more heavily -- probably up to 64,000 pounds -- in commercial service. American Export Airlines, now making transatlantic surveys, is believed to have ordered two or more of them.

Neither speed nor load figures are given in the trade journal advertisement which revealed the new airliner's existence, as these are still confidential Navy data. The plane will be equipped with the retractable wing-tip float that has become famous in the smaller twin-engined patrol bomber the same firm has supplied by the score to the Navy.

SEA SERVICE INTERESTED IN SHOW

Union 8-26-39



G. A. NEY T. RIDER

. . . Ney, chief gunner, attached to Destroyer base, and Rider, a diver, inspect "Jake the Diver," which is on display at Navy Relief carnival.

Meige foto.

Eventful Finish Planned for Navy Relief Carnival

"Never a dull moment."

Officials and entertainers of Navy Relief carnival, who so far have lived up to that slogan with rapid-fire programs, predicted that today's wind-up show would overshadow all former attractions.

The three-day carnival, being held at Naval Training station, will close at 12 tonight.

KIDDIE REVIEW TODAY

Today's program will open at 3:30 p.m. with a special "Kiddie Revue." Following in fast succession will be a military band concert and a series of 5-minute sketches by four local dancing academy groups, a skating act, acrobatics, a magician and songs.

A 8 p. m. a waltz group featuring the Navy Juniors will be presented. Following will be a vocal duet by Lorna and Rita, songs by Donna Lee, sketches from "The Drunkard" by the Community players and songs by Frances Maddux, famed night club entertainer.

MARINES PARADE

Two film players, Ellen Drew and William Frawley, will appear at 9 p. m. The entertainment program will conclude at 10 p. m. with a spectacular searchlight display.

Patrons will be entertained between programs by 36 concessions, eight thrill rides and 29 skill games.

More than 500 marching marines opened yesterday's show. The entertainment-packed program included military displays, songs, dances, two "air raids" and a personal appearance of Pat O'Brien, film star.

8/21 Christian Science Monitor

P3

Imperial Airways Suspends Bookings for Long Trips

LONDON, Aug. 9 (AP)—Imperial Airways has suspended passenger reservations on Empire air routes to Africa and Australia after today, principally because of a shortage of planes caused by Britain's military program.

The company said British plane factories were unable to fill commercial orders in addition to requirements of the Army and Navy. Imperial Airways therefore is buying 48 Pratt & Whitney cyclone engines in the United States.

Reservations already made for passenger accommodations on the company's long routes will be filled, but no new reservations will be accepted at least until after the Christmas mail rush. About 1,100 passengers have been carried each month on these routes recently.

Curtailment will not affect Imperial Airways' many cross-channel services and continental schedules.

Other causes contributing to the decision were the shortage of trained personnel owing to Royal Air Force recruiting, larger amounts of mail carried, and desirability of carrying a greater fuel reserve in each plane.

Suspension is the first major pinch felt by the British public in transport facilities since rearmament reached its present huge proportions.

Army Demands Come First

Written for The Christian Science Monitor

Air armament demands in Great Britain, requiring not only equipment but personnel for the needs of the air force, have consistently hampered recent development of British commercial aviation.

British trans-Atlantic air mail service, for example, which originally had been scheduled for last summer, was inaugurated last week with the flight of the Caribou. The New York-Bermuda service of Imperial Airways, interrupted by the sinking of the flying boat Cavalier, has not been restored. The Tasman Sea link from Australia to New Zealand has been projected only recently owing to inability to get delivery of flying boats needed for the route.

Until last season British continental services were operated with 15-year-old equipment. It was not until public pressure was exerted at home and severe competition was offered by the French and Dutch lines, with their new fast equipment, that new fast planes were placed on British continental services. American planes were purchased to augment the slow delivery of the British factories.

Need for additional pilots for the British commercial services had become so acute, due to Royal Air Force demands, that a call had gone out to Canada offering inducements to Canadian flying clubs to enter commercial flying. But this apparently did not yield sufficient personnel, owing to Canada's pre-occupation with the needs of its own new transcontinental air service.

The British "all up" mail scheme, whereby first-class mail outbound to the Empire has been carried by planes, unquestionably has contributed greater mail loads sometimes even to the extent of cancelling passenger bookings to accommodate the extra weight of mail sacks.

Coupled with Britain's desire to carry a greater fuel reserve in commercial planes, the mail loads, plus extra fuel, contributed to cancellation of the only cargo that could be omitted—that is, passengers. These undoubtedly are the contributing factors to passenger cancellations in the British long-distance services.

8/20/39 LA Times

Four-Hundred-Mile-an-Hour Bomber Motor Put on Display

NEW YORK, Aug. 19. (AP)—An aeronautical engineer yanked a tarpaulin unceremoniously off an exhibit in the Aviation Building at the New York World's Fair today to uncover the most powerful high-altitude aircraft engine ever built.

Tested by both the Army and Navy, it will make possible speeds above 400 miles an hour for bombing planes for the first time since the feverish quest for higher speeds began incident to the world-wide rearmament.

HIGHLY SUPERCHARGED

The engine, with a rating of 1600 horsepower above altitudes of 20,000 feet, is highly supercharged. Streamlined in accordance with specifications of the National Advisory Committee for Aeronautics, it is bullet-like, compact and narrow of profile to reduce wind resistance. At the Fair it is mounted in a display wing.

Military men attach high tactical value to high-speed bombers. In wartime they could not only elude defending pursuit planes, but also would make difficult targets for anti-aircraft fire. Unofficially it was said that no world power has yet produced a bomber which would approach within 75 miles an hour the speed made possible by the new engine.

EIGHTEEN CYLINDERS

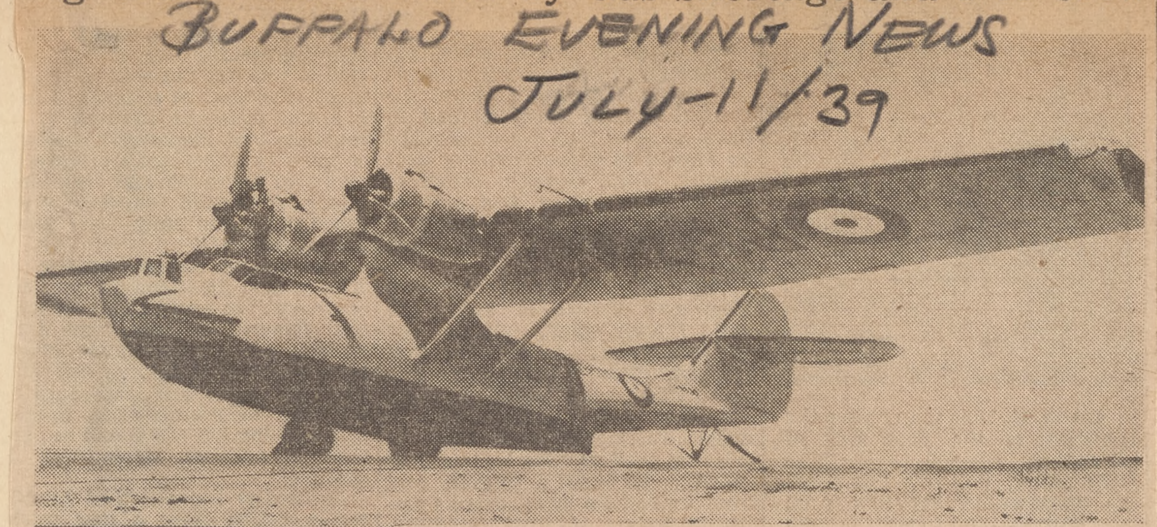
Produced by the Pratt & Whitney division of United Aircraft Corp. and supercharged with the aid of the Naval Bureau of Aeronautics, it contains 18 cylinders in two "banks" which are cooled both by a frontal blast of air and by wing ducts which deliver air to the rear cylinders.

To reduce "drag" or head resistance, the engine is smaller in diameter than any engine of similar horsepower ever built.

About a month ago, Louis A. Johnson, Assistant Secretary of War, described the engine, without supercharging, as the most powerful motor that had passed the rigorous 150-hour Army Air Corps test at Wright Field, Dayton, O.

Big Craft Forced Down by Gas Shortage and 2 of Crew

BUFFALO EVENING NEWS
JULY-11/39



These two members of the crew of the Consolidated Aircraft Corporation flying boat pictured above came ashore when the big ship, en route from San Diego to England, was forced to alight here for fuel. They are Lewis A. Yancey, left, navigator, and Pilot Russell R. Rogers.

England-Bound Flying Boat Lands at Buffalo to Refuel

Huge Military Craft Left San Diego Monday for First Scheduled Air Delivery Abroad.

Fearing a gasoline shortage before they could reach Botwood, Newfoundland, on the first scheduled air delivery of an American military plane to England, four fliers alighted at the Marine Airport here today in a Consolidated Aircraft Corporation flying boat after a 2500-mile flight from San Diego, Cal.

The airmen planned to take off for the remainder of their projected 5900-mile flight to Felixstowe, England, after taking aboard 400 or 500 gallons of gasoline. The fliers are Capt. Russell R. Rogers, pilot; Lewis A. Yancey, navigator; Raymond Booth, radioman, and Gerald Brown, engineer.

Capt. Rogers said he took off from San Diego at 8:30 o'clock Monday morning (12:30 P. M., Buffalo time), flew a direct route toward Botwood but bucked heavy headwinds virtually all the way.

Makes Smooth Landing.

"We flew over Chicago a little after 4 o'clock this morning, about two hours behind schedule," Capt. Rogers said. "We figured we had enough fuel to reach Botwood if conditions were favorable but we didn't want to take any chances on fog as we neared the coast. So we decided to come down at Buffalo and take on more gas."

Radioman Booth contacted the Consolidated plant at San Diego and asked to have arrangements made for gasoline to be ready at Buffalo.

The 15-ton ship was brought down just outside the Buffalo Harbor gap about 6:45 o'clock. It came down on the water smoothly and headed toward the Marine Airport at the foot of Georgia st. Capt. John J. Daly and a Coast Guard crew went out to meet the plane.

Capt. Rogers said arrangements had been made for gasoline, but Capt. Daly said none was waiting at the airport and Cept. Rogers then had to make his own arrangements. Capt. Daly furnished a pump so the fuel could be put aboard as speedily as possible. But four hours later they still were waiting for gasoline.

Fliers Recently Circled Globe.

Capt. Rogers had planned to be in England in time to keep a dinner engagement at Claridge's tomorrow evening. This is out of the question now. He said he would finish the trip to Botwood today, refuel and take off for Felixstowe, about 60 miles north of London, tomorrow morning.

The plane in which the men are flying is a new twin-motored flying boat, model PBY-4. It has been sold to the British Air Ministry and bears the insignia of the British Royal Air Force. It is an all-metal, high-wing monoplane.

The four fliers just got back to New York July 1 after a round-the-world flight for the American Museum of Natural History under the leadership of Richard Archibald of the museum staff. They left San Diego June 2, 1938, in a plane similar to the one they are taking to England.

Capt. Rogers and Mr. Yancey, an experienced trans-Atlantic flier, are on leave from museum posts to make the delivery of the Consolidated ship.

8/20/39 LA Times

Largest Navy Bomber to Make Long Flight

SAN DIEGO, Aug. 19. (U.P.)—The Navy's largest bomber, the four-motored, 25-ton PB2Y, "flying flagship" of Rear Admiral Arthur B. Cook, Aircraft Scouting Force commander, will take off at dawn tomorrow on a 1200-mile, nonstop flight to Seattle.

On its first assignment since it was turned over to the Navy by Consolidated Aircraft Co. officials a week ago, the huge patrol bombing plane, piloted by Comdr. Andrew Crinkley and operated by a crew of eight.

8/21/39

Los Angeles Times

Largest Navy Bomber Arrives at Seattle

SEATTLE, Aug. 20. (U.P.)—The four-motored, 25-ton PB2Y—the Navy's biggest bomber and flying flagship of Rear Admiral Arthur B. Cook, aircraft scouting force commander—arrived in Seattle today from San Diego, Cal., to join Admiral Cook's surface flagship, the U.S.S. Memphis.

AVIATION MAG. FEB. 39

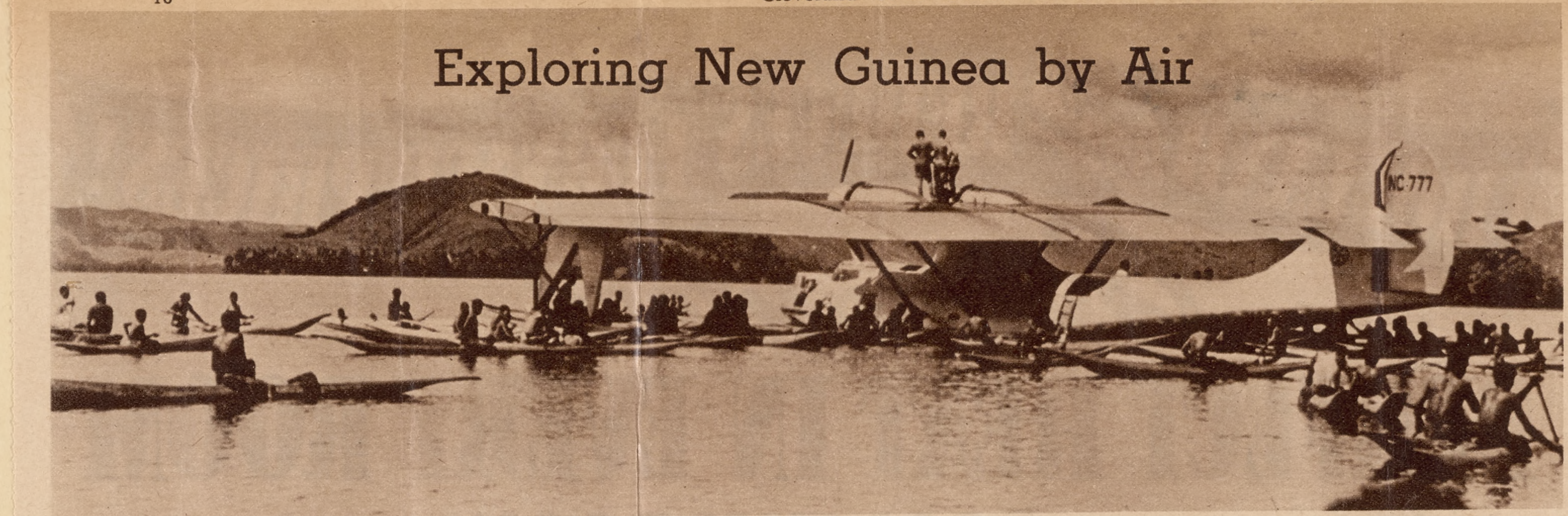
Consolidateds Do It Again

THE LONG, BRILLIANT SERVICE RECORD of the Navy's twin-engined Consolidated patrol-bombers grew brilliantly longer last month as 48 of these big boats made their way to the current "war zone" in the Caribbean.

Led by Capt. Marc A. Mitscher, the formidable four dozen, comprising PB Squadrons 7, 9, 11 and 12 from Fleet Patrol Wing No. 1 lifted off the bay at San Diego just before noon on January 10, then headed southward in what local reporters described as a 120 mile parade. Some twenty-five hours later 45 of the planes were riding quietly at Coco Solo, Canal Zone, 2,500 non-stop miles from their take-off. A few hours after that, three planes of Squadron 7 which had stopped at the Gulf of Fonseca, presumably for refueling, rejoined their fellows.

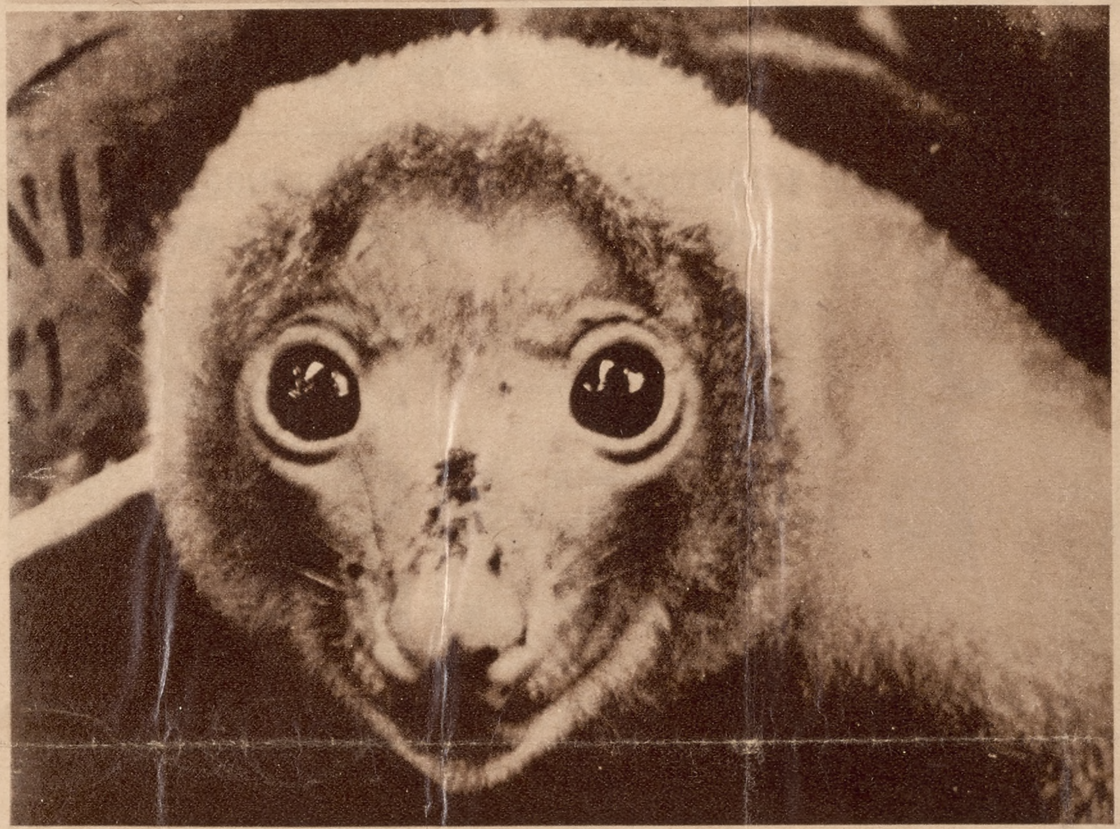
The same day the Consolidated's left San Diego for the Canal Zone, nine Sikorsky Amphibians and eight Grummans headed eastward across our southern border to join fleet forces at Guantanamo, Cuba. All in all, there seems little wrong with the mobility of our naval air arm.

Exploring New Guinea by Air

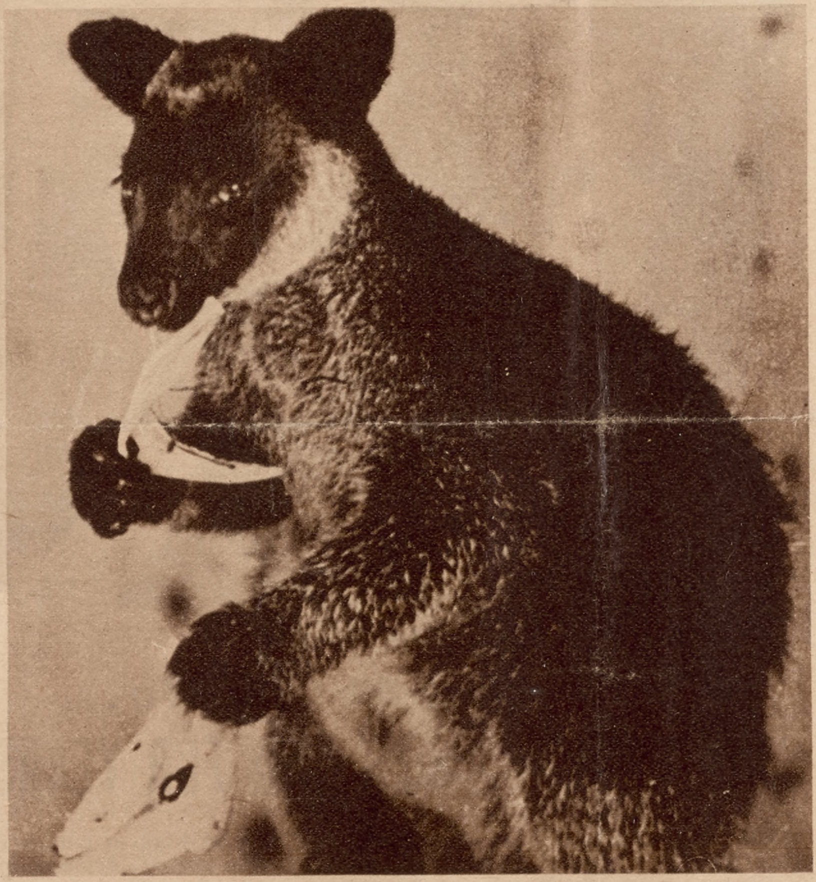


After eleven months of successful exploration for rare specimens of plant, animal and bird life on the island of New Guinea, the American Museum of Natural History Expedition, headed by Mammologist Richard Archbold, recently returned to New York. These pictures, brought back by the party, show some aspects of the work which was carried on from the expedition's fourteen-ton flying boat, the Guba. The plane is seen ABOVE on the waters of Lake Habbema, a two-mile-high body of water in the mountainous region of New Guinea, where the party established an advance camp.

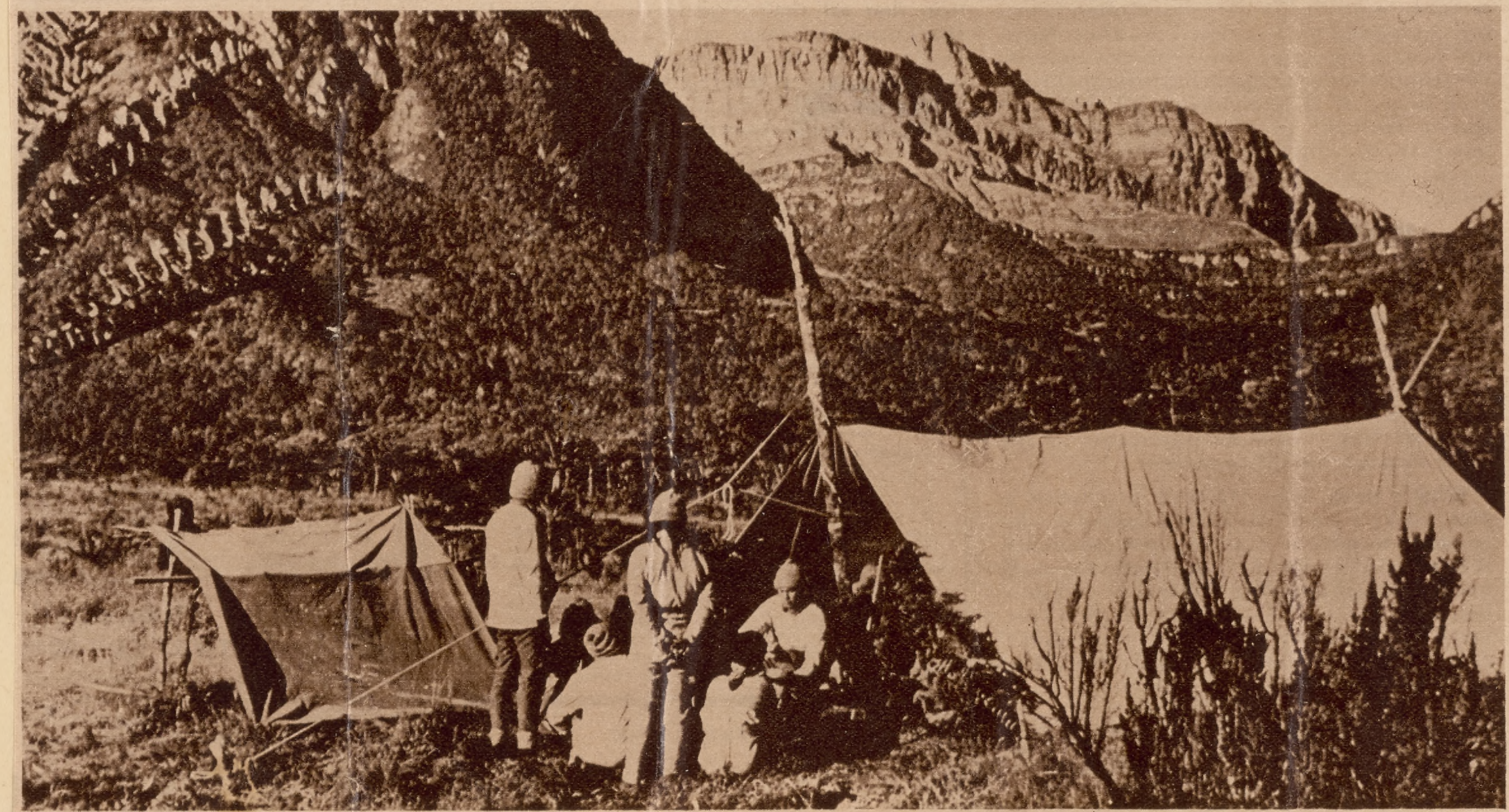
Biological Exploration Photos from Wide World



THIS WIDE-EYED FELLOW is the Cuscus, a night-prowling marsupial related to the opossum.—It was among the many unusual animal specimens obtained for the American Museum of Natural History in New York.



RIGHT: Another prized find of the New Guinea expedition was this tree-climbing kangaroo, shown here eating a banana. These animals, which are about six feet over-all in length, climb trees by pulling themselves up the trunk with their front paws.



MOUNTAIN CAMP of the expedition, where some bird specimens new to science were discovered.—In the background lies Mt. Wilhelmina, 15,560 feet, second loftiest peak on the island.

» **AFTER SITTING IN** at the midsummer Maintenance Meeting (6/12 to 6/14), we spent the rest of the wee going the rounds of plants in the Los Angeles and San Diego areas. We would like to take the opportunity here to thank all those at Douglas, Lockheed, North American, Consolidated, Ryan, and Solar for the courtesies extended to Charlie McReynolds and your editor during that time. We hope

AVIATION MAG. AUG. '39

to see you all in the east before too long. How about coming over to see our Fair?

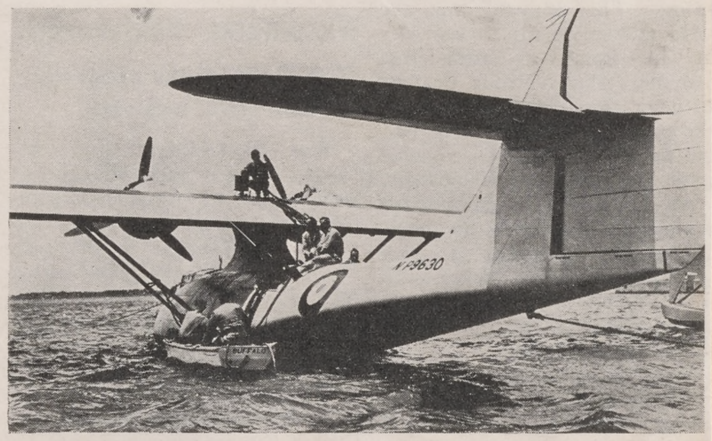
Flyaway Factory

Consolidated makes first trans-Atlantic delivery

Twenty-two years ago, a lot of high-pitched crowing was going on in this country about (1) How many tens of thousands of combat planes the U. S. was about to build and deliver to Europe. (2) How the biggest of these were going to be delivered by flying them across the Atlantic. Cynics on the subject of war-time propaganda as dished out for home consumption may therefore relish the facts that (1) The U. S. has already this year delivered more combat planes to England and France than it did during the entire war period. (2) That just last month the first military aircraft ever to be delivered by air across the Atlantic arrived in England.

Not that the delivery on July 14, of the Royal Air Force's new fifteen-ton Consolidated patrol-bomber was not a brilliant enough feat of airmanship. The crew was no amateur one. Russel Rogers was pilot; Lewis A. Yancey, navigator and relief pilot; Raymond Booth, radio man; and Gerald Brown, engineer. All of them were just returned from the brilliant Archbold round-the-world flight described in another column. First plans were to make the first stop out of San Diego at Botwood, Newfoundland, but the first leg of the trip, which started July 10, was ended at Buffalo after the ship had run into severe headwind conditions while crossing the Middle West. The next day, the big ship pushed on toward Botwood. The day after that with no more fanfare than as if they were ferrying their big Consolidated across San Francisco Bay, Rogers and his crew crossed over to land at Felixstowe, England.

AVIATION MAG. AUG. 39.



DELIVERY SERVICE PLUS: The R.A.F.'s new Consolidated pauses at Buffalo.

AVIATION MAG. JAN. '39

» CONSOLIDATED AIRCRAFT CORP.: A special cash dividend of $1 per common stock share, for the year ending Dec. 31, 1938, payable Dec. 19, 1938. This is in addition to the regular quarterly cash dividend of 75 cents per share on the Convertible $3 Preferred, payable Dec. 23, 1938.

AVIATION MAG. APRIL '39

» CONSOLIDATED AIRCRAFT CORP., for year ending Dec. 31, 1938, net profit of $1,535,110, equal, after dividends on $3 preferred stock, to $2.55 a share on 574,760 shares of common stock. Compares with $462,959 or 68 cents a common share in 1937. Net sales of planes and parts for 1938 were $12,245,067, against $11,907,493 in 1937. Backlog at end of 1938 amounted to $2,796,881, compared with $13,990,096 a year ago. New business booked during past year totaled $1,051,853, against $7,771,542 in 1937.

Trib. 8-29-39

New Contract Won By Ryan Company

Receipt by the Ryan Aeronautical Co. of more than $70,000 in additional manufacturing contracts was announced today by T. Claude Ryan, president.

Among the latest contracts obtained by Ryan is one for approximately $30,000 from the Consolidated Aircraft Corp., builders of huge army and navy multi-motored bombers. This order calls for the production of several hundred exhaust collector rings, one of the specialty aircraft products which Ryan produces on contract for other plane manufacturers.

Other recent orders closed by Ryan for aircraft parts and equipment are with the Douglas Aircraft Co., Lockheed Aircraft Corp. and the United States army air corps. In addition to a recent $100,000 order from the army for primary training planes, Ryan now is working on manufacturing contracts for the air corps, which include exhaust collector rings and a drop-hammer.

Work in progress represents a value of nearly $300,000 and backlog of uncompleted contracts as of the first of the month equaled approximately $750,000, the highest in the company's history.

On the first of July the company moved into its modern new $150,000 factory, which more than doubled the manufacturing floor space. Production output, though temporarily hampered slightly during the period of moving, has now climbed to approximately twice the former production volume.

RYAN AWARDED CONSAIR WORK

$70,000 Job Calls For Plane Parts

Sun 8-29-39

Aeronautics

Receipt of a contract for approximately $30,000 from their "next door neighbors," the Consolidated Aircraft Corp. was announced today by officials of the Ryan Aeronoutical Co.

The contract order calls for the production of several hundred exhaust collector rings, one of the specialty aircraft products which Ryan produces for other plane manufacturers, President T. Claude Ryan said.

Other recent orders closed by Ryan have been with the Douglas Aircraft Co., the Lockheed Aircraft Corp., and the U. S. Army Air Corps. Work now in progress represents a value of nearly $300,000, with approximately $750,000 of contracts yet to be completed, it was said.

Production output, slightly hampered during the company's moving into its new $150,000 factory in July, now has climbed to twice its former level, Mr. Ryan said.

CHEST TO SEEK AID IN COUNTY COMMUNITIES

New Division For Campaign Will Be Organized Tonight

Sun 8-29-30

Community Chest

A county communities division of the Community Chest campaign for funds will be organized at a meeting tonight at 6:30 in the U. S. Grant hotel, with Arthur M. Shoven, president, as chairman of this unit.

In the year's appeal for funds for support of 35 agencies serving in welfare, relief and character-building fields, a goal of $216,553 has been set. Campaign dates are from Sept. 28 to Oct. 14.

SYSTEM OUTLINED

The campaign organization committee, with a membership of upward of 40, met late yesterday when details of the "unit account" system, basic feature of the coming appeal, were outlined. Each member of this committee will form a sub-committee which will direct the solicitation of funds in business and industrial establishments.

Members of the main committee and the groups they are to form will hold a joint meeting a week from tomorrow in the board room of San Diego Trust & Savings Bank.

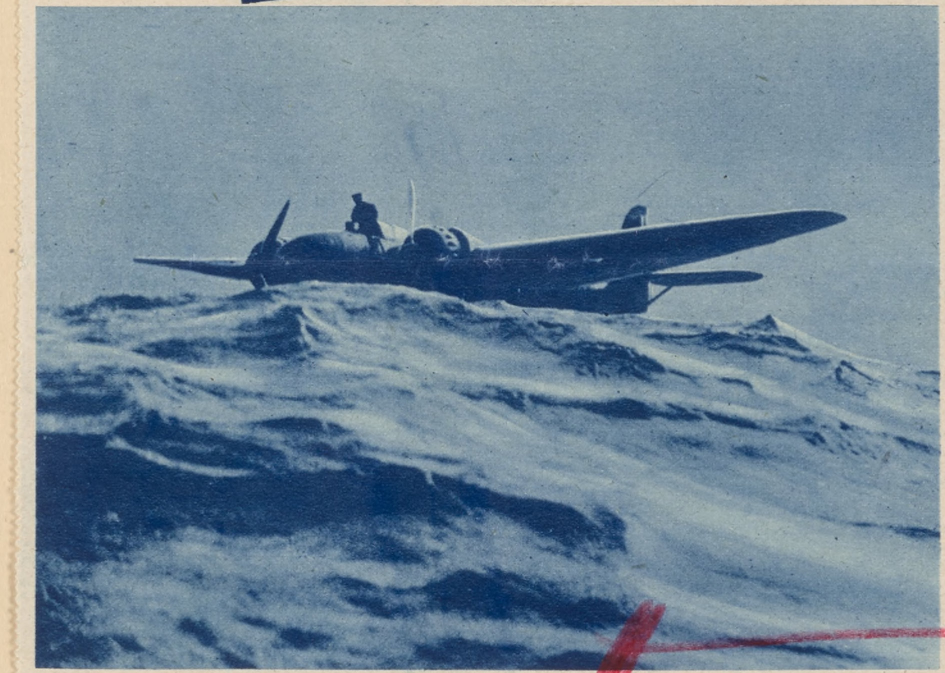
COMMITTEEMEN

Comprising the campaign organization committee, of which J. O. Miller is general chairman, were Thomas Hamilton, E. B. Gould Jr., Ewart W. Goodwin, Edgar N. Gott, S. M. Sullivan, Harry E. Callaway, David N. Millan, W. D. Rudd, Neil Nettleship, Alan Klauber, John L. Fox, Marston Burnham, Frank J. Guasti, George N. Lynch, Carleton Lichty, Verne Sutherland, Charles B. Wincote, Robert Frazee, Korley H. Golden, Emery D. Sherwin, Fred Annable, Douglas Young, Wilbur Thomas, Mrs. Frank E. Marcy, Mrs. E. T. Hale, Mifflin Ward, Dan S. Kuqkendall, E. Robert Anderson, Sam Claggett, J. B. McLees, D. M. Hammond and F. A. Rhodes.

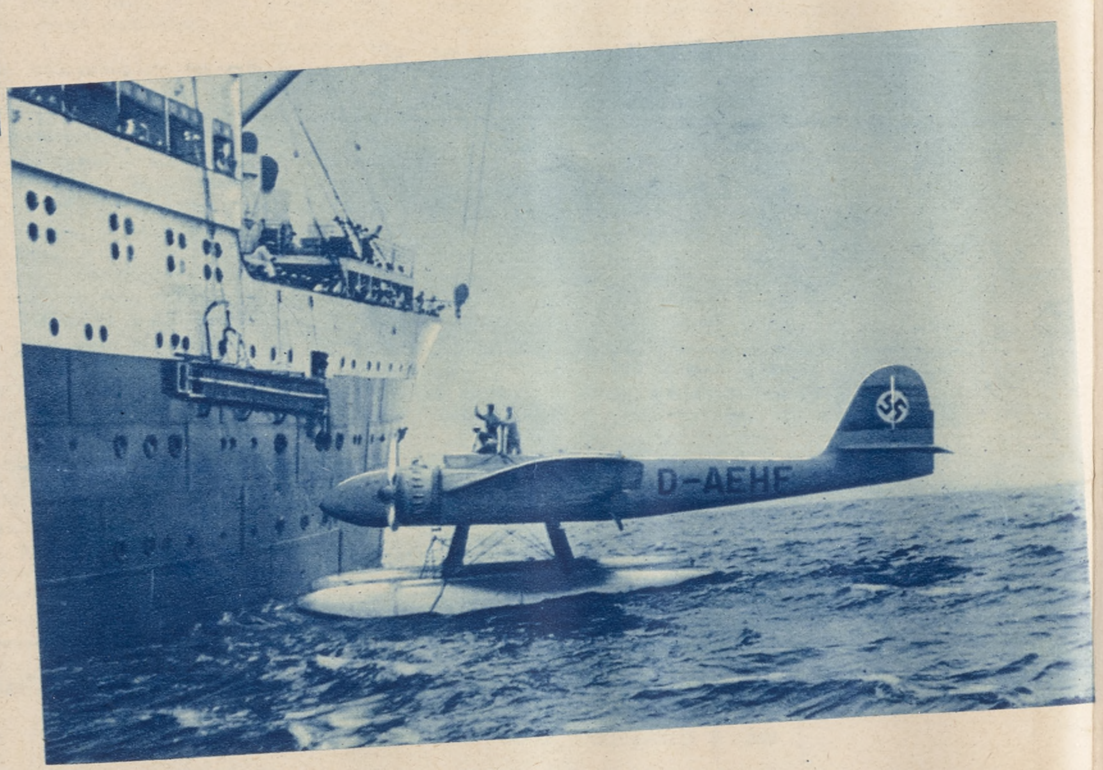
L'ACTU

A la date du 5 mai, l'ensemble des 3 hydravions quadrimoteurs Blohm & Voss Ha 139 et HA 139 B, de la Lufthansa a totalisé 50 traversées transatlantiques. On voit, ici, une photographie d'un des bateaux relais, l' « Oostmark », prise en vol d'un de ces hydravions.

Une grande curiosité a été éveillée, ces temps derniers, par une tentative de record de distance accomplie en direction de l'Amérique du Sud par un hydravion allemand. Nous avons la bonne fortune de pouvoir publier, à ce sujet, quelques photographies. La tentative a été faite par un ← hydravion Heinkel He 115 à deux moteurs BMW. Au départ l'appareil pesait 15 tonnes.



L'appareil, parti de la Baltique, en face de Rostock, a dû se poser en mer, après avoir survolé les îles du Cap Vert, par suite d'une avarie survenue à un des moteurs. On voit, ici, l'hydravion posé par grosse mer.



Peu avant de devoir interrompre son vol, l'équipage avait aperçu le vapeur « Monte Pascoal ». Celui-ci fut alerté au moment de l'amérissage et se porta aussitôt au secours de l'hydravion qu'il réussit à prendre à son bord.

(Photos Muller & C°, Hambourg.)

AMERICAN
ORT AIRLINES INC.

La star Patricia Morison, à bord de l'hydravion Consolidated 28-4, pendant les prises de vues du film « Magnificent Fraud ».

Les aviatrices britanniques, les sœurs Glass, dites les « sœurs volantes » viennent, de nouveau, de prendre ← part, avec succès, au rallye de l'Ile de Man.

L'aviation et le cinéma. Une firme américaine utilise pour tourner le fi
ginaire république de San Cristobal, un hydravion bimoteur Consolida
faire l'été prochain. Le rayon d'action

UALITE

la

is,

Sur le terrain de Döberitz, le maréchal Goering passe en revue les aviateurs de la Légion Condor qui ont participé à la guerre d'Espagne.

Le maréchal Goering présente au Prince Régent Paul de Yougoslavie, à l'occasion de sa visite à Berlin, l'escadrille de chasse von Richthofen. On notera que, sur cette photographie d'agence, une des mitrailleuses d'ailes du monoplace Messerschmitt Me 109 a été sommairement effacée. →

Photographie prise pendant le défilé de l'Armée de l'Air allemande en présence du prince Paul de Yougoslavie.

Les groupes de Vol à Voile du N. S. F. K. développent, en ce moment en Allemagne, une grande activité qui a permis d'obtenir de très importants résultats. On voit, ici, les pilotes du groupe Berlin-Brandenbourg suivant des yeux les évolutions de leurs camarades sur le terrain de Trebbin.

r le film « Magnificent Fraud », dont l'action se passe dans une ima-
solidated 28-4 qui est destiné à des essais de liaison transatlantique à
ction de cet appareil est de 6.500 km.

L'habitude se prend aux Etats-Unis d'associer les grands noms du cinéma aux événements aéronautiques marquants. Voici Anita Louise, Otto Krueger, Annabella et son mari Tyrone Power, sortant du nouveau quadrimoteur Douglas DC 4 après le vol qu'ils ont fait à bord de son appareil lors de l'obtention de sa licence définitive.

Aviatrices britanniques, membres de la Civil Air Guard, s'entraînant à l'Aéro Club de Blackpool. →

F. R. WATCHES U. S. AIRCRAFT

Plane Production In America Speeded

Sun 8-31-39

Aviation

By United Press

WASHINGTON, Aug. 31.—High ranking officials have advised President Roosevelt, who is closely scrutinizing the status of the national defense program because of the European crisis, that present production of military aircraft can be accelerated two and one-half times if an emergency arises in the near future, it was disclosed today.

The report was given to the chief executive by Assistant Secretary of War Louis Johnson during a series of White House conferences in which Acting Secretary of the Navy Charles Edison, Admiral Harold R. Stark, chief of the naval operations, and other top defense officials participated.

PROCEED SMOOTHLY

The President was informed it was reported that both Army and Navy aviation programs, embracing the nation's greatest aircraft construction effort, are proceeding "smoothly." The Army has already let the bulk of its $170,000,000 worth of authorized contracts designed to raise its present strength of 2,000 planes to 5,500 by July 1, 1946. The Navy, with slightly fewer planes than the Army, is building more gradually to a goal of not less than 3,000 planes.

Mr. Johnson is understood to have based his report on a series of conferences with leading manufacturers, data available in the Army Air Corps, and on first hand information obtained during a recent inspection trip to the west coast, where most military aircraft factories are located.

NEED PLANES

Under the Air Corps expansion program, the Army will need 3,500 planes to reach its goal within the next 23 months or an average of slightly more than 150 monthly. In addition, it will nave to replace a considerable number, which become obsolete or damaged.

Officials refused, however, to give out definite production schedules on the grounds that it is "confidential" data.

Much of the new Army program is being constructed by the Glenn L. Martin Co., Baltimore, Md.; North American Aviation, Inc., Inglewood, Calif.; **Consolidated Aircraft Corp., San Diego, Calif.**; Boeing Aircraft Co., Seattle, Wash.; Boeing Airplane Co., Stearman division, Wichita, Kans.; Lockheed Aircraft Corp., Burbank, Calif., and Vultee Aircraft division, Aviation Manufacturing Corp., Downey, Calif., and several other concerns.

Consolidated Air

Romeike & Curtice Ld.

Telephone
CENTRAL 2781
(2 Lines.)

R C

35. Shoe Lane
LONDON.
E.C.4.

EXTRACT FROM

NOTTINGHAM EVENING NEWS,
Parliament Street, Nottingham.

21 NOV 194

GIANT U.S. BOMBERS

Released For Britain

GIANT United States bombers, with a range of at least 3,000 miles when fully loaded, have been released to Britain, it was announced by General George C. Marshall, U.S. Chief of Staff, in Washington.

The machines are under construction at the works of the Consolidated Aircraft Corporation. Three are due to be delivered this month, three will be ready in December, while another 20 will be completed before March.

The Consolidated machines are similar to the "Flying Fortresses," are equipped with Pratt and Whitney engines, and were being built for the United States Air Force.

General Marshall said that the planes to be released were equipped with the Sperry bombsight, recently released to Britain.

ENGINES IN EXCHANGE

In exchange for getting priority for these Consolidated bombers, Britain had released to the United States sufficient engines to equip 41 "Flying Fortresses," of which delivery to the United States Army was due before the end of the year.

Meanwhile, the general added, negotiations are continuing for the release to Britain of 20 of the latest type of "Flying Fortresses," fully-equipped except for the secret bombsight. Any of these machines released to Britain would be equipped with the Sperry bombsight, the same as the Consolidated bombers.

General Marshall pointed out that no comparable plane had ever been used in active operations, therefore the United States was anxious to see the results.

United States air officers, acting as observers, actually fly in British machines during air battles over England, the general said.

BASES IN USE

While General Marshall was making this announcement, Colonel Frank Knox, Secretary for the U.S. Navy, stated that the United States Navy was already using some of the bases leased from Britain as stations for the Atlantic patrol.

Planes of United States Navy were using the bases, and were working from Bermuda, St. Lucia, and probably from Newfoundland, and warships were maintaining an active patrol at Martinique.

—British United Press.

Air-Conditioned By Nature

San Diego—where your thermometer works less than in any other American city. Only thrice in 64 years has the mercury fallen below 32 or risen above 100 degrees. In the last five years the lowest recorded temperature has been 30 degrees, the highest 94 degrees.

The San Diego Union

Weather Forecast

Fair today and probably tomorrow; somewhat warmer; moderate west and northwest winds.

Temperature tables will be found in detailed weather report on Page 7, Section B.

ESTABLISHED 1868—SEVENTY-FIRST YEAR | No. 27,674 | SAN DIEGO, CALIFORNIA, FRIDAY MORNING, SEPT. 8, 1939 | SECTION A | DAILY 5 CENTS—SUNDAY 10 CENTS

SIX KILLED IN NAVY BOMBER CRASH

S. D. TO FILL PLANE ORDERS

Neutrality Not In Way Of $18,000,000 Back Log

Sun 9-7-39

Aviation

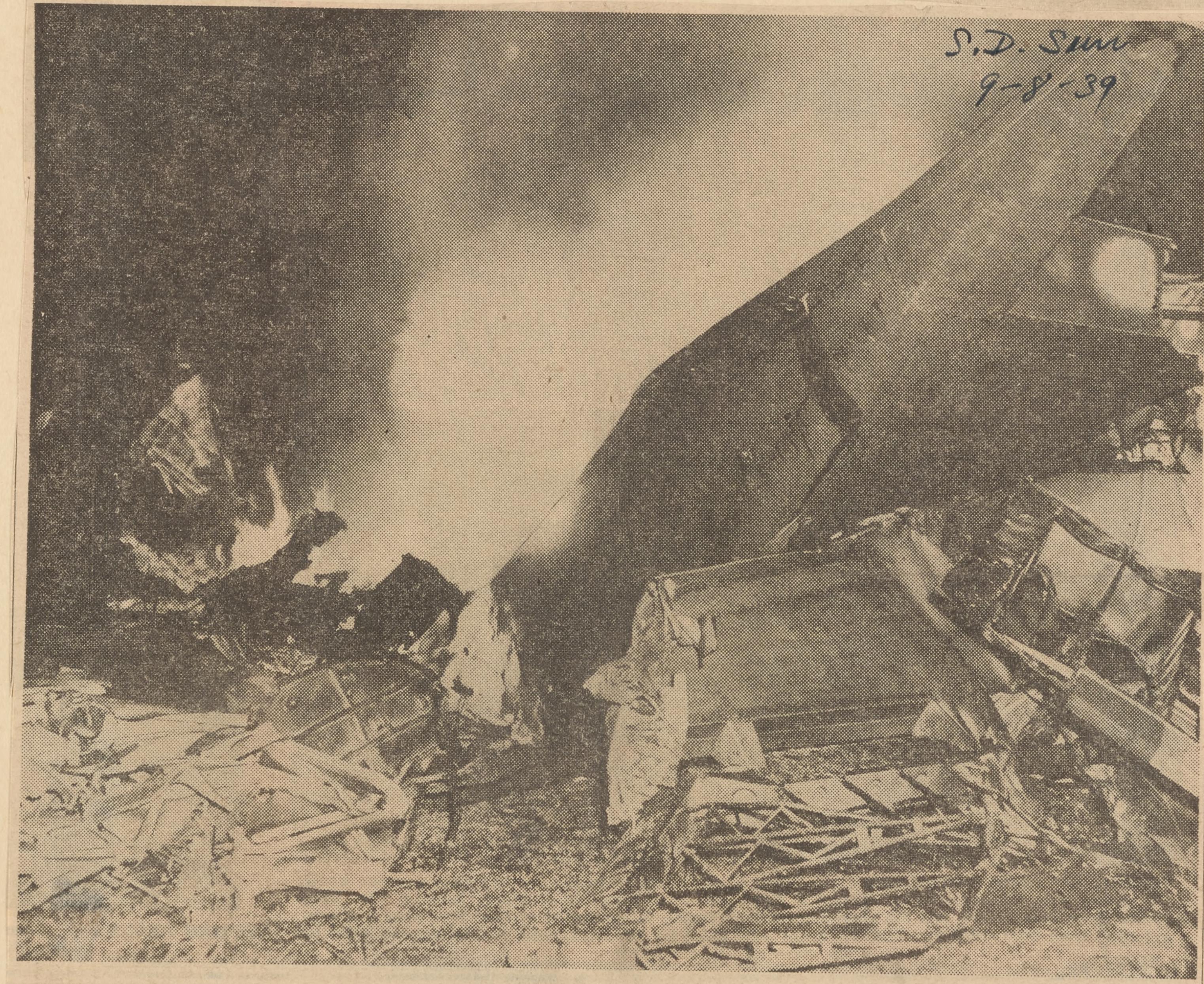
President Roosevelt's neutrality proclamation will not stand in the way of San Diego's aircraft industry fulfilling an $18,000,000 backlog of orders.

This was learned by Chamber of Commerce officials after a survey of this city's three major aircraft firms.

Consolidated Aircraft Corporation's $17,000,000 backlog of orders are all for United States Army and Navy and for American firms and individuals, chamber officials said. No portion of the orders are for belligerent nations named by the President in his neutrality measure.

Ryan Aircraft Corporation's $750,000 in orders and its recently acquired order of $200,000 from the Army likewise will not be affected by the legislation. Solar Aircraft Co., builders of airplane parts, has a backlog of more than $500,000, but none of the orders are from nations termed "belligerent" in President Roosevelt's proclamation.

The tense international situation is expected to speed up work in filling the huge orders for this government, aviation officials indicated.



S.D. Sun 9-8-39

Photo by Earl Zahm, Sun Staff Photographer.

WHERE SIX FELL TO THEIR DEATHS . . . Here is the twisted, smoking wreckage of a Consolidated seaplane which crashed last night at the Chollas Heights radio station. In the background fire still rages several hours after the plane exploded, cremating six Navy fliers. A naval board of inquiry blamed a low ceiling for the tragedy.

* * *

Radio Wires Believed Cause In San Diego Bomber Crash

Six Bodies Recovered From Wreck Of Consolidated Sea Plane

A Navy board of inquiry today learned that six fliers killed in the flaming crash of a giant patrol bomber near the Chollas Heights naval radio station probably fell to their doom when trapped over a layer of fog that blotted out vision of a radio tower and antenna rising 1100 feet above sea level.

The Consolidated seaplane, which smashed into the Chollas Heights radio antenna at 9:15 last night, fluttered a half mile farther, then plunged into the brush and exploded.

Flames leaped high into the air, brilliantly lighting the night sky, and attracting hundreds to the wreckage and blocked fire-fighting apparatus of the city and the Navy.

Killed were:

Lieut. A. H. Irons, 817 B-st, Coronado, survived by his widow and two children.

Ensign L. W. Latremore, 966 F-st, Coronado, survived by his widow.

Frank Vukovich, 31, chief aviation machinist's mate 3c, survived by his widow and three children.

V. E. Morris, 24, aviation ordinance man, 3970 Goldfinch-st, survived by his widow.

H. G. Berry, radioman 3c, 2044 Columbia-st, survived by his widow.

H. O. Wilson, aviation machinist's mate (3c), unmarried.

Death was belived to have been instantaneous. It was several

Turn to Page 2, Col. 7.

SIX KILLED IN PLANE CRASH

Airboat Strikes Wires Of Radio Towers

Sun 9-8-39

(Continued from Page 1)

hours before the pyre cooled sufficiently for salvage crews to remove the charred remains.

An official Navy announcement, as the board of inquiry convened, stated that the bomber, one of a group of six of Patrol Squadron 12 on a routine night training flight, was believed to have crashed while attempting to cut through the overcast. The ceiling over the bay last night was only 700 feet, while the Chollas Heights tower, situated at a 500-foot level rises another 600 feet.

The pilots, Lieut. Irons and Ensign Latremore, apparently anticipated landing in the harbor after descending through the fog, as the wing tip floats had been lowered. That they never saw the antenna which brought their doom was almost certain.

The other five planes of the group returned to their North Island base safely.

Funeral arrangements were being made at Bonham Bros. Mortuary today.

The accident brought the year's Navy aviation fatality list in the San Diego area to a total of 16 in seven crashes. It was the first fatal mishap in San Diego to a PBY bomber since Aug. 15, 1938, when two airboats made crash night landings near the Destroyer Base, resulting in six deaths.

S. D. Plane Hits Chollas Radio Antenna

Wreckage Burns 2 Hours; Thousands Rush to Scene

Six navy flyers were killed last night when their Consolidated patrol seaplane tore into the antenna at the Chollas Heights long-range navy radio station then crashed in the brush 3000 feet west of the radio towers and burst into flames.

Firemen and navy crews fought the fire more than two hours before it was controlled, the position of the plane making it difficult to bring fire-fighting equipment to the scene.

The dead are:

LT. A. H. IRONS, pilot, El Cordova hotel, Coronado.

ENS. L. W. LATREMORE, 966 F st., Coronado.

FRANK VUKOVICH, chief aviation machinist's mate, Coronado.

H. O. WILSON, aviation machinist's mate, third class, naval air station.

V. E. NORRIS, aviation ordnance man and naval air pilot, San Diego.

H. G. BERRY, radioman third class, San Diego.

AUTOS JAM ROADS

Thousands of San Diegans rushed to the scene as the pillar of flame lighted up the plateau where the plane crashed a mile east of Radio rd. and three-fourth of a mile south of University ave. They jammed roads with their automobiles and delayed attempts of the fire department and navy rescue crews to reach the blazing plane.

An eye witness account of the crash was given by Mr. and Mrs. Sidney Diday, 429 Sixteenth st., who were sitting in an automobile at the radio station at the time of the crash.

"As the plane flew over our heads we saw the pilot was in trouble and about to crash into the antenna," said Diday. "One of the motors was sputtering and then both engines became quiet and the plane tipped to the right to avoid the wires (of the radio station). The tip of the wing hit the wires, then the plane crashed with a roar and immediately exploded, sending clouds of smoke into the air. We could not see any landing lights on when the plane approached the wires."

A city fireman reported there was a cloud over the radio station when he arrived and thought it possible the pilot did not see the antenna.

EAST S. D. HEARS BLAST

The explosion was heard throughout East San Diego.

The plane was one of a flight of six planes engaged in regular night flying operations. The other five returned safely.

Three engine companies of the San Diego fire department responded to an alarm turned in at 9:24 p.m. They were hampered by a traffic jam on the road and were unable to approach nearer than several thousand feet.

Firemen made their way to the blazing plane with portable extin-

(Continued on Page 3, Col. 1)

C. G. [illegible] not [illegible] this article to appear

Consolidating a Reputation

CONSOLIDATED FLYING-BOATS, built by the Consolidated Aircraft Corp., Lindbergh Field, San Diego, California, U.S.A., have made two outstanding long-range flights recently. The first, by the *Guba*, was the survey crossing of the Indian Ocean, along the Imperial Reserve Route, from Australia to Africa, managed by Capt. Bill Taylor, and on across the Atlantic to California. The second was the delivery flight from San Diego to Felixstowe of the Consolidated 28-5 for the British Air Ministry. Both were reported in THE AEROPLANE at the time. The crew of the *Guba*, Russel Rogers, Lewis Yancey, Ray Booth, and Gerald Brown, also delivered the Model 28-5 flying-boat to the R.A.F. in England.

Recently we had an interesting lunch with Mr. Booth and Mr. Brown, who were brought along by Mr. John Millar, of Aviation Corporates Ltd., the British agents for Consolidated.

The Americans were loud in their praises of the great time they had had at Felixstowe where they have been turning the Service boat over to the Marine and Experimental Establishment. At the moment it has been stripped down for detailed examination by R.A.F. technical officers.—We shall be interested to learn how it flies afterwards.

Although the original intention on the British delivery flight was to fly from San Diego to Felixstowe with one stop at Botwood, Newfoundland, Messrs. Booth and Brown told us that, unfortunately, they encountered average head winds of between 30 and 40 m.p.h. on the first part of the trip. So, although they had enough fuel to take them to Botwood without any reserve, they decided to alight at Buffalo, because Botwood might be fogged in and they would have no extra fuel for cruising around.

The strong head winds brought down their average speed to Buffalo to only about 124 m.p.h. They followed the T.W.A. route across the American Continent to Chicago. On that day, July 10, the average time of the Eastbound commercial transports was 125 m.p.h. against the wind, and that of the Westbound transports somewhere about 222 m.p.h.—nothing to cause undue excitement.

For the flight from Botwood to Felixstowe the boat averaged 169 m.p.h. for the 2,460 statute miles. They arrived over Felixstowe in the dark, so they cruised around until daylight. For the whole flight the Pratt and Whitney Twin Wasps used only 995 gals. of fuel. Nearly 500 gals. were left when the boat alighted. In fact, this fuel was used for test flights by R.A.F. officers during the next two days. Only the plugs were changed before the boat was flown after its Atlantic crossing.

The clean appearance of the nacelles and wings after the crossing was particularly commented on at Felixstowe. One particularly inane Pressman suggested that the crew must have swabbed down the wings and nacelles before they alighted.

The Consolidated 28 supplied to the R.A.F. takes off and cruises on 100 octane fuel, which probably accounts for the very low consumptions. The *Guba* was operated on 87 octane fuel.

The Atlantic was crossed at about 13,500 ft. Mr. Booth was in constant radio-telephonic communication with stations on both sides of the Atlantic through the Bendix equipment.

Botwood seems to be getting quite an amount of traffic these days. At the same time as the Consolidated boat arrived from Buffalo a Boeing Clipper arrived from England. They alighted within a few minutes of each other. The remark in *Punch* that there is no danger in flying the Atlantic nowadays, except from collisions, is silly but quite funny.

Mr. Brown said that the retraction of the wing-tip floats increases the speed by about 18 or 20 m.p.h. and decreases the length of the take-off considerably. Also it improves the handleability of the boat slightly. Retraction is done electrically, and there is an emergency hand-operating gear.

Both Mr. Brown and Mr. Booth agreed with the statement which has been made in this paper any time in the past ten or twelve years namely that the wing-tip floats of big high speed flying-boats nowadays must be retractable. And both were convinced that after the Royal Air Force have done a bit of flying in the Model 28 they will be converted too.

They also told us something of the flight of the *Guba*. This boat was flown from San Diego to Netherlands New Guinea for archæological and survey work by the Archbold Expedition sponsored by the American Museum of Natural History. During its time in New Guinea the *Guba* carried a total of 450,000 lb. (about 200 tons) of freight from the coast up to Lake Habbema, 11,500 ft. above sea level.

This involved repeated alightings and take-offs from the lake at that height. We have never before heard of a flying-boat operated in such conditions. From New Guinea the *Guba* was flown to Australia and then was the first aeroplane to cross the Indian Ocean from Australia to Africa. It was also the first flying-boat to cross Africa,—which it did from Mombasa to Lagos, after which it went on to Dakar.

From Dakar the *Guba* was flown non-stop across the Atlantic to St. Thomas in the Virgin Islands, 3,300 statute miles in 19 hours 33 minutes. Actually the boat remained in the air for 22 hours because of darkness. When it alighted it still had fuel for another 10½ hours.

All across the South Atlantic there were very favourable trade winds. At times the motors were throttled to the minimum needed to keep in the air. From St. Thomas the boat was flown to Miami and on to San Diego.

Thus the *Guba* was the first aeroplane and the first flying-boat to be flown round the World near its greatest diameter. Also from Dakar to St. Thomas was the longest non-stop over-water flight by any flying-boat.

After being in the Tropics for about a year, and although there were only two mechanics with the Expedition and practically no arrangements for maintenance, the boat was in extraordinarily good condition. Hardly any repairs were necessary compared with what would be expected for an aeroplane which had flown for more than 1,000 hours, mostly in the Tropics.

The original coat of paint was still in good condition and the only refinishing done on the trip was one coat of black bituminous paint below the water line. There was practically no corrosion. During the year the boat has done 750 hours flying and has been out in the open all the time.

One lesson to be learned is that flying-boats can be stationed in out-of-the-way tropical places for long periods with only a small personnel for maintenance,—as the R.A.F. found years ago with their Short and Vickers boats.

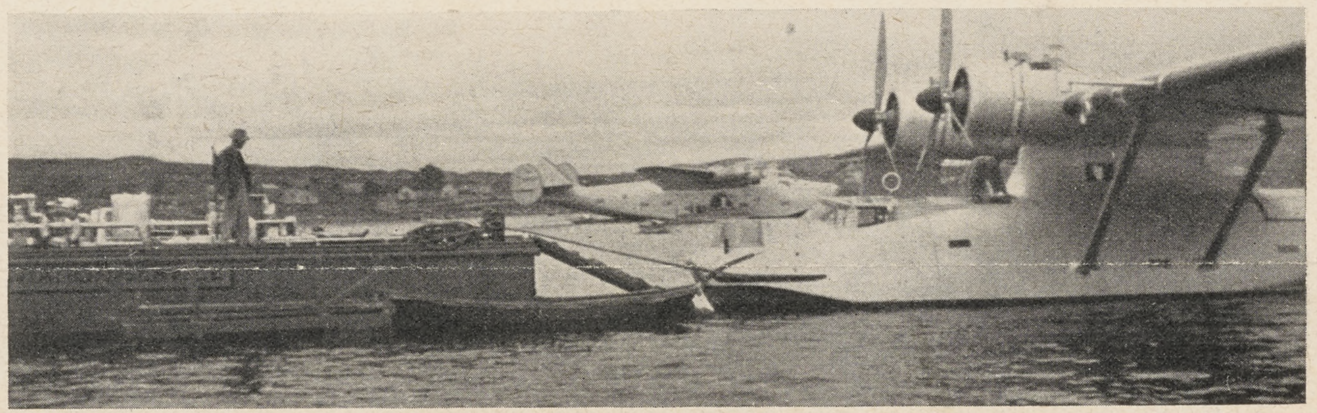
An interesting point is that complete overhauls on Consolidated boats are necessary only once every 44 months. Before these boats came into service the overhaul periods were 12 to 14 months. A strip-down of a Consolidated boat after 3½ years of service showed that complete overhaul was unnecessary, only minor repairs had to be made and there was very little corrosion.

The normal gross loaded weight of the type is 27,000 lb. Tests were made at a loaded weight of 30,500 lb. for the U.S. Department of Commerce for the licencing of the Commercial boat for American Export Airlines. The *Guba* was on occasion overloaded up to 35,000 lb., a 30% overload.

The makers do not advise open sea or rough water operation at a weight of more than 27,000 lb. Accelerometer readings in rough water tests have been as high as 8 or 10, which shows what a pounding a boat can get.

Both Mr. Booth and Mr. Brown had flown in the Consolidated Model 31 flying-boat (two 2,000 h.p. Wright Duplex Cyclones) and confirmed all the rumours of extraordinary performance which we have published about that boat.

Certainly the new Consolidated Model 31 is among the World's best aeroplanes. It contains the accumulated experience gained by the building of more than 200 PBYs for the U.S. Navy. The progress of the smaller Consolidated 28-5 in this country will be most interesting to watch.



TRANS-ATLANTIC TRAFFIC.—In the foreground the Consolidated model 28-5 flying-boat (two 1,200 h.p. Pratt and Whitney Twin Wasps) refuelling at Botwood, Newfoundland, before being flown across the Atlantic for delivery to the R.A.F.,—the first time a military aeroplane has been delivered by air from America. The Pan American Airways Boeing "Yankee Clipper," en route to New York from England, is in the background.

Sun 9-11-39

AIRBOAT PICTURES

Maj. Edgar N. Gott, vice president of the Consolidated Aircraft Corp., showed moving pictures of the manufacturing of airboats, at the University Club.

Sun 9-6-39

AIR FLAGSHIP BACK IN S. D.

Rear Admiral Ends Alaska Inspection

Aviation

The four-motored "flying flagship" of Rear Adm. Arthur B. Cook, Aircraft Scouting Force commander, today was back at its San Diego base after a tour of patrol plane facilities in the Alaska-Aleutian Islands area.

Piloted by Comdr. Andrew Crinkley, the 25-ton Consolidated bomber yesterday flew with a nine man crew from Sitka, Alaska, to San Francisco, then to San Diego on a spectacular 1900-mile flight.

Meanwhile, the surface flagship of Rear Adm. Cook, the light cruiser Memphis, was scheduled to leave Kodiak for Dutch Harbor today in a continuation of the officers' inspection of Navy air bases in the far north.

MEMPHIS GOING

The Memphis will depart Monday from Dutch Harbor for Hawaii, where the Navy's greatest concentration of long-range patrol bombers is based.

Due home this week from Mare Island Navy Yard after several weeks' overhaul are the destroyers Aylwin and Dale of Division Two, which has been reported slated for transfer, probably in October, to the Asiatic Fleet as replacements for older vessels. The two craft will anchor in San Diego Saturday. A third destroyer, the 1850-ton USS Phelps, will arrive from Mare Island Sept. 15.

OTHER ARRIVALS

Other arrivals from Mare Island this month will be the destroyers Henley, Helm, Craven and Fanning, on Sept. 20. Destroyer Division 28—the Southard, Chandler, Hovey and Long—will proceed to Mare Island for overhaul Sept. 18, and the aircraft carrier Yorktown will go to Puget Sound Navy Yard Sept. 20 for its first overhaul since coming to the west coast with the Fleet last May to begin permanent duty in San Diego.

Union 9-7-39

S. D. Aircraft Output Escapes Neutrality Ban

In sharp contrast to Los Angeles, where aircraft factories are affected deeply by the President's proclamation putting an embargo on delivery of planes and accessories to European belligerents, San Diego's aircraft industry is not affected by the neutrality measures.

Work is going on as usual here on the $18,000,000 backlog of orders for airplanes and accessories while in Los Angeles millions of dollars in orders from France and Great Britain cannot be filled under the neutrality proclamation.

Aviation leaders, speaking informally, indicated belief that instead of slowing down, aircraft work here would tend to speed up to fill U. S. government orders in view of the tense international situation.

Of the $17,000,000 backlog now awaiting fulfillment by Consolidated Aircraft Corp., no portion is for export to any of the belligerent nations named in the proclamation, chamber of commerce officials declared. They said all unfilled Consolidated orders are for the United States army and navy and for American firms and individuals.

Ryan Aircraft Corp., possessing a backlog of more than $750,000 and a new order of nearly $200,000 from the army, likewise is unaffected by the President's neutrality measure. Solar Aircraft Co., builders of airplane parts, has a backlog of more than $500,000 but none of the orders are from nations named in the proclamation.

---

6 S. D. Fliers Killed in Crash

Union 9-8-39

(Continued from Page 1)

guishers but were unable to cope with the flames.

Eddie McLarney, fire department battalion chief, fought his way with firemen close to the plane and said he saw five bodies jammed in the forward part of the still smoking ruins. He said it was possible the other was under wrecked parts of the craft. McLarney said the bodies were burned beyond recognition.

BODIES TAKEN OUT

The navy rushed special equipment to fight gasoline fires and late last night sought to cool the wreckage to permit removal of the bodies. On removal they were taken to Bonham's mortuary.

There was a report that the wing tip of the plane was torn off when it struck the radio station wires and was found several hundred feet from the foot of one of the great radio towers which project several hundred feet into the air.

The Chollas Heights radio station refused to answer questions about damage to the station, which transmits messages to navy outposts all over the world.

Air Consolidated

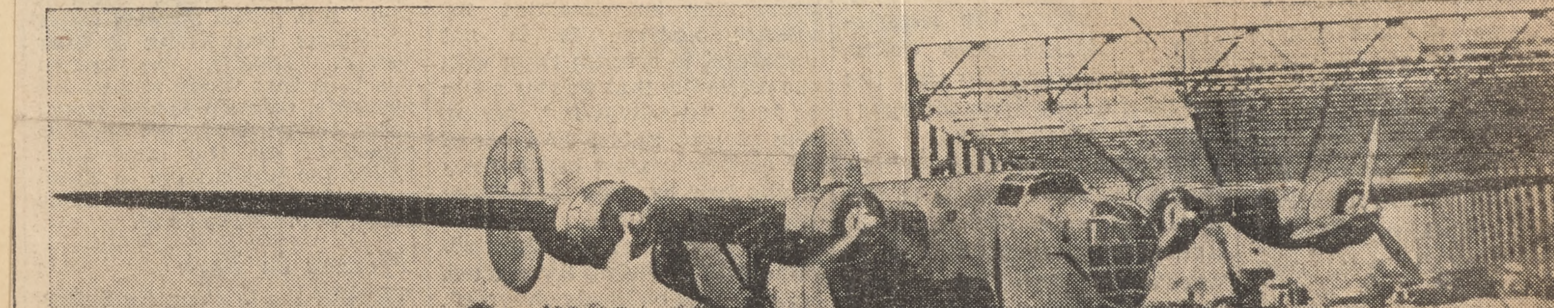
Romeike & Curtice Ltd

Telephone
CENTRAL 2781
(2 Lines.)

35, Shoe Lane.
LONDON.
E.C.4.

EXTRACT FROM
YORKSHIRE POST,
55, Albion Street, Leeds

New Giant American Bomber



This huge four-engined long-range bomber, the Consolidated Aircraft Corporation's B—24, received its initial test at San Diego, California. The bomber, the first of its type, weighs 20 tons, has a cruising range of 3,000 miles and a speed of 300 miles per hour.

Air-Conditioned By Nature

San Diego—where your thermometer works less than in any other American city. Only thrice in 64 years has the mercury fallen below 32 or risen above 100 degrees. In the last five years the lowest recorded temperature has been 38 degrees, the highest 94 degrees.

The San Diego Union

Weather Forecast

Fair today and probably tomorrow; somewhat warmer; moderate west and northwest winds.

Temperature tables will be found in detailed weather report on Page 7, Section B.

ESTABLISHED 1868—SEVENTY-FIRST YEAR | No. 27,674 | SAN DIEGO, CALIFORNIA, FRIDAY MORNING, SEPT. 8, 1939 | SECTION A | DAILY 5 CENTS—SUNDAY 10 CENTS

SIX KILLED IN NAVY BOMBER CRASH

S. D. TO FILL PLANE ORDERS

Neutrality Not In Way Of $18,000,000 Back Log

Sun 9-7-39

Aviation

President Roosevelt's neutrality proclamation will not stand in the way of San Diego's aircraft industry fulfilling an $18,000,000 backlog of orders.

This was learned by Chamber of Commerce officials after a survey of this city's three major aircraft firms.

Consolidated Aircraft Corporation's $17,000,000 backlog of orders are all for United States Army and Navy and for American firms and individuals, chamber officials said. No portion of the orders are for belligerent nations named by the President in his neutrality measure.

Ryan Aircraft Corporation's $750,000 in orders and its recently acquired order of $200,000 from the Army likewise will not be affected by the legislation. Solar Aircraft Co., builders of airplane parts, has a backlog of more than $500,000, but none of the orders are from nations termed "belligerent" in President Roosevelt's proclamation.

The tense international situation is expected to speed up work in filling the huge orders for this government, aviation officials indicated.

S.D. Sun
9-8-39

Photo by Earl Zahm, Sun Staff Photographer.

WHERE SIX FELL TO THEIR DEATHS . . . Here is the twisted, smoking wreckage of a Consolidated seaplane which crashed last night at the Chollas Heights radio station. In the background fire still rages several hours after the plane exploded, cremating six Navy fliers. A naval board of inquiry blamed a low ceiling for the tragedy.

☼ ☼ ☼

Radio Wires Believed Cause In San Diego Bomber Crash

Six Bodies Recovered From Wreck Of Consolidated Sea Plane

A Navy board of inquiry today learned that six fliers killed in the flaming crash of a giant patrol bomber near the Chollas Heights naval radio station probably fell to their doom when trapped over a layer of fog that blotted out vision of a radio tower and antenna rising 1100 feet above sea level.

The Consolidated seaplane, which smashed into the Chollas Heights radio antenna at 9:15 last night, fluttered a half mile farther, then plunged into the brush and exploded.

Flames leaped high into the air, brilliantly lighting the night sky, and attracting hundreds to the wreckage and blocked fire-fighting apparatus of the city and the Navy.

Killed were:

Lieut. A. H. Irons, 817 B-st, Coronado, survived by his widow and two children.

Ensign L. W. Latremore, 966 F-st, Coronado, survived by his widow.

Frank Vukovich, 31, chief aviation machinist's mate 3c, survived by his widow and three children.

V. E. Morris, 24, aviation ordinance man, 3970 Goldfinch-st, survived by his widow.

H. G. Berry, radioman 3c, 2044 Columbia-st, survived by his widow.

H. O. Wilson, aviation machinist's mate (3c), unmarried.

Death was belived to have been instantaneous. It was several

Turn to Page 2, Col. 7.

SIX KILLED IN PLANE CRASH

Airboat Strikes Wires Of Radio Towers

Sun 9-8-39

(Continued from Page 1)

hours before the pyre cooled sufficiently for salvage crews to remove the charred remains.

An official Navy announcement, as the board of inquiry convened, stated that the bomber, one of a group of six of Patrol Squadron 12 on a routine night training flight, was believed to have crashed while attempting to cut through the overcast. The ceiling over the bay last night was only 700 feet, while the Chollas Heights tower, situated at a 500-foot level rises another 600 feet.

The pilots, Lieut. Irons and Ensign Latremore, apparently anticipated landing in the harbor after descending through the fog, as the wing tip floats had been lowered. That they never saw the antenna which brought their doom was almost certain.

The other five planes of the group returned to their North Island base safely.

Funeral arrangements were being made at Bonham Bros. Mortuary today.

The accident brought the year's Navy aviation fatality list in the San Diego area to a total of 16 in seven crashes. It was the first fatal mishap in San Diego to a PBY bomber since Aug. 15, 1938, when two airboats made crash night landings near the Destroyer Base, resulting in six deaths.

S. D. Plane Hits Chollas Radio Antenna

Wreckage Burns 2 Hours; Thousands Rush to Scene

Six navy flyers were killed last night when their Consolidated patrol seaplane tore into the antenna at the Chollas Heights long-range navy radio station then crashed in the brush 3000 feet west of the radio towers and burst into flames.

Firemen and navy crews fought the fire more than two hours before it was controlled, the position of the plane making it difficult to bring fire-fighting equipment to the scene.

The dead are:

LT. A. H. IRONS, pilot, El Cordova hotel, Coronado.

ENS. L. W. LATREMORE, 966 F st., Coronado.

FRANK VUKOVICH, chief aviation machinist's mate, Coronado.

H. O. WILSON, aviation machinist's mate, third class, naval air station.

V. E. NORRIS, aviation ordnance man and naval air pilot, San Diego.

H. G. BERRY, radioman third class, San Diego.

AUTOS JAM ROADS

Thousands of San Diegans rushed to the scene as the pillar of flame lighted up the plateau where the plane crashed a mile east of Radio rd. and three-fourth of a mile south of University ave. They jammed roads with their automobiles and delayed attempts of the fire department and navy rescue crews to reach the blazing plane.

An eye witness account of the crash was given by Mr. and Mrs. Sidney Diday, 429 Sixteenth st., who were sitting in an automobile at the radio station at the time of the crash.

"As the plane flew over our heads we saw the pilot was in trouble and about to crash into the antenna," said Diday. "One of the motors was sputtering and then both engines became quiet and the plane tipped to the right to avoid the wires (of the radio station). The tip of the wing hit the wires, then the plane crashed with a roar and immediately exploded, sending clouds of smoke into the air. We could not see any landing lights on when the plane approached the wires."

A city fireman reported there was a cloud over the radio station when he arrived and thought it possible the pilot did not see the antenna.

EAST S. D. HEARS BLAST

The explosion was heard throughout East San Diego.

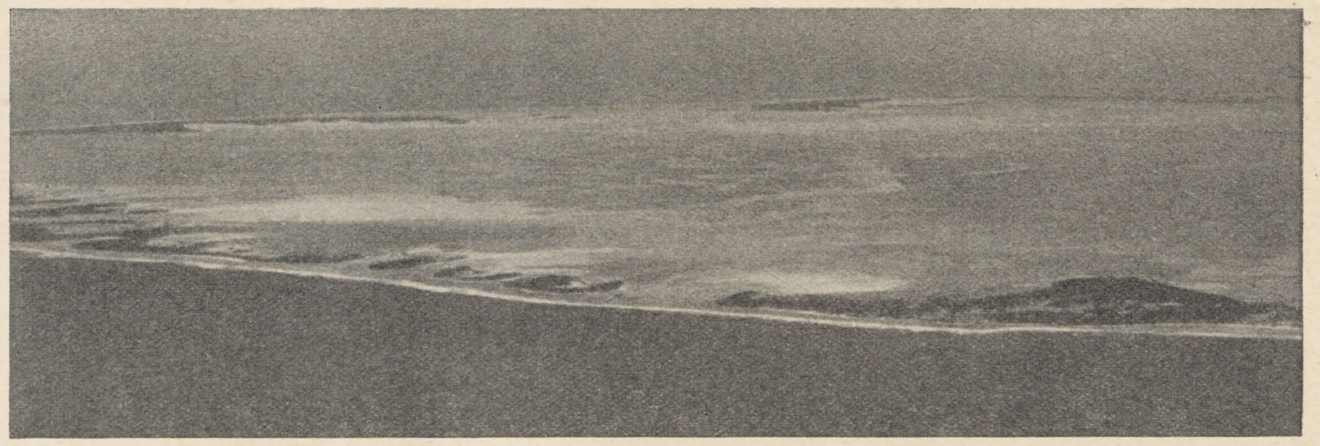
The plane was one of a flight of six planes engaged in regular night flying operations. The other five returned safely.

Three engine companies of the San Diego fire department responded to an alarm turned in at 9:24 p.m. They were hampered by a traffic jam on the road and were unable to approach nearer than several thousand feet.

Firemen made their way to the blazing plane with portable extin-

(Continued on Page 3, Col. 1)

AUGUST 9, 1939 177 THE AEROPLANE



ON THE IMPERIAL RESERVE ROUTE.—The Cocos Island Reef and its lagoon, the main island is in the right-hand bottom corner. This is probably the first air picture to be published of Cocos Island,—and few photographs of any group of atolls have been seen.

Wings over the North Sea

CAPTAIN NORMAN MACMILLAN had a beautiful story in the *Daily Mail* on July 26 headed " Germans Fly Over the East Coast." He tells us that " a keen watch is being kept by the R.A.F. on the East Coast areas following the appearance of German military aircraft close to British shores on a number of occasions during the past few weeks. These machines have been engaged either on specific exercises or normal routine training flights."

That is all very probable. German machines from Jutland and the islands round about Sylt cruising over the North Sea are almost bound to get over the British or Scottish coast somewhere or another, just as our navigation pupils aiming, with the best of good will, from Manston to Edinburgh occasionally find themselves over Holland and Belgium.

Also there is the possibility that enthusiastic young air scouts in high-speed machines may have mistaken German Junkers or Condor air liners for German bombers. Certainly the Condor at high cruising speed would take some catching and seeing.

Capt. Macmillan very rightly says that there can be no connection between these German flights over British territory and the long-distance flights of the R.A.F. over France, because the German military machines were seen over British territory before the British training flights to France began.

Young navigators on training flights cannot well help trespassing over foreign territory at times. Look at the number of people from French training schools in foreign aeroplanes who landed in Red Spain and stayed there

The London Airports Committee

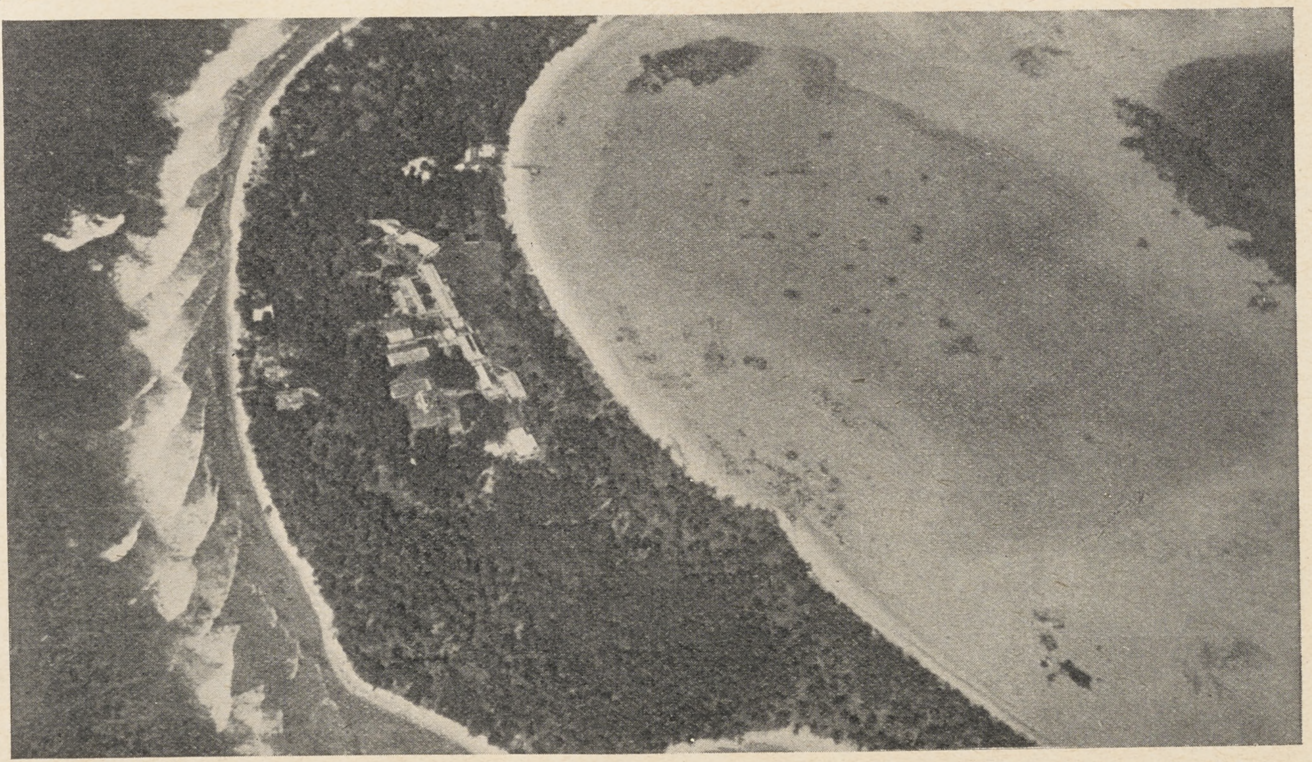
REAR ADMIRAL SIR MURRAY SUETER (Con. Hertford) asked the Secretary of State for Air in Parliament on July 25 whether he could make any statement about the proposed London Airport Committee.

SIR KINGSLEY WOOD, Secretary of State for Air, said that a London Civil Airports Joint Committee had been appointed representative of the Air Ministry and the Corporation of London, the two parties which own terminal airports in the London Area.

The Chairman will be the Parliamentary Under-Secretary of State for Air, and each of the parties will appoint three members.

The duties of the Committee are: 1. To make proposals to the Secretary for Air and the Corporation of London for the pooling of receipts from all the airports. 2. To consider plans for distributing traffic among them and advising the Secretary of State thereon. 3. To consider general matters of terminal airport organization in the London Area.

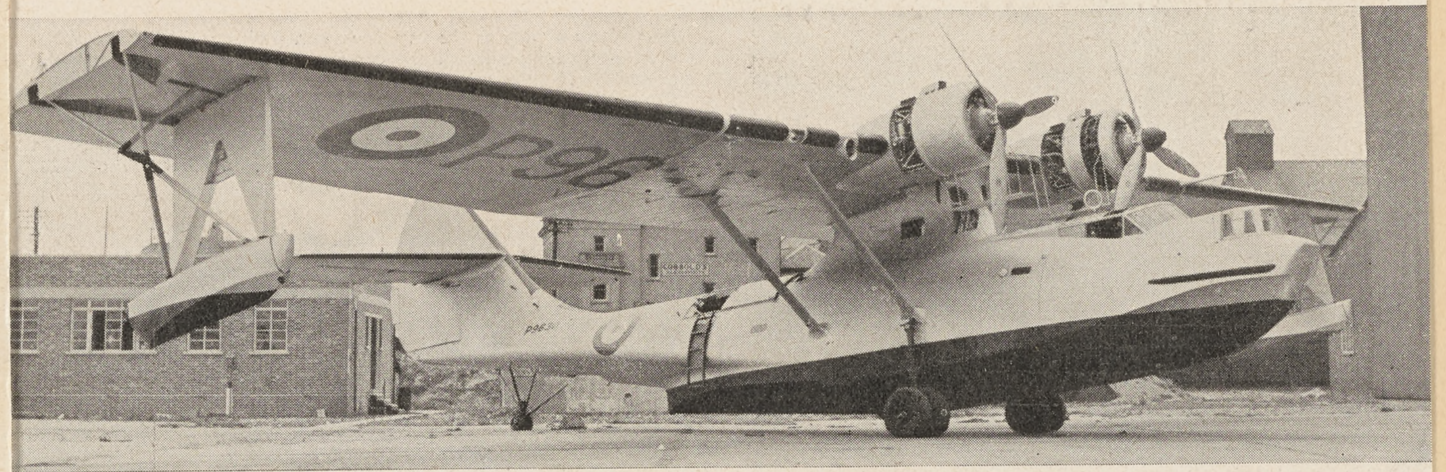
The Committee at present is constituted as follows: Captain Harold Balfour, Chairman; Lt.-Col. Sir Francis Shelmerdine, Director-General of Civil Aviation; Sir Harold Howitt and Mr. Whitney Straight representing the Secretary of State. Alderman F. Horner, Chairman of the Airport Committee of the Corporation of the City of London, Mr. Sheriff Rowland, and Alderman Colonel Whitaker will represent the Corporation. The Joint Secretaries are the Deputy-Director of Civil Aviation, Mr. Hildred, and the Town Clerk.



ON THE IMPERIAL RESERVE ROUTE:—The main Island, showing the Radio Station, photographed from above by a member of the crew of the flying-boat "Guba," in which Captain Bill Taylor made his survey of the route. The same member of the crew took the picture at the top of this page. The heavy surf from the open ocean on the left is an interesting contrast with the calm transparent water in the lagoon on the right.

c3

FLIGHT, August 10, 1939.



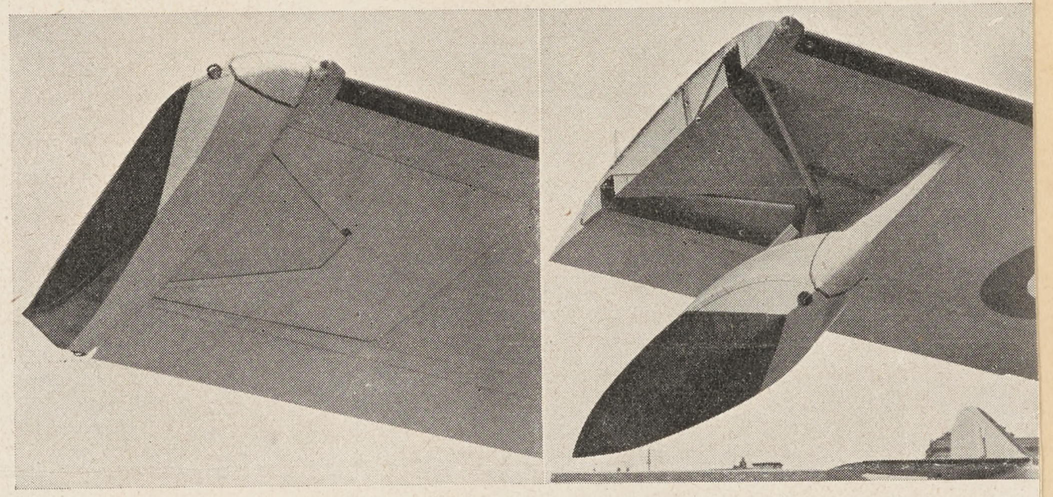
PICTORIAL SPECIFICATION

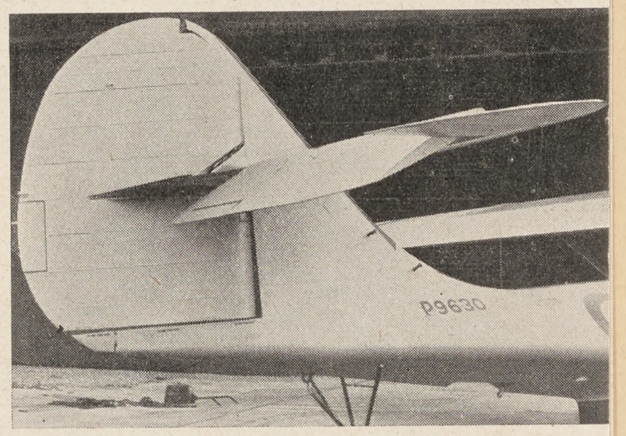
A Photographic Study of a Notable American Flying Boat

(Illustrated with "Flight" photographs)

THROUGH the courtesy of the Air Ministry, who have acquired the machine for experimental purposes, *Flight's* chief photographer was able at Felixstowe last week to "go to work" on the American Consolidated Model 28-5 twin-engined flying boat. This machine was lately flown across the Atlantic from Botwood, Newfoundland, to the Marine Aircraft Experimental Establishment at Felixstowe after having flown to Botwood from the Consolidated factory in San Diego.

In all essentials the machine resembles the PBY machines, more than 200 of which are being supplied to the U.S. Navy and which have replaced destroyers for scouting and reconnaissance duties. Despite its comparatively low wing loading, the 28-5 is claimed to have a maximum range of more than 4,200 miles. The engines are two Pratt and Whitney Twin Wasps and the top speed is claimed to be over 200 m.p.h.

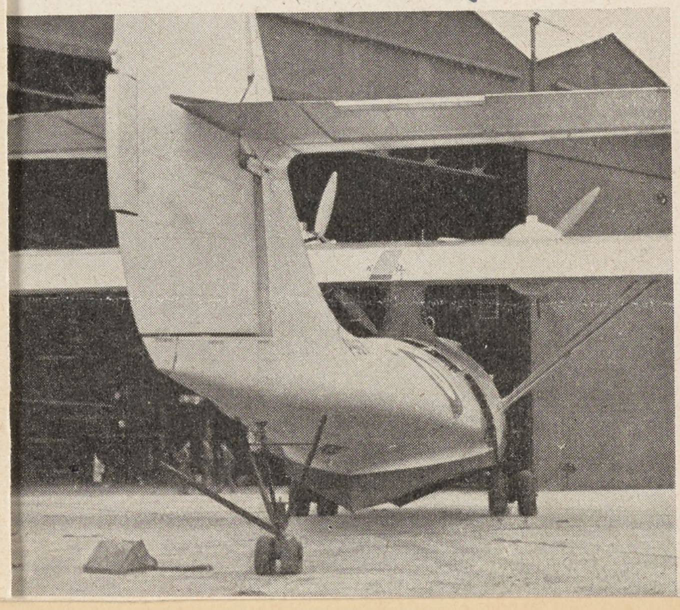


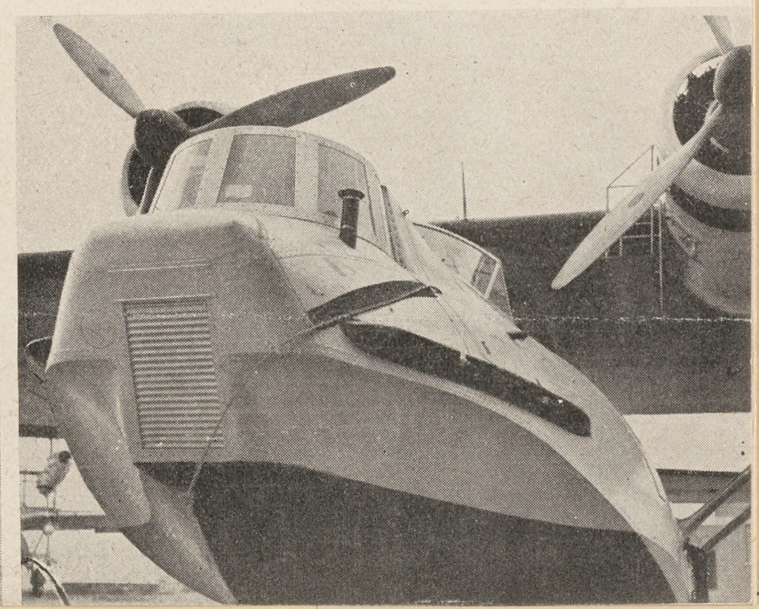


The characteristic features of the Consolidated 28-5—large wing area, retractable wing-tip floats and peculiar hull formation—are apparent in the top view on this page. Below it are close-ups of the float retracted and partially extended while on the right is a study of the tail with its single fin and very large rudder, the former built integral with the hull. Below, on the left, is a view which shows more details of the tail, the broad hull and the termination of the step. Finally, there is a view of the bows showing the location of the bomb aimer's window and the gun turret.

c

OVER.





---

other was under wrecked parts of the craft. McLarney said the bodies were burned beyond recognition.

BODIES TAKEN OUT

The navy rushed special equipment to fight gasoline fires and late last night sought to cool the wreckage to permit removal of the bodies. On removal they were taken to Bonham's mortuary.

There was a report that the wing tip of the plane was torn off when it struck the radio station wires and was found several hundred feet from the foot of one of the great radio towers which project several hundred feet into the air.

The Chollas Heights radio station refused to answer questions about damage to the station, which transmits messages to navy outposts all over the world.

Sun 9-11-39

AIRBOAT PICTURES

Maj. Edgar N. Gott, vice president of the Consolidated Aircraft Corp., showed moving pictures of the manufacturing of airboats, at the University Club.

Sun 9-6-39

AIR FLAGSHIP BACK IN S. D.

Rear Admiral Ends Alaska Inspection

Aviation

The four-motored "flying flagship" of Rear Adm. Arthur B. Cook, Aircraft Scouting Force commander, today was back at its San Diego base after a tour of patrol plane facilities in the Alaska-Aleutian Islands area.

Piloted by Comdr. Andrew Crinkley, the 25-ton Consolidated bomber yesterday flew with a nine man crew from Sitka, Alaska, to San Francisco, then to San Diego on a spectacular 1900-mile flight.

Meanwhile, the surface flagship of Rear Adm. Cook, the light cruiser Memphis, was scheduled to leave Kodiak for Dutch Harbor today in a continuation of the officers' inspection of Navy air bases in the far north.

MEMPHIS GOING

The Memphis will depart Monday from Dutch Harbor for Hawaii, where the Navy's greatest concentration of long-range patrol bombers is based.

Due home this week from Mare Island Navy Yard after several weeks' overhaul are the destroyers Aylwin and Dale of Division Two, which has been reported slated for transfer, probably in October, to the Asiatic Fleet as replacements for older vessels. The two craft will anchor in San Diego Saturday. A third destroyer, the 1850-ton USS Phelps, will arrive from Mare Island Sept. 15.

OTHER ARRIVALS

Other arrivals from Mare Island this month will be the destroyers Henley, Helm, Craven and Fanning, on Sept. 20. Destroyer Division 28—the Southard, Chandler, Hovey and Long—will proceed to Mare Island for overhaul Sept. 18, and the aircraft carrier Yorktown will go to Puget Sound Navy Yard Sept. 20 for its first overhaul since coming to the west coast with the Fleet last May to begin permanent duty in San Diego.

Union 9-7-39

S. D. Aircraft Output Escapes Neutrality Ban

In sharp contrast to Los Angeles, where aircraft factories are affected deeply by the President's proclamation putting an embargo on delivery of planes and accessories to European belligerents, San Diego's aircraft industry is not affected by the neutrality measures.

Work is going on as usual here on the $18,000,000 backlog of orders for airplanes and accessories while in Los Angeles millions of dollars in orders from France and Great Britain cannot be filled under the neutrality proclamation.

Aviation leaders, speaking informally, indicated belief that instead of slowing down, aircraft work here would tend to speed up to fill U. S. government orders in view of the tense international situation.

Of the $17,000,000 backlog now awaiting fulfillment by Consolidated Aircraft Corp., no portion is for export to any of the belligerent nations named in the proclamation, chamber of commerce officials declared. They said all unfilled Consolidated orders are for the United States army and navy and for American firms and individuals.

Ryan Aircraft Corp., possessing a backlog of more than $750,000 and a new order of nearly $200,000 from the army, likewise is unaffected by the President's neutrality measure. Solar Aircraft Co., builders of airplane parts, has a backlog of more than $500,000 but none of the orders are from nations named in the proclamation.

Air Consolidated

Romeike & Curtice Ltd

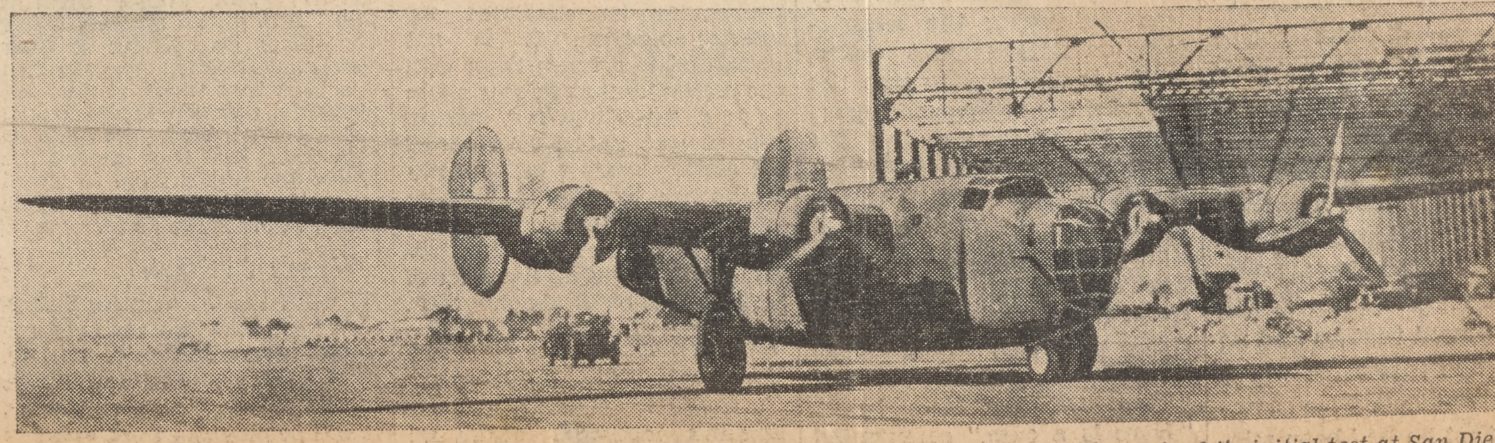
Telephone CENTRAL 2781 (2 Lines.)

R&C

35, Shoe Lane. LONDON. E.C.4.

EXTRACT FROM
YORKSHIRE POST,
55, Albion Street, Leeds

New Giant American Bomber



This huge four-engined long-range bomber, the Consolidated Aircraft Corporation's B—24, received its initial test at San Diego, California. The bomber, the first of its type, weighs 20 tons, has a cruising range of 3,000 miles and a speed of 300 miles per hour.

Air-Conditioned By Nature

San Diego—where your thermometer works less than in any other American city. Only thrice in 64 years has the mercury fallen below 32 or risen above 100 degrees. In the last five years the lowest recorded temperature has been 39 degrees, the highest 94 degrees.

The San Diego Union

ESTABLISHED 1868—SEVENTY-FIRST YEAR | No. 27,674 | SAN DIEGO, CALIFORNIA, FRIDAY MORNING, SEPT. 8, 1939 | SECTION A | DAILY 5 CENTS—SUNDAY 10 CENTS

Weather Forecast

Fair today and probably tomorrow; somewhat warmer; moderate west and northwest winds.

Temperature tables will be found in detailed weather report on Page 7, Section B.

SIX KILLED IN NAVY BOMBER CRASH

S. D. TO FILL PLANE ORDERS

Neutrality Not In Way Of $18,000,000 Back Log

Sun 9-7-39

Aviation

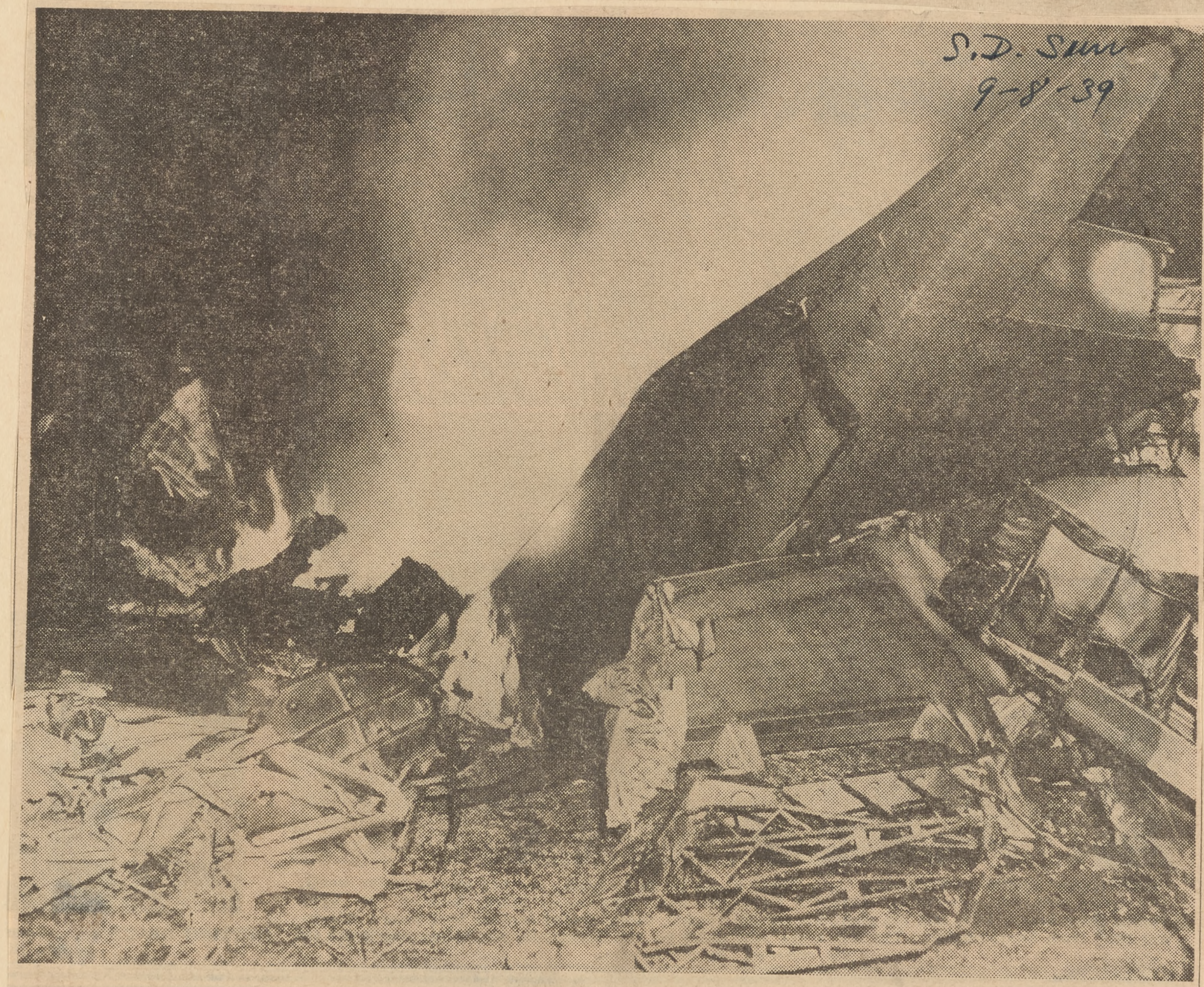
President Roosevelt's neutrality proclamation will not stand in the way of San Diego's aircraft industry fulfilling an $18,000,000 backlog of orders.

This was learned by Chamber of Commerce officials after a survey of this city's three major aircraft firms.

Consolidated Aircraft Corporation's $17,000,000 backlog of orders are all for United States Army and Navy and for American firms and individuals, chamber officials said. No portion of the orders are for belligerent nations named by the President in his neutrality measure.

Ryan Aircraft Corporation's $750,000 in orders and its recently acquired order of $200,000 from the Army likewise will not be affected by the legislation. Solar Aircraft Co., builders of airplane parts, has a backlog of more than $500,000, but none of the orders are from nations termed "belligerent" in President Roosevelt's proclamation.

The tense international situation is expected to speed up work in filling the huge orders for this government, aviation officials indicated.



S.D. Sun
9-8-39

Photo by Earl Zahm, Sun Staff Photographer.

WHERE SIX FELL TO THEIR DEATHS . . . Here is the twisted, smoking wreckage of a Consolidated seaplane which crashed last night at the Chollas Heights radio station. In the background fire still rages several hours after the plane exploded, cremating six Navy fliers. A naval board of inquiry blamed a low ceiling for the tragedy.

* * *

Radio Wires Believed Cause In San Diego Bomber Crash

Six Bodies Recovered From Wreck Of Consolidated Sea Plane

A Navy board of inquiry today learned that six fliers killed in the flaming crash of a giant patrol bomber near the Chollas Heights naval radio station probably fell to their doom when trapped over a layer of fog that blotted out vision of a radio tower and antenna rising 1100 feet above sea level.

The Consolidated seaplane, which smashed into the Chollas Heights radio antenna at 9:15 last night, fluttered a half mile farther, then plunged into the brush and exploded.

Flames leaped high into the air, brilliantly lighting the night sky, and attracting hundreds to the wreckage and blocked fire-fighting apparatus of the city and the Navy.

Killed were:

Lieut. A. H. Irons, 817 B-st, Coronado, survived by his widow and two children.

Ensign L. W. Latremore, 966 F-st, Coronado, survived by his widow.

Frank Vukovich, 31, chief aviation machinist's mate 3c, survived by his widow and three children.

V. E. Morris, 24, aviation ordinance man, 3970 Goldfinch-st, survived by his widow.

H. G. Berry, radioman 3c, 2044 Columbia-st, survived by his widow.

H. O. Wilson, aviation machinist's mate (3c), unmarried.

Death was believed to have been instantaneous. It was several

Turn to Page 2, Col. 7.

SIX KILLED IN PLANE CRASH

Airboat Strikes Wires Of Radio Towers

Sun 9-8-39

(Continued from Page 1)

hours before the pyre cooled sufficiently for salvage crews to remove the charred remains.

An official Navy announcement, as the board of inquiry convened, stated that the bomber, one of a group of six of Patrol Squadron 12 on a routine night training flight, was believed to have crashed while attempting to cut through the overcast. The ceiling over the bay last night was only 700 feet, while the Chollas Heights tower, situated at a 500-foot level rises another 600 feet.

The pilots, Lieut. Irons and Ensign Latremore, apparently anticipated landing in the harbor after descending through the fog, as the wing tip floats had been lowered. That they never saw the antenna which brought their doom was almost certain.

The other five planes of the group returned to their North Island base safely.

Funeral arrangements were being made at Bonham Bros. Mortuary today.

The accident brought the year's Navy aviation fatality list in the San Diego area to a total of 16 in seven crashes. It was the first fatal mishap in San Diego to a PBY bomber since Aug. 15, 1938, when two airboats made crash night landings near the Destroyer Base, resulting in six deaths.

S. D. Plane Hits Chollas Radio Antenna

Wreckage Burns 2 Hours; Thousands Rush to Scene

Six navy flyers were killed last night when their Consolidated patrol seaplane tore into the antenna at the Chollas Heights long-range navy radio station then crashed in the brush 3000 feet west of the radio towers and burst into flames.

Firemen and navy crews fought the fire more than two hours before it was controlled, the position of the plane making it difficult to bring fire-fighting equipment to the scene.

The dead are:

LT. A. H. IRONS, pilot, El Cordova hotel, Coronado.

ENS. L. W. LATREMORE, 966 F st., Coronado.

FRANK VUKOVICH, chief aviation machinist's mate, Coronado.

H. O. WILSON, aviation machinist's mate, third class, naval air station.

V. E. NORRIS, aviation ordnance man and naval air pilot, San Diego.

H. G. BERRY, radioman third class, San Diego.

AUTOS JAM ROADS

Thousands of San Diegans rushed to the scene as the pillar of flame lighted up the plateau where the plane crashed a mile east of Radio rd. and three-fourth of a mile south of University ave. They jammed roads with their automobiles and delayed attempts of the fire department and navy rescue crews to reach the blazing plane.

An eye witness account of the crash was given by Mr. and Mrs. Sidney Diday, 429 Sixteenth st., who were sitting in an automobile at the radio station at the time of the crash.

"As the plane flew over our heads we saw the pilot was in trouble and about to crash into the antenna," said Diday. "One of the motors was sputtering and then both engines became quiet and the plane tipped to the right to avoid the wires (of the radio station). The tip of the wing hit the wires, then the plane crashed with a roar and immediately exploded, sending clouds of smoke into the air. We could not see any landing lights on when the plane approached the wires."

A city fireman reported there was a cloud over the radio station when he arrived and thought it possible the pilot did not see the antenna.

EAST S. D. HEARS BLAST

The explosion was heard throughout East San Diego.

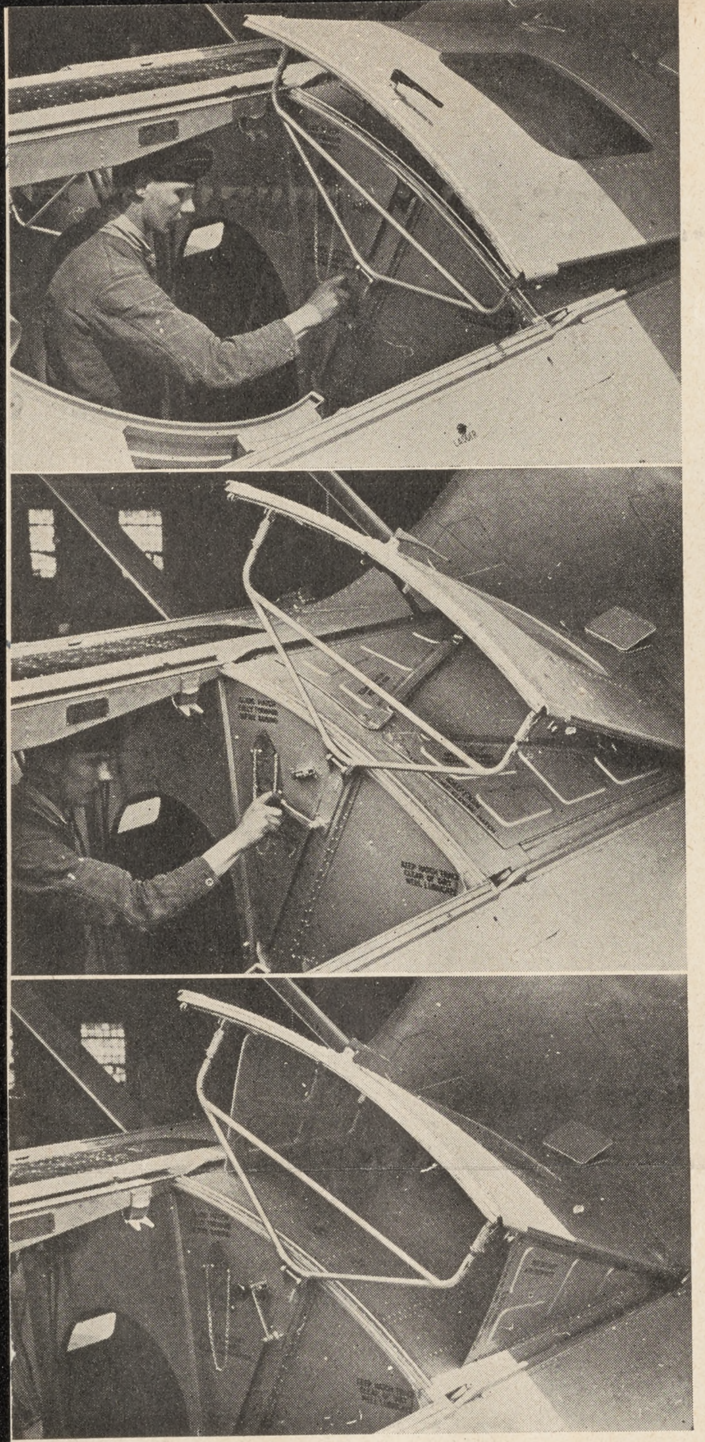
The plane was one of a flight of six planes engaged in regular night flying operations. The other five returned safely.

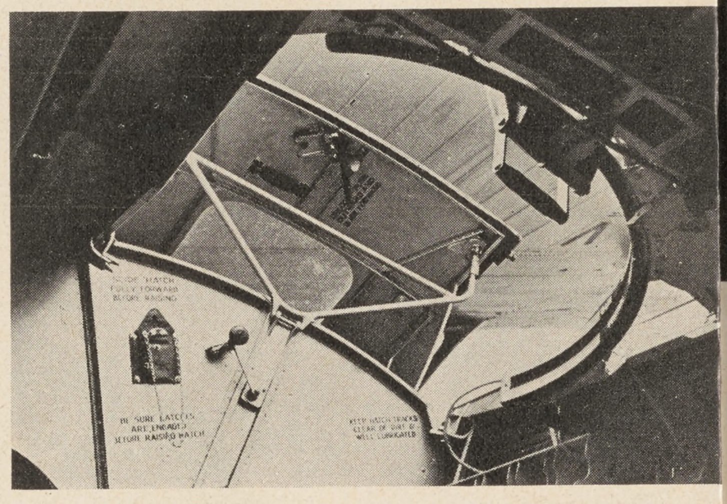
Three engine companies of the San Diego fire department responded to an alarm turned in at 9:24 p.m. They were hampered by a traffic jam on the road and were unable to approach nearer than several thousand feet.

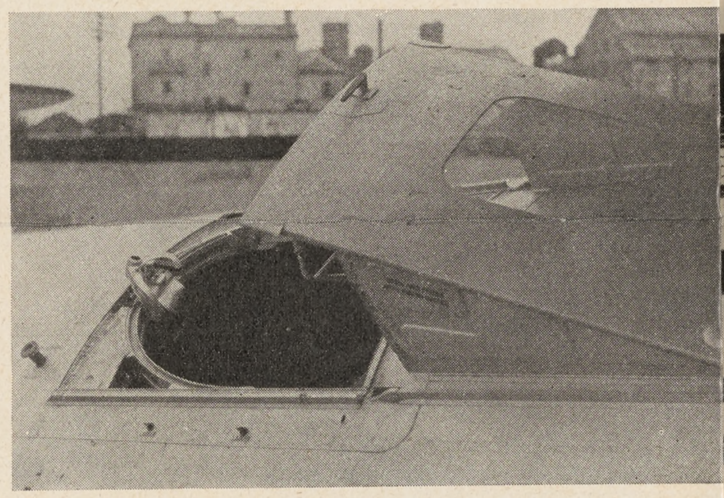
Firemen made their way to the blazing plane with portable extin-

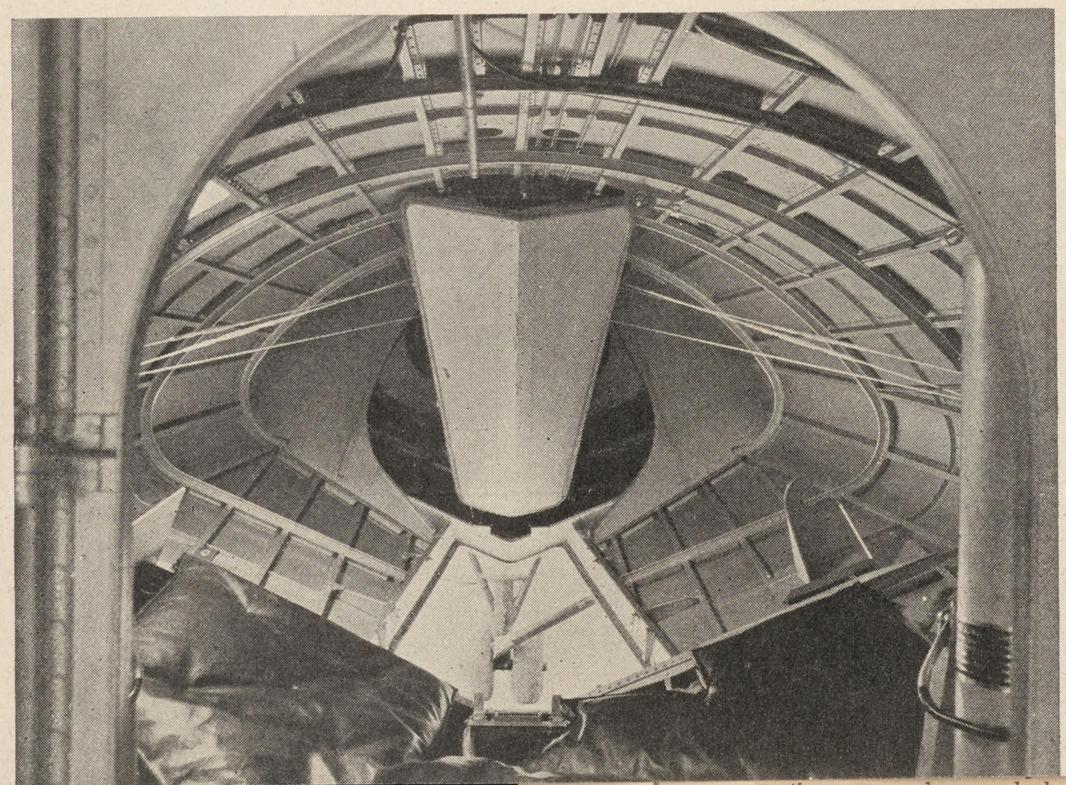
(Continued on Page 3, Col. 1)

Five views of one of the two deck gun positions. On the left the portion of decking which protects the gunner from the airstream is shown being raised after having been slid forward. The third view shows the side plates in position. Below is a "shot" of the gunner's position from inside the hull and below that is a view showing everything ready for action, except that the gun is not fitted to the track-type mounting which, incidentally, operates very smoothly.

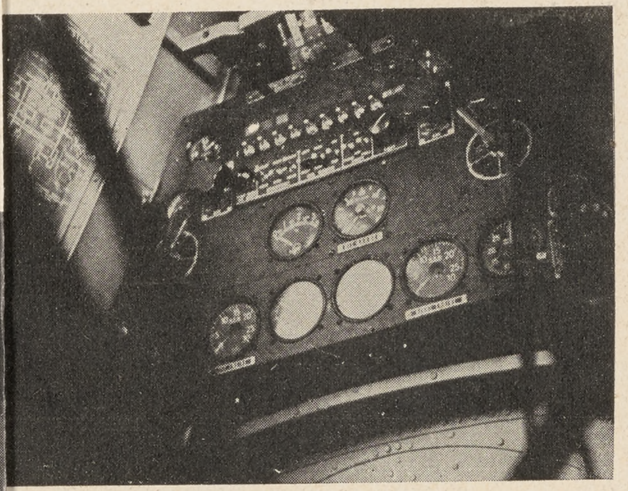




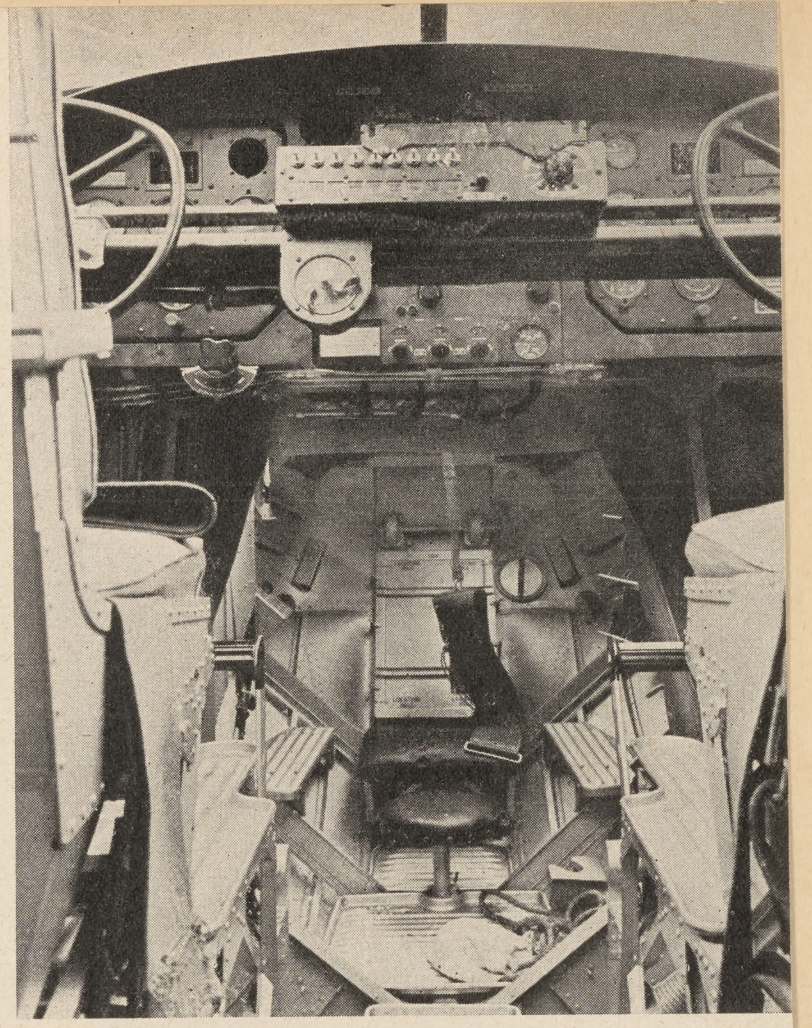


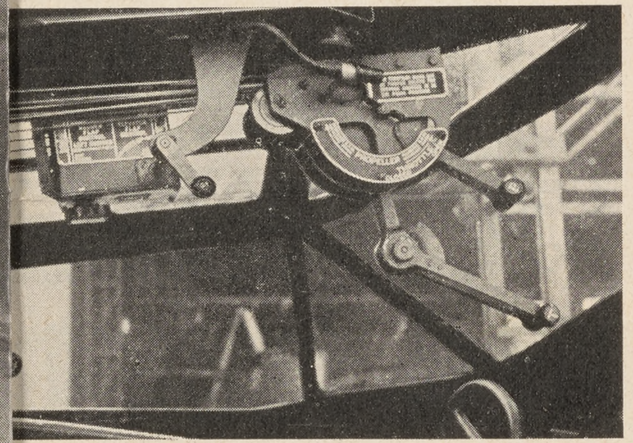


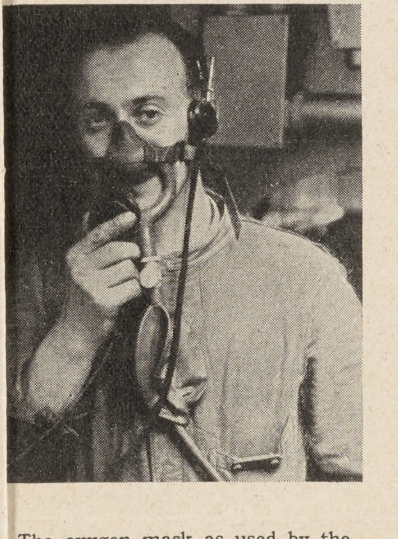
(Left) This is what the Americans call the tunnel gun position. Actually it is not so much a tunnel as an aperture in the floor which is normally filled by the folding section of hull seen above it. This view also shows the section and construction of the rear portion of the hull.



The majority of the engine instruments are grouped on the flight engineer's panel shown above and not in the pilot's cockpit which is seen on the right. The row of switches on the pilot's dashboard transmit orders to corresponding visual indicators on the engineer's panel. The flight engineer sits in the superstructure between the hull and the wing where he may observe the engines directly. He also operates the wing tip floats either manually or electrically. Below are the pilot's throttle and trim controls in the roof of the cockpit.

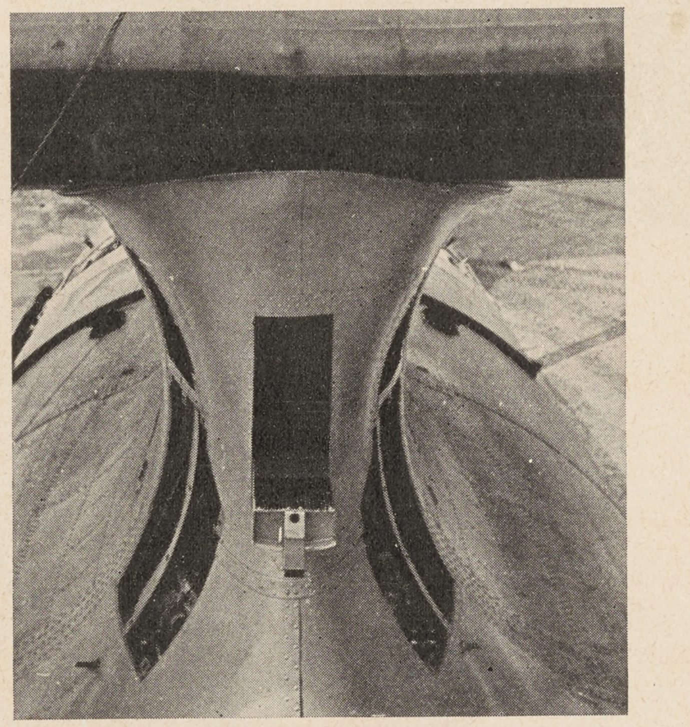


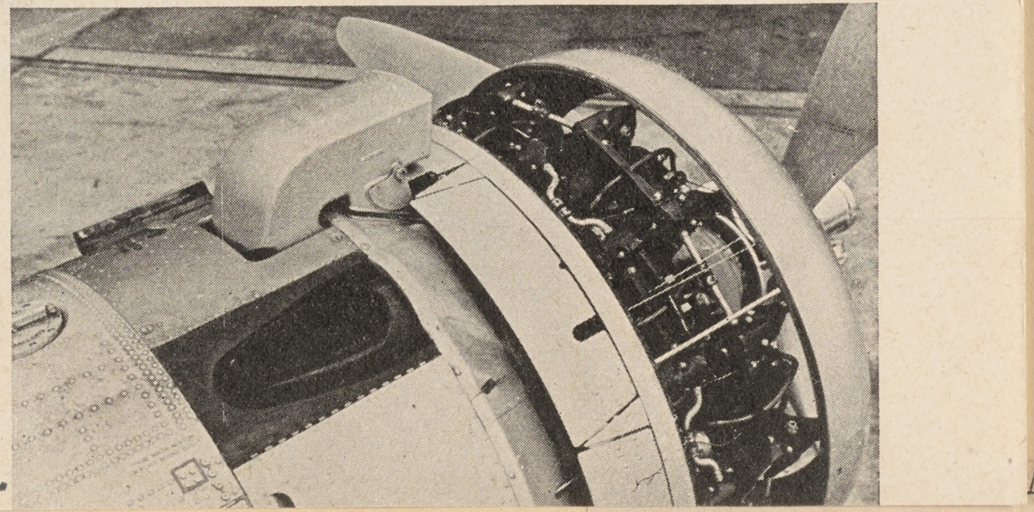




The oxygen mask as used by the crew of the Consolidated 28-5 leaves the mouth free to use the intercommunication system which extends throughout the boat.

On the right is a view looking aft showing the superstructure in which the flight engineer is housed. A section of the deicer is also visible. Below is a view of the installation of one of the Pratt and Whitney Twin Wasps with part of the cowling removed.





OVER.

---

other was under wrecked parts of the craft. McLarney said the bodies were burned beyond recognition.

BODIES TAKEN OUT

The navy rushed special equipment to fight gasoline fires and late last night sought to cool the wreckage to permit removal of the bodies. On removal they were taken to Bonham's mortuary.

There was a report that the wing tip of the plane was torn off when it struck the radio station wires and was found several hundred feet from the foot of one of the great radio towers which project several hundred feet into the air.

The Chollas Heights radio station refused to answer questions about damage to the station, which transmits messages to navy outposts all over the world.

Sun 9-11-39

AIRBOAT PICTURES

Maj. Edgar N. Gott, vice president of the Consolidated Aircraft Corp., showed moving pictures of the manufacturing of airboats, at the University Club.

Sun 9-6-39

AIR FLAGSHIP BACK IN S. D.

Rear Admiral Ends Alaska Inspection

Aviation

The four-motored "flying flagship" of Rear Adm. Arthur B. Cook, Aircraft Scouting Force commander, today was back at its San Diego base after a tour of patrol plane facilities in the Alaska-Aleutian Islands area.

Piloted by Comdr. Andrew Crinkley, the 25-ton Consolidated bomber yesterday flew with a nine man crew from Sitka, Alaska, to San Francisco, then to San Diego on a spectacular 1900-mile flight.

Meanwhile, the surface flagship of Rear Adm. Cook, the light cruiser Memphis, was scheduled to leave Kodiak for Dutch Harbor today in a continuation of the officers' inspection of Navy air bases in the far north.

MEMPHIS GOING

The Memphis will depart Monday from Dutch Harbor for Hawaii, where the Navy's greatest concentration of long-range patrol bombers is based.

Due home this week from Mare Island Navy Yard after several weeks' overhaul are the destroyers Aylwin and Dale of Division Two, which has been reported slated for transfer, probably in October, to the Asiatic Fleet as replacements for older vessels. The two craft will anchor in San Diego Saturday. A third destroyer, the 1850-ton USS Phelps, will arrive from Mare Island Sept. 15.

OTHER ARRIVALS

Other arrivals from Mare Island this month will be the destroyers Henley, Helm, Craven and Fanning, on Sept. 20. Destroyer Division 28—the Southard, Chandler, Hovey and Long—will proceed to Mare Island for overhaul Sept. 18, and the aircraft carrier Yorktown will go to Puget Sound Nav Yard Sept. 20 for its first over haul since coming to the wes coast with the Fleet last May to begin permanent duty in San Diego.

Union 9-7-39

S. D. Aircraft Output Escapes Neutrality Ban

In sharp contrast to Los Angeles, where aircraft factories are affected deeply by the President's proclamation putting an embargo on delivery of planes and accessories to European belligerents, San Diego's aircraft industry is not affected by the neutrality measures.

Work is going on as usual here on the $18,000,000 backlog of orders for airplanes and accessories while in Los Angeles millions of dollars in orders from France and Great Britain cannot be filled under the neutrality proclamation.

Aviation leaders, speaking informally, indicated belief that instead of slowing down, aircraft work here would tend to speed up to fill U. S. government orders in view of the tense international situation.

Of the $17,000,000 backlog now awaiting fulfillment by Consolidated Aircraft Corp., no portion is for export to any of the belligerent nations named in the proclamation, chamber of commerce officials declared. They said all unfilled Consolidated orders are for the United States army and navy and for American firms and individuals.

Ryan Aircraft Corp., possessing a backlog of more than $750,000 and a new order of nearly $200,000 from the army, likewise is unaffected by the President's neutrality measure. Solar Aircraft Co., builders of airplane parts, has a backlog of more than $500,000 but none of the orders are from nations named in the proclamation.

Air Consolidated

Romeike & Curtice Ltd

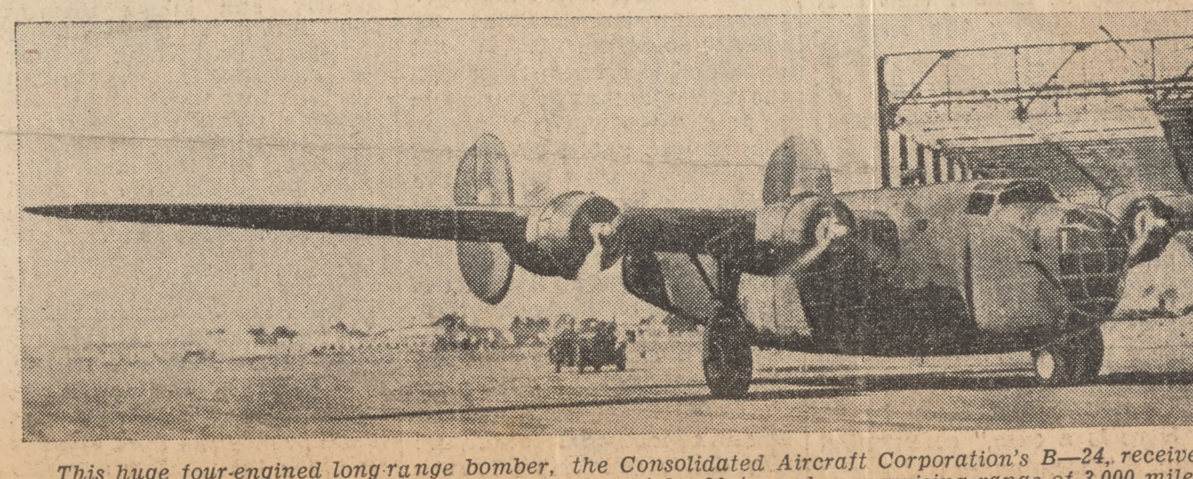
Telephone
CENTRAL 2781
(2 Lines.)

R&C

35. Shoe Lane.
LONDON.
E.C.4.

EXTRACT FROM
YORKSHIRE POST,
55. Albion Street. Leeds

New Giant American Bomber



This huge four-engined long-range bomber, the Consolidated Aircraft Corporation's B—24, received its initial test at San Diego, California. The bomber, the first of its type, weighs 20 tons, has a cruising range of 3,000 miles and a speed of 300 miles per hour.

Air-Conditioned By Nature

San Diego—where your thermometer works less than in any other American city. Only thrice in 64 years has the mercury fallen below 32 or risen above 100 degrees. In the last five years the lowest recorded temperature has been 30 degrees, the highest 94 degrees.

The San Diego Union

ESTABLISHED 1868—SEVENTY-FIRST YEAR | No. 27,674 | SAN DIEGO, CALIFORNIA, FRIDAY MORNING, SEPT. 8, 1939 | SECTION A | DAILY 5 CENTS—SUNDAY 10 CENTS

Weather Forecast

Fair today and probably tomorrow; somewhat warmer; moderate west and northwest winds.

Temperature tables will be found in detailed weather report on Page 7, Section B.

SIX KILLED IN NAVY BOMBER CRASH

S. D. Plane Hits Chollas Radio Antenna

Wreckage Burns 2 Hours; Thousands Rush to Scene

Six navy flyers were killed last night when their Consolidated patrol seaplane tore into the antenna at the Chollas Heights long-range navy radio station then crashed in the brush 3000 feet west of the radio towers and burst into flames.

Firemen and navy crews fought the fire more than two hours before it was controlled, the position of the plane making it difficult to bring fire-fighting equipment to the scene.

The dead are:

LT. A. H. IRONS, pilot, El Cordova hotel, Coronado.

ENS. L. W. LATREMORE, 966 F st., Coronado.

FRANK VUKOVICH, chief aviation machinist's mate, Coronado.

H. O. WILSON, aviation machinist's mate, third class, naval air station.

V. E. NORRIS, aviation ordnance man and naval air pilot, San Diego.

H. G. BERRY, radioman third class, San Diego.

AUTOS JAM ROADS

Thousands of San Diegans rushed to the scene as the pillar of flame lighted up the plateau where the plane crashed a mile east of Radio rd. and three-fourth of a mile south of University ave. They jammed roads with their automobiles and delayed attempts of the fire department and navy rescue crews to reach the blazing plane.

An eye witness account of the crash was given by Mr. and Mrs. Sidney Diday, 429 Sixteenth st., who were sitting in an automobile at the radio station at the time of the crash.

"As the plane flew over our heads we saw the pilot was in trouble and about to crash into the antenna," said Diday. "One of the motors was sputtering and then both engines became quiet and the plane tipped to the right to avoid the wires (of the radio station). The tip of the wing hit the wires, then the plane crashed with a roar and immediately exploded, sending clouds of smoke into the air. We could not see any landing lights on when the plane approached the wires."

A city fireman reported there was a cloud over the radio station when he arrived and thought it possible the pilot did not see the antenna.

EAST S. D. HEARS BLAST

The explosion was heard throughout East San Diego.

The plane was one of a flight of six planes engaged in regular night flying operations. The other five returned safely.

Three engine companies of the San Diego fire department responded to an alarm turned in at 9:24 p.m. They were hampered by a traffic jam on the road and were unable to approach nearer than several thousand feet.

Firemen made their way to the blazing plane with portable extin-

(Continued on Page 3, Col. 1)

S. D. TO FILL PLANE ORDERS

Neutrality Not In Way Of $18,000,000 Back Log

Sun 9-7-39

Aviation

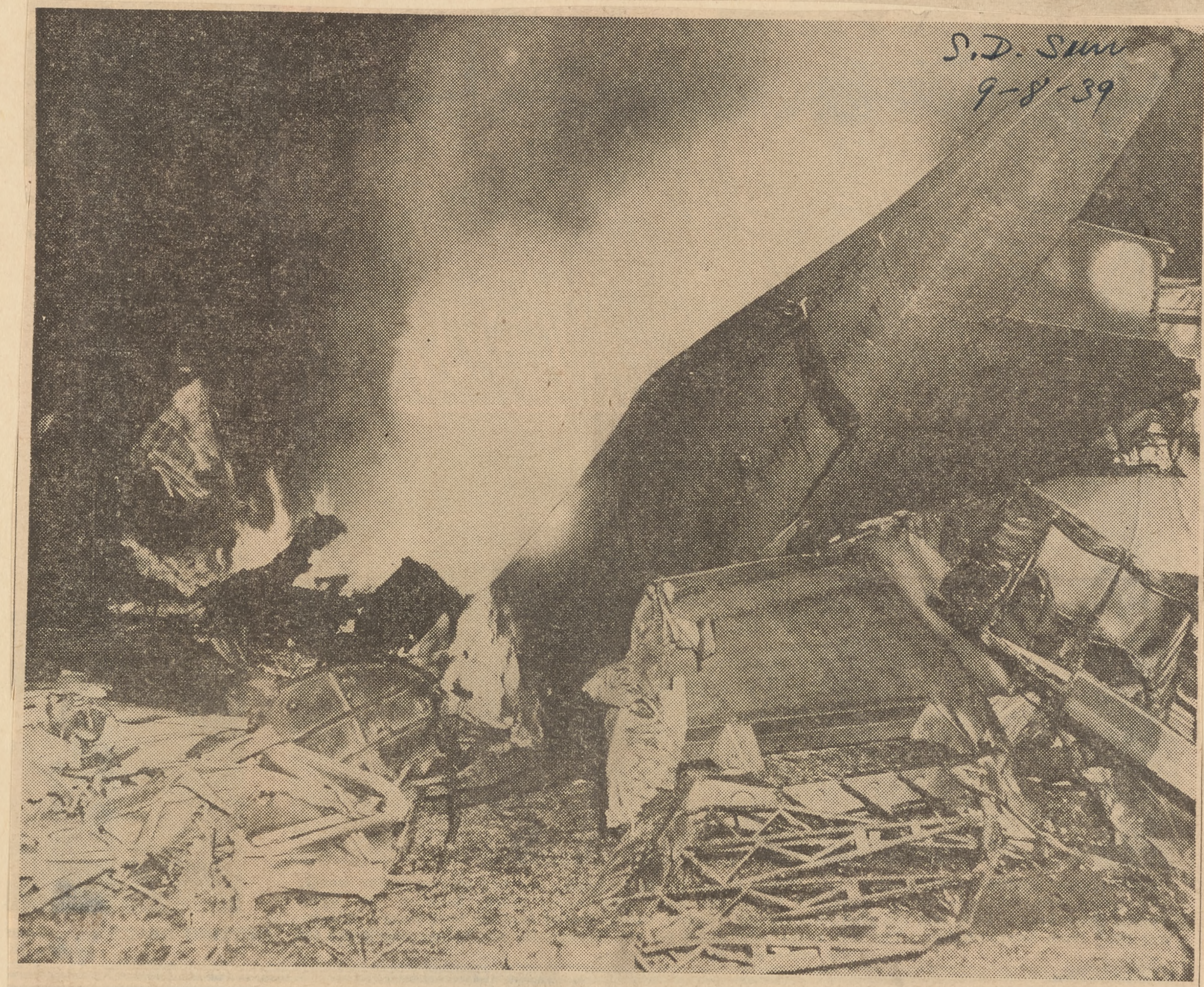
President Roosevelt's neutrality proclamation will not stand in the way of San Diego's aircraft industry fulfilling an $18,000,000 backlog of orders.

This was learned by Chamber of Commerce officials after a survey of this city's three major aircraft firms.

Consolidated Aircraft Corporation's $17,000,000 backlog of orders are all for United States Army and Navy and for American firms and individuals, chamber officials said. No portion of the orders are for belligerent nations named by the President in his neutrality measure.

Ryan Aircraft Corporation's $750,000 in orders and its recently acquired order of $200,000 from the Army likewise will not be affected by the legislation. Solar Aircraft Co., builders of airplane parts, has a backlog of more than $500,000, but none of the orders are from nations termed "belligerent" in President Roosevelt's proclamation.

The tense international situation is expected to speed up work in filling the huge orders for this government, aviation officials indicated.



S.D. Sun 9-8-39

Photo by Earl Zahm, Sun Staff Photographer.

WHERE SIX FELL TO THEIR DEATHS . . . Here is the twisted, smoking wreckage of a Consolidated seaplane which crashed last night at the Chollas Heights radio station. In the background fire still rages several hours after the plane exploded, cremating six Navy fliers. A naval board of inquiry blamed a low ceiling for the tragedy.

☼ ☼ ☼

Radio Wires Believed Cause In San Diego Bomber Crash

Six Bodies Recovered From Wreck Of Consolidated Sea Plane

A Navy board of inquiry today learned that six fliers killed in the flaming crash of a giant patrol bomber near the Chollas Heights naval radio station probably fell to their doom when trapped over a layer of fog that blotted out vision of a radio tower and antenna rising 1100 feet above sea level.

The Consolidated seaplane, which smashed into the Chollas Heights radio antenna at 9:15 last night, fluttered a half mile farther, then plunged into the brush and exploded.

Flames leaped high into the air, brilliantly lighting the night sky, and attracting hundreds to the wreckage and blocked fire-fighting apparatus of the city and the Navy.

Killed were:

Lieut. A. H. Irons, 817 B-st, Coronado, survived by his widow and two children.

Ensign L. W. Latremore, 966 F-st, Coronado, survived by his widow.

Frank Vukovich, 31, chief aviation machinist's mate 3c, survived by his widow and three children.

V. E. Morris, 24, aviation ordinance man, 3970 Goldfinch-st, survived by his widow.

H. G. Berry, radioman 3c, 2044 Columbia-st, survived by his widow.

H. O. Wilson, aviation machinist's mate (3c), unmarried.

Death was belived to have been instantaneous. It was several

Turn to Page 2, Col. 7.

SIX KILLED IN PLANE CRASH

Airboat Strikes Wires Of Radio Towers

Sun 9-8-39

(Continued from Page 1)

hours before the pyre cooled sufficiently for salvage crews to remove the charred remains.

An official Navy announcement, as the board of inquiry convened, stated that the bomber, one of a group of six of Patrol Squadron 12 on a routine night training flight, was believed to have crashed while attempting to cut through the overcast. The ceiling over the bay last night was only 700 feet, while the Chollas Heights tower, situated at a 500-foot level rises another 600 feet.

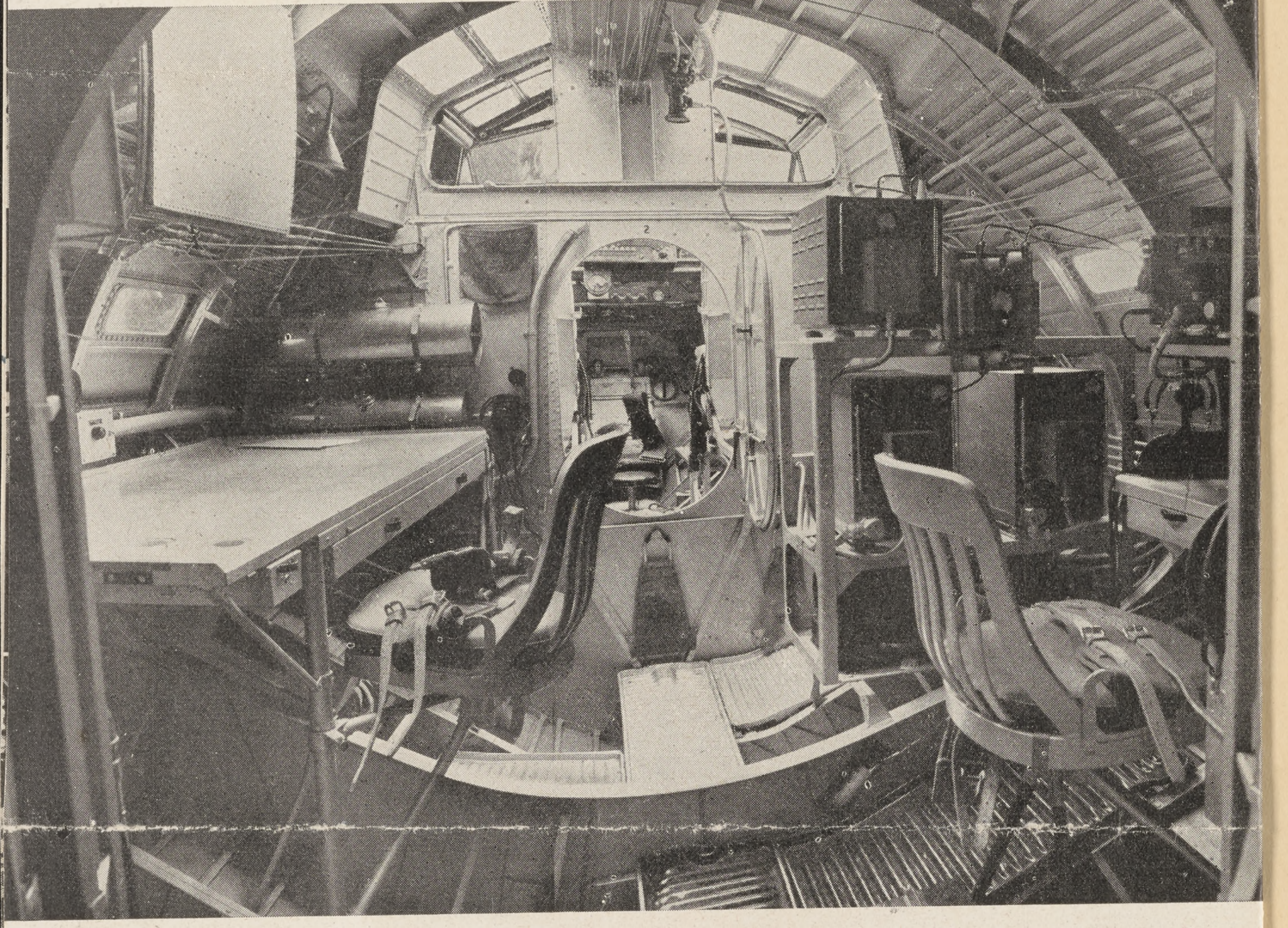
The pilots, Lieut. Irons and Ensign Latremore, apparently anticipated landing in the harbor after descending through the fog, as the wing tip floats had been lowered. That they never saw the antenna which brought their doom was almost certain.

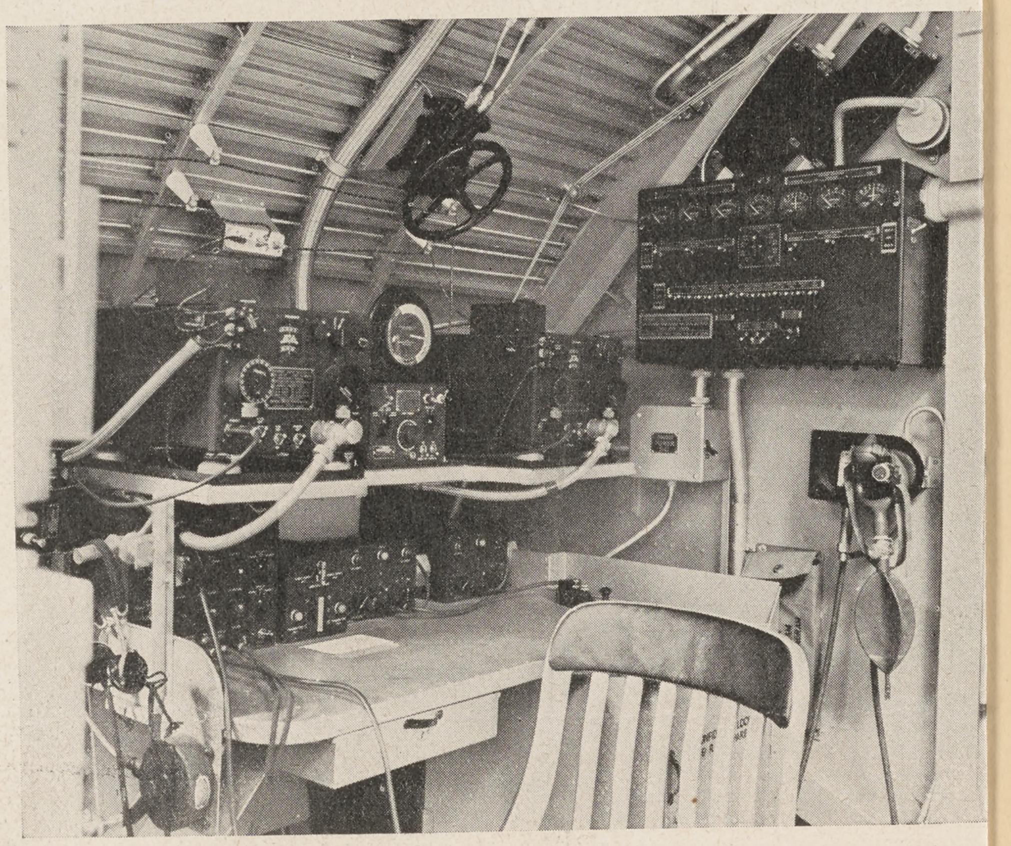
The other five planes of the group returned to their North Island base safely.

Funeral arrangements were being made at Bonham Bros. Mortuary today.

The accident brought the year's Navy aviation fatality list in the San Diego area to a total of 16 in seven crashes. It was the first fatal mishap in San Diego to a PBY bomber since Aug. 15, 1938, when two airboats made crash night landings near the Destroyer Base, resulting in six deaths.

d FLIGHT, August 10, 1939.





Above is a unique view showing the compartment occupied by the navigator and the wireless operator. The Bendix installation seen on the right and in the lower view comprises main and auxiliary transmitters, two complete receivers, a direction-finder and an inter-communication system which extends throughout the hull and permits both pilots to use the wireless directly when necessary. The loop aerial is extended through the roof and is remotely controlled from the wheel seen in the smaller view over the wireless operator's table. The cylinders by the navigator's table are drinking-water tanks.

---

other was under wrecked parts of the craft. McLarney said the bodies were burned beyond recognition.

BODIES TAKEN OUT

The navy rushed special equipment to fight gasoline fires and late last night sought to cool the wreckage to permit removal of the bodies. On removal they were taken to Bonham's mortuary.

There was a report that the wing tip of the plane was torn off when it struck the radio station wires and was found several hundred feet from the foot of one of the great radio towers which project several hundred feet into the air.

The Chollas Heights radio station refused to answer questions about damage to the station, which transmits messages to navy outposts all over the world.

Sun 9-11-39

AIRBOAT PICTURES

Maj. Edgar N. Gott, vice president of the Consolidated Aircraft Corp., showed moving pictures of the manufacturing of airboats, at the University Club.

Sun 9-6-39

AIR FLAGSHIP BACK IN S. D.

Rear Admiral Ends Alaska Inspection

Aviation

The four-motored "flying flagship" of Rear Adm. Arthur B. Cook, Aircraft Scouting Force commander, today was back at its San Diego base after a tour of patrol plane facilities in the Alaska-Aleutian Islands area.

Piloted by Comdr. Andrew Crinkley, the 25-ton Consolidated bomber yesterday flew with a nine man crew from Sitka, Alaska, to San Francisco, then to San Diego on a spectacular 1900-mile flight.

Meanwhile, the surface flagship of Rear Adm. Cook, the light cruiser Memphis, was scheduled to leave Kodiak for Dutch Harbor today in a continuation of the officers' inspection of Navy air bases in the far north.

MEMPHIS GOING

The Memphis will depart Monday from Dutch Harbor for Hawaii, where the Navy's greatest concentration of long-range patrol bombers is based.

Due home this week from Mare Island Navy Yard after several weeks' overhaul are the destroyers Aylwin and Dale of Division Two, which has been reported slated for transfer, probably in October, to the Asiatic Fleet as replacements for older vessels. The two craft will anchor in San Diego Saturday. A third destroyer, the 1850-ton USS Phelps, will arrive from Mare Island Sept. 15.

OTHER ARRIVALS

Other arrivals from Mare Island this month will be the destroyers Henley, Helm, Craven and Fanning, on Sept. 20. Destroyer Division 28—the Southard, Chandler, Hovey and Long—will proceed to Mare Island for overhaul Sept. 18, and the aircraft carrier Yorktown will go to Puget Sound Nav Yard Sept. 20 for its first over haul since coming to the wes coast with the Fleet last May to begin permanent duty in San Diego.

Union 9-7-39

S. D. Aircraft Output Escapes Neutrality Ban

In sharp contrast to Los Angeles, where aircraft factories are affected deeply by the President's proclamation putting an embargo on delivery of planes and accessories to European belligerents, San Diego's aircraft industry is not affected by the neutrality measures.

Work is going on as usual here on the $18,000,000 backlog of orders for airplanes and accessories while in Los Angeles millions of dollars in orders from France and Great Britain cannot be filled under the neutrality proclamation.

Aviation leaders, speaking informally, indicated belief that instead of slowing down, aircraft work here would tend to speed up to fill U. S. government orders in view of the tense international situation.

Of the $17,000,000 backlog now awaiting fulfillment by Consolidated Aircraft Corp., no portion is for export to any of the belligerent nations named in the proclamation, chamber of commerce officials declared. They said all unfilled Consolidated orders are for the United States army and navy and for American firms and individuals.

Ryan Aircraft Corp., possessing a backlog of more than $750,000 and a new order of nearly $200,000 from the army, likewise is unaffected by the President's neutrality measure. Solar Aircraft Co., builders of airplane parts, has a backlog of more than $500,000 but none of the orders are from nations named in the proclamation.

Air Consolidated

Romeike & Curtice Ltd

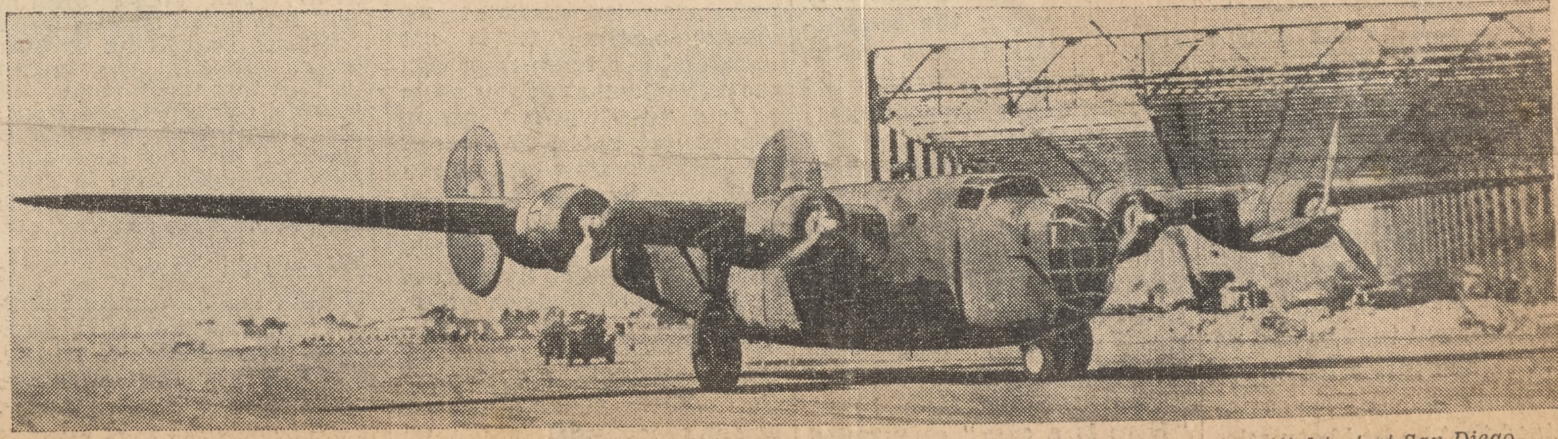
Telephone
CENTRAL 2781
(2 Lines)

R&C

35, Shoe Lane.
LONDON.
E.C.4.

EXTRACT FROM
YORKSHIRE POST,
55, Albion Street, Leeds

New Giant American Bomber



This huge four-engined long-range bomber, the Consolidated Aircraft Corporation's B—24, received its initial test at San Diego, California. The bomber, the first of its type, weighs 20 tons, has a cruising range of 3,000 miles and a speed of 300 miles per hour.

NAVAL AFFAIRS COMMITTEE MEMBERS CONFER HERE

Union 9-11-39

REP. M. J. MAAS CAPT. J. S. McCAIN REP. ED IZAC

. . . house naval affairs committeemen confer with Capt. McCain, Naval Air station commander. (Story on Page 1.)

* * *

REP. L. W. SCHUETZ REAR ADM. J. R. DEFREES

. . . the admiral points out Naval Air station improvements.

* * *

BOTH FROM SALEM, SOLONS' HOMES ARE MILES APART

There are two congressmen from Salem here today, although they live 3000 miles apart.

Rep. James W. Mott is a resident of Salem, Ore., and a graduate of Stanford university, as well as having attended the University of Oregon and Columbia; he received his LL.B. degree at Willamette university, Salem, in 1917, and began the practice of law, leaving it to enlist in the navy in the World war.

Rep. George J. Bates is a resident of Salem, Mass. Before his election to congress he was a member of the Massachusetts house of representatives and also was mayor of Salem.

Both are Republicans.

WHAT, NO BADGE? NO TICKET, EITHER

There is a little matter which Rep. Melvin J. Maas, ranking minority member of the house naval affairs committee, would like to take up with Police Chief J. T. Peterson.

"Here I am in San Diego, which I call my 'second home,'" he said last night, "and I'm not a member of the police department!"

Rep. Maas is the possessor of an imposing array of badges ranking from deputy sheriff to chief of detectives—and honorary chief of police—in many widely separated cities. One of them is from Miami, Fla.

"I got that when Pat Cannon was a motorcycle cop in Miami," he explained. He added that Rep. Cannon, who is here with the congressional party, studied law while on the Miami police force, attended law school and began the law practice before he was elected to congress last fall.

Sun 9-11-39

CONGRESSMEN VIEW S. D. BASE

Committee Impressed By Destroyer Job

Convinced that the United States' powerful Navy will enable this country to maintain its neutrality, 11 members of the House Naval Affairs committee today inspected San Diego shore establishments and were particularly impressed with the activity at the Destroyer Base, where recommissioning of destroyers for patrol duty was in full swing.

The solons arrived late yesterday from San Clemente island aboard the heavy cruiser Chester, and today toured the Destroyer Base after a drive from Coronado via Silver Strand, the 11th Naval District headquarters and supply depot, Naval Training Station, Naval Fuel Depot, Fort Rosecrans, Cabrillo National Monument, and Consolidated Aircraft Corp.

LEAVE TOMORROW

Tomorrow the group will inspect the Naval Air Station, the aircraft carrier Yorktown, the Marine Base, and Naval hospital, leaving for Los Angeles by train at 4:15 p. m.

Acting chairman of the committee in the absence of Rep. Carl Vinson was Rep. Leonard W. Schuetz (D., Ill.), who was born in Posen, on Polish territory recently occupied by the Nazis. Other congressmen were Reps. Melvin Maas (R., Minn.); James W. Mott (R., Ore.); William H. Sutphin (D., N. J.); W. Sterling Cole (R., N. Y.); George J. Bates (R., Mass.); William E. Hess (R., Ohio); William S. Jacobsen (D., Ia.); Arthur B. Jenks (R., N. H.); Michael J. Bradley (D., Pa.), and Pat Cannon (D., Fla.).

MAAS VISITS MESA

Rep. Maas, accompanied by San Diego's Rep. Ed V. Izac and Chamber of Commerce representatives, visited Camp Kearney Mesa yesterday to inspect the proposed site either for a Marine Corps combat range or a $10,000,000 aeronautical research laboratory.

Rep. Mass, ranking minority member of the committee, was certain Congress will repeal the present neutrality laws in the special session, and will replace it with "cash and carry" regulations benefiting American industry.

---

11 CONGRESSMEN ARRIVE TO INSPECT NAVY BASE; EMBARGO REPEAL SEEN

Union 9-11-39

"If we'd had a proper navy back in 1914 we wouldn't have landed in the World war. We've got a proper navy now—and we can see to it that so far as we are concerned, international law will be enforced."

Thus Rep. Melvin J. Maas (R-Minn) summed up the international situation here last night. Maas, ranking minority member of the house naval affairs committee, arrived last evening in company with other committeemen on a flying tour of inspection of the Pacific coast naval defenses. The party came into port from San Pedro via Santa Catalina and San Clemente in the U.S.S. Chester, heavy cruiser, and will be here today and tomorrow.

(Pictures on Page 1--B)

Acting chairman of the committee is Rep. Leonard W. Schuetz (D-Ill), who is head of the committee in the absence of its chairman, Rep. Carl W. Vinson (D-Ga). Born in what now is Poland in 1887, Rep. Schuetz was brought to this country when a year old, and now heads a large Chicago contracting firm. He offered no comment upon probable action of congress relative to neutrality legislation:

"That will have to be decided when congress convenes," he said. "They'll have to make up their minds about it then—and there are more than 400 congressmen."

In the Chester's boats the 11 congressmen, most of them accompanied by their wives, landed at the Naval Air station at North Island at 5:15 p.m., and with exception of Rep. Maas, immediately headed for Hotel del Coronado, where they are staying.

On hand to greet the visitors

(Continued on Page 4, Col. 5)

Chest Leaders, Business Firms Parley Today

Union 9-11-39

Another important step in development and application of the "unit account" plan of self-solicitation of business and industrial establishments in the Community Chest campaign will be taken today at meetings scheduled for division chairmen and group leaders.

The meetings, to be held in the San Diego Trust & Savings bank board room, are for three groups—finance at 11 a.m., national firms, 1:35 p.m., and industry, at 4 p.m. Eight similar meetings for other groups are announced for the remainder of the week.

Each establishment in the several groups has been requested to send representatives to these meetings, at which details of the "unit account" plan will be outlined. This method is based upon solicitation of contributions at all places of employment, for which previously agreed upon quotas have been fixed. Adopted in this year's Chest campaign for the first time, the plan has been highly successful in fund-raising efforts in scores of cities.

Division leaders meeting today with company representatives are:

Industrial—Edgar N. Gott, chairman; S. M. Sullivan, Lionel Ridout, Claude Brakehill, J. E. Rockwell, Russell Bremer, Arthur Ponsford, Walter Kranes.

Finance—John L. Fox, chairman; Marston Burnham, Kenneth Jennings, Wilbur Martin, Sam Snyder, Beryl Blevins, Roy Hegg, Eugene Zeiss, George Stannard.

National firms—George N. Lynch, Frank J. Guasti, chairmen; E. K. Hurlburt, G. T. Gallagher, C. D. Doerr, A. A. Robinson, Frank Nolan, W. S. Bigelow, Milton Heller, E. K. Klenke, Charles W. Amos, John M. Jones.

---

11 Congressmen Here on Navy Inspection Tour

Union 9-11-39

(Continued from Page 1)

were Rear Adm. Joseph R. Defrees, commandant of the 11th Naval district, and his aid, Comdr. F. W. Benson; Capt. John S. McCain, commanding the Naval Air station; Rep. Ed V. Izac of San Diego; Howard Worth, chairman of the army and navy committee of the chamber of commerce; Maj. T. C. Macaulay, executive secretary, and D. W. Campbell and Tom Bomar, chamber department heads.

Reps. Maas and Izac, accompanied by Bomar, immediately left the air station, taking advantage of the remaining minutes of dusk for a hurried trip to Camp Kearney mesa, to look over one of the proposed sites for the marine corps combat range. Rep. Maas, a marine reserve officer, will accompany Rep. Izac back to Washington, D. C., by plane tomorrow, cutting short the trip to get back for the work which is piling up there ahead of the special session which President Roosevelt is expected momentarily to call.

HINTS EMBARGO REPEAL

Either outright repeal on the arms embargo, or enactment of "cash and carry" legislation governing the export of war materials, is predicted by Rep. Maas.

"They tried an embargo 100 years ago," he said, "and it gave them a depression that lasted 20 years."

Other members of the group arriving here were Rep. James W. Mott, (R-Ore) and Mrs. Mott; Rep. William H. Sutphin (D-NJ) and Mrs. Sutphin; Rep. W. Sterling Cole (R-NY) and Mrs. Cole; Rep. George J. Bates (R-Mass) and Mrs. Bates. Rep. William E. Hess (R-Ohio) and Mrs. Hess; Rep. William S. Jacobsen (D-Ia) and son; Rep. Arthur B. Jenks (R-NH) and Mrs. Jenks; Rep. Michael J. Bradley (D-Pa); Rep. Pat Cannon (D-Fla) and Mrs. Cannon; Comdr. I. C. Bogart U.S.N. ret., aid, and Mrs. Bogart, and Robert H. Harper, clerk.

The members of the party are the guests of the city and county of San Diego, and of the chamber of commerce, during their stay.

PLAN ACTIVE TOUR

There will be no idle moments for the visitors while they are here. The following is the program outlined for them:

TODAY—Drive to San Diego via the Silver strand; inspect destroyer repair base, naval headquarters and naval supply depot; luncheon at Naval Training station, followed by station inspection and review of the recruits; visit naval fuel depot, Ft. Rosecrans and Cabrillo national monument; visit Consolidated Aircraft plant; official dinner-dance at Hotel del Coronado.

TOMORROW—Inspect Naval Air station and U. S. S. Yorktown; luncheon at Marine Corps base, followed by review of troops and inspection of base; visit Naval hospital, Balboa park, and entrain for Los Angeles on the Santa Fe streamliner San Diegan at 4:15 p. m.

Wives of the congressmen will visit Pt. Loma, the beaches and La Jolla this morning, with luncheon at the Casa del Rey Moro, Balboa park, as guests of Mrs. Izac; this afternoon will be spent at the zoo, under the guidance of Mrs. Belle J. Benchley. Tomorrow morning they will visit Tijuana, followed by luncheon at the Coronado Beach and Tennis club.

S. D. NAVAL EXPANSION FORECAST AS CONGRESSIONAL VISIT RESULT

Union 9-12-39

"Expansion of the San Diego naval establishment, especially the supply facilities, is a virtual certainty because of the present international situation," Rep. Ed V. Izac said last night after a day spent here with 11 members of the house naval affairs committee.

"There doubtless will be another storage warehouse south of the one now building, with an overhead to the pier. The pier, no doubt, will be widened and extended to a length of 1000 feet," he said. "Additional supply facilities will be absolutely necessary, with half the fleet operating out of San Diego and having requirement for supplies all the time. It is ridiculous to think ships would be sent 100 miles or more north for supplies, under such conditions.

(Pictures on Page 8-A)

"We hope also for an administration building at the Naval Training station. This is badly needed now. I think the other congressmen also agree that there is need for crews for the 100 ships to be put into service."

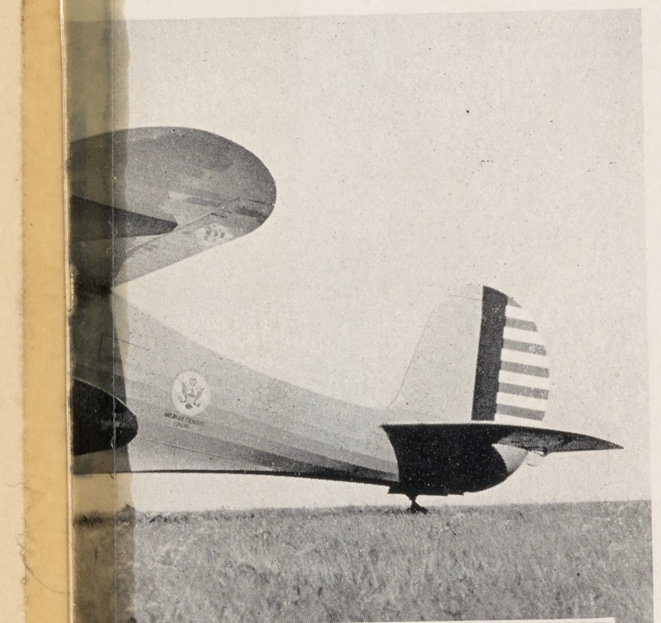
With only two days in which to inspect naval activities here, committee members were kept busy all day, on a whirlwind tour of local stations. They will furnish their inspections today.

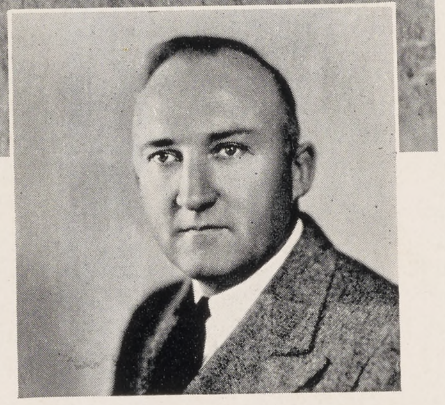
Added strengthening of the defenses of the Pacific, especially here, was hinted by several members of the party, who also voiced the opinion that, in all likelihood, President Roosevelt gain his objective in having the arms embargo

(Continued on Page 3, Col 5)

HE MONTH

T. 1939





5th anni-
H. Beech
him at a
industry,
in 1923,
e above-
p Junior
rmy and

VOUGHT-SIKORSKY COMPLETES ADDITION

Construction work has just been completed on the new factory addition to United Aircraft's Vought-Sikorsky Aircraft Division plant at Stratford, Connecticut, and seventy-five per cent of the machinery has been installed in the new space, which adds 64,500 square feet to the manufacturing area already existing. The addition includes an employes' cafeteria 125 x 70 feet in size, a new boiler room, a first aid department, and employes' locker and wash rooms, as well as increased factory floor space.

R. A. F. "CONSOLIDATES"

A new "first" was chalked up recently, when this Consolidated flying boat, built for the Royal Air Force, arrived at Felixstowe, England. Equipped with Hamilton Standard propellers and Pratt & Whitney engines, the 14-ton patrol-bomber was the first military airplane to be delivered by air across the North Atlantic, and the 5,750 mile trip from factory to England marked the longest military delivery flight on record. The airplane is shown at Buffalo where its crew, formerly of the Guba, stopped en route to refuel. After one more stop, at Botwood, Newfoundland, the plane took off for its successful Atlantic crossing.

Official U. S. Navy photograph

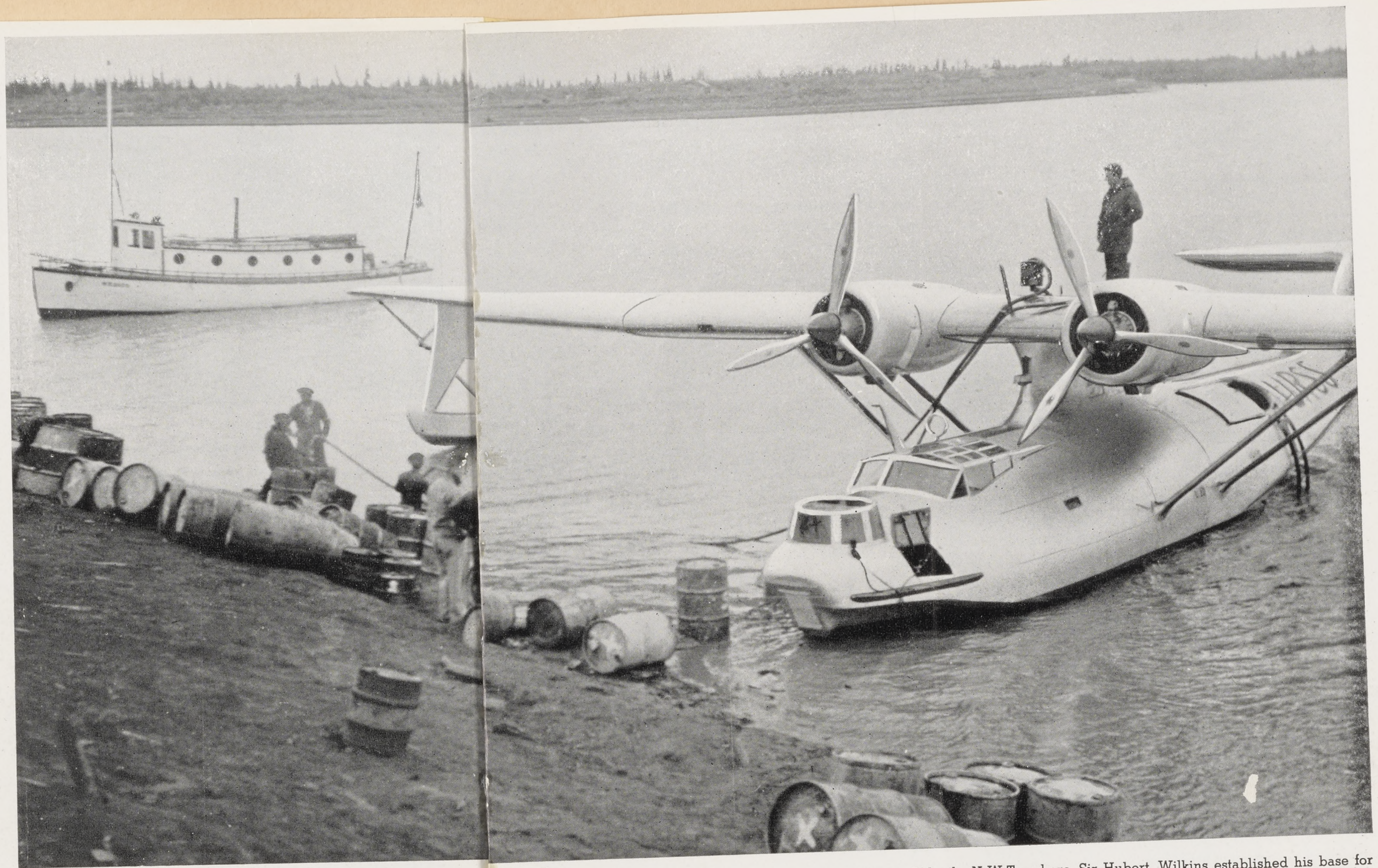
ATLANTIC ENTRANT

Shown here demonstrating ability to fly on one of its two Hydromatic propeller-equipped Twin Wasp engines, the American Export Line's "Trans-Atlantic" recently lived up to its name by completing the fifth of a series of trans-Atlantic survey flights for its parent company, which operates a fleet of 18 steamships. Planning to keep its planes in radio communication with its surface ships, which are equipped to make upper air weather observations, the company expects to inaugurate passenger service by air in the not distant future.

SIR HUBERT WILKINS' *Search* FOR THE LOST RUSSIAN FLIERS

● Fuel for a thirsty Arctic sky giant. Above—A gasoline engineer, at Aklavik, N.W.T., "doping" gasoline with tetraethyl lead. Note the gas mask. Below—Refueling from spare drums at Melville Island.

Photos by Sir Hubert Wilkins.



Photograph by Raymond E. Booth.

● Imperial fuel drums lie on the shore at Aklavik, N.W.T., where Sir Hubert Wilkins established his base for most of the autumn and winter flights. The powerful twin engines burned 75 gallons of gasoline an hour.

SOMEWHERE in the barren wastes of the Arctic Ocean the wreckage of an aeroplane lies buried, and with it the fate of six Russians led by Sigismund Levanevsky. A sequel to two successful flights from Moscow to the United States with single-engined planes, the experts believed Levanevsky's flight in a four-engined plane had an assured chance of success and would secure valuable data on flying conditions in the Arctic.

The expedition left Moscow on August 12th, 1937, to fly across the North Pole to Fairbanks, Alaska. The plane had made a successful passage over the Pole and was 300 miles beyond when a crackling code message suddenly told the listening radio stations on both sides of the Arctic Ocean that the plane was encountering trouble. It said quite briefly, that the plane was flying heavily against a 100-kilometer wind and was losing altitude. Then in a jumble of signals which followed, the last message said, "We are going to land. . ." No further message was ever received, and no conclusion could be reached as to where or under what conditions the big plane had alighted in the summer ice floes of the Arctic.

The story of the search for the Russian flyers has been graphically related by Sir Hubert Wilkins in "The National Geographic Magazine" by whose courtesy this material is reproduced here. As the world knows, the entire aviation and radio resources in the Yukon, Alaska, the North-West Territory, Greenland and the U.S.S.R. were made available in an effort to establish immediate contact with the flyers and to aid in their rescue. For the first time in aviation history, a rescue party was organized to conduct a search by air in the polar regions.

The failure of Levanevsky's tragic expedition to complete this important flight to Fairbanks ironically enough accomplished many of the things they had set out to do. Many important discoveries were made by those who went in search of the missing flyers—discoveries which years of spasmodic trans-Arctic test flights might never have revealed about the perils and problems to be encountered in the Arctic.

Sir Hubert Wilkins' search extended more than 44,000 miles, most of the flying being done over the Arctic Ocean. Using a flying boat at first and then a land plane equipped with skis, his series of flights in

AIRCRAFT FIRM ADDS TO LAND

L.A. Times

SAN DIEGO, Sept. 12.—The Consolidated Aircraft Corp., builder of fighting planes for both the Army and Navy, has been leased 17 acres of tidelands by the City Council to permit the firm virtually to double its present size.

The land adjoins the factory site and company officials told Councilmen that plans for factory expansion will be started immediately.

Anticipated orders for new planes from the United States government as well as foreign powers, when the neutrality law is revised, was given as the main reason for the expansion program.

GUBA'S PROGRESS

FINAL HOP TO-DAY.

Victoria, Australia

Colorful Scenes at Mahe

SEYCHELLES, Monday.
(From J. Percival, jnr., aboard the Guba)

The Guba will refuel to-morrow in preparation for its 940 miles flight to Mombassa—the last leg of the Indian Ocean flight survey. This flight is tentatively planned for Wednesday and is expected to take about eight hours.

There is a native population of about 24,000 on Mahe, and the Sunday church parade in rickshaws of snowy white linen and lace, with bright colored tunics and trousers, is not to be seen elsewhere. In the cool of the evening, princes exiled from the political tangles of the East sip cool drinks on the patio of a leading hotel, and then parade to the quay in rickshaws.

YANKEE CLIPPER

CARRIES 30 ACROSS ATLANTIC

LISBON, Sunday.

The giant Pan American flying-boat Yankee Clipper arrived here at 8.44 p.m. with 18 newspapermen and 12 members of the crew—the largest number ever to cross the Atlantic by plane.

AVIATOR'S DEATH

MAN CHARGED WITH MANSLAUGHTER

LONDON, Sunday.

The death is announced of the aviator Captain Nicholas Comper, who designed the Comper-Swift machine which held the England-Australian record in 1931.

Captain Comper was spending the week-end with a friend who is the proprietor of the Swan Hotel, at Hythe. He went for a walk alone and was found unconscious in High-street. He was taken to hospital where he died as a result of a fracture of the base of the skull.

The police state that a man has been charged with manslaughter.

SERIOUS DELAY

IN PRODUCTION OF PLANES

WAITING FOR MR. CLAPP

SYDNEY, Monday.

Air Force officials view with concern the delay in the scheme for mass production of British Beaufort aeroplanes in Australia. One senior officer said to-day that Australia had all the expert guidance she needed and it would appear that there had been a marked lack of initiative on the part of some responsible persons.

Australia's mass production of planes cannot become effective until Mr. W. H. Clapp, who is still Victorian Railway Commissioner, takes over the organising of the industry.

SDAY MORNING, SEPT. 12,

Union 9-12-39

Congressmen See S. D. Naval Expansion Need

(Continued from Page 1)

clause stricken from neutrality legislation at the forthcoming special session of congress.

Rep. Izac, San Diego, said that both congress and the public have turned decidedly toward approval of the President's views since war broke out. Either an outright repeal of the embargo on munitions shipments or a "cash and carry" plan is forecast.

VISIT AIRPLANE PLANT

Heading the party is Rep. L. W. Schuetz (D-Ill). Rep. Melvin J. Maas (R-Minn) is ranking minority member of the group. Others in the party are Reps. James W. Mott, William H. Sitphin, W. Sterling Cole, George J. Bates, William E. Hess, William S. Jacobsen, Arthur B. Jenks, Michael J. Bradley and Pat Cannon.

Yesterday was devoted to inspection of the Destroyer base, district headquarters, Naval Training station, fuel depot and the Consolidated Aircraft plant; in the evening the congressmen and their wives were guests of the city, county and chamber of commerce at a dinner dance at Hotel del Coronado.

This morning the party will inspect the Naval Air station and the U. S. S. Yorktown, aircraft carrier. They will have luncheon at the Marine base, after which they will inspect that base and Naval hospital. The party will entrain on the Santa Fe streamliner San Diegan at 4:15 p. m. for Los Angeles, on their way home.

SECRET BOMBER HOP TOMORROW

S. D. Navy Planes Due For Hawaii Flight

Sun 9-12-39

By HAROLD KEEN

Wartime secrecy today was clamped down on preparations of the Patrol Wing One command at North Island to dispatch a group of Navy patrol bombers on a nonstop flight from San Diego to Pearl Harbor, Hawaii, this week.

The tentative date for the takeoff from the harbor is tomorrow, weather permitting, it was learned.

Navy authorities refused to reveal the exact number of craft to participate in the mission. It was believed, however, that a minimum of 12 will make the 2500-mile trans-Pacific hop, and that Patrol Squadron 13, commanded by Lieut.-Comdr. Stuart H. Ingersoll, will be one of the units involved.

SECRECY ORDERED

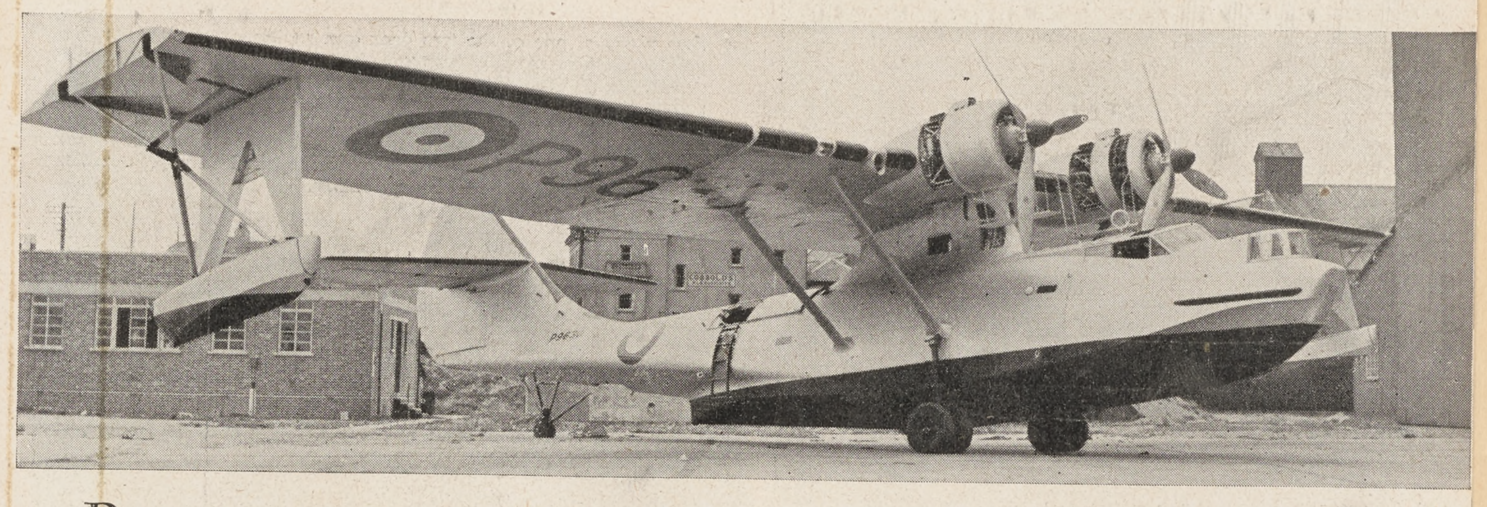
Capt. Charles P. Mason, commander of Patrol Squadron One, said that he has been given specific orders by the Navy Department to "avoid publicity" of the flight. In every long-distance mass hop from San Diego during the past two and one-half years, the Navy has taken pains to announce the venture, particularly to insure that the harbor channel will be clear of fishing boats and other small craft during the hazardous takeoffs with full gasoline loads.

The San Diego squadron will be sent to Hawaii to replace one just ordered to the Philippines in a move to strengthen defense forces required to enforce U. S. neutrality.

LANGLEY TO MANILA

The aircraft tender Langley, formerly based in San Diego and only recently sent to Pearl Harbor, has been ordered to Manila.

First indication of the contemplated Hawaii flight was the hurried departure Sunday of the aircraft tender Wright for Pearl Harbor. The vessel will act as guard hip for the planes en route and will be stationed in Hawaii as replacement of the Langley for an indefinite period.



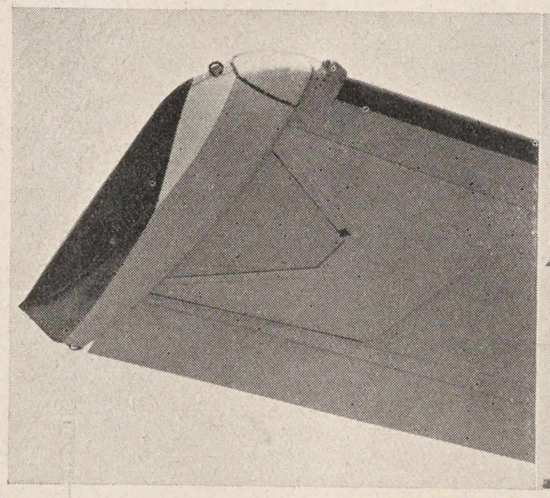
PICTORIAL SPECIFICATION

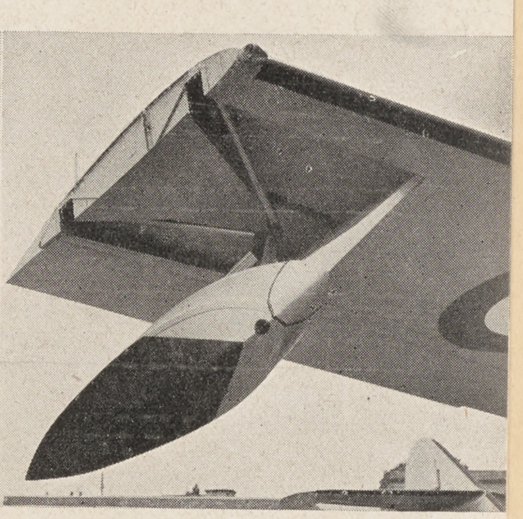
A Photographic Study of a Notable American Flying Boat

(Illustrated with "Flight" photographs)

THROUGH the courtesy of the Air Ministry, who have acquired the machine for experimental purposes, *Flight's* chief photographer was able at Felixstowe last week to "go to work" on the American Consolidated Model 28-5 twin-engined flying boat. This machine was lately flown across the Atlantic from Botwood, Newfoundland, to the Marine Aircraft Experimental Establishment at Felixstowe after having flown to Botwood from the Consolidated factory in San Diego.

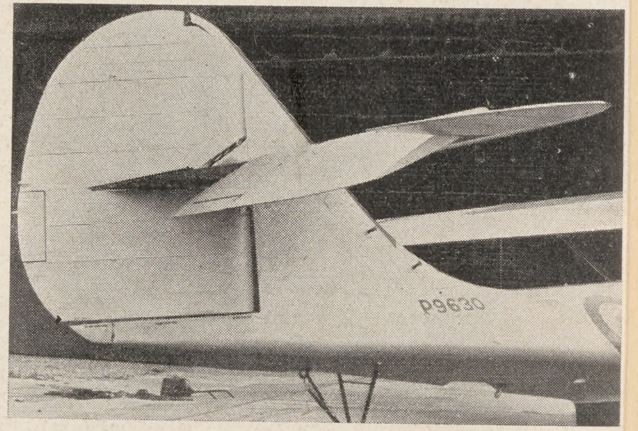
In all essentials the machine resembles the PBY machines, more than 200 of which are being supplied to the U.S. Navy and which have replaced destroyers for scouting and reconnaissance duties. Despite its comparatively low wing loading, the 28-5 is claimed to have a maximum range of more than 4,200 miles. The engines are two Pratt and Whitney Twin Wasps and the top speed is claimed to be over 200 m.p.h.

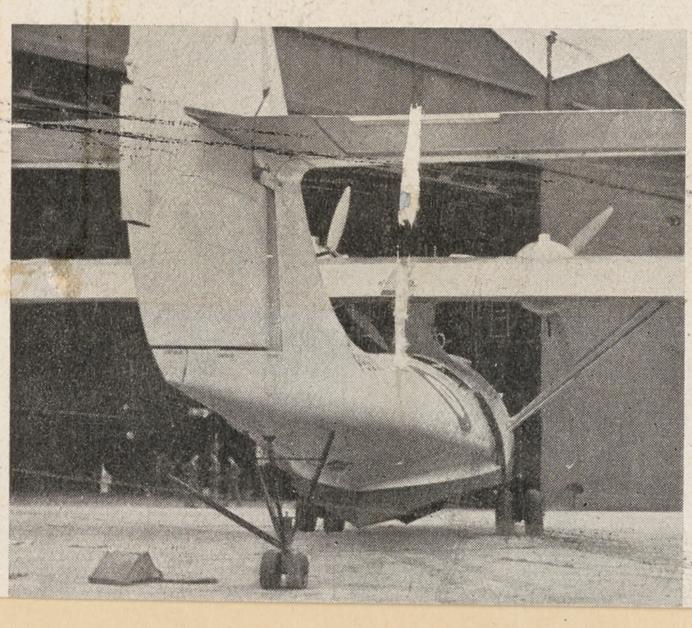


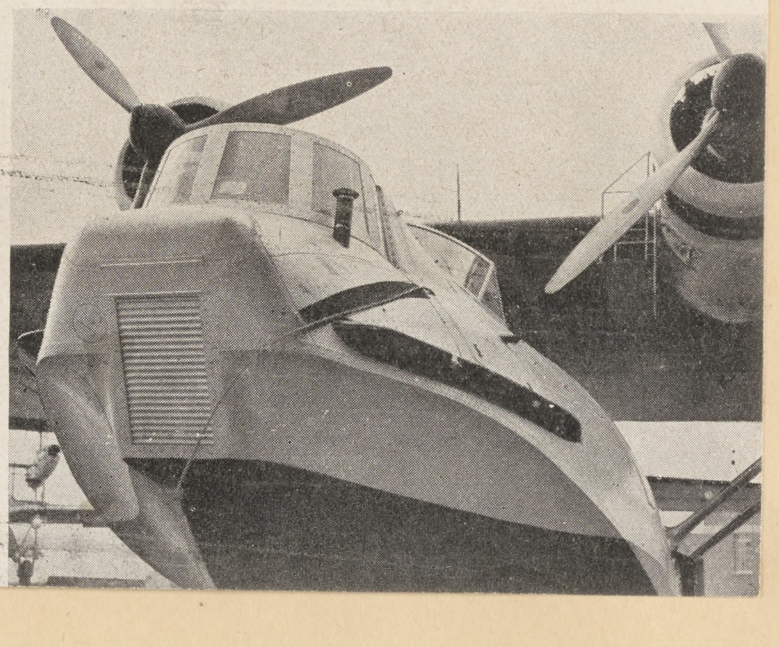


The characteristic features of the Consolidated 28-5—large wing area, retractable wing-tip floats and peculiar hull formation—are apparent in the top view on this page. Below it are close-ups of the float retracted and partially extended while on the right is a study of the tail with its single fin and very large rudder, the former built integral with the hull. Below, on the left, is a view which shows more details of the tail, the broad hull and the termination of the step. Finally, there is a view of the bows showing the location of the bomb aimer's window and the gun turret.

C







the Arctic proved beyond any doubt that standard aircraft is capable of undergoing the rigours of Arctic conditions. The performance of the radio equipment and the accuracy of the meteorological services also confirmed the belief that the conquest in the Arctic is many years nearer achievement than was anticipated before the Soviet flyers began their experiments in the summer of 1937.

WHEN the Russian flyers were first reported missing, the Mackenzie Air Service sent a plane along the Alaska Coast to check a story from Eskimos who told of having heard a plane on the day Levanevsky disappeared. On August 15th the Soviet Embassy at Washington asked Sir Hubert Wilkins, noted Arctic explorer, to head a search party. Convinced of the dangers of flying a land plane in the Arctic in mid-summer, due to the melted ice and treacherous landing conditions, he chose a long-range flying boat. He secured a twin-motor flying boat in New York which he felt was most suitable, and organized his crew. Within two days the party was en route to Edmonton and the North-West, leaving on the 17th. In the crew were Air Commodore Herbert Hollick-Kenyon of Toronto and S. A. Cheesman of Port Arthur, both of whom had accompanied Sir Hubert Wilkins as pilots on an Antarctic expedition. The other two members of the crew were Gerald D. Brown, Engineer, and Raymond E. Booth, Radio Operator. Sir Hubert Wilkins acted as navigator.

Four days after leaving New York the search party had established its first base at Coppermine, 90 miles north of the Arctic Circle and immediately began operations. The fuel tanks of the flying boat carried 1,760 gallons of gasoline which was sufficient for a flight of 3,000 miles. In addition to this supply ten extra drums of fuel were carried in the cabin of the plane to allow an additional flying range of 500 miles. As the plane was taxied out for the first search flight, a leaking oil line was discovered. The sudden change in temperature, which in August was a few degrees above freezing, had loosened some connections and a complete check-up was necessary before the flight could get underway.

On the first flight the flyers learned to their surprise that at high altitudes the temperature was warmer than nearer the ground. This was due to air currents, which are heated in the Tropics and blown toward the Poles. Falling towards the earth's surface in the Arctic, the air chills and drifts back towards the equator. This weather phenomenon made air travel in the Arctic considerably more comfortable than had been anticipated.

In the midst of one of the flights at an altitude of 10,000 feet, an overflow of gasoline from the drums flowed over the cabin floor. The Eskimo ground crew had filled the drums to capacity, and the reduced air pressure at this altitude caused the gasoline to expand and run over, covering the floor to a depth of about two inches. Locking himself in the cabin compartment, Sir Hubert Wilkins worked for two hours sopping up the fuel with old rags until it had been all evaporated. "It was really miraculous", says Sir Hubert Wilkins, "that it had not already caused an explosion". Three flights in all were made from the base, the total mileage being about 5,000 miles.

During their flights which were pointed directly into the region in which the flyers were lost, radio calls were sent out every thirty minutes in the hope of contacting Levanevsky. Although cloud and fog banks made it difficult to see whole areas of ice fields, the visibility, even at night during August and September in 1937, was generally good. Sir Hubert Wilkins spent most of his time in the air seated in the navigator's cockpit in the nose of the flying boat, wearing four-powered spectacle binoculars. When he spotted a dark object or anything even remotely suggestive of a plane or a tent on the ice below, he used high powered glasses for a closer inspection. With him the entire crew kept a lookout covering their vast network of flights.

On their return to Coppermine after the first series of flights, they decided to move their base to Aklavik, 600 miles West. This change was due in the first place to the fact that the Royal Canadian Air Forces' emergency supply of gasoline had been rapidly depleted by the plane which burned about 75 gallons per hour; and secondly because the new location was better suited for shorter approach flights into the area they wished to search. At Aklavik they also had the advantage of direct air communications with Edmonton.

When they reached Aklavik a representative of the Ethyl Corporation with an emergency supply of Ethyl fluid provided by Imperial Oil Limited was on hand to service the flying boat with the proper gasoline mixture and to formulate the necessary octane rating for the equipment in use. Rigged out in a gas mask, rubber clothes and gloves, his appearance was unusual even for the shores of the Arctic Ocean where styles seem strange to the visitor.

ON September 2nd the search party moved over into Alaska to visit Barter Island and re-check the rumours that Levanevsky's plane had been heard in that vicinity. After a short delay the weather report indicated good weather, and a new series of flights commenced. Zig-zagging back and forth between 82° and 85° north latitude and 135° to 150° west, they continued the search. A week or so later the ice began to encrust the surface of the flying boat and it was decided to discontinue the search with the flying boat. During the thirty-day search they flew 13,000 miles over the Arctic.

On his return to New York, the Soviet Government asked Sir Hubert Wilkins to continue his search in a plane equipped with skis. Dick Merrill's trans-Atlantic plane was purchased and flown to Edmonton where it was fitted out with skis. Although considerably smaller than the flying boat, since it only carried two men, this ship had a long cruising range. Sir Hubert Wilkins and Hollick-Kenyon returned to Aklavik on November 23rd, taking Allan Dyne, engineer from Canadian Airways and W. R. Wilson as radio operator in place of Booth and Brown. The twin-engined monoplane was equipped with de-icers on the propeller hubs and also had a radio direction-finder which was used extensively with two long-wave radio direction-finding sets which were put in operation at Aklavik and Point Barrow, Alaska.

The winter expedition did not have favorable flying conditions until well into the New Year. Grounded at Point Barrow, just prior to Christmas, they celebrated a real Arctic Christmas by visiting all the white families for Christmas dinners. On January 12th they were forced to return to Aklavik due to the heavy drifts at Port Barrow which would not allow a take-off with a full load. The plane had also begun to accumulate salty hoar frost which formed a solid coating of ice both on the inside and outside of the plane. This could be removed only by tapping the ice with hammers. To overcome this condition on the windows it was found necessary to fly with them open. Otherwise, the fliers could not see.

On January 16th Sir Hubert Wilkins and Hollick-Kenyon prepared for another cruise into the Arctic. They took off at night into the clear semi-gloom of the full moon in a temperature that registered 44° below and continued their search over another wide area. On their return, engine trouble developed from an accident to one of the propellers and another lay-off was necessary until a new motor could be flown up from Edmonton. It was about the first of March before the engine was installed and ready to fly. To test the new engine a complete inland search was made out across the Richardson and Brook Mountains in Alaska—an area into which the Russian plane might have flown if there was any accuracy in the stories told by the Eskimos of Barter Island. Bad weather delayed further flights until March 10th when an eleven-hour flight was made and this one was followed up by another flight on March 14th which proved to be the longest and most informative of the entire search. They were in the air for nineteen and a half hours and covered 2,300 miles in a search which carried them to within 200 miles of the North Pole. Two more flights were anticipated but before suitable flying weather was obtained the Soviet Government had decided to give up the search and asked them to return to New York.

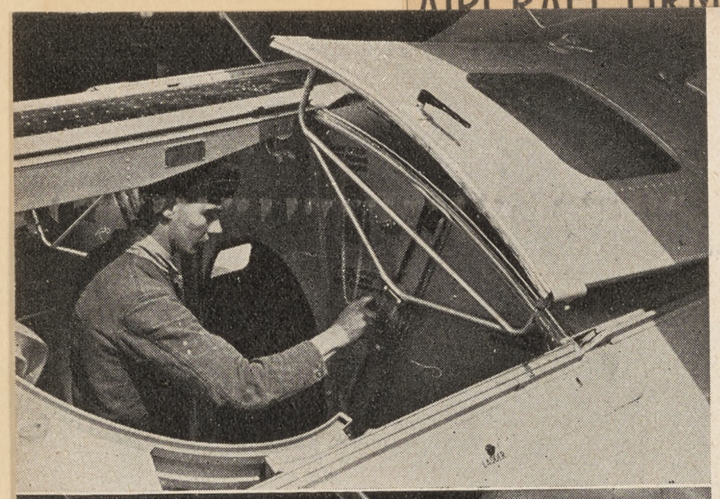
During the six months' search the Wilkins' flights covered 44,400 miles without any mishap or failure on the part of his equipment. In giving up the search Sir Hubert Wilkins stated that he and his companions "sincerely regretted" that the search did not succeed in locating Levanevsky and his companions. "Their efforts —perhaps more than those of any others," said Sir Hubert Wilkins, "will inspire the development which will eventually open the shortest routes for aerial transportation between the big cities of the Northern Hemisphere."

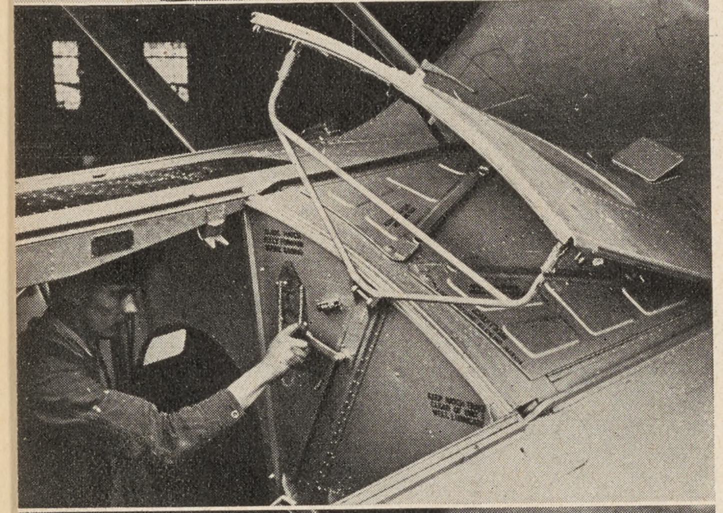
INTERNATIONAL DAY ON THE PRAIRIES

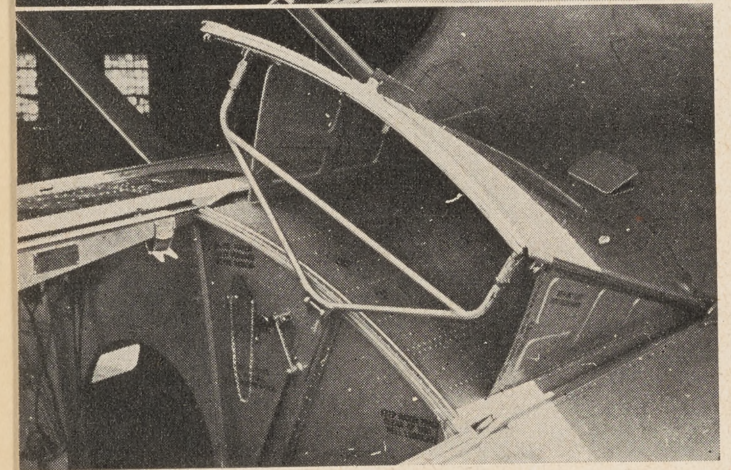
● International Day in Swift Current, Sask., sponsored by the Kinetic Club, is an event which crowds the prairie city with thousands of visitors. These photographs, supplied through the courtesy of the Swift Current "Sun", show (above) a part of the crowd watching the parade; an African kraal (left) which masked a merchant's store and (right) a desert scene masking a bank building.

AIRCRAFT FIRM

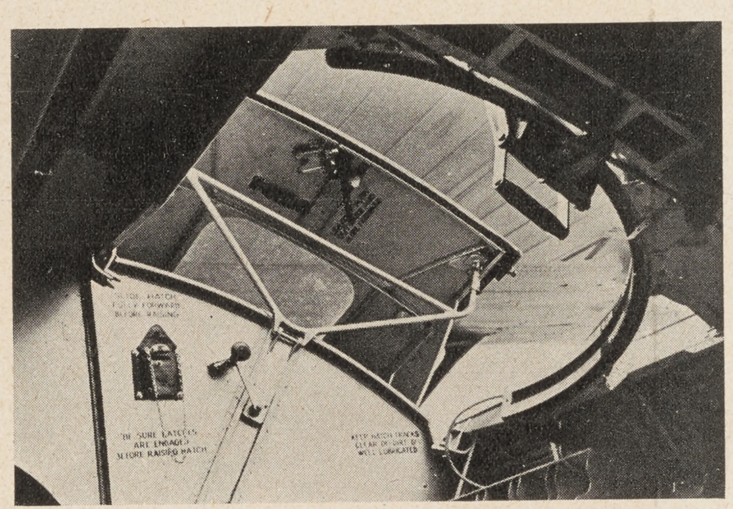
SDAY MORNING, SEPT. 12,

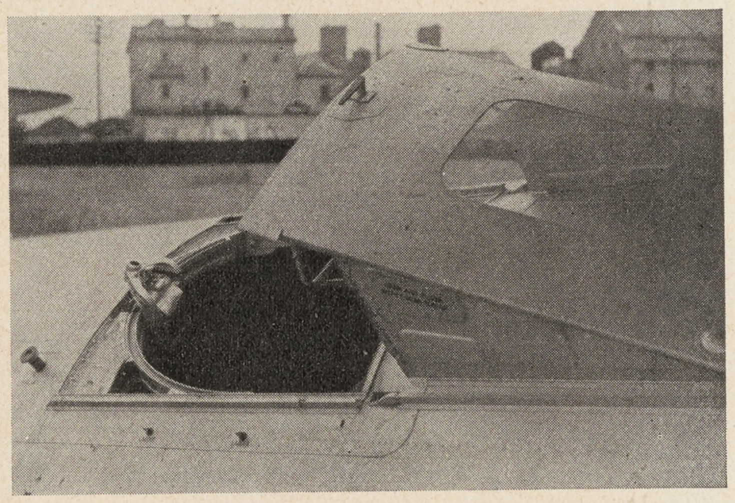


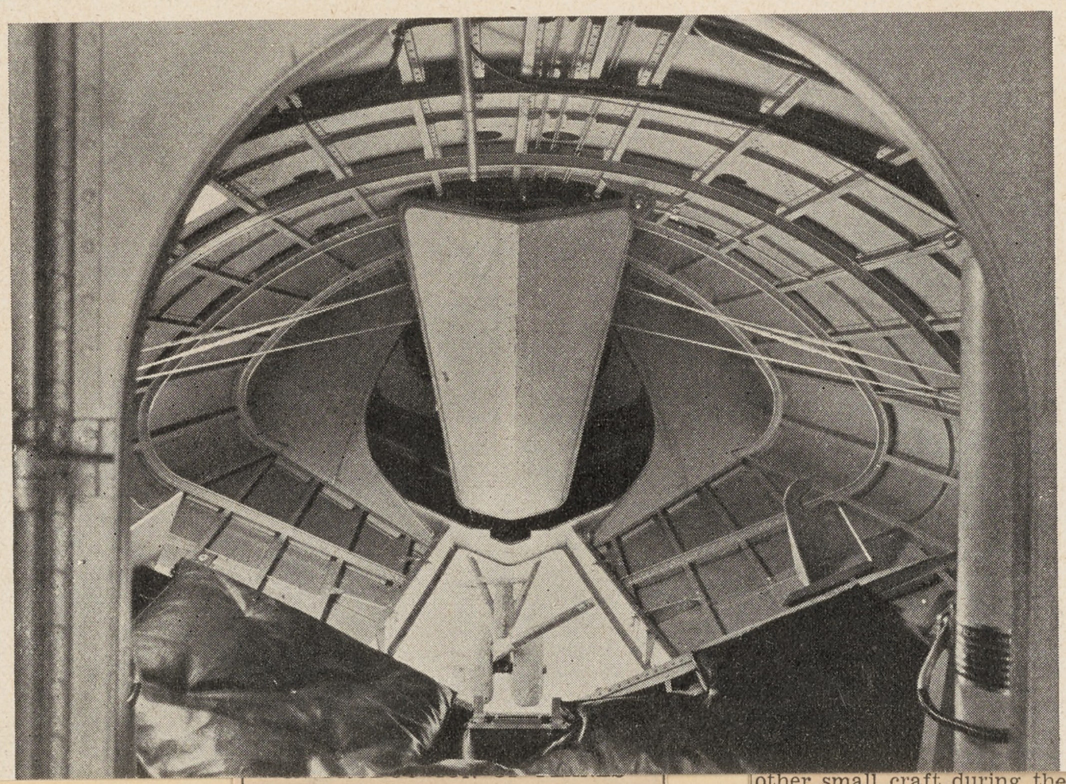




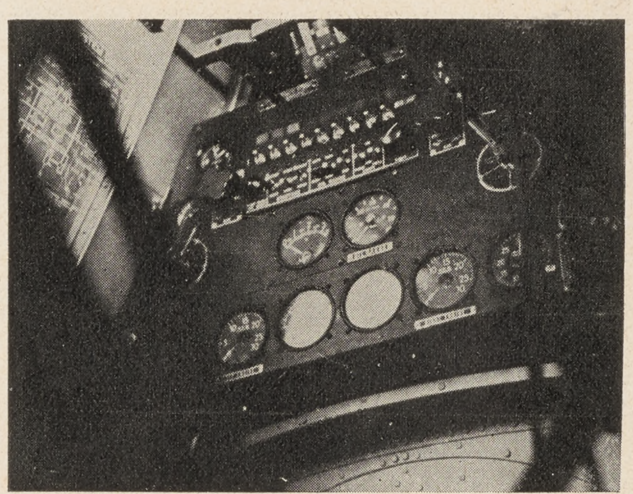
Five views of one of the two deck gun positions. On the left the portion of decking which protects the gunner from the airstream is shown being raised after having been slid forward. The third view shows the side plates in position. Below is a "shot" of the gunner's position from inside the hull and below that is a view showing everything ready for action, except that the gun is not fitted to the track-type mounting which, incidentally, operates very smoothly.



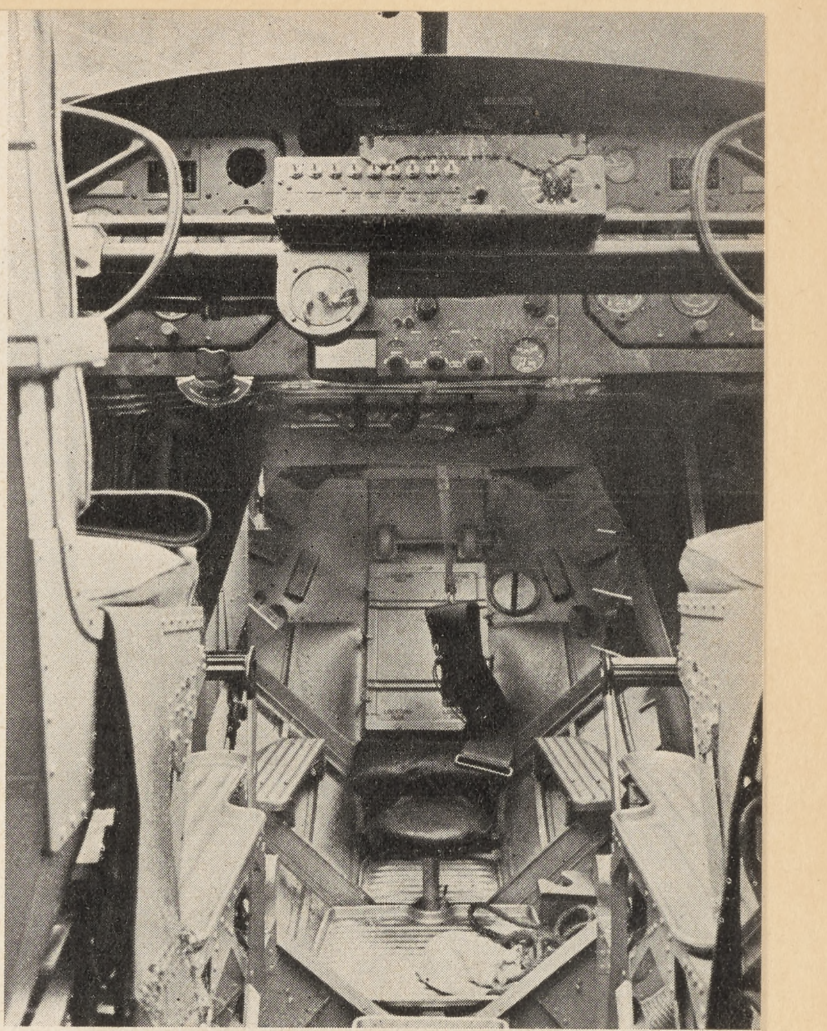


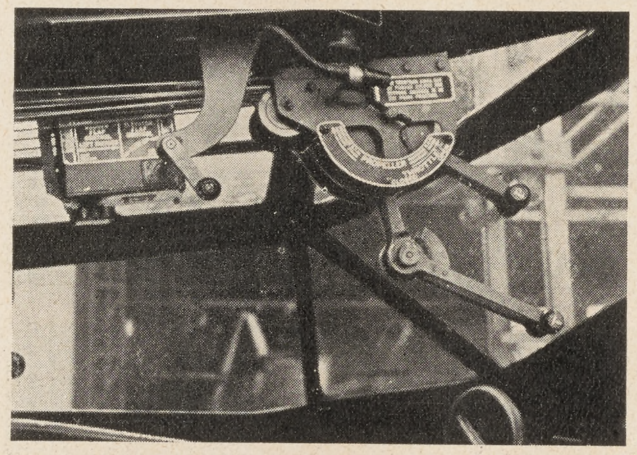


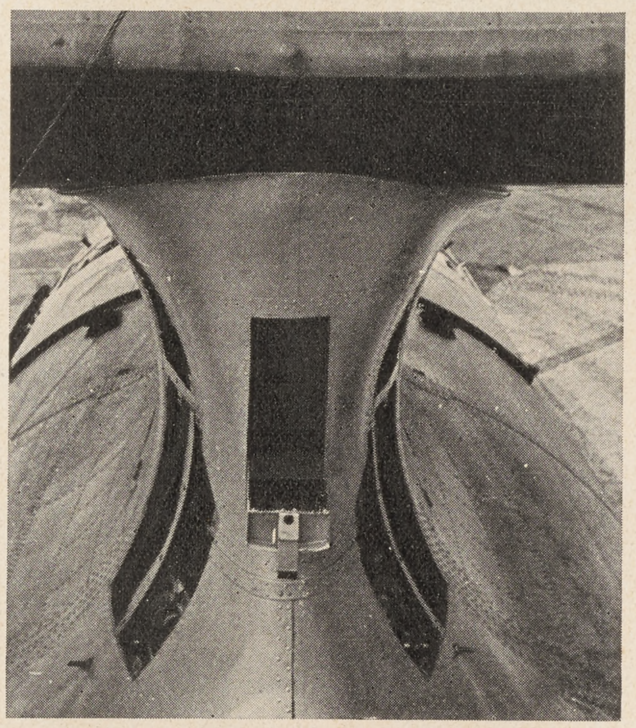
(Left) This is what the Americans call the tunnel gun position. Actually it is not so much a tunnel as an aperture in the floor which is normally filled by the folding section of hull seen above it. This view also shows the section and construction of the rear portion of the hull.



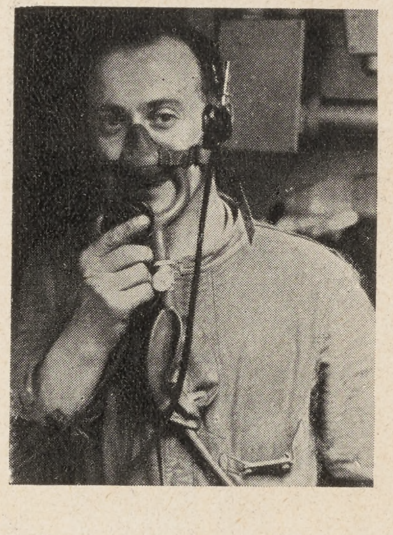
The majority of the engine instruments are grouped on the flight engineer's panel shown above and not in the pilot's cockpit which is seen on the right. The row of switches on the pilot's dashboard transmit orders to corresponding visual indicators on the engineer's panel. The flight engineer sits in the superstructure between the hull and the wing where he may observe the engines directly. He also operates the wing tip floats either manually or electrically. Below are the pilot's throttle and trim controls in the roof of the cockpit.



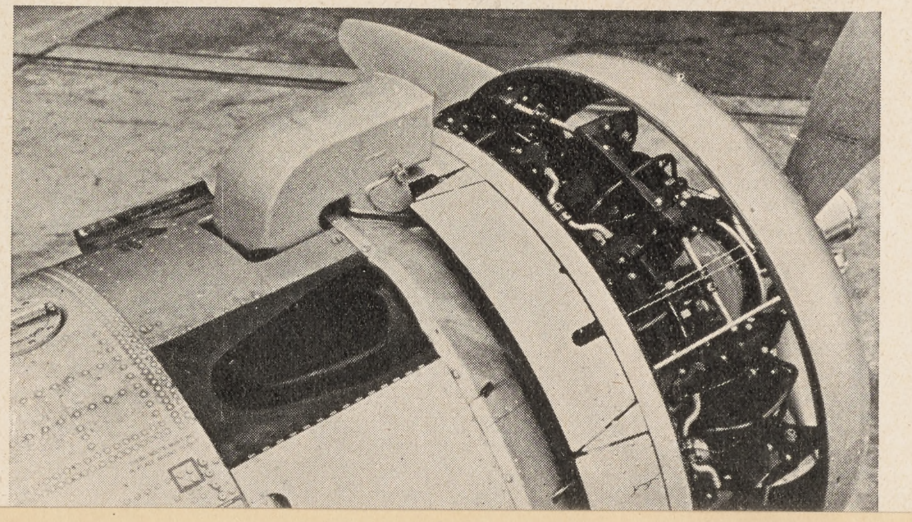




On the right is a view looking aft showing the superstructure in which the flight engineer is housed. A section of the de-icer is also visible. Below is a view of the installation of one of the Pratt and Whitney Twin Wasps with part of the cowling removed.



The oxygen mask as used by the crew of the Consolidated 28-5 leaves the mouth free to use the intercommunication system which extends throughout the boat.



WAITING FOR MR. CLAPP

SYDNEY, Monday.

Air Force officials view with concern the delay in the scheme for mass production of British Beaufort aeroplanes in Australia. One senior officer said to-day that Australia had all the expert guidance she needed and it would appear that there had been a marked lack of initiative on the part of some responsible persons.

Australia's mass production of planes cannot become effective until Mr. W. H. Clapp, who is still Victorian Railway Commissioner, takes over the organising of the industry.

---

other small craft during the hazardous takeoffs with full gasoline loads.

The San Diego squadron will be sent to Hawaii to replace one just ordered to the Philippines in a move to strengthen defense forces required to enforce U. S. neutrality.

LANGLEY TO MANILA

The aircraft tender Langley, formerly based in San Diego and only recently sent to Pearl Harbor, has been ordered to Manila.

First indication of the contemplated Hawaii flight was the hurried departure Sunday of the aircraft tender Wright for Pearl Harbor. The vessel will act as guard hip for the planes en route and will be stationed in Hawaii as replacement of the Langley for an indefinite period.

the Arctic proved beyond any doubt that standard aircraft is capable of undergoing the rigours of Arctic conditions. The performance of the radio equipment and the accuracy of the meteorological services also confirmed the belief that the conquest in the Arctic is many years nearer achievement than was anticipated before the Soviet flyers began their experiments in the summer of 1937.

WHEN the Russian flyers were first reported missing, the Mackenzie Air Service sent a plane along the Alaska Coast to check a story from Eskimos who told of having heard a plane on the day Levanevsky disappeared. On August 15th the Soviet Embassy at Washington asked Sir Hubert Wilkins, noted Arctic explorer, to head a search party. Convinced of the dangers of flying a land plane in the Arctic in mid-summer, due to the melted ice and treacherous landing conditions, he chose a long-range flying boat. He secured a twin-motor flying boat in New York which he felt was most suitable, and organized his crew. Within two days the party was en route to Edmonton and the North-West, leaving on the 17th. In the crew were Air Commodore Herbert Hollick-Kenyon of Toronto and S. A. Cheesman of Port Arthur, both of whom had accompanied Sir Hubert Wilkins as pilots on an Antarctic expedition. The other two members of the crew were Gerald D. Brown, Engineer, and Raymond E. Booth, Radio Operator. Sir Hubert Wilkins acted as navigator.

Four days after leaving New York the search party had established its first base at Coppermine, 90 miles north of the Arctic Circle and immediately began operations. The fuel tanks of the flying boat carried 1,760 gallons of gasoline which was sufficient for a flight of 3,000 miles. In addition to this supply ten extra drums of fuel were carried in the cabin of the plane to allow an additional flying range of 500 miles. As the plane was taxied out for the first search flight, a leaking oil line was discovered. The sudden change in temperature, which in August was a few degrees above freezing, had loosened some connections and a complete check-up was necessary before the flight could get underway.

On the first flight the flyers learned to their surprise that at high altitudes the temperature was warmer than nearer the ground. This was due to air currents, which are heated in the Tropics and blown toward the Poles. Falling towards the earth's surface in the Arctic, the air chills and drifts back towards the equator. This weather phenomenon made air travel in the Arctic considerably more comfortable than had been anticipated.

In the midst of one of the flights at an altitude of 10,000 feet, an overflow of gasoline from the drums flowed over the cabin floor. The Eskimo ground crew had filled the drums to capacity, and the reduced air pressure at this altitude caused the gasoline to expand and run over, covering the floor to a depth of about two inches. Locking himself in the cabin compartment, Sir Hubert Wilkins worked for two hours sopping up the fuel with old rags until it had been all evaporated. "It was really miraculous", says Sir Hubert Wilkins, "that it had not already caused an explosion". Three flights in all were made from the base, the total mileage being about 5,000 miles.

During their flights which were pointed directly into the region in which the flyers were lost, radio calls were sent out every thirty minutes in the hope of contacting Levanevsky. Although cloud and fog banks made it difficult to see whole areas of ice fields, the visibility, even at night during August and September in 1937, was generally good. Sir Hubert Wilkins spent most of his time in the air seated in the navigator's cockpit in the nose of the flying boat, wearing four-powered spectacle binoculars. When he spotted a dark object or anything even remotely suggestive of a plane or a tent on the ice below, he used high powered glasses for a closer inspection. With him the entire crew kept a lookout covering their vast network of flights.

On their return to Coppermine after the first series of flights, they decided to move their base to Aklavik, 600 miles West. This change was due in the first place to the fact that the Royal Canadian Air Forces' emergency supply of gasoline had been rapidly depleted by the plane which burned about 75 gallons per hour; and secondly because the new location was better suited for shorter approach flights into the area they wished to search. At Aklavik they also had the advantage of direct air communications with Edmonton.

When they reached Aklavik a representative of the Ethyl Corporation with an emergency supply of Ethyl fluid provided by Imperial Oil Limited was on hand to service the flying boat with the proper gasoline mixture and to formulate the necessary octane rating for the equipment in use. Rigged out in a gas mask, rubber clothes and gloves, his appearance was unusual even for the shores of the Arctic Ocean where styles seem strange to the visitor.

ON September 2nd the search party moved over into Alaska to visit Barter Island and re-check the rumours that Levanevsky's plane had been heard in that vicinity. After a short delay the weather report indicated good weather, and a new series of flights commenced. Zigzagging back and forth between 82° and 85° north latitude and 135° to 150° west, they continued the search. A week or so later the ice began to encrust the surface of the flying boat and it was decided to discontinue the search with the flying boat. During the thirty-day search they flew 13,000 miles over the Arctic.

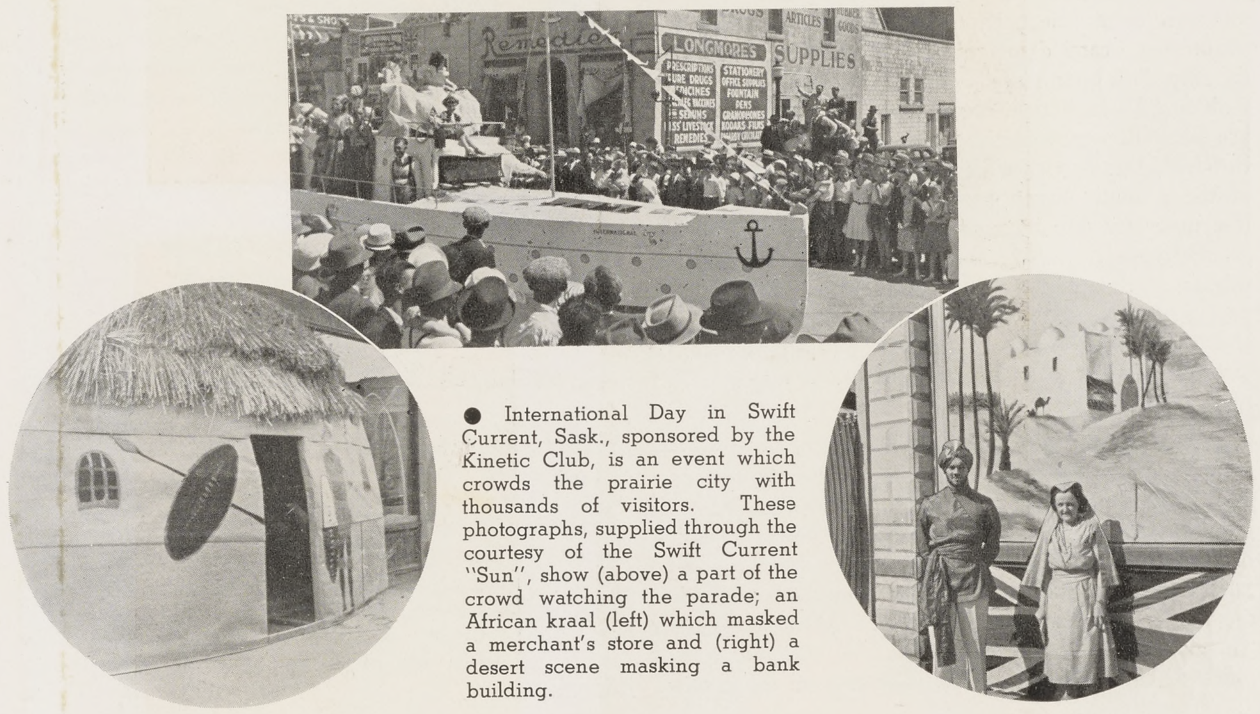
On his return to New York, the Soviet Government asked Sir Hubert Wilkins to continue his search in a plane equipped with skis. Dick Merrill's trans-Atlantic plane was purchased and flown to Edmonton where it was fitted out with skis. Although considerably smaller than the flying boat, since it only carried two men, this ship had a long cruising range. Sir Hubert Wilkins and Hollick-Kenyon returned to Aklavik on November 23rd, taking Allan Dyne, engineer from Canadian Airways and W. R. Wilson as radio operator in place of Booth and Brown. The twin-engined monoplane was equipped with de-icers on the propeller hubs and also had a radio direction-finder which was used extensively with two long-wave radio direction-finding sets which were put in operation at Aklavik and Point Barrow, Alaska.

The winter expedition did not have favorable flying conditions until well into the New Year. Grounded at Point Barrow, just prior to Christmas, they celebrated a real Arctic Christmas by visiting all the white families for Christmas dinners. On January 12th they were forced to return to Aklavik due to the heavy drifts at Port Barrow which would not allow a take-off with a full load. The plane had also begun to accumulate salty hoar frost which formed a solid coating of ice both on the inside and outside of the plane. This could be removed only by tapping the ice with hammers. To overcome this condition on the windows it was found necessary to fly with them open. Otherwise, the fliers could not see.

On January 16th Sir Hubert Wilkins and Hollick-Kenyon prepared for another cruise into the Arctic. They took off at night into the clear semi-gloom of the full moon in a temperature that registered 44° below and continued their search over another wide area. On their return, engine trouble developed from an accident to one of the propellers and another lay-off was necessary until a new motor could be flown up from Edmonton. It was about the first of March before the engine was installed and ready to fly. To test the new engine a complete inland search was made out across the Richardson and Brook Mountains in Alaska—an area into which the Russian plane might have flown if there was any accuracy in the stories told by the Eskimos of Barter Island. Bad weather delayed further flights until March 10th when an eleven-hour flight was made and this one was followed up by another flight on March 14th which proved to be the longest and most informative of the entire search. They were in the air for nineteen and a half hours and covered 2,300 miles in a search which carried them to within 200 miles of the North Pole. Two more flights were anticipated but before suitable flying weather was obtained the Soviet Government had decided to give up the search and asked them to return to New York.

During the six months' search the Wilkins' flights covered 44,400 miles without any mishap or failure on the part of his equipment. In giving up the search Sir Hubert Wilkins stated that he and his companions "sincerely regretted" that the search did not succeed in locating Levanevsky and his companions. "Their efforts—perhaps more than those of any others," said Sir Hubert Wilkins, "will inspire the development which will eventually open the shortest routes for aerial transportation between the big cities of the Northern Hemisphere."

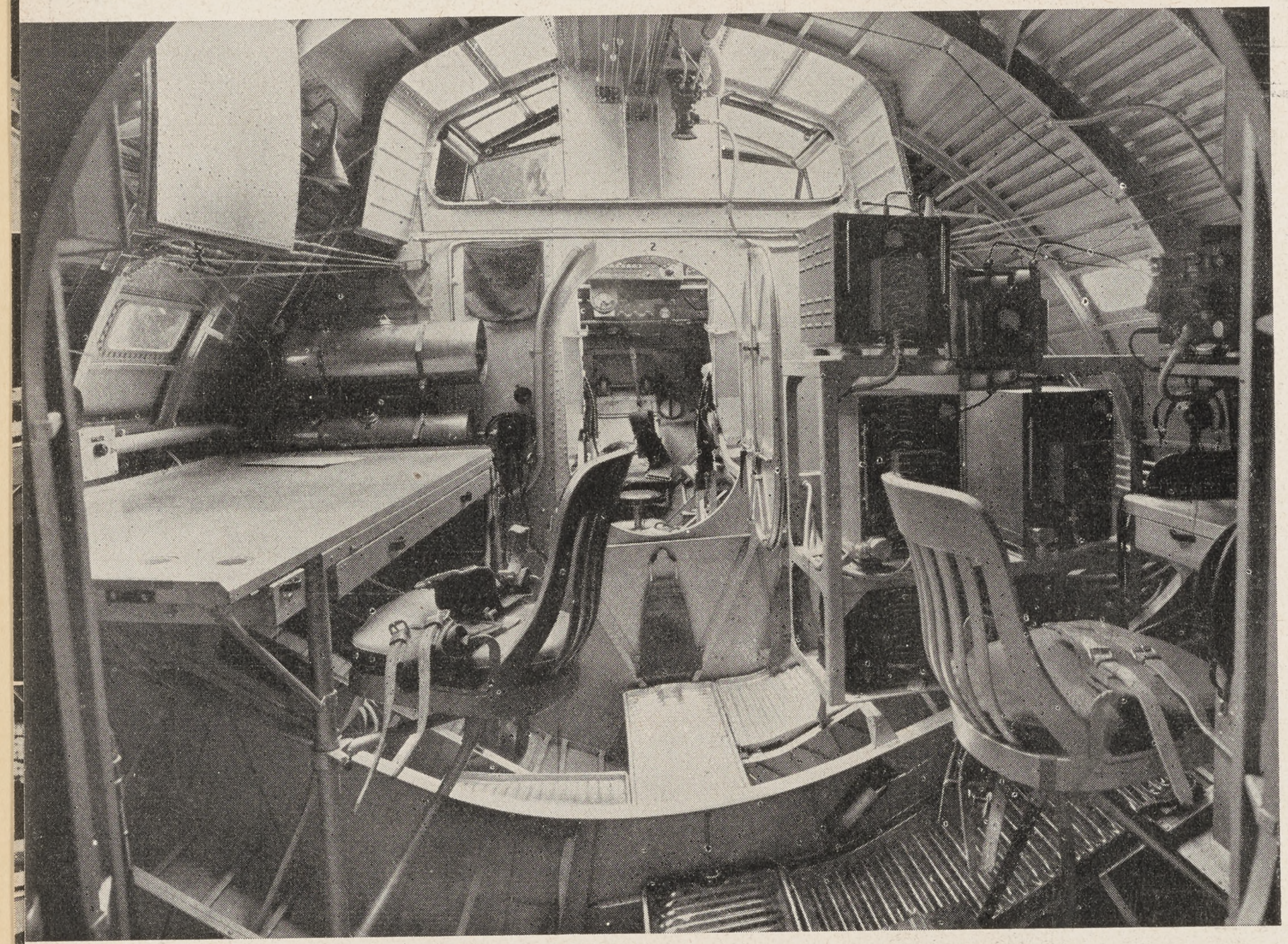
INTERNATIONAL DAY ON THE PRAIRIES



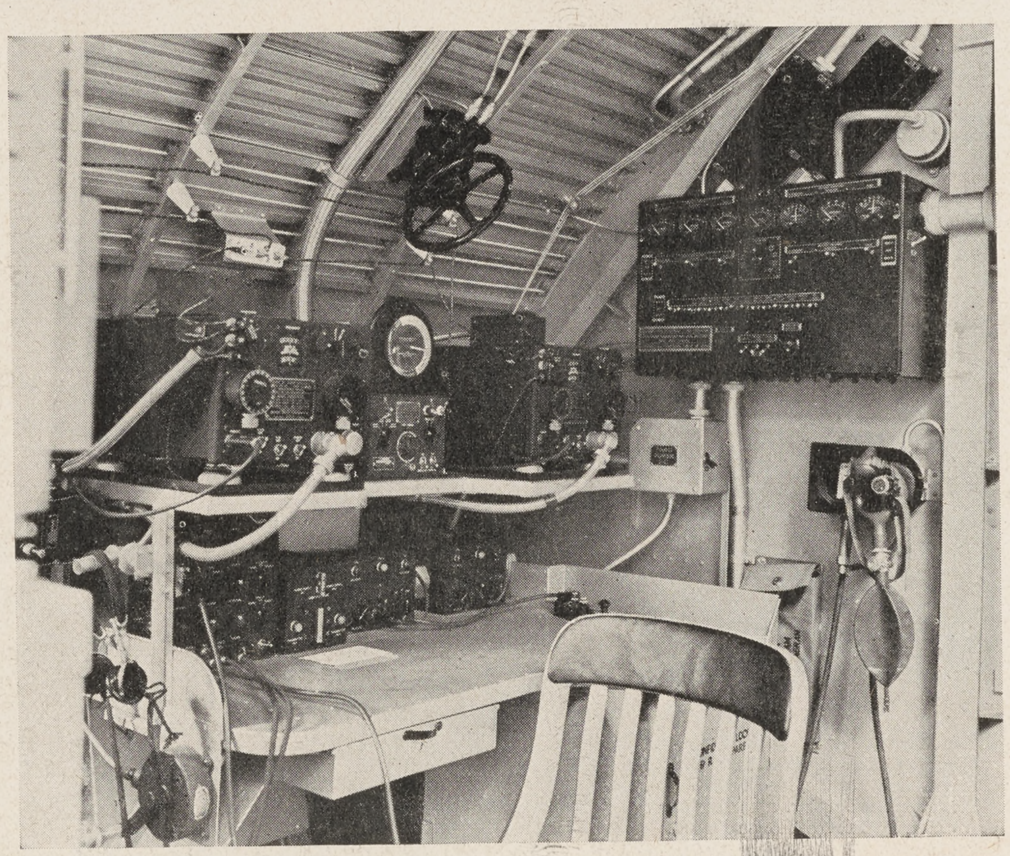
● International Day in Swift Current, Sask., sponsored by the Kinetic Club, is an event which crowds the prairie city with thousands of visitors. These photographs, supplied through the courtesy of the Swift Current "Sun", show (above) a part of the crowd watching the parade; an African kraal (left) which masked a merchant's store and (right) a desert scene masking a bank building.

AIRCRAFT FIRM

SDAY MORNING, SEPT. 12,



Above is a unique view showing the compartment occupied by the navigator and the wireless operator. The Bendix installation seen on the right and in the lower view comprises main and auxiliary transmitters, two complete receivers, a direction-finder and an inter-communication system which extends throughout the hull and permits both pilots to use the wireless directly when necessary. The loop aerial is extended through the roof and is remotely controlled from the wheel seen in the smaller view over the wireless operator's table. The cylinders by the navigator's table are drinking-water tanks.



WAITING FOR MR. CLAPP

SYDNEY, Monday.

Air Force officials view with concern the delay in the scheme for mass production of British Beaufort aeroplanes in Australia. One senior officer said to-day that Australia had all the expert guidance she needed and it would appear that there had been a marked lack of initiative on the part of some responsible persons.

Australia's mass production of planes cannot become effective until Mr. W. H. Clapp, who is still Victorian Railway Commissioner, takes over the organising of the industry.

---

other small craft during the hazardous takeoffs with full gasoline loads.

The San Diego squadron will be sent to Hawaii to replace one just ordered to the Philippines in a move to strengthen defense forces required to enforce U. S. neutrality.

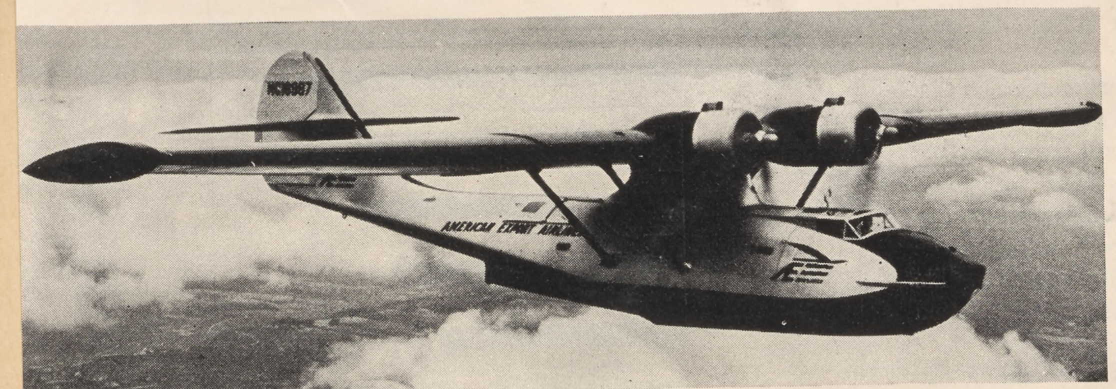
LANGLEY TO MANILA

The aircraft tender Langley, formerly based in San Diego and only recently sent to Pearl Harbor, has been ordered to Manila.

First indication of the contemplated Hawaii flight was the hurried departure Sunday of the aircraft tender Wright for Pearl Harbor. The vessel will act as guard hip for the planes en route and will be stationed in Hawaii as replacement of the Langley for an indefinite period.

HERE AND THERE IN BUSINESS

WHAT'S NEW AS OBSERVED BY THE AGENCY'S REPORTERS



Air Boat—*Trans-Atlantic surveys south of Pan-American's route are being conducted by American Export Air Lines. subsidiary of a shipping line, for Fall mail service.*

Caution—Rarely does a manufacturers' association say the trade's newest product is getting too much favorable publicity. In the end days of this June, the Board of Directors of the Radio Manufacturers' Association did this, going on record publicly as opposed to the creation of false hopes for television.

Scanning their new baby through the minimizing end of the spy glass, they saw television at present as limited within a 50-mile radius of the Empire State building, and to even smaller areas in a few other cities in the near future.

Television, they said, has suffered from over-statement, and its inauguration in New York may arouse false and ungrounded hopes in the minds of people throughout the country. Over 90 per cent of the geographical area of the United States will not be served for some time to come.

Television must be considered as a supplemental service to radio broadcasting. "It will not render the modern radio receiving set obsolete any more than the airplane renders the modern auto obsolete."

One reason for this caution is understandable. Folks who vainly await television sets, defer buying current radio equipment.

Selling—One of our reporters got a letter the other day from the Eberhard Faber Pencil Company, Brooklyn, N. Y. It answered a query about "Noblot," a mechanical pencil with lead which writes as permanently as ink. The letter was signed in pencil, but when the black tones were erased, a light blue ink effect remained—evidently "Noblot."

A former salesman, the reporter says this is one of the rare times he has encountered a manufacturer, publisher, or purchasing agent who demonstrated use of his company's product when either buying someone else's or answering an inquiry which was not a sales lead.

Electric bills—In Prosser, Wash., customers of the Benton Rural Electric Association read their own meters, figure their own bills, mail meter reading and payment together.

Before this an agent made the rounds, from two to 60 miles, read meters, and sent bills. The cost was about 30 cents each. Farmers paid when they got around to dropping into town.

Now monthly collections cost slightly over 10 cents per member. This includes money order fee, which is deducted from the bill, postage reply envelopes, and duplicated instructions. During its early operation, the plan has improved collections 50 per cent.

Monthly electric bills are filled out by the utility staff, except for current readings. Each bill form has four circles, numbered to correspond with electric meter clocks. On these the user draws arrows, showing where the pointers are on his meter.

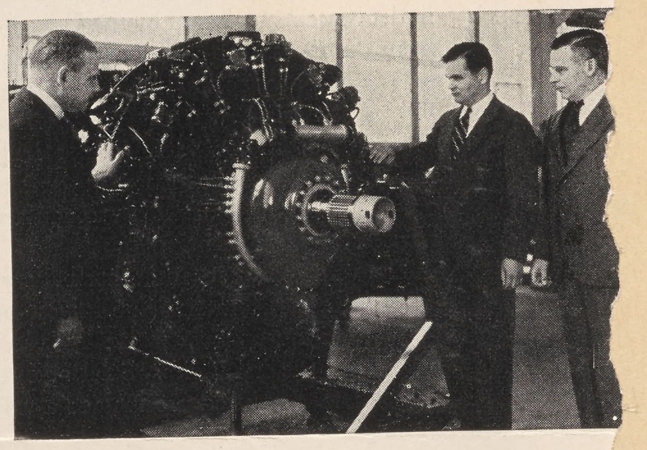
He enters his kilowatt-hour reading and subtracts last month's, already filled in. After a huddle with a table of charges, he knows what he owes. A money order from the rural postman finishes the matter quickly.

When all meter readings come in, Benton Rural Electric can check the total against its total output.

Shoes—Since the double header in World's Fairs opened, twin Meccas for what O. Henry fondly would have called "The American Rubberneck," it has become evident that the feet of today can't keep pace with the World of Tomorrow.

This problem was considered by the Florsheim Shoe Company, Chicago, Ill., and there is now available "The Shoe of Tomorrow." Cardinal virtue of this product is that every pair stretches, *i.e.*, swells luxuriously, to accommodate the prisoners within.

Tomorrow's shoe is cut from buckskin, which stretches. Backing up the buckskin is a woven Lastex lining. This pulls the leather back to its original shape while a wearer, presumably, is soaking his pedals in warm water.



Cloud thrasher—*World's largest, most powerful air-cooled airplane engine, this new 18-cylinder Wright Duplex-Cyclone motor powers a Consolidated Aircraft flying boat which holds 57 persons and can cruise 10,000 miles.*

Saw Scene—If you will visualize a one-room factory covering five acres, in which are four big drop hammers, a precision-testing engineering laboratory, an office force, and eight self-con-

---

S. D. Sun

Wednesday, September 13,

CONSOLIDATED IN BUSINESS RUSH

3000 Employes Seen Before End Of '39

(Copyright, 1939, San Diego Sun Publishing Co., Ltd.)

By HAROLD KEEN
Aviation Editor

The feverish pace to prepare the United States for any eventuality is reflected in the intense activity at Consolidated Aircraft Corp., where important developments vital to national defense were made known today.

With a payroll of 1800 employes that is due to be swelled to 3000 before the end of the year, Consolidated is rushing to completion the first of 24 four-motored Army and Navy bombers in contracts totalling approximetely $16,000,000.

NAVY AIRBOATS

Six of these craft are Navy airboats, each costing about $800,000. They are similar to the bomber that has made non-stop round trip crossings of the continent and recently returned from Alaska, where it transported Rear Adm. A. B. Cook, Aircraft Scouting Force commander, on an inspectoin tour. Its 25 tons and armed potentialities make it the largest and most powerful plane in the U. S. Navy.

Little has been disclosed of the four-motored Army bomber. The Army, whose procurement system is different from that of the Navy, placed orders for 18 of these super winged fortresses merely on the basis of a wooden prototype, known as the mockup, and the design. Consolidated defeated the Boeing producers of the famous "flying fortresses" in the design competition, which was said to have brought out startling advances in performance possibilities of heavy bombers.

MYSTERY SHIP

The four 1000 h. p. Pratt & Whitney engines, which will be housed in a 110-foot wing similar to that on the Consolidated "mystery ship," the twin-engined, steep-hulled Model 31, will give the plane terrific speed possibilities. elocity in excess of 300 miles per hour will be achieved, the designers believe, and if this is true, it will not only provide America with a sensational improvement on its present flying fortresses but will furnish part of the answer to defense against speedy pursuit planes so essential in an air war.

Another almost characteristic will be the cruising range of the Army plane, which some reports set as high as 10,000 miles. Destruction over a wide area, hitherto unapproached, will be possible with such a non-stop ability.

MAJOR PRODUCTION

Careful to avoid placing all its contract hopes in one basket, as was done for a period of more than two years, when seaplanes comprised the major form of production and experimental activity, Consolidated has added an amphibian type, it was learned.

Adapted to the design of the twin-engined PBY airboat, of which more than 200 are in Navy service, a plane capable of both land and sea operation soon will be delivered to North Island.

The firm is advertising in trade magazines the practicality of converting its four-motored Navy bomber to a commercial transoceanic airliner. The copy, which undoubtedly was written before the European war, paints an attractive picture of overnight flights to London "in luxury non-stop in the ease of an exclusive club."

CONTRACTS EXPECTED

That Consolidated is expecting another large contract soon was revealed by Port Director Joe Brennan to the City Council yesterday, when he sought authority for the Harbor Commission to grant the firm a lease on 17 addi-

---

crew.

Tribune. 9-12-39

Navy Bomber Returns

Here to be fitted with special heating aparatus for flying at high altitudes, the navy's four-motored, long-range patrol bomber has returned to North Island from an Alaskan cruise. The bomber recently was assigned as aerial flagship to Rear Adm. Arthur B. Cook, commander scouting force aircraft, who is now on an inspection of Alaskan and Hawaiian naval air bases. The new flagship is commanded by Comdr. Andrew Crinkley.

Consolidated Air

Romeike & Curtice Ld

Telephone
CENTRAL 2781
(2 Lines.)

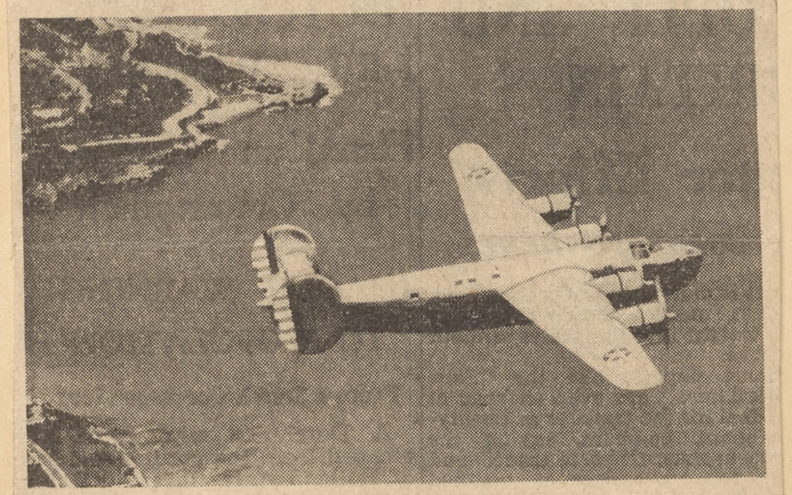
35. Shoe Lane.
LONDON.
E.C.4.

EXTRACT FROM

SUNDAY TIMES
135, Fleet Street, E.C.4.

24 NOV 1940

E SUNDAY TIMES, NOVEMBER 24, 1



The new American bomber, B-24.

POWERFUL NEW BOMBERS FROM AMERICA

Greatest U.S. Contribution To Victory

By THE "SUNDAY TIMES" AIR CORRESPONDE

News that America has released twenty-six Consolidated B-24 four-motor bombers for immediate delivery to the R.A.F. is most encouraging.

The Consolidated Model 32, designated the B-24 by the U.S. Army, is by far the best military aeroplane which the U.S.A. has yet produced and the first American aeroplane on which we can really unreserved enth

four motors, there is little
larity. Incidentally, the
Company has copyrighte
name "Flying Fortress"—
is misleading anyway.

The sending of these
dated bombers for the R
intensify the offensive is o
greatest contributions
can make towards the w
the war.

LAST STAGE OF GREAT GUBA FLIGHT

Victoria, Australia.

Safe Arrival At Mombasa

In this article, the last of a series of four on Captain P. G. Taylor's flight survey of the reserve Empire air mail route across the Indian Ocean, Mr J. Percival, Jun., official newspaper correspondent, describes the arrival of the Guba at Diego Garcia, in the Chagos Archipelago, and at Mahe, in the Seychelles.

THE Guba left Cocos Island late in the afternoon of June 13, and the 1470 miles flight through the night was uneventful in the smooth, cool air.

In the early hours of the morning, wireless communication with VIS, Sydney, and VIP, Perth, the Australian coastal stations, was lost for the first time.

It was estimated that the aircraft would arrive at Diego Garcia a few minutes before dawn. In the darkness of early morning the lights of H.M.S. Manchester, based there for the flight, were sighted.

The cruiser, anchored in the great pear-shaped lagoon, looked like an illuminated toy.

The aircraft made two wide circuits of the palm-covered coral, and as the first tinge of light appeared over the horizon she settled down beside H.M.S. Manchester. Soon a launch was beside her, and the crew was invited to board the cruiser for hot coffee, baths, shaves and breakfast. H.M.S Manchester left that afternoon.

LONELY FRENCHMAN

Diego Garcia was originally a French settlement, but is now British.

The cocoanut plantation is managed by a lonely Frenchman. In the space of a few days he saw the arrival of H.M.S. Manchester, the island steamer, Zambezi, which visits him once in every four months, and the Guba.

He dug deep into his cellar and his black servants fossicked the island to supply the best for our table. He made his first flight the day after our arrival.

The Guba made a smooth passage to Mahe, an island paradise in the Seychelles, on June 16. The mountains of Mahe rise sheer out of the surrounding ocean depths of 2000 fathoms to heights up to 3000 feet.

The sight of a mountainous island brought a strange feeling of security again. There is a feeling of insecurity about Cocos Island and Diego Garcia, where the highest coral outcrop from which the cocoanut palms sprout is only about 10 feet above sea level.

"GREAT VALUE"

The day after the Guba's arrival at the Seychelles, H.M.S. Liverpool, with which the Guba was in communication during the flight, entered Port Victoria.

The Governor of the Seychelles (Sir Walter Buchanan Smith) made his first air journey during a photographic flight.

After the survey work at Mahe, the Guba tooff-off for Africa in the morning on June 21, and alighted at Mombasa flying boat base the same day.

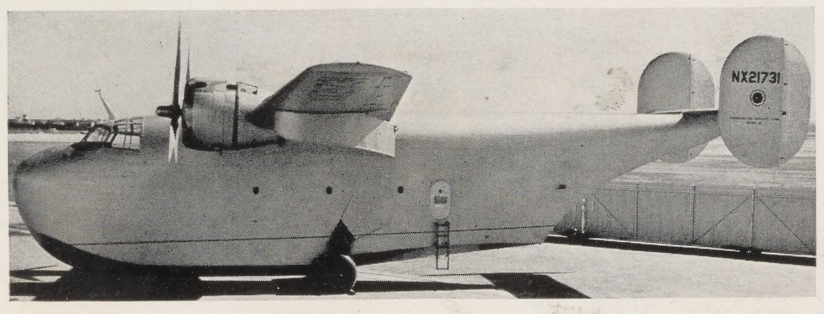
Arriving at Mombasa, Captain Taylor said that the flight had been fully justified, and that the route should be of great value to Imperial communications. Information obtained in the survey would enable the establishment of a regular service at short notice.

"The use of the Indian Ocean route will bring Australia and Africa within two days of each other," he said.

AERO EQUIPMENT REVIEW MAY-39

CONSOLIDATED MODEL 31 FLYING BOAT

POWERED WITH TWO WRIGHT 2,000 H.P. ENGINES TOPS 275 M.P.H.–CAPABLE OF 10,000 MILE RANGE



Consolidated Model 31 Flying Boat

Some ten months after its design and construction was initiated Consolidated Aircraft's new Model 31 twin-engine flying boat took to the air off San Diego Bay one day this month. The outstanding figures reported on completion of the first flight were that the 50,000-pound Model 31, powered with two 2,000 h.p. Wright Duplex-Cyclones, has a top speed of 275 m.p.h., is capable of a range of 10,000 miles, with a light passenger load.

Contrasted against a chunky hull, with a sharply upswept stern, is an extremely slim wing, reputedly the product of ten years' development work by engineer David R. Davis. The wing narrows to such a small tip that the outboard floats retract to the underside of the outer wing panel, rather than at the tip as they do on the PBY's. The wing, tail surfaces, and the planing surface of the hull are flush-riveted.

The Model 31 is built with two full decks, one above the other, providing a large flight control compartment and eight additional large compartments. It is designed to accommodate a crew of five in a completely sound-proofed flight compartment furnished with all the latest type instruments and equipment. As a commercial airliner, it has a maximum capacity for 52 passengers for daytime operations and 28 sleeper passengers for night operations. For trans-oceanic flights, it has accommodations for 28 passengers. As a military airplane its function would be similar to that of the well-known Consolidated twin-engine patrol bombers built for the U.S. Navy.

At this instance it seems probable that this last application will be the Model 31's first service assignment. Although this is entirely the Consolidated Corporation's private venture, the Navy has been cognizant of the construction, and the performance delivered by the 31 is reported to have excited much interest on the part of the Navy. The fact that this was a private venture, and was not government financed nor subjected to the ordinary procedure routine, is held to be a major factor in the swift production of the design. While the development of types of similar magnitude, under government contract, has heretofore occupied from two to three years' time, this project was completed in ten months.

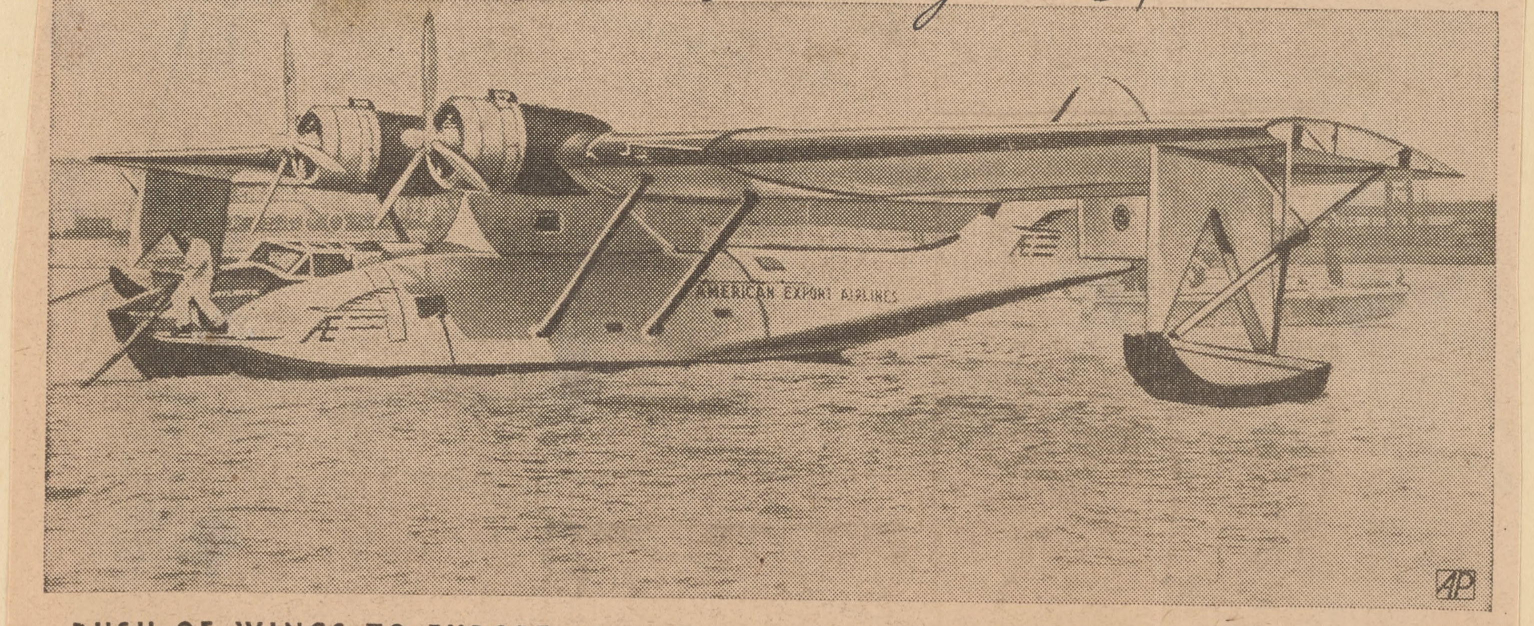
An aluminum coated aluminum alloy skin, internally reinforced with longitudinal stiffeners and transverse bulkheads and frames, is employed in the construction of the 31. Flush riveting is used on the wings, tail surfaces and the planing surface of the hull bottom. The full cantilever wing has integral fuel tanks in the center section. Hydraulically operated Fowler flaps extend from the inboard side of the ailerons to the hull. Ailerons and flaps are fabric covered. The full cantilever stabilizer has twin fins and rudders. Rudders and elevators are fabric covered.

The retractable tricycle beaching gear is hydraulically operated. The nose wheel is housed in a well in the bottom of the hull and the side wheels swing upward into wells in the side of the hull. All wheels are completely enclosed by doors for maximum efficiency in flight. The side wheels are removable in addition to being retractable. The two Wright Duplex-Cyclone 2,000 h.p. engines carry three-bladed, Hamilton Standard Hydromatic full-feathering propellers, with 16-foot diameters. Beyond the statement that the Model 31 exceeds the PBY in speed, range and load capacity, and those figures reported here, no performance figures have been released.

General specifications follow:

Wing span	approximately 110 feet
Length over-all	approximately 73 feet
Height	approximately 22 feet
Maximum wing chord	approximately 14 feet
Gross weight	approximately 50,000 lbs.

Santa Barbara News-Press aug 20-'39.



RUSH OF WINGS TO EUROPE—In the harbor at Saint Nazaire, France, rests "Transatlantic," the American Export Airlines' flying boat now engaged in making survey flights across the Atlantic, with a view to establishment of service from U. S. to 30 Mediterranean ports. The airline will possibly fly mail in the fall and passengers, in a year or two. Other airlines crossing the Atlantic are the Pan American Airways' Clipper ships, carrying passengers and mail, and Britain's Imperial Airways mail plane.

Sun 9-13-39

NAVY SQUADRON IN HAWAII HOP TODAY

Bound for Pearl Harbor to replace a squadron assigned to patrol Uncle Sam's westernmost defense line at the Philippines Patrol Squadron 13, commanded by Lieut.-Comdr. S. H. Ingersoll, was to take off at about 3 p. m. today, weather permitting, it was reported at North Island.

Ninety-eight officers and men will operate 14 twin-engined Consolidated bombers in the non-stop, 2500-mile jaunt to Hawaii.

The aircraft tender Wright, which left Sunday for an indefinite period of duty in Pearl Harbor, will be stationed along the line of flight to furnish weather reports and act as guard ship.

Extreme secrecy surrounded preparations for the hop during the past week, with Naval Air Station officials refusing to divulge details of the mission on direct orders from the Navy Department.

Today's flight will be the first to Hawaii by the Navy in more than a year. On Sept. 7, 1938, 17 bombers set a record of 17 hours, 17 minutes. To date, 59 Consolidated PBY's have been delivered by this method to Pearl Harbor, which has been developed into the Navy's strongest patrol plane base.

GUBA REACHES AFRICA

Victoria, Australia

Completes Aerial Survey Flight

(From J. Percival, jun., official correspondent aboard the flying boat Guba.)

MOMBASA (Kenya), Wednesday. — The Guba reached Mombasa at 9.45 a.m. Greenwich time (7.45 p.m. Melbourne time) today, completing her aerial survey of the trans-Indian Ocean flying boat bases.

The Guba took off from Mahe, Seychelles Islands, at 2 a.m. (12 noon, Melbourne time). The weather was fine with scattered cumulus cloud.

Flying at 8000ft. in a slight south-west wind, the Guba maintained a steady 128 knots.

Secret Fast Air Fighters For Australia

AUSTRALIA is to have a squadron of extremely powerful fighting planes — hush-hush machines which, when produced in England soon, will be the most modern in the Royal Air Force, the Minister for Defence (Brigadier Street) announced yesterday.

As the new planes are still on the secret list, details are not yet available, but it is understood that they will have a speed of 400 miles an hour, and will be armed with high-speed guns of a new type.

The squadron, probably consisting of 12 front-line planes, with six in reserve, will be stationed at Richmond (N.S.W.), and its function will be the protection of the industrial areas of the east coast.

Total cost to the Government will be about £400,000. It is hoped for delivery within a year.

(Further References on Page 16)

HERE AND THERE IN BUSINESS

WHAT'S NEW AS OBSERVED BY THE AGENCY'S REPORTERS

AIR BOAT—*Trans-Atlantic surveys south of Pan-American's route are being conducted by American Export Air Lines. subsidiary of a shipping line, for Fall mail service.*

Caution—Rarely does a manufacturers' association say the trade's newest product is getting too much favorable publicity. In the end days of this June, the Board of Directors of the Radio Manufacturers' Association did this, going on record publicly as opposed to the creation of false hopes for television.

Scanning their new baby through the minimizing end of the spy glass, they saw television at present as limited within a 50-mile radius of the Empire State building, and to even smaller areas in a few other cities in the near future.

Television, they said, has suffered from over-statement, and its inauguration in New York may arouse false and ungrounded hopes in the minds of people throughout the country. Over 90 per cent of the geographical area of the United States will not be served for some time to come.

Television must be considered as a supplemental service to radio broadcasting. "It will not render the modern radio receiving set obsolete any more than the airplane renders the modern auto obsolete."

One reason for this caution is understandable. Folks who vainly await television sets, defer buying current radio equipment.

Selling—One of our reporters got a letter the other day from the Eberhard Faber Pencil Company, Brooklyn, N. Y. It answered a query about "Noblot," a mechanical pencil with lead which writes as permanently as ink. The letter was signed in pencil, but when the black tones were erased, a light blue ink effect remained—evidently "Noblot."

A former salesman, the reporter says this is one of the rare times he has encountered a manufacturer, publisher, or purchasing agent who demonstrated use of his company's product when either buying someone else's or answering an inquiry which was not a sales lead.

Electric bills—In Prosser, Wash., customers of the Benton Rural Electric Association read their own meters, figure their own bills, mail meter reading and payment together.

Before this an agent made the rounds, from two to 60 miles, read meters, and sent bills. The cost was about 30 cents each. Farmers paid when they got around to dropping into town.

Now monthly collections cost slightly over 10 cents per member. This includes money order fee, which is deducted from the bill, postage reply envelopes, and duplicated instructions. During its early operation, the plan has improved collections 50 per cent.

Monthly electric bills are filled out by the utility staff, except for current readings. Each bill form has four circles, numbered to correspond with electric meter clocks. On these the user draws arrows, showing where the pointers are on his meter.

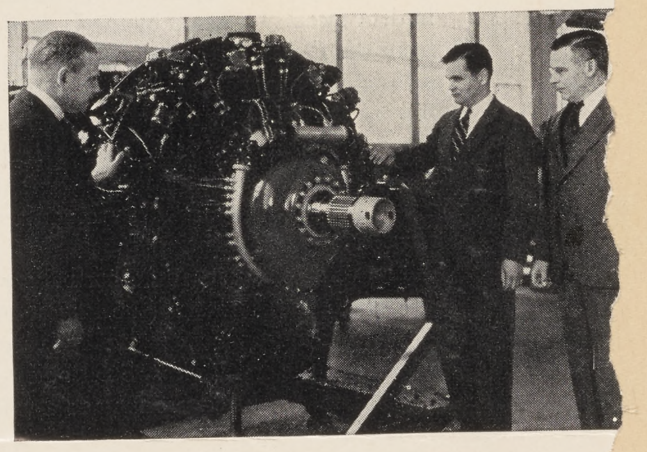
He enters his kilowatt-hour reading and subtracts last month's, already filled in. After a huddle with a table of charges, he knows what he owes. A money order from the rural postman finishes the matter quickly.

When all meter readings come in, Benton Rural Electric can check the total against its total output.

Shoes—Since the double header in World's Fairs opened, twin Meccas for what O. Henry fondly would have called "The American Rubberneck," it has become evident that the feet of today can't keep pace with the World of Tomorrow.

This problem was considered by the Florsheim Shoe Company, Chicago, Ill., and there is now available "The Shoe of Tomorrow." Cardinal virtue of this product is that every pair stretches, *i.e.*, swells luxuriously, to accommodate the prisoners within.

Tomorrow's shoe is cut from buckskin, which stretches. Backing up the buckskin is a woven Lastex lining. This pulls the leather back to its original shape while a wearer, presumably, is soaking his pedals in warm water.



CLOUD THRASHER—*World's largest, most powerful air-cooled airplane engine, this new 18-cylinder Wright Duplex-Cyclone motor powers a Consolidated Aircraft flying boat which holds 57 persons and can cruise 10,000 miles.*

Saw Scene—If you will visualize a one-room factory covering five acres, in which are four big drop hammers, a precision-testing engineering laboratory, an office force, and eight self-con-

---

S. D. Sun

Wednesday, September 13,

CONSOLIDATED IN BUSINESS RUSH

3000 Employes Seen Before End Of '39

(Copyright, 1939, San Diego Sun Publishing Co., Ltd.)

By HAROLD KEEN
Aviation Editor

The feverish pace to prepare the United States for any eventuality is reflected in the intense activity at Consolidated Aircraft Corp., where important developments vital to national defense were made known today.

With a payroll of 1800 employes that is due to be swelled to 3000 before the end of the year, Consolidated is rushing to completion the first of 24 four-motored Army and Navy bombers in contracts totalling approximetely $16,000,000.

NAVY AIRBOATS

Six of these craft are Navy airboats, each costing about $800,000. They are similar to the bomber that has made non-stop round trip crossings of the continent and recently returned from Alaska, where it transported Rear Adm. A. B. Cook, Aircraft Scouting Force commander, on an inspectoin tour. Its 25 tons and armed potentialities make it the largest and most powerful plane in the U. S. Navy.

Little has been disclosed of the four-motored Army bomber. The Army, whose procurement system is different from that of the Navy, placed orders for 18 of these super winged fortresses merely on the basis of a wooden prototype, known as the mockup, and the design. Consolidated defeated the Boeing producers of the famous "flying fortresses" in the design competition, which was said to have brought out startling advances in performance possibilities of heavy bombers.

MYSTERY SHIP

The four 1000 h. p. Pratt & Whitney engines, which will be housed in a 110-foot wing similar to that on the Consolidated "mystery ship," the twin-engined, steep-hulled Model 31, will give the plane terrific speed possibilities. elocity in excess of 300 miles per hour will be achieved, the designers believe, and if this is true, it will not only provide America with a sensational improvement on its present flying fortresses but will furnish part of the answer to defense against speedy pursuit planes so essential in an air war.

Another almost characteristic will be the cruising range of the Army plane, which some reports set as high as 10,000 miles. Destruction over a wide area, hitherto unapproached, will be possible with such a non-stop ability.

MAJOR PRODUCTION

Careful to avoid placing all its contract hopes in one basket, as was done for a period of more than two years, when seaplanes comprised the major form of production and experimental activity, Consolidated has added an amphibian type, it was learned.

Adapted to the design of the twin-engined PBY airboat, of which more than 200 are in Navy service, a plane capable of both land and sea operation soon will be delivered to North Island.

The firm is advertising in trade magazines the practicality of converting its four-motored Navy bomber to a commercial transoceanic airliner. The copy, which undoubtedly was written before the European war, paints an attractive picture of overnight flights to London "in luxury non-stop in the ease of an exclusive club."

CONTRACTS EXPECTED

That Consolidated is expecting another large contract soon was revealed by Port Director Joe Brennan to the City Council yesterday, when he sought authority for the Harbor Commission to grant the firm a lease on 17 addi-

---

crew.

Tribune. 9-12-39

Navy Bomber Returns

Here to be fitted with special heating aparatus for flying at high altitudes, the navy's four-motored, long-range patrol bomber has returned to North Island from an Alaskan cruise. The bomber recently was assigned as aerial flagship to Rear Adm. Arthur B. Cook, commander scouting force aircraft, who is now on an inspection of Alaskan and Hawaiian naval air bases. The new flagship is commanded by Comdr. Andrew Crinkley.

Consolidated Air

Romeike & Curtice Ltd

Telephone
CENTRAL 2781
(2 Lines.)

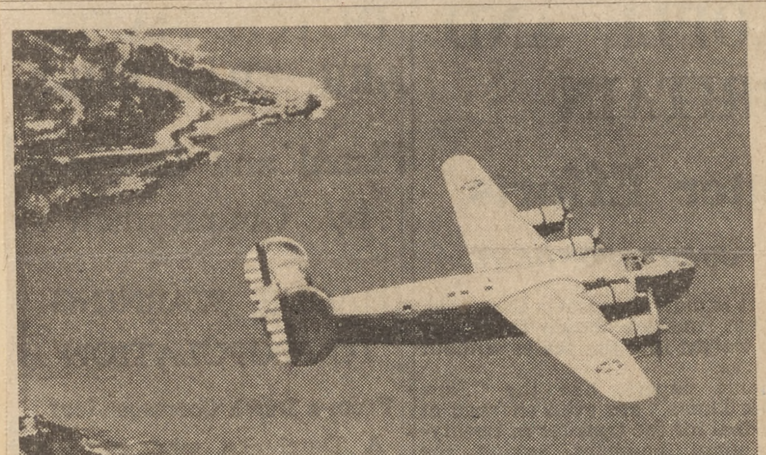
35. Shoe Lane.
LONDON.
E.C.4.

EXTRACT FROM

SUNDAY TIMES
135, Fleet Street, E.C.4.

24 NOV 1940

E SUNDAY TIMES, NOVEMBER 24. 1



The new American bomber, B-24.

POWERFUL NEW BOMBERS FROM AMERICA

Greatest U.S. Contribution To Victory

By THE "SUNDAY TIMES" AIR CORRESPONDENT

News that America has released twenty-six Consolidated B-24 four-motor bombers for immediate delivery to the R.A.F. is most encouraging.

The Consolidated Model 32, designated the B-24 by the U.S. Army, is by far the best military aeroplane which the U.S.A. has yet produced and the first American aeroplane on which we can really bestow unreserved enthusiasm.

It is fast, it is well defended (British gun turrets can be installed) it can carry a big load of bombs, and it has a long range. It is superior to any bomber at present in service, though not to some of our new machines now flying. It is vastly better than the old Boeing B-17 "flying fortresses"—as indeed it should be for it is five years later in design.

Before France fell the Armée de l'Air had ordered 120 of these Consolidated bombers, but orders previously placed by the U.S. Army had to take precedence. Great Britain took over all the French orders, but the gesture by America will mean that deliveries can begin immediately. The first production model flew three weeks ago.

3,000-MILE RANGE

The B-24 is claimed to have a top speed of round about 330 m.p.h., a bomb load of 4,000 lb., and a maximum range of more than 3,000 miles. So, in fact, it could fly from New York to England by way of Berlin.

The best feature of the machine aerodynamically, which accounts for its high speed, is its wing, designed on a new principle. This "Davies" wing, which in plan is very long and narrow, resembling a paper knife, presents about one-third less resistance to the air than a conventional type. The making of such a long thin wing, constructionally stiff, is a triumph of engineering.

There has been some confusion between the Consolidated bomber and the Boeing bomber. Apart from the fact that they both have four motors, there is little similarity. Incidentally, the Boeing Company has copyrighted the name "Flying Fortress"—which is misleading anyway.

The sending of these Consolidated bombers for the R.A.F. to intensify the offensive is one of the greatest contributions America can make towards the winning of the war.

THE R.A.F.'s NEW COMMAND

CO-OPERATION WITH THE ARMY

The new Army Co-Operation Command of the R.A.F. comes into being on December 1. The decision to form this new Command successfully avoids the drawbacks of handing over a separate Air Arm to the Army, yet presents to it a specialised body of Air Power under an officer—Air Marshal Sir Arthur Barratt—who came from the Army and thoroughly understands Army problems as no purely Army officer understands the air.

The step satisfies all the requirements outlined in these notes some weeks ago, yet has few disadvantages. Its great merit is its elasticity. So long as that is maintained the R.A.F. can fall into none of the troubles which the Luftwaffe dug for itself in its rigid training for and adherence to the dictates of the German Army.

Air strategy of necessity calls for an independent air force. There are times when the whole of the available fighter strength may be needed for defence of a single objective. There are times when the whole of the R.A.F. may have to be flung in to support of land forces.

The Army Co-operation Command forms thus a nucleus, which at times may serve as the hub of the operation of all the other Commands of the R.A.F., or it may form a small preserve from which the other Commands may draw machines for support in independent action as the situation needs.

As a strategic weapon the Army Co-Operation Command finds efficiency in its specialisation and strength in its elasticity.

LAST STAGE OF GREAT GUBA FLIGHT

Victoria, Australia.

Safe Arrival At Mombasa

In this article, the last of a series of four on Captain P. G. Taylor's flight survey of the reserve Empire air mail route across the Indian Ocean, Mr J. Percival, Jun., official newspaper correspondent, describes the arrival of the Guba at Diego Garcia, in the Chagos Archipelago, and at Mahe, in the Seychelles.

THE Guba left Cocos Island late in the afternoon of June 13, and the 1470 miles flight through the night was uneventful in the smooth, cool air.

In the early hours of the morning, wireless communication with VIS, Sydney, and VIP, Perth, the Australian coastal stations, was lost for the first time.

It was estimated that the aircraft would arrive at Diego Garcia a few minutes before dawn. In the darkness of early morning the lights of H.M.S. Manchester, based there for the flight, were sighted.

The cruiser, anchored in the great pear-shaped lagoon, looked like an illuminated toy.

The aircraft made two wide circuits of the palm-covered coral, and as the first tinge of light appeared over the horizon she settled down beside H.M.S. Manchester. Soon a launch was beside her, and the crew was invited to board the cruiser for hot coffee, baths, shaves and breakfast. H.M.S. Manchester left that afternoon.

LONELY FRENCHMAN

Diego Garcia was originally a French settlement, but is now British.

The cocoanut plantation is managed by a lonely Frenchman. In the space of a few days he saw the arrival of H.M.S. Manchester, the island steamer, Zambezi, which visits him once in every four months, and the Guba.

He dug deep into his cellar and his black servants fossicked the island to supply the best for our table. He made his first flight the day after our arrival.

The Guba made a smooth passage to Mahe, an island paradise in the Seychelles, on June 16. The mountains of Mahe rise sheer out of the surrounding ocean depths of 2000 fathoms to heights up to 3000 feet.

The sight of a mountainous island brought a strange feeling of security again. There is a feeling of insecurity about Cocos Island and Diego Garcia, where the highest coral outcrop from which the cocoanut palms sprout is only about 10 feet above sea level.

"GREAT VALUE"

The day after the Guba's arrival at the Seychelles, H.M.S. Liverpool, with which the Guba was in communication during the flight, entered Port Victoria.

The Governor of the Seychelles (Sir Walter Buchanan Smith) made his first air journey during a photographic flight.

After the survey work at Mahe, the Guba tooff-off for Africa in the morning on June 21, and alighted at Mombasa flying boat base the same day.

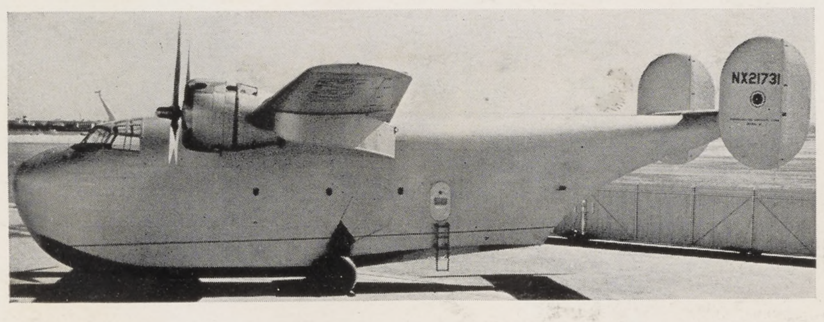
Arriving at Mombasa, Captain Taylor said that the flight had been fully justified, and that the route should be of great value to Imperial communications. Information obtained in the survey would enable the establishment of a regular service at short notice.

"The use of the Indian Ocean route will bring Australia and Africa within two days of each other," he said.

AERO EQUIPMENT REVIEW MAY-39

CONSOLIDATED MODEL 31 FLYING BOAT

POWERED WITH TWO WRIGHT 2,000 H.P. ENGINES
TOPS 275 M.P.H.–CAPABLE OF 10,000 MILE RANGE



Consolidated Model 31 Flying Boat

Some ten months after its design and construction was initiated Consolidated Aircraft's new Model 31 twin-engine flying boat took to the air off San Diego Bay one day this month. The outstanding figures reported on completion of the first flight were that the 50,000-pound Model 31, powered with two 2,000 h.p. Wright Duplex-Cyclones, has a top speed of 275 m.p.h., is capable of a range of 10,000 miles, with a light passenger load.

Contrasted against a chunky hull, with a sharply upswept stern, is an extremely slim wing, reputedly the product of ten years' development work by engineer David R. Davis. The wing narrows to such a small tip that the outboard floats retract to the underside of the outer wing panel, rather than at the tip as they do on the PBY's. The wing, tail surfaces, and the planing surface of the hull are flush-riveted.

The Model 31 is built with two full decks, one above the other, providing a large flight control compartment and eight additional large compartments. It is designed to accommodate a crew of five in a completely sound-proofed flight compartment furnished with all the latest type instruments and equipment. As a commercial airliner, it has a maximum capacity for 52 passengers for daytime operations and 28 sleeper passengers for night operations. For trans-oceanic flights, it has accommodations for 28 passengers. As a military airplane its function would be similar to that of the well-known Consolidated twin-engine patrol bombers built for the U.S. Navy.

At this instance it seems probable that this last application will be the Model 31's first service assignment. Although this is entirely the Consolidated Corporation's private venture, the Navy has been cognizant of the construction, and the performance delivered by the 31 is reported to have excited much interest on the part of the Navy. The fact that this was a private venture, and was not government financed nor subjected to the ordinary procedure routine, is held to be a major factor in the swift production of the design. While the development of types of similar magnitude, under government contract, has heretofore occupied from two to three years' time, this project was completed in ten months.

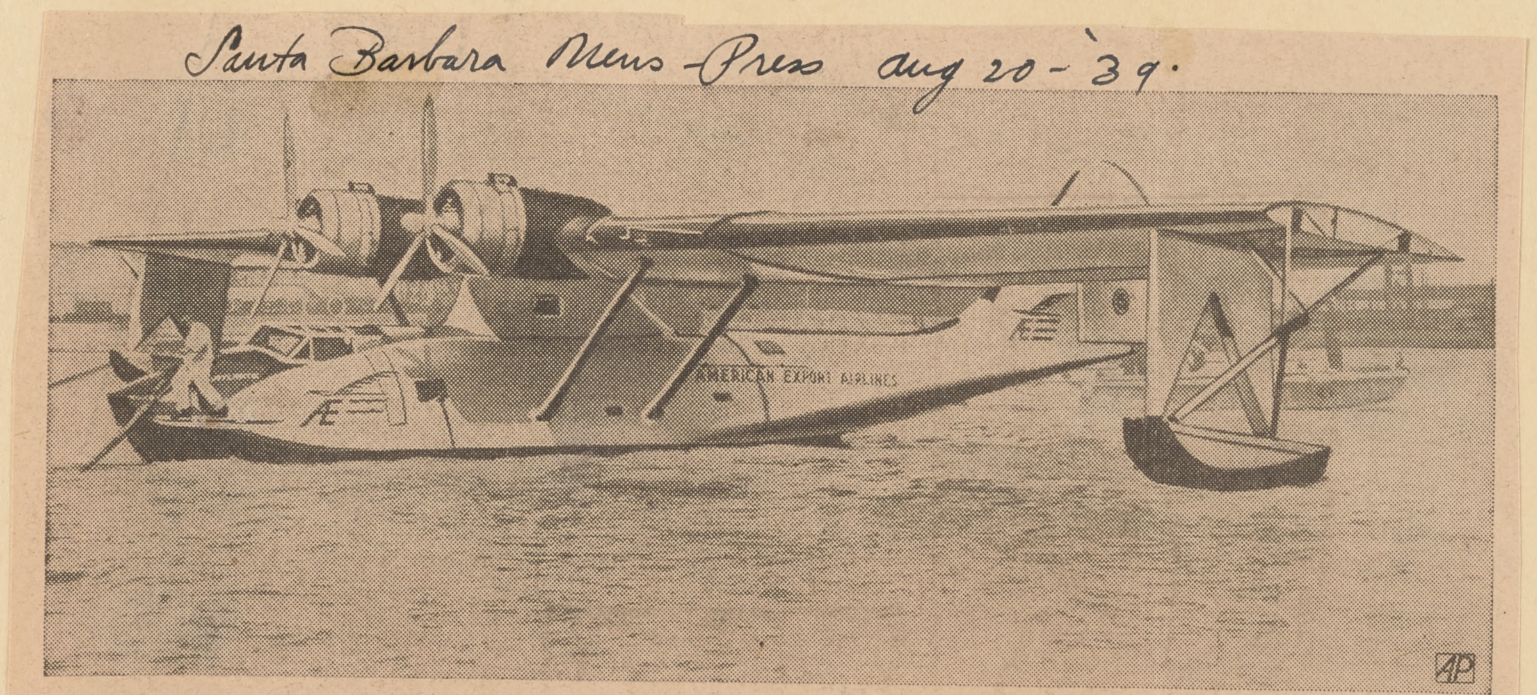
An aluminum coated aluminum alloy skin, internally reinforced with longitudinal stiffeners and transverse bulkheads and frames, is employed in the construction of the 31. Flush riveting is used on the wings, tail surfaces and the planing surface of the hull bottom. The full cantilever wing has integral fuel tanks in the center section. Hydraulically operated Fowler flaps extend from the inboard side of the ailerons to the hull. Ailerons and flaps are fabric covered. The full cantilever stabilizer has twin fins and rudders. Rudders and elevators are fabric covered.

The retractable tricycle beaching gear is hydraulically operated. The nose wheel is housed in a well in the bottom of the hull and the side wheels swing upward into wells in the side of the hull. All wheels are completely enclosed by doors for maximum efficiency in flight. The side wheels are removable in addition to being retractable. The two Wright Duplex-Cyclone 2,000 h.p. engines carry three-bladed, Hamilton Standard Hydromatic full-feathering propellers, with 16-foot diameters. Beyond the statement that the Model 31 exceeds the PBY in speed, range and load capacity, and those figures reported here, no performance figures have been released.

General specifications follow:

Wing span	approximately 110 feet
Length over-all	approximately 73 feet
Height	approximately 22 feet
Maximum wing chord	approximately 14 feet
Gross weight	approximately 50,000 lbs.

Santa Barbara News-Press Aug 20-'39.



RUSH OF WINGS TO EUROPE—In the harbor at Saint Nazaire, France, rests "Transatlantic," the American Export Airlines' flying boat now engaged in making survey flights across the Atlantic, with a view to establishment of service from U. S. to 30 Mediterranean ports. The airline will possibly fly mail in the fall and passengers, in a year or two. Other airlines crossing the Atlantic are the Pan American Airways' Clipper ships, carrying passengers and mail, and Britain's Imperial Airways mail plane.

Sun 9-13-39

NAVY SQUADRON IN HAWAII HOP TODAY

Bound for Pearl Harbor to replace a squadron assigned to patrol Uncle Sam's westernmost defense line at the Philippines Patrol Squadron 13, commanded by Lieut.-Comdr. S. H. Ingersoll, was to take off at about 3 p. m. today, weather permitting, it was reported at North Island.

Ninety-eight officers and men will operate 14 twin-engined Consolidated bombers in the non-stop, 2500-mile jaunt to Hawaii.

The aircraft tender Wright, which left Sunday for an indefinite period of duty in Pearl Harbor, will be stationed along the line of flight to furnish weather reports and act as guard ship.

Extreme secrecy surrounded preparations for the hop during the past week, with Naval Air Station officials refusing to divulge details of the mission on direct orders from the Navy Department.

Today's flight will be the first to Hawaii by the Navy in more than a year. On Sept. 7, 1938, 17 bombers set a record of 17 hours, 17 minutes. To date, 59 Consolidated PBY's have been delivered by this method to Pearl Harbor, which has been developed into the Navy's strongest patrol plane base.

GUBA REACHES AFRICA

Victoria, Australia

Completes Aerial Survey Flight

(From J. Percival, jun., official correspondent aboard the flying boat Guba.)

MOMBASA (Kenya), Wednesday. — The Guba reached Mombasa at 9.45 a.m. Greenwich time (7.45 p.m. Melbourne time) today, completing her aerial survey of the trans-Indian Ocean flying boat bases.

The Guba took off from Mahe, Seychelles Islands, at 2 a.m. (12 noon, Melbourne time). The weather was fine with scattered cumulus cloud.

Flying at 8000ft. in a slight south-west wind, the Guba maintained a steady 128 knots.

Secret Fast Air Fighters For Australia

AUSTRALIA is to have a squadron of extremely powerful fighting planes — hush-hush machines which, when produced in England soon, will be the most modern in the Royal Air Force, the Minister for Defence (Brigadier Street) announced yesterday.

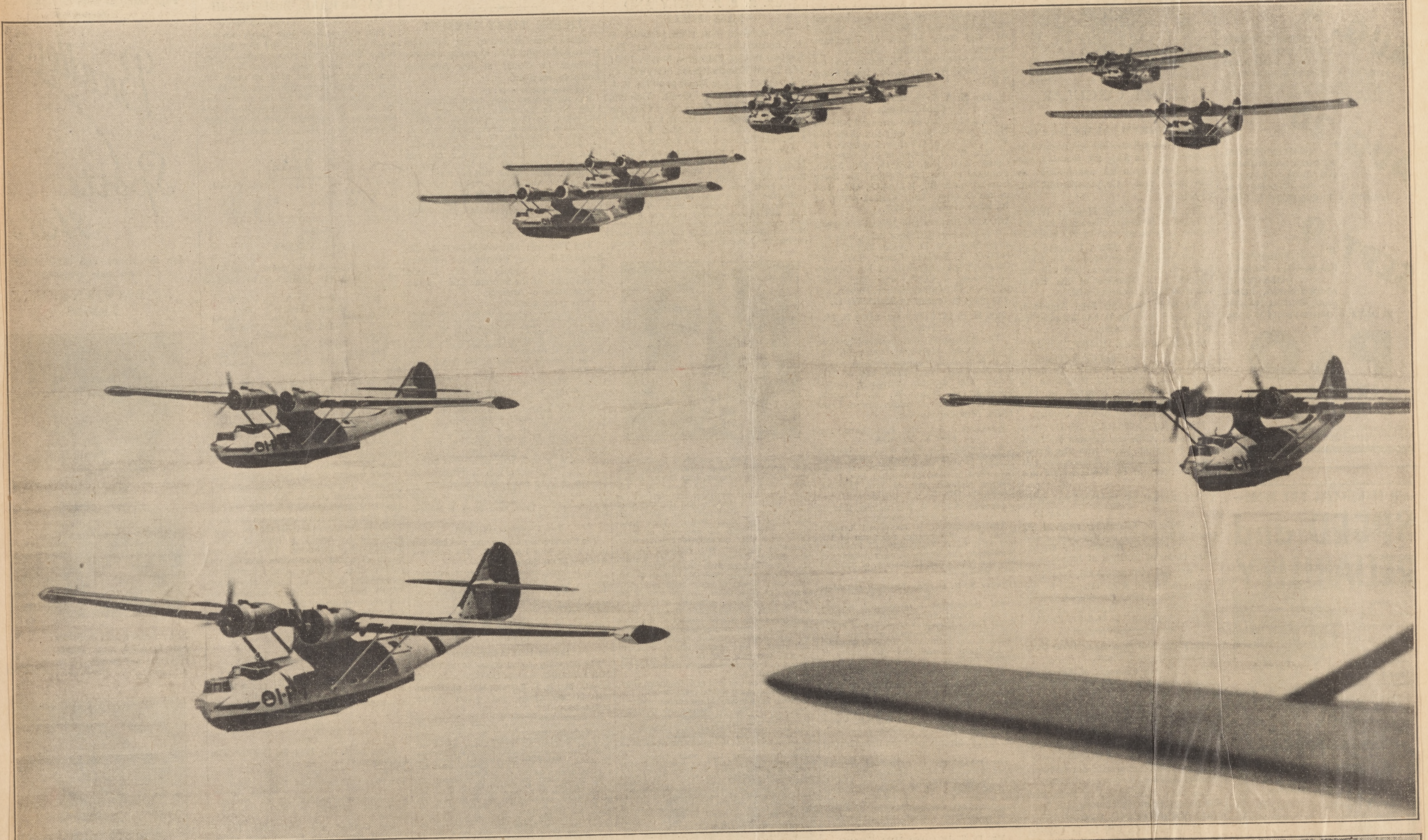
As the new planes are still on the secret list, details are not yet available, but it is understood that they will have a speed of 400 miles an hour, and will be armed with high-speed guns of a new type.

The squadron, probably consisting of 12 front-line planes, with six in reserve, will be stationed at Richmond (N.S.W.), and its function will be the protection of the industrial areas of the east coast.

Total cost to the Government will be about £400,000. It is hoped for delivery within a year.

(Further References on Page 16)

UNITED STATES NAVY PATROL BOMBERS IN FLIGHT



NAVY PATROL BOMBERS of the United States air fleet preparing for a flight from San Diego to Honolulu. Machines of this type have been ordered by the British Air Ministry from the United States for experimental purposes. The first of them will be delivered by air from San Diego to Felixstowe shortly, making the journey in two hops.

Air Consolidated Air

Romeike & Curtice Ltd

Telephone
CENTRAL 2781
(2 Lines.)

35. Shoe Lane
LONDON.
E.C.4.

EXTRACT FROM

Date

Union 9-14-39

SAN DIEGO, CALIFORNIA, THURS

14 San Diego Bombers Hop for Hawaii Amid Wartime Censorship Conditions

Patrol Wing Due At Pearl Harbor This Morning

ound for Hawaii for duty with l Wing 2, 14 patrol bombers of dron 13 took off from the har- starting at 3:15 p.m. yesterday. last plane was aloft at 3:40, 15 minutes later, after attain- a rendezvous 6000 feet above Coronado islands, headed west- d across the Pacific. The squad- is commanded by Lt. Comdr. . Ingersoll.

rung along the airway at 300- intervals between Pt. Loma Diamond Head were the air- t tenders Wright and Avocet, Cimarron and destroyer Sic- They will act as plane guards will flash weather reports.

he grim shadow of war marked departure of the squadron, in trast to previous long-distance s flight take-offs.

WSREELS BARRED

here were no newsreels, no news eramen. The launching ramp roped off and heavily guarded. luded among the 98 officers and n who manned the patrol bomb- were the sons of a number of minent San Diegans, including icials of Consolidated Aircraft p. who designed and built the nes in which their sons now are ing. The navy department or- ed names of the crews not to be blished, and hereafter all flights olving ships and planes engaged neutrality enforcement will be sored.

No radio reports showing the ogress of the planes on the 2500- le flight to Pearl Harbor are to e made public. Because favorable eather conditions prevail, it is xpected the squadron will land at earl Harbor between 9 and 10 a.m. oday, Pacific coast time.

ROMPT IN TAKE-OFF

With characteristic celerity, the avy lost not time in getting under ay when the zero hour for the ake-off arrived. The flag plane ent over the ramp at 3 p.m. The thers followed in rapid succession.

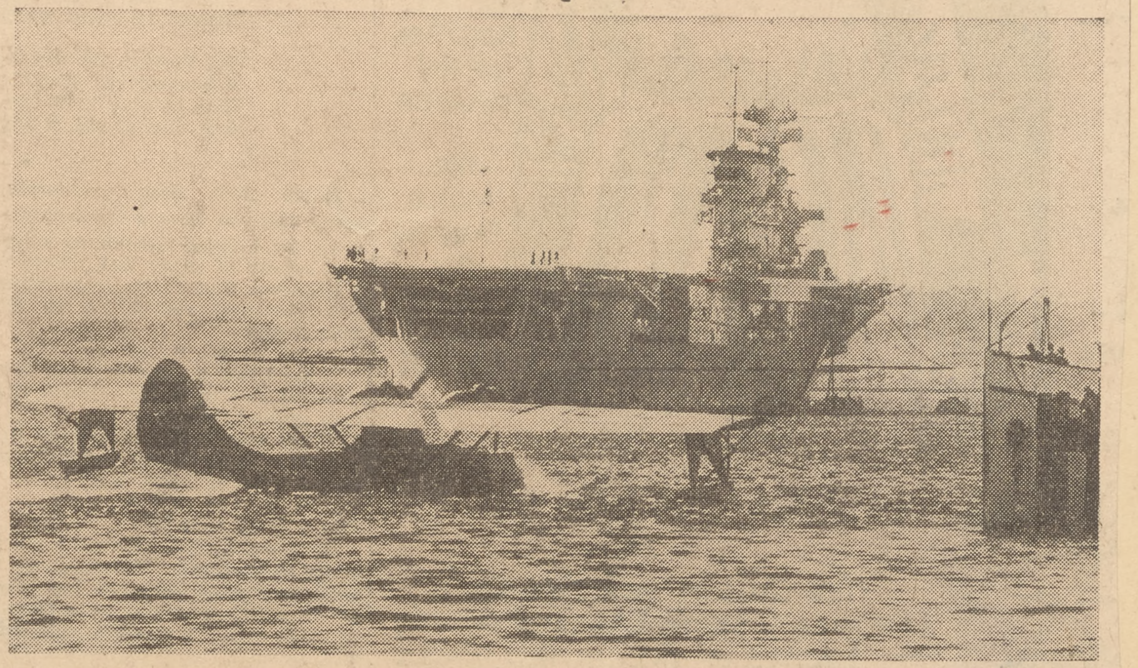
Forming in two lines, the planes ame barging down the take-off rea, flanking both the starboard nd port sides of the giant aircraft arrier Enterprise. Plane 7 was the nly bomber that expreienced any rouble. Its motors sputtered at the eginning of the take-off but after obbling for several hundred yards, he plane started picking up speed nd finally left the water.

Plane No. 2 made the smartest ake-off, getting aloft within 90 sec- nds after the pilot gave the engines ull throttle.

HIPS HEAVILY LOADED

All of the bombers were heavily oaded with gas and oil.

Early next week 12 bombers of Patrol wing 2, squadron 21, are to eave Pearl Harbor for Manila via Wake and Midway islands. With hem will go the aircraft tender Langley. After that the movements of naval craft taking part in neutrality patrol in the Pacific, the canal zone, the West Indies and on the Atlantic no longer will be headlined in the nation's press.



. . . last of the Hawaii-bound planes to take off; U. S. aircraft carrier Enterprise in the background.

OCEAN SURVEY COMPLETED

Victoria, Australia

Guba For Africa Today

(From J. Percival, jun., official correspondent aboard the flying-boat Guba)

MAHE (Seychelles), Tuesday. — The survey of Seychelles Islands having been completed, the Guba will leave for Mombasa, Africa, at 2 a.m. Greenwich time (12 noon, Melbourne time) tomorrow.

The real purpose of the flight, to determine suitable bases for flying boats in the Indian Ocean, has been accomplished, since a base already exists at Mombasa.

As was anticipated, the surface winds over the entire route from Australia to Seychelles have been east to south-east. Note has been taken of the change of wind at levels at which the Guba has been flying.

It is understood that Captain Taylor will recommend the taking of regular upper wind observations at Cocos, Diego, Garcia and Seychelles.

This morning, at the invitation of the commanding officer of H.M.S. Liverpool, Captain Taylor made a flight in one of the vessel's Supermarine Walrus flying-boats.

This afternoon officers of the Liverpool inspected the Guba at her moorings in the inner harbor at Port Victoria.

NEW FLYING BOAT WITH RANGE OF 10,000 MILES

Successor to the Guba Tested In America

SAID to have a range of 10,000 miles and a top speed of 275 miles an hour, a new flying boat, successor to the Guba, has just completed its tests in America.

With this capacity it would be able to reach any point of the globe nonstop. A flight from America to Australia could be completed with hundreds of miles to spare.

The flying boat has been manufactured by the Consolidated Aircraft Corporation and, for a start, it will be used on transatlantic services. If its range is effective it could break the world's distance record by 2000 miles.

Slightly smaller than the standard Empire flying boat, its all-up weight of 50,000lb. is 9500lb. greater. Its eight compartments can be fitted to accommodate 52 passengers for day flights or 28 sleeper berths. With these its range would not be so extensive.

Union 9-14-39

Aircraft Employes All Sign for Votes

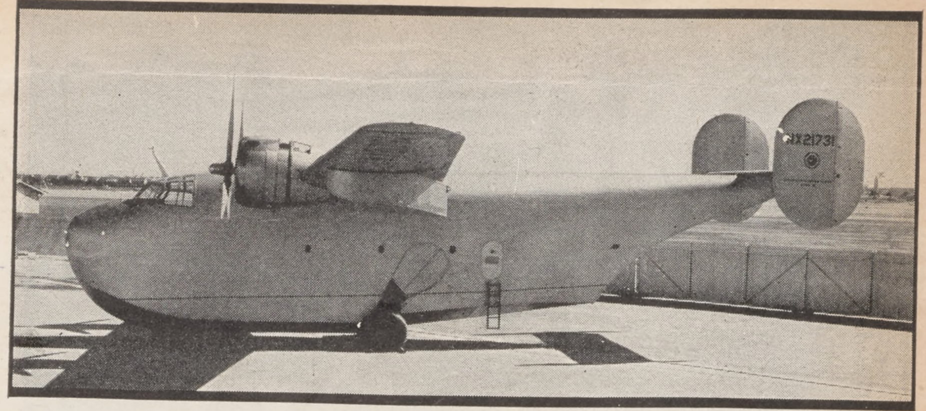
Employes at Consolidated Aircraft corp. yesterday learned that the firm they represent is the first in this county to report a "100 percent registration," thus qualifying all of their group, 21 years of age and over, to vote at the next election.

Rallying to the campaign to bolster the number of eligible voters in this county, Consolidated employes, registered, hurriedly summoned a deputy registrar to take their affidavits of registration.

The Consolidated employes, however, are not the only ones representing concerns in the "100 percent" bracket. Campbell Chevrolet Co., Frost Lumber Co., Standard Oil Co., Whitney & Co. and others now boast 100 percent registrations. These firms engage hundreds of employes.

Business Week May-13-39

Consolidated Aircraft's 25-Ton Flying Boat



In San Diego last week Consolidated Aircraft Corp.'s powerful new flying boat, Model 31, made its first test flight. Weighing 25 tons, Model 31 has a wing-span of 110 feet, is 73 feet long, 22 feet high. It has two—instead of the usual four—engines, 2,000-horsepower each, is capable of a speed exceeding 250 miles an hour. As a commercial air liner it can carry 52 passengers by day, 28 in berths at night. Consolidated's own private venture, Model 31 is nevertheless well adapted for use by the U.S. Navy, or for commercial transatlantic service.

---

11 Groups Ready To Begin Drive For Chest Funds

Union Sept 18-39

Organization of 11 sections in the industrial division of the Community Chest campaign is announced by J. O. Miller, general chairman, with the further information that city and county units of the public employes' group are ready to do their part in the annual fund-raising effort for support of 34 social service agencies.

Civic and business leaders who have assisted in organizing the division will meet at a "kick-off" breakfast tomorrow, 7:30, in the Italian room, U. S. Grant hotel. They will receive final instructions and supplies for the next step, which will be to contact company captains in 448 establishments participating in the campaign under the "unit account" system.

Each of these places of employment, said Miller, has accepted a goal toward which contributions of the firm, its executives and all employes will be credited. It is expected most of the establishments under the self-solicitation feature of the "unit account" plan, will complete their assignments when the general campaign begins a week from Thursday.

Directing the organization of the undustrial division units are:

Builders — Morley H. Golden, Robert Frazee.

Hotels - restaurants — Carleton Lichey, O. B. Wetzell.

National firms — George N. Lynch, F. J. Guasti.

Industrial—Edgar N. Gott, S. M. Sullivan.

Retail — W. D. Rudd, George Scott.

Wholesale—Allan S. Klauber.

Finance—John L. Fox, Marston Burnham.

Food—Wilbur Thomas, Douglas Young.

Public service — Fred L. Annable, Emery D. Sherwin.

Automotive — Chester Dorman, W. A. Morgan.

General—Charles B. Wincote.

Heading the city employes division are Fred A. Rhodes and D. M. Hammond, while the county unit has as leaders Sam A. Claggett and J. B. McLees.

---

money.

S.D. ~~Sun~~ Sept 19-39

U. S. BOMBERS HOP FOR PHILIPPINES

HONOLULU, T. H., Sept. 19.—Navy headquarters announced a squadron of naval bombers took off from Pearl Harbor at 9 a. m. (PST) today on a mass flight to Manila—the first mass flight ever attempted from Hawaii to the Philippines.

Union Sept 20-39

Consair's Picture To Be Shown Club

Exchange club members and guests will see a showing of Consolidated Aircraft's picture, "Building the P. B. Y. Record Breakers," at tomorrow's noon meeting in Hotel San Diego, John Arthur Jenkins, entertainment chairman, announced.

Maj. Gott

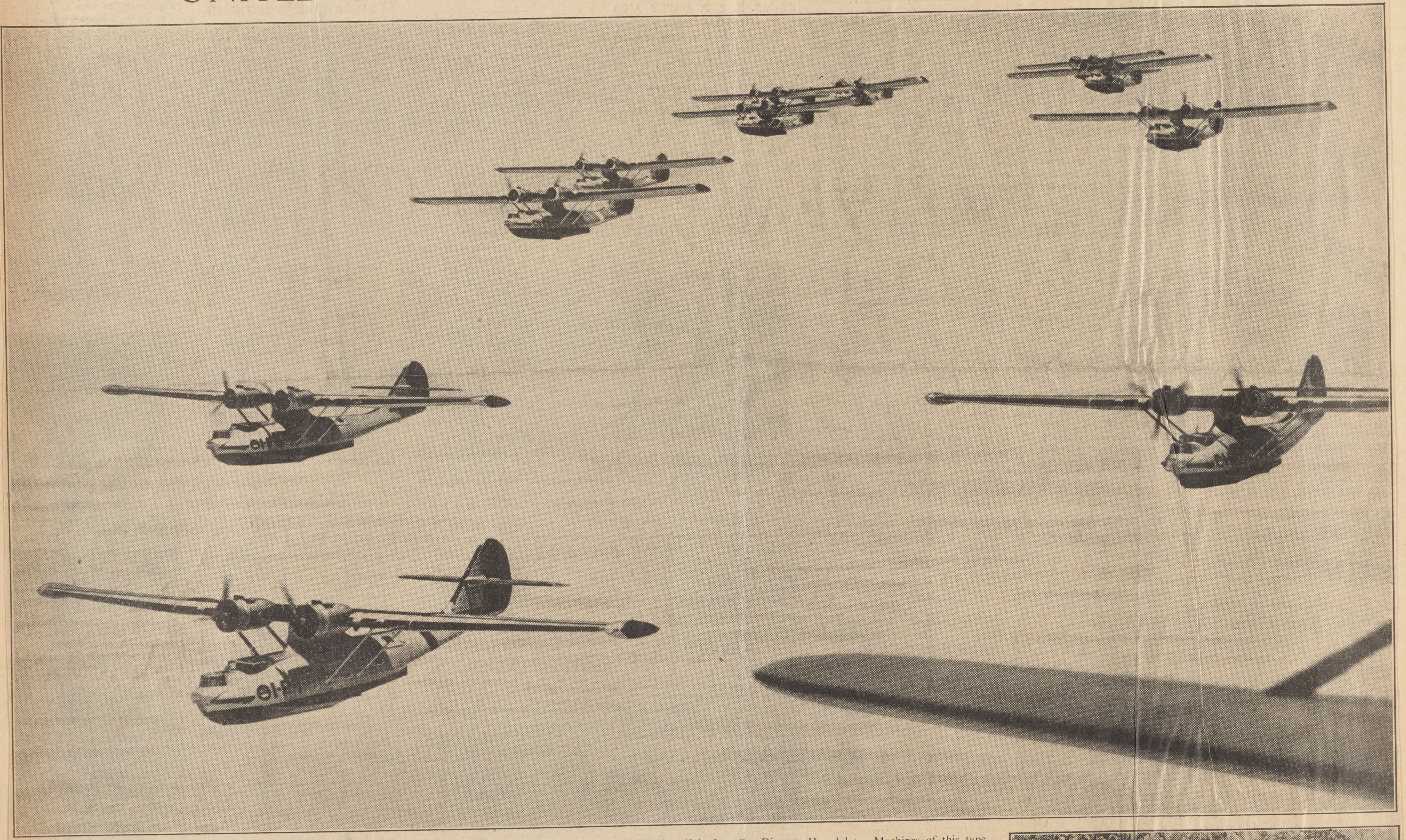
The film will be presented by Maj. E. N. Gott, Consolidated. It pictures the progress of the giant air bombers from the laboratory to the record flights.

Union 9-14-39

Two San Diego Bombers Arrive at Pensacola

Two navy bombers which took off on a routine transfer flight from North Island at 5 a.m. yesterday, arrived at Pensacola, Fla., at 7 p.m. (P.S.T.) last night. The ships are scheduled to continue on to Norfolk, Va., today.

UNITED STATES NAVY PATROL BOMBERS IN FLIGHT



NAVY PATROL BOMBERS of the United States air fleet preparing for a flight from San Diego to Honolulu. Machines of this type have been ordered by the British Air Ministry from the United States for experimental purposes. The first of them will be delivered by air from San Diego to Felixstowe shortly, making the journey in two hops.

Air Consolidated Air

Romeike & Curtice Ltd
Telephone CENTRAL 2781 (2 Lines.)
R&C
35. Shoe Lane LONDON. E.C.4.

EXTRACT FROM Observer

Date 1 DEC 1940

AIR WAR AND SUPPLY

THE BATTLE OF RESOURCES

AID FROM U.S.A. AND EMPIRE

THE NIGHT BOMBING PROBLEM

BY OUR AIR CORRESPONDENT
(MAJOR OLIVER STEWART)

Germany is making an effort to check the growth of British air power. She believes that the numerical strength of the Royal Air Force now approaches that of the Luftwaffe and sees the danger to herself of a gigantic aerial offensive next year.

That is the reason for her concentrated night bombing especially of places in the midlands and in the west where aircraft factories are known to be.

Damage to an aircraft factory does not immediately affect air strength. There is a time lag. In order to ensure that our offensive shall have its full weight, production now, while the Germans are making their effort in large night attacks, is of supreme importance.

SAVING TIME AND SPACE

Evidence from the places that have received the severest attacks shows that the check to output, though appreciable, is less serious than was thought at first.

What deficiencies there have been must be made up and more than made up by the contributions from the Dominions and the United States of America. The appointment of Air Chief Marshal Sir Hugh Dowding, who handled the problems of fighter defence so brilliantly, to a post on the Ministry of Aircraft Production with special duties in the United States, should be of assistance in speeding up supplies.

If the American industry can but gear itself up quickly enough, nothing will be able to approach its output. And many of the aircraft made there for us can be flown across the Atlantic, so that the calls on time and shipping space are not heavy.

The Consolidated Aircraft Corporation, which makes the XB-24 four-engined bomber, mentioned in these notes last week, and the 31 flying boat, has a total floor space at its San Diego factory of about 2,000,000 square feet. The Lockheed factory now has a floor space exceeding 1,350,000 square feet, and it will eventually be larger than the Consolidated factory.

NEWS ON OTHER PAGES

	Page
In the Mediterranean ...	8
Parliament	8
Mr. Dalton's Broadcast ...	8
America To-day	9
Shipping Losses	9
The Sardinia Battle ...	10

RESEARCH

Lockheed, who build the Hudson aircraft which have been in use with the Coastal Command since the beginning of the war, are also completing one of the largest privately owned wind tunnels in the world. The Northrop Aircraft Corporation is also completing a new wind tunnel. This company is making seaplane bombers which were originally ordered by Norway, but are now said to be coming here.

Meanwhile, research is being pressed forward in the United States as a sequel to the organisation of the National Defence Research Committee in June. The chairman is Dr. Vannevar Bush, who is also chairman of the National Advisory Committee for Aeronautics.

In Canada the rate of production of aircraft is rising. Initial training aeroplanes of the Fleet Finch and de Havilland Tiger Moth types have been coming through quickly during the past few months, and it is useful that United States engines, instead of the original British engines, are now being used for them. Harvard advanced trainers, Lysander Army Co-operation machines, Bolingbroke bombers (which are modifications of the Blenheim), and Hurricane fighters are among the other types being built in Canada.

Originally Britain was to have supplied Canada with Avro Anson twin-engined machines for intermediate

AIR WAR AND SUPPLY

(Continued from page 7, column 7)

training, and 1,600 were to have been delivered. After the fall of France, however, it was decided to have the Ansons built in Canada, and this is now being done.

FLEXIBILITY

If the best use is to be made of these and the other Dominion and United States resources, there will have to be a good deal of flexibility in our inspection and in the details of our Service requirements. In smoothing out this kind of thing, Sir Hugh Dowding should be particularly valuable.

In some instances there has been too great a tendency to insist on the British way of doing things and, consequently, too much unnecessary changing of compasses, radio equipment, and other accessories. The American machines must usually be re-armed. That is essential, for they do not carry anything like the gun power that the Royal Air Force has found to be necessary. But apart from such essentials it would be of assistance to the rate of supply if as few modifications and changes as possible were made.

Even the matter of gun turrets is open to argument. While the Germans have no reply to the night bomber, the additional apparatus and weight needed to furnish a night-bombing aeroplane with perhaps two power-operated turrets may seem unnecessary. For if the night-bomber is not called upon to fight—and certainly the German ones are not yet often called upon to do so—the full turret equipment might be temporarily dispensed with in aircraft being delivered from America.

That does not diminish the excellence of the turret as a piece of engineering nor does it make it less necessary when the big bomber must face fighter opposition. But to get a good flow of new aircraft to the operational units, the inclusion of some night bombers without turrets would seem to be justifiable.

IN GREECE

In Greece Royal Air Force operations in collaboration with the Greek Army have been mainly directed at checking the flow of supplies and reinforcements from Italy to Albania. Under Air Commodore J. H. D'Albiac, who is in command of the British Forces in Greece, this work is being done effectively. Moreover, a good deal of useful experience of Army co-operation duties is being accumulated.

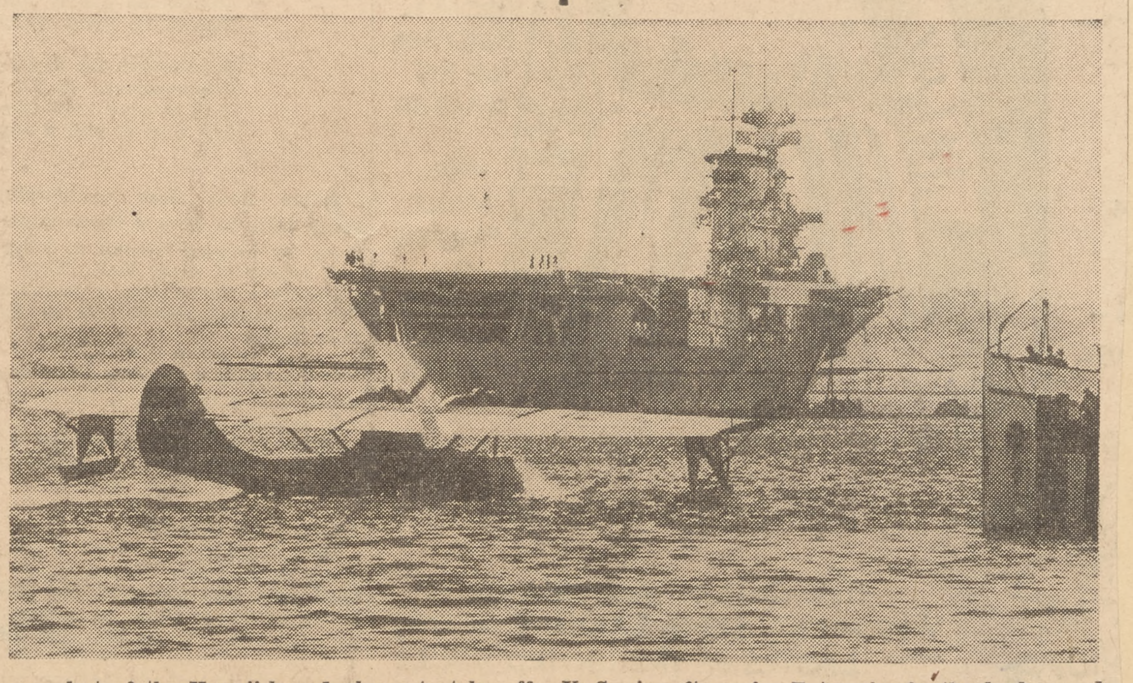
At home the night bomber continues to be the chief trouble. The problem of finding it and shooting it down is complicated by the use by the Germans at night of great heights. They often come over very high and only descend when near their target.

The impression of so many people that the German machines fly on a "railway line" overhead, keeping to exactly the same course every time, is only partially correct. The enemy machines are plotted at a great many different heights and they converge on a great many different courses.

Union 9-14-39

SAN DIEGO, CALIFORNIA, THURS

14 San Diego Bombers Hop for Hawaii Amid Wartime Censorship Conditions



. . . last of the Hawaii-bound planes to take off; U. S. aircraft carrier Enterprise in the background.

Patrol Wing Due At Pearl Harbor This Morning

Bound for Hawaii for duty with Patrol Wing 2, 14 patrol bombers of squadron 13 took off from the harbor starting at 3:15 p.m. yesterday. The last plane was aloft at 3:40, and 15 minutes later, after attaining a rendezvous 6000 feet above the Coronado islands, headed westward across the Pacific. The squadron is commanded by Lt. Comdr. S. H. Ingersoll.

Strung along the airway at 300-mile intervals between Pt. Loma and Diamond Head were the aircraft tenders Wright and Avocet, oiler Cimarron and destroyer Sicard. They will act as plane guards and will flash weather reports.

The grim shadow of war marked the departure of the squadron, in contrast to previous long-distance mass flight take-offs.

NEWSREELS BARRED

There were no newsreels, no news cameramen. The launching ramp was roped off and heavily guarded. Included among the 98 officers and men who manned the patrol bombers were the sons of a number of prominent San Diegans, including officials of Consolidated Aircraft Corp. who designed and built the planes in which their sons now are flying. The navy department ordered names of the crews not to be published, and hereafter all flights involving ships and planes engaged in neutrality enforcement will be censored.

No radio reports showing the progress of the planes on the 2500-mile flight to Pearl Harbor are to be made public. Because favorable weather conditions prevail, it is expected the squadron will land at Pearl Harbor between 9 and 10 a.m. today, Pacific coast time.

PROMPT IN TAKE-OFF

With characteristic celerity, the navy lost not time in getting under way when the zero hour for the take-off arrived. The flag plane went over the ramp at 3 p.m. The others followed in rapid succession.

Forming in two lines, the planes came barging down the take-off area, flanking both the starboard and port sides of the giant aircraft carrier Enterprise. Plane 7 was the only bomber that expreienced any trouble. Its motors sputtered at the beginning of the take-off but after wobbling for several hundred yards, the plane started picking up speed and finally left the water.

Plane No. 2 made the smartest take-off, getting aloft within 90 seconds after the pilot gave the engines full throttle.

SHIPS HEAVILY LOADED

All of the bombers were heavily loaded with gas and oil.

Early next week 12 bombers of Patrol wing 2, squadron 21, are to leave Pearl Harbor for Manila via Wake and Midway islands. With them will go the aircraft tender Langley. After that the movements of naval craft taking part in neutrality patrol in the Pacific, the canal zone, the West Indies and on the Atlantic no longer will be headlined in the nation's press.

OCEAN SURVEY COMPLETED

Victoria, Australia

Guba For Africa Today

(From J. Percival, jun., official correspondent aboard the flying-boat Guba)

MAHE (Seychelles), Tuesday. — The survey of Seychelles Islands having been completed, the Guba will leave for Mombasa, Africa, at 2 a.m. Greenwich time (12 noon, Melbourne time) tomorrow.

The real purpose of the flight, to determine suitable bases for flying boats in the Indian Ocean, has been accomplished, since a base already exists at Mombasa.

As was anticipated, the surface winds over the entire route from Australia to Seychelles have been east to south-east. Note has been taken of the change of wind at levels at which the Guba has been flying.

It is understood that Captain Taylor will recommend the taking of regular upper wind observations at Cocos, Diego, Garcia and Seychelles.

This morning, at the invitation of the commanding officer of H.M.S. Liverpool, Captain Taylor made a flight in one of the vessel's Supermarine Walrus flying-boats.

This afternoon officers of the Liverpool inspected the Guba at her moorings in the inner harbor at Port Victoria.

NEW FLYING BOAT WITH RANGE OF 10,000 MILES

Successor to the Guba Tested In America

SAID to have a range of 10,000 miles and a top speed of 275 miles an hour, a new flying boat, successor to the Guba, has just completed its tests in America.

With this capacity it would be able to reach any point of the globe non-stop. A flight from America to Australia could be completed with hundreds of miles to spare.

The flying boat has been manufactured by the Consolidated Aircraft Corporation and, for a start, it will be used on transatlantic services. If its range is effective it could break the world's distance record by 2000 miles.

Slightly smaller than the standard Empire flying boat, its all-up weight of 50,000lb. is 9500lb. greater. Its eight compartments can be fitted to accommodate 52 passengers for day flights or 28 sleeper berths. With these its range would not be so extensive.

Union 9-14-39

Aircraft Employes All Sign for Votes

Employes at Consolidated Aircraft corp. yesterday learned that the firm they represent is the first in this county to report a "100 percent registration," thus qualifying all of their group, 21 years of age and over, to vote at the next election.

Rallying to the campaign to bolster the number of eligible voters in this county, Consolidated employes, registered, hurriedly summoned a deputy registrar to take their affidavits of registration.

The Consolidated employes, however, are not the only ones representing concerns in the "100 percent" bracket. Campbell Chevrolet Co., Frost Lumber Co., Standard Oil Co., Whitney & Co. and others now boast 100 percent registrations. These firms engage hundreds of employes.

Union Sept 18-39

11 Groups Ready To Begin Drive For Chest Funds

Organization of 11 sections in the industrial division of the Community Chest campaign is announced by J. O. Miller, general chairman, with the further information that city and county units of the public employes' group are ready to do their part in the annual fund-raising effort for support of 34 social service agencies.

Civic and business leaders who have assisted in organizing the division will meet at a "kick-off" breakfast tomorrow, 7:30, in the Italian room, U. S. Grant hotel. They will receive final instructions and supplies for the next step, which will be to contact company captains in 448 establishments participating in the campaign under the "unit account" system.

Each of these places of employment, said Miller, has accepted a goal toward which contributions of the firm, its executives and all employes will be credited. It is expected most of the establishments. under the self-solicitation feature of the "unit account" plan, will complete their assignments when the general campaign begins a week from Thursday.

Directing the organization of the undustrial division units are:

Builders — Morley H. Golden, Robert Frazee.

Hotels - restaurants — Carleton Lichey, O. B. Wetzell.

National firms — George N. Lynch, F. J. Guasti.

Industrial—Edgar N. Gott, S. M. Sullivan.

Retail — W. D. Rudd, George Scott.

Wholesale—Allan S. Klauber.

Finance—John L. Fox, Marston Burnham.

Food—Wilbur Thomas, Douglas Young.

Public service — Fred L. Annable, Emery D. Sherwin.

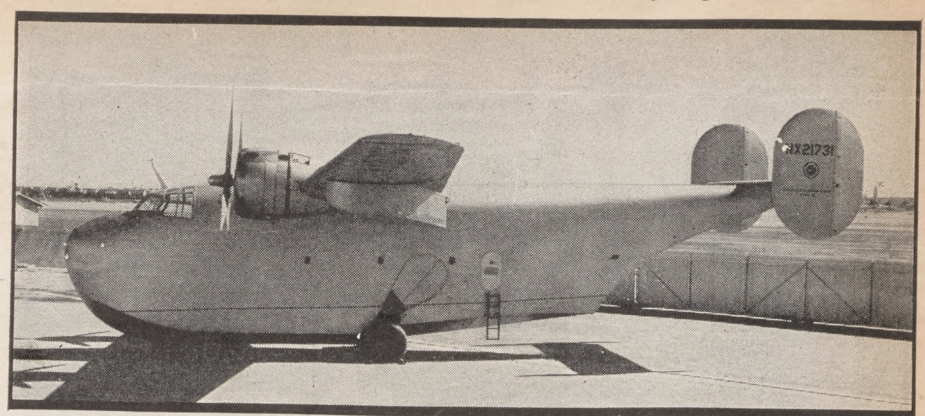
Automotive — Chester Dorman, W. A. Morgan.

General—Charles B. Wincote.

Heading the city employes division are Fred A. Rhodes and D. M. Hammond, while the county unit has as leaders Sam A. Claggett and J. B. McLees.

Business Week May 13-39

Consolidated Aircraft's 25-Ton Flying Boat



In San Diego last week Consolidated Aircraft Corp.'s powerful new flying boat, Model 31, made its first test flight. Weighing 25 tons, Model 31 has a wing-span of 110 feet, is 73 feet long, 22 feet high. It has two—instead of the usual four—engines, 2,000-horsepower each, is capable of a speed exceeding 250 miles an hour. As a commercial air liner it can carry 52 passengers by day, 28 in berths at night. Consolidated's own private venture, Model 31 is nevertheless well adapted for use by the U.S. Navy, or for commercial transatlantic service.

---

money.

S.D. Sun Sept 19-39

U. S. BOMBERS HOP FOR PHILIPPINES

HONOLULU, T. H., Sept. 19.—Navy headquarters announced a squadron of naval bombers took off from Pearl Harbor at 9 a. m. (PST) today on a mass flight to Manila—the first mass flight ever attempted from Hawaii to the Philippines.

Union Sept 20-39

Consair's Picture To Be Shown Club

Exchange club members and guests will see a showing of Consolidated Aircraft's picture, "Building the P. B. Y. Record Breakers," at tomorrow's noon meeting in Hotel San Diego, John Arthur Jenkins, entertainment chairman, announced.

Maj. Gott

The film will be presented by Maj. E. N. Gott, Consolidated. It pictures the progress of the giant air bombers from the laboratory to the record flights.

Union 9-14-39

Two San Diego Bombers Arrive at Pensacola

Two navy bombers which took off on a routine transfer flight from North Island at 5 a.m. yesterday, arrived at Pensacola, Fla., at 7 p.m. (P.S.T.) last night. The ships are scheduled to continue on to Norfolk, Va., today.

SAN DIEGO, CALIFORNIA, TUESDAY, SEPTEMBER 12, 1939 Tribune

CONSAIR SET TO DOUBLE PLANT

Given Space For Another Factory

By DON SHORT

A lease of tidelands to enable the Consolidated Aircraft Corp. to double the capacity of its airplane plant was authorized by the city council today.

Granted Option

The council was informed that officials of the company now in Washington were confident of federal government contracts that would demand doubling the size of the factory.

The tracts adjoin the present factory buildings and consist of 17 acres, or 722,832 square feet of space, on which another factory is to be constructed immediately.

In addition, the company was granted an option to lease after 10 years, of 22 additional acres, making 84 acres to be occupied by factory buildings. The present factory occupies 17 acres. The lease was recommended by the harbor board and was presented to the council by Joseph Brennan, port director, who said the terms of the proposed lease had been threshed out by the harbor commissioners. The additional acreage is to return $750 per year rental to the city.

Brennan told the council that under the new agreement the city would not be obligated to reimburse the company for taxes. When councilmen inquired as to how Lindbergh field would be affected, Brennan showed maps that indicated additions to Lindbergh field, proposed by the harbor commission, would increase the field to 450 acres.

When Councilman A. E. Housh inquired as to reason for the haste in presenting the new lease, Brennan explained that the company expects big contracts and it was imperative that the authorities in Washington be guaranteed that the company has ample room to expand its plant.

Adopted Unanimously

Brennan said every detail had been studied by the harbor commissioners and that they were satisfied with the terms. A resolution authorizing the lease was adopted unanimously. H. B. Daniel, assistant city attorney, said he would prepare the lease and that he would see that the rights of the city were amply protected.

Brennan informed the council that Consolidated's payrolls for the first year in San Diego amounted to $3,712,000; the second year, $5,193,000, and the third year, $3,198,000. He said the company brought 250 new families to San Diego, that at its lowest peak of operation employes numbered 1100, and that today 1800 are on the payrolls. He said the first year the company paid $23,973 in taxes and the third year, $45,425, the greater part of which was paid to the county.

---

14 S.D. BOMBERS REACH HAWAII

Sun 9-14-39

Mass Flight Ends Without Incident

Fourteen U. S. Navy bombing planes arrived at Honolulu today on a non-stop flight from San Diego to strengthen Hawaiian Island defenses.

The planes hopped across the Pacific in a routine overnight flight, completed successfully without incident.

The planes, which left San Diego at 3:30 p. m. yesterday, arrived at Honolulu at 9:50 a. m. PST. Clear weather prevailed on the 2000-mile flight.

The bombers, of Patrol Squadron 13, were commanded by Lieut.-Comdr. Stuart H. Ingersoll, and will replace a unit transferred from Hawaii to the Philippine Islands with the former San Diego-based aircraft tender Langley. Succeeding the latter will be the USS Wright, which sailed from here last Sunday and will become the flagship of Rear Adm. Arthur L. Bristol Jr., commander of Patrol Wing Two.

Sun 9-22-39

AIR SCOUT FORCE IN PEARL HARBOR

Rear Adm. Arthur B. Cook, Aircraft Scouting Force commander, and his staff have arrived in Pearl Harbor from Alaska aboard their flagship, the San Diego cruiser Memphis, to continue their inspection tour of patrol plane facilities. The officers recently completed visits to bases in Puget Sound, Sitka, Kodiak, and Dutch Harbor in the Alaska-Aleutian Islands sector.

Pearl Harbor has been the destination and starting point for two important Navy mass flights during the past 10 days. A squadron of 14 bombers flew from San Diego to Hawaii last week in approximately 18 hours to relieve a patrol plane unit which now is enroute to Manila from Pearl Harbar via Midway, Wake and Guam.

The Memphis is slated to return to San Diego October 8.

Sun 9-22-39

AIR CONTRACTS TO S. D. CONFIRMED

Confirmation of tentative contract awards for construction of Army planes by Consolidated Aircraft Corp., and Ryan Aeronautical Co., was made today by Assistant Secretary of War Louis Johnson in Washington, D. C., the United Press reported.

The contracts, which were given to winners of Air Corps design competitions, follow: Consolidated Aircraft Corp., for four-motored bombers, $8,613,674; Ryan Aeronautical Co., for observation planes, $132,020. The awards will not affect the previously announced backlogs of the two concerns, now aggregating about $16,000,000 for Consolidated and $1,000,000 for Ryan.

Sun 9-22-39

MANILA LOOKS FOR NAVAL SQUADRON

MANILA, Sept. 22.—A flight of Navy planes which departed from Honolulu last Tuesday, is expected to arrive at the Cavite Navy Yard Sunday afternoon, Navy authorities said tonight.

There has been no direct or official word of the planes since they departed from Honolulu, but it was generally believed that there were 15 in the squadron in charge of Lieut. Comdr. Sam Lahache, and that they had stopped at Wake Island, Midway Island and Guam, following the Pan-American Airways route. It was the first time any United States war plane flight had been made west of the international dateline.

Western Flying Aug 39

AMERICAN EXPORT LAUNCHES TESTS

AMERICAN Export Airlines began its long-deferred test flights across the Atlantic early in July, completing its first hop on July 9 from New York to Marseilles. **Capt. Patrick Byrne** commanded the big Consolidated flying boat with **T. S. Terrill, M. C. J. Doyle, W. W. Ehmer, R. B. Carlson** and **Charles F. McDonough** as the crew.

Plans for the season's tests have not been announced, but it is known that American Export, which is an affiliate of **American Export Lines,** proposes to tie in its flying boat operations closely with its steamer operations across the Atlantic. It is understood that the test flights of the **Transatlantic,** as the survey plane has been christened, will be timed to take advantage of the crossing of the steamers.

WANTED—INSPECTORS

Western Flying Sept 39(?)

THE engineering section of the Sixth Region of the C.A.A. has before it for testing and recommendation over 50 different aircraft and aircraft engine projects. Of these, seven are major projects, including the Douglas DC-5, Lockheed 16, Lockheed 27, Lockheed 44, the Consolidated 28, and others. There are, in addition, four engine projects, including the Menasco Vega-Unitwin, Seelig and Taylor's four-cylinder inverted gasoline engine, Seelig and Taylor's OX5 conversion, and L. M. Fisk's Diesel engine. There are two or three starter projects; one or two propeller projects.

The rest are all new airplanes of various types and importance, some large, some small.

To handle these projects, the engineering section of the Sixth Region has one senior engineering inspector, who has to assist him three engineering inspectors and six factory inspectors.

In addition to the static tests and flight tests of these new projects, this section is responsible for the routine factory inspection of all commercial aircraft in production in the factories of the Sixth Region, which includes California, Arizona, Nevada and Utah. Until recently, the Sixth Region engineering section also has been entrusted with the responsibility for the products of the Boeing Aircraft Company at Seattle and conducted all the early tests of the Boeing 314, prior to the time that special inspectors were sent from Washington to take charge of this work. Word has just been received that Inspector George Halderman has been assigned to duty at the Boeing plant, so that henceforth the Sixth Region officers will be relieved of this duty.

We cite the case of the engineering section of the Sixth Region, but the situation is the same in practically all divisions of the CAA. The inspector staffs invariably are too small, and have too much work to do, and this is responsible in large degree for many of the troubles between the CAA and the aviation industry. The CAA will never be able to do its work properly, and the industry will never be properly administered until the field force of the Authority is properly, and completely manned.

Consolidating a Reputation

CONSOLIDATED FLYING-BOATS, built by the Consolidated Aircraft Corp., Lindbergh Field, San Diego, California, U.S.A., have made two outstanding long-range flights recently. The first, by the *Guba*, was the survey crossing of the Indian Ocean, along the Imperial Reserve Route, from Australia to Africa, managed by Capt. Bill Taylor, and on across the Atlantic to California. The second was the delivery flight from San Diego to Felixstowe of the Consolidated 28-5 for the British Air Ministry. Both were reported in THE AEROPLANE at the time. The crew of the *Guba*, Russel Rogers, Lewis Yancey, Ray Booth, and Gerald Brown, also delivered the Model 28-5 flying-boat to the R.A.F. in England.

Recently we had an interesting lunch with Mr. Booth and Mr. Brown, who were brought along by Mr. John Millar, of Aviation Corporates Ltd., the British agents for Consolidated.

The Americans were loud in their praises of the great time they had had at Felixstowe where they have been turning the Service boat over to the Marine and Experimental Establishment. At the moment it has been stripped down for detailed examination by R.A.F. technical officers.—We shall be interested to learn how it flies afterwards.

Although the original intention on the British delivery flight was to fly from San Diego to Felixstowe with one stop at Botwood, Newfoundland, Messrs. Booth and Brown told us that, unfortunately, they encountered average head winds of between 30 and 40 m.p.h. on the first part of the trip. So, although they had enough fuel to take them to Botwood without any reserve, they decided to alight at Buffalo, because Botwood might be fogged in and they would have no extra fuel for cruising around.

The strong head winds brought down their average speed to Buffalo to only about 124 m.p.h. They followed the T.W.A. route across the American Continent to Chicago. On that day, July 10, the average time of the Eastbound commercial transports was 125 m.p.h. against the wind, and that of the Westbound transports somewhere about 222 m.p.h.—nothing to cause undue excitement.

For the flight from Botwood to Felixstowe the boat averaged 169 m.p.h. for the 2,460 statute miles. They arrived over Felixstowe in the dark, so they cruised around until daylight. For the whole flight the Pratt and Whitney Twin Wasps used only 995 gals. of fuel. Nearly 500 gals. were left when the boat alighted. In fact, this fuel was used for test flights by R.A.F. officers during the next two days. Only the plugs were changed before the boat was flown after its Atlantic crossing.

The clean appearance of the nacelles and wings after the crossing was particularly commented on at Felixstowe. One particularly inane Pressman suggested that the crew must have swabbed down the wings and nacelles before they alighted.

The Consolidated 28 supplied to the R.A.F. takes off and cruises on 100 octane fuel, which probably accounts for the very low consumptions. The *Guba* was operated on 87 octane fuel.

The Atlantic was crossed at about 13,500 ft. Mr. Booth was in constant radio-telephonic communication with stations on both sides of the Atlantic through the Bendix equipment.

Botwood seems to be getting quite an amount of traffic these days. At the same time as the Consolidated boat arrived from Buffalo a Boeing Clipper arrived from England. They alighted within a few minutes of each other. The remark in *Punch* that there is no danger in flying the Atlantic nowadays, except from collisions, is silly but quite funny.

Mr. Brown said that the retraction of the wing-tip floats increases the speed by about 18 or 20 m.p.h. and decreases the length of the take-off considerably. Also it improves the handleability of the boat slightly. Retraction is done electrically, and there is an emergency hand-operating gear.

Both Mr. Brown and Mr. Booth agreed with the statement which has been made in this paper any time in the past ten or twelve years namely that the wing-tip floats of big high speed flying-boats nowadays must be retractable. And both were convinced that after the Royal Air Force have done a bit of flying in the Model 28 they will be converted too.

They also told us something of the flight of the *Guba*. This boat was flown from San Diego to Netherlands New Guinea for archæological and survey work by the Archbold Expedition sponsored by the American Museum of Natural History. During its time in New Guinea the *Guba* carried a total of 450,000 lb. (about 200 tons) of freight from the coast up to Lake Habbema, 11,500 ft. above sea level.

This involved repeated alightings and take-offs from the lake at that height. We have never before heard of a flying-boat operated in such conditions. From New Guinea the *Guba* was flown to Australia and then was the first aeroplane to cross the Indian Ocean from Australia to Africa. It was also the first flying-boat to cross Africa,—which it did from Mombasa to Lagos, after which it went on to Dakar.

From Dakar the *Guba* was flown non-stop across the Atlantic to St. Thomas in the Virgin Islands, 3,300 statute miles in 19 hours 33 minutes. Actually the boat remained in the air for 22 hours because of darkness. When it alighted it still had fuel for another 10½ hours.

All across the South Atlantic there were very favourable trade winds. At times the motors were throttled to the minimum needed to keep in the air. From St. Thomas the boat was flown to Miami and on to San Diego.

Thus the *Guba* was the first aeroplane and the first flying-boat to be flown round the World near its greatest diameter. Also from Dakar to St. Thomas was the longest non-stop over-water flight by any flying-boat.

After being in the Tropics for about a year, and although there were only two mechanics with the Expedition and practically no arrangements for maintenance, the boat was in extraordinarily good condition. Hardly any repairs were necessary compared with what would be expected for an aeroplane which had flown for more than 1,000 hours, mostly in the Tropics.

The original coat of paint was still in good condition and the only refinishing done on the trip was one coat of black bituminous paint below the water line. There was practically no corrosion. During the year the boat has done 750 hours flying and has been out in the open all the time.

One lesson to be learned is that flying-boats can be stationed in out-of-the-way tropical places for long periods with only a small personnel for maintenance,—as the R.A.F. found years ago with their Short and Vickers boats.

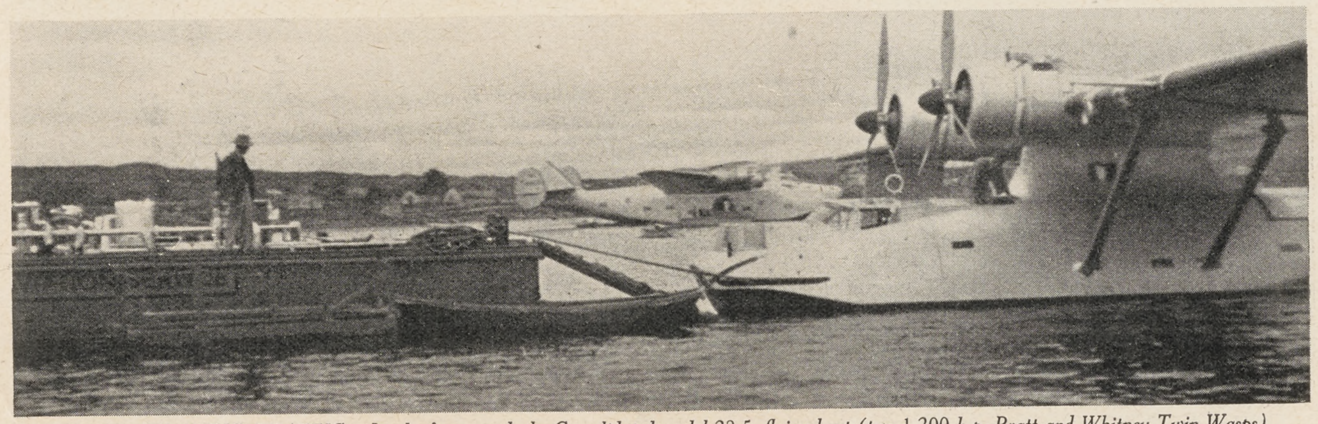
An interesting point is that complete overhauls on Consolidated boats are necessary only once every 44 months. Before these boats came into service the overhaul periods were 12 to 14 months. A strip-down of a Consolidated boat after 3½ years of service showed that complete overhaul was unnecessary, only minor repairs had to be made and there was very little corrosion.

The normal gross loaded weight of the type is 27,000 lb. Tests were made at a loaded weight of 30,500 lb. for the U.S. Department of Commerce for the licencing of the Commercial boat for American Export Airlines. The *Guba* was on occasion overloaded up to 35,000 lb., a 30% overload.

The makers do not advise open sea or rough water operation at a weight of more than 27,000 lb. Accelerometer readings in rough water tests have been as high as 8 or 10, which shows what a pounding a boat can get.

Both Mr. Booth and Mr. Brown had flown in the Consolidated Model 31 flying-boat (two 2,000 h.p. Wright Duplex Cyclones) and confirmed all the rumours of extraordinary performance which we have published about that boat.

Certainly the new Consolidated Model 31 is among the World's best aeroplanes. It contains the accumulated experience gained by the building of more than 200 PBYs for the U.S. Navy. The progress of the smaller Consolidated 28-5 in this country will be most interesting to watch.



TRANS-ATLANTIC TRAFFIC.—In the foreground the Consolidated model 28-5 flying-boat (two 1,200 h.p. Pratt and Whitney Twin Wasps) refuelling at Botwood, Newfoundland, before being flown across the Atlantic for delivery to the R.A.F.,—the first time a military aeroplane has been delivered by air from America. The Pan American Airways Boeing "Yankee Clipper," en route to New York from England, is in the background.

BREVES NOTICIAS DEL EXTERIOR

CHILE

• **Mejoras introducidas en el servicio aéreo.** — La empresa de transportes aéreos denominada Línea Aérea Nacional (L. A. N.), ha adquirido recientemente para los servicios internos y al exterior 2 nuevos aviones Junkers Ju 86. Se espera además en breve, la llegada de otros dos aparatos del mismo tipo. Con estos agregados se estará en condiciones de reiniciar el trayecto Santiago - Puerto Montt, que cesó a principios de 1938.

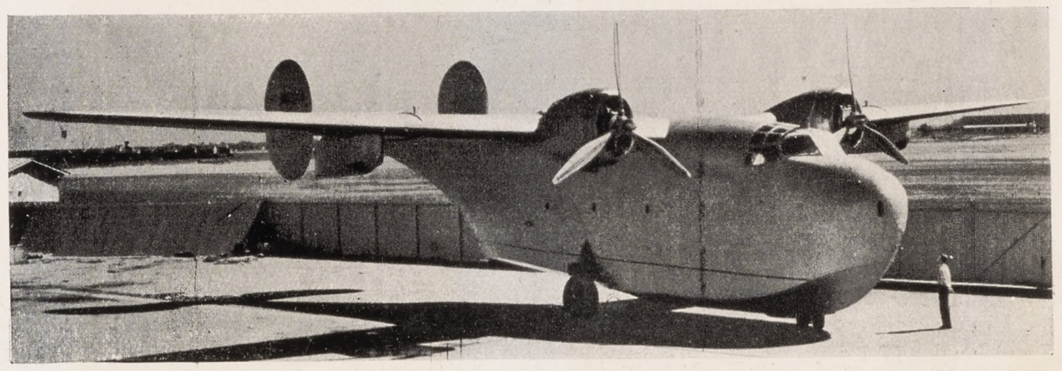
DINAMARCA

• **Nuevo tipo de avión deportivo.** — La empresa **Skandinavisk Aeroindustri,** de Copenhague, que está construyendo aviones livianos en base a los planos de dos ingenieros daneses, Kramme y Zeuthen, ha comenzado la producción de un nuevo modelo denominado K.Z. II Sport. La fábrica danesa construye únicamente los planeadores y no los motores. El nuevo avión será demostrado ante los oficiales de la Fuerza Aérea sueca, quienes, según noticias, se han interesado mucho por el modelo más pequeño, el K.Z. Sport. Sin embargo, estos oficiales advirtieron que no era recomendable que estos aviones se vendiesen a las organizaciones de aviación civil suecas, con las cuales parece ser que la Fuerza Aérea colabora, debido a que el aparato no poseía características que permitiesen efectuar aerobacia. Por ello, la empresa danesa ha construído este nuevo modelo, más poderoso, a fin de obtener su aprobación.

ESTADOS UNIDOS

• **Nueva fábrica Ryan en construcción.** — De acuerdo a informaciones, el 15 de junio debió darse fin a la construcción de las nuevas ampliaciones para la empresa Ryan. Estos trabajos costarán 150 mil dólares y la construcción abarcará una superficie de 60 × 84 m., siendo la estructura íntegramente de acero, con techo en forma de dientes de serrucho. Al lado de este edificio se erigirá una instalación para oficinas de dos pisos, que medirá 12,80 × 36,50 m. Además de estos dos grupos, habrá dos estructuras separadas para los talleres de pintura y dope. La empresa Ryan firmó un contrato de locación por el término de 50 años, por la superficie de terreno que ocupan actualmente sus instalaciones, además de otro tanto para futuras expansiones.

• **Pruebas de un tren de aterrizaje en un Ryan S-C.** — Durante la visita que efectuó a EE. UU. el conocido técnico británico Sr. George H. Dowty, constructor de los trenes de aterrizaje y elementos hidráulicos de su nombre, éste llevó a cabo interesantes pruebas con un nuevo tipo de tren de su concepción, el que fué instalado a dicho efecto en un avión Ryan S-C de cabina. El nuevo tren es fijo y está constituído por un nuevo tipo de montante amortiguador que hace uso de un movimiento telescópico horizontal, en lugar del tipo vertical actualmente conocido.



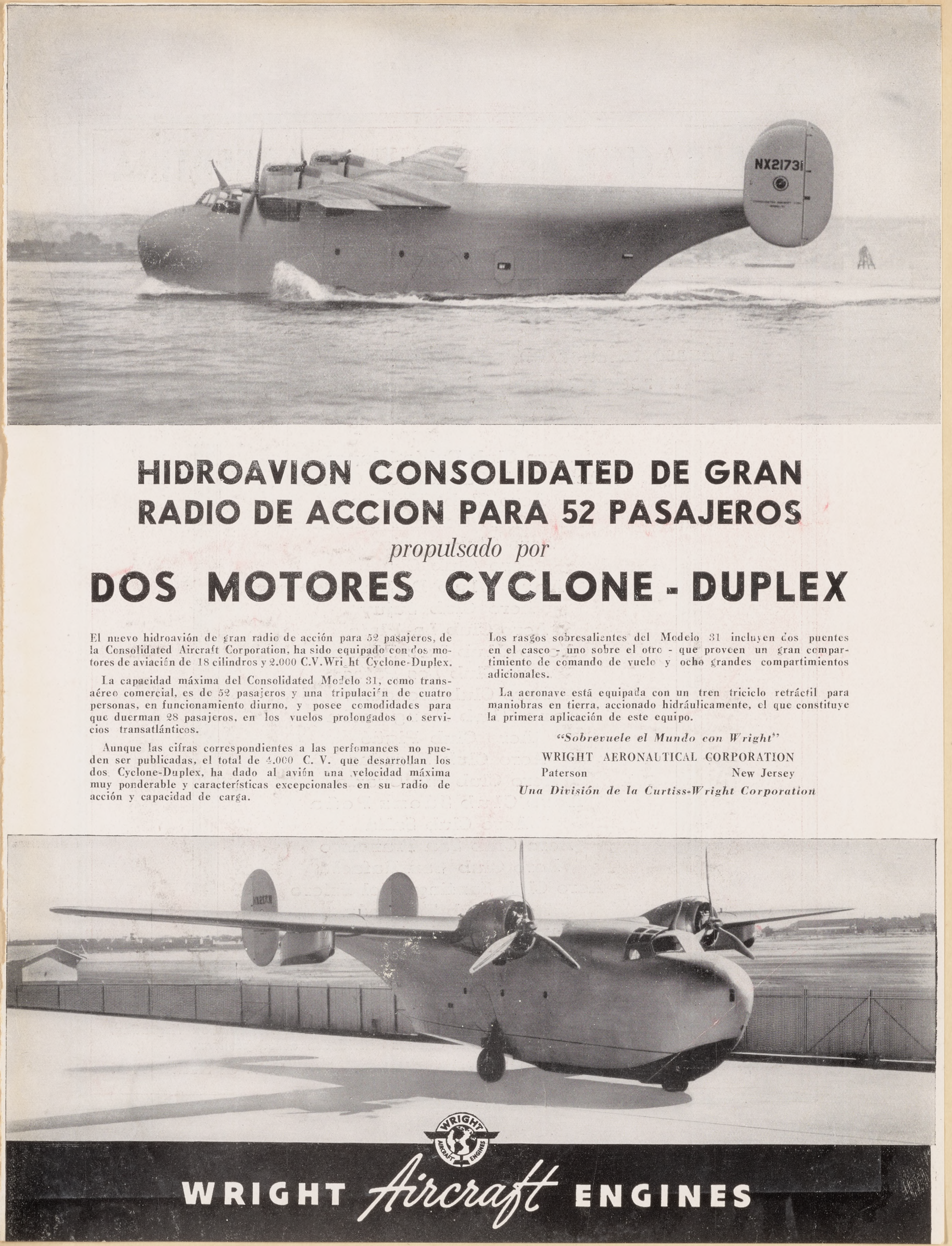
Vista de tres cuartos de frente del nuevo hidroavión Consolidated 31, propulsado por dos motores Wright Cyclone Duplex de 2000 C.V., que, según rumores, desarrolla una velocidad máxima del orden de 484 Km/h. y un radio de acción superior a 10.000 Km. Entre sus características de diseño figura la forma de su casco, dotado de un solo redán, sus flotadores retráctiles, su tren de maniobras en tierra, también retráctil y el diseño de su perfil alar, de extrema fineza, al que se debe gran parte de sus extraordinarias performances.

• **Nuevas construcciones de la Lockheed.** — Confirmando la noticia que diéramos en nuestro número anterior, damos a continuación las características resumidas de dos nuevos aviones Lockheed que se hallan en construcción. El primero es un monoplano bajo bimotor, denominado Lockheed Electra 16-E, destinado al transporte de 12 pasajeros, piloto y copiloto. Estará propulsado por dos motores Pratt & Whitney Wasp de 550 C.V. y hélices Hamilton Standard de velocidad constante. Su peso total será de 5200 Kg. con carga completa y sus dimensiones generales, las siguientes: envergadura, 18 m. y longitud, 13.50 m. Sus performances calculadas serán:

Velocidad máxima, a 2400 m, 368 Km/h.; de crucero a 3600 m., 350 Km/h.; carrera de decolaje, 265 m.; tiempo empleado, 15 segundos; velocidad de aterrizaje, 105 Km/h; velocidad ascensional, 460 m/min. a n. del m.; techo teórico, 7200 m.; techo práctico, 7000 m ; techo teórico con un motor, 3050 m.

El otro aparato será un monoplano bajo, cuatrimotor, para el transporte de 21 a 28 pasajeros y 3 tripulantes. Como novedad en los diseños Lockheed, poseerá un tren de aterrizaje triciclo retráctil. Los motores serán Pratt & Whitney Wasp S1H1-G de 600 C.V. cada uno para el decolaje. La envergadura será de 29 m. y la longitud, de 22,55 m. Según se anuncia, el nuevo aparato estará listo para nuestro otoño de 1940 y presentará notables perfeccionamientos en materia de hipersustentadores. La velocidad máxima será del orden de los 390 Km/h. y la de crucero llegará a 355. El radio de acción será de 3400 Km. normalmente, pero mediante depósitos auxiliares podría ser aumentado a cerca de 5000 Km. Las otras características del cuatrimotor proyectado, que se denominará «Excalibur», son: hélices Hamilton Standard «Hidromáticas»; peso total, cargado, con 21 pasajeros, 12.500 Kg.; carrera de decolaje a nivel del mar, 300 m.; velocidad ascensional máx. 365 m/min.; techo teórco, 7300 m.

• **Nuevo hidroavión construído por la Consolidated.** — La Consolidated Aircraft Corporation, de San Diego, California, acaba de dar fin a la construcción de un nuevo hidroavión bimotor, denominado modelo 31. Se trata de una iniciativa privada de la empresa, sin intervención del apoyo o las especificaciones de ninguna rama militar, salvo las referentes al empleo del motor, que figura en la lista secreta. Se trata de un monoplano de ala alta, sumamente fina y de planta y perfil decrecientes. Su construcción es íntegramente metálica con revestimiento de aleación de aluminio pintado con pintura del mismo color. Las alas son cantilever con los depósitos formando parte integral, en el plano central. Los «flaps» son del tipo Fowler de accionamiento hidráulico. Los flotadores laterales son retráctiles en el interior de los tramos exteriores del ala, pues, los extremos de la misma son demasiado reducidos para alojarlos según la práctica empleada en los hidros de las series PBY. Los aletones y los «flaps» son entelados. Los empenajes son del tipo cantilever, siendo los verticales dobles. Los timones van revestidos en tela. El casco posee dos puentes superpuestos, permitiendo un gran compartimiento central de comando y ocho grandes compartimientos adicionales. En el diseño se ha introducido un tren de maniobras en tierra, para el transporte hasta los hangares, de tipo permanente, retráctil, triciclo. La rueda anterior se retracta longitudinalmente hacia arriba, en el casco, mientras que las posteriores lo hacen lateralmente y también hacia arriba, alo-



HIDROAVION CONSOLIDATED DE GRAN RADIO DE ACCION PARA 52 PASAJEROS

propulsado por

DOS MOTORES CYCLONE - DUPLEX

El nuevo hidroavión de gran radio de acción para 52 pasajeros, de la Consolidated Aircraft Corporation, ha sido equipado con dos motores de aviación de 18 cilindros y 2.000 C.V. Wright Cyclone-Duplex.

La capacidad máxima del Consolidated Modelo 31, como transaéreo comercial, es de 52 pasajeros y una tripulación de cuatro personas, en funcionamiento diurno, y posee comodidades para que duerman 28 pasajeros, en los vuelos prolongados o servicios transatlánticos.

Aunque las cifras correspondientes a las perfomances no pueden ser publicadas, el total de 4.000 C. V. que desarrollan los dos Cyclone-Duplex, ha dado al avión una velocidad máxima muy ponderable y características excepcionales en su radio de acción y capacidad de carga.

Los rasgos sobresalientes del Modelo 31 incluyen dos puentes en el casco - uno sobre el otro - que proveen un gran compartimiento de comando de vuelo y ocho grandes compartimientos adicionales.

La aeronave está equipada con un tren triciclo retráctil para maniobras en tierra, accionado hidráulicamente, el que constituye la primera aplicación de este equipo.

"Sobrevuele el Mundo con Wright"

WRIGHT AERONAUTICAL CORPORATION
Paterson New Jersey
Una División de la Curtiss-Wright Corporation

WRIGHT *Aircraft* ENGINES

DAY MORNING, SEPT. 25, 1

Aircraft Plants Guard Against Spies, Sabotage

Union 9-25-'39

Southern California aircraft manufacturers, acting under instructions from Washington to prevent sabotage and espionage, have imposed wartime restrictions.

Consolidated, Ryan and Solar aircraft plants have followed the lead of other plane factories throughout the nation in fingerprinting employes. These are checked with the federal bureau of investigation.

At the same time employes must produce evidence they are American citizens. Those who did not meet with these requirements have been discharged.

The Associated Press reported officials of the four major Los Angeles county plants—Douglas, Lockheed, Vultee and North American—say restrictions have been imposed in excess of those effective in peacetime. The plants manufacture military planes.

Consolidated has a backlog of $18,000,000 of orders for army and navy bombers, Ryan is building training planes for the army, and Solar is manufacturing accessories for military and naval planes being built by aircraft companies.

---

14 S.D. BOMBERS REACH CAVITE

Sun 9-25-39

One Of Squadron Returns To Midway

By United Press

MANILA, P. I., Sept. 25.—Fourteen Navy bombers, built by Consolidated Aircraft Corp., San Diego, landed at Cavite today after a leisurely mass flight from Honolulu, which marked one of the first passages of American military planes over the international date line.

The bombers arrived in formation and began landing shortly after 3:40 p. m. The planes were transferred here from the Pearl Harbor Base, along with the aircraft carrier langley.

The fifteenth plane of the squadron turned back to Midway Island after developing minor engine trouble and was to fly here later.

---

14 Patrol Bombers Reach Philippines

Union 9-26-39

MANILA, Sept. 25 (A.P.)—America's armed forces in the Far East today were increased by 14 big navy patrol bombers, which completed the first mass flight between Hawaii and the Philippines.

The planes left Pearl Harbor Tuesday and followed the 5586-mile route flown by Pan American airways, via the island stepping stones of Midway, Wake and Guam.

Wartime secrecy surrounded transfer of the squadron, which will be assigned to a "neutrality patrol" of Philippine waters, along with naval surface craft.

Lt. Comdr. Sam Lahache, who directed the flight, reported one accident en route, the loss of a thumb at Wake island by Ens. Willoughby Mercer, whose hand was struck by a whirling propeller.

Western Flying.

The awards announced by **Assistant Secretary of War Louis Johnson** on August 10, were as follows: Sept 39

1. **Bombardment, 4-engine Consolidated Aircraft Corporation,** San Diego, California, approximately $8,485,000.

Boeing Aircraft Company, Seattle, Washington, approximately $8,090,000.

With options to the firms of approximately $5,400,000.

The planes winning these awards are similar to the Consolidated type B-24, contract for which was announced on April 27, 1939, and the Boeing B-17B, contract for which was announced on October 8, 1937. No details or photographs have been published as to the Consolidated B-24. The bomber on which the award to the Boeing Airplane Company was made is similar to the B-17B, which established the Los Angeles-New York course record for plane with crew or passengers. This flight was made at an average speed of 263.8 miles per hour in an elapsed time of 9 hours 14 minutes, 30 seconds. This bomber incorporates various minor improvements found desirable as a result of more than a year's service test of this type at Langley Field, Virginia. The B-17B is powered with four Wright cyclone engines.

The Boeing B-17B Bomber, like the previous B-17 delivered in 1937 is a 22-ton all-metal, low-wing monoplane of some 105 feet wing span by 70 feet in length, and has an overall height of 15 feet. These bombers can fly at speeds greatly in excess of the 250 miles per hour of the earlier 4-engine bombers, carry 5 machine-guns and a crew of 7 to 9 men, including a comanding officer, pilot, co-pilot, navigator, engineer, bomber, radio operator, and gunners. All members of the crew can freely change stations, and for long flights sufficient additional personnel can be carried so that the operators of the airplane may be relieved from time to time and get the necessary rest.

San Diego

Exchange Club

COMPLIMENTARY

Showing of a Talkie Movie Film

"Building the P.B.Y. Record Breakers"

Through the courtesy of

Consolidated Aircraft Corporation

MOCHA ROOM, SAN DIEGO HOTEL
Thursday Noon, September 21, 1939

Members are requested to be in their seats at 12:15 sharp.
Movie starts at 12:30.
No meals furnished after 12:30.

JOHN ARTHUR JENKINS
Entertainment Chairman

8-P-3
8-P-2
8-P-1
U.S. NAVY

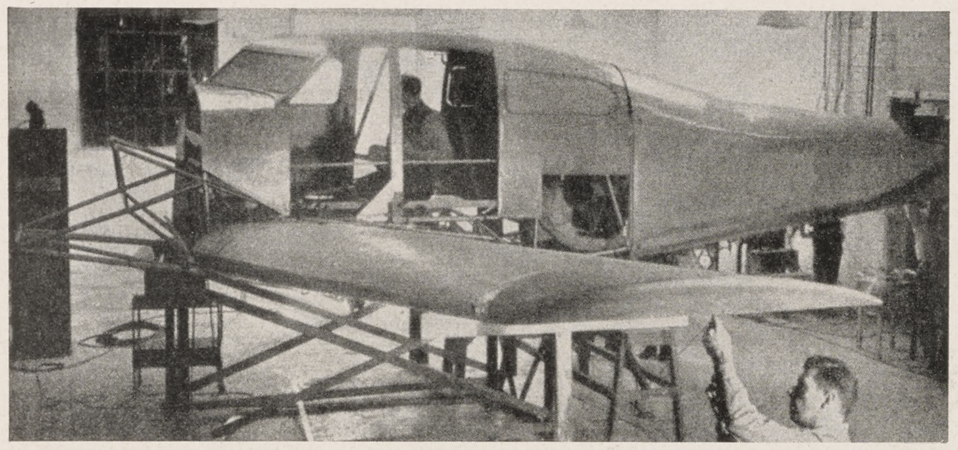
Official photograph, U. S. Navy

CONSOLIDATED PATROL BOMBERS, DESIGNATED IN THE NAVY PBY'S, OF PATROL SQUADRON 8 ATTACHED TO PATROL WING 2, SCOUTING FORCE, AT PEARL HARBOR

Consolidated Aircraft Corporation is proceeding with its tests of its Model 31, in conjunction with the Navy. The CAA has not been requested to participate in the flight tests of the big ship, which has given rise to the unconfirmed report that the Navy will take it over. . . . A commercial version of the Navy PBY, with two twin-row Wasps, was ferried from San Diego to England for delivery to the British Air Ministry, during July.

Aug 39

Western Flying



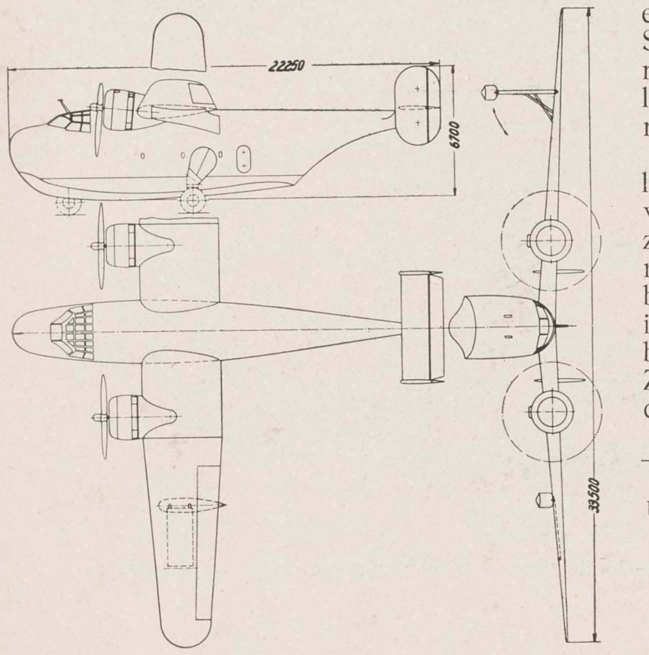
USA. Vega - 2. Bild: Aviation

USA Consolidated-Zweimotor-Flugboot, Modell 31.

Der neue Typ, Modell 31, der Consolidated Corp., San Diego, von der Firma selbständig entwickelt in der Hoffnung, daß es später von der Marine angenommen wird, ist ein Zweimotor-Schulterdecker. Flügel von verhältnismäßig geringer Tiefe und geringer Profilhöhe, größte Wölbung im ersten Drittel, entworfen von Davis. Zwischen Querrudern und Rumpf hydraulisch betätigte Fowler-Klappen. Glattblechflügelhaut, Querruder und Klappen leinwandbedeckt. Betriebsstoffbehälter im Mittelstück, seitliche Stützschwimmer an die Unterseite der Ansatzflügel hochziehbar. Motorachse des Motorenvorbaus geht durch den Flügel. Verkleidung infolge Einbeziehung von Oelkühler, Vergasereinlaß, etwas elliptisch.

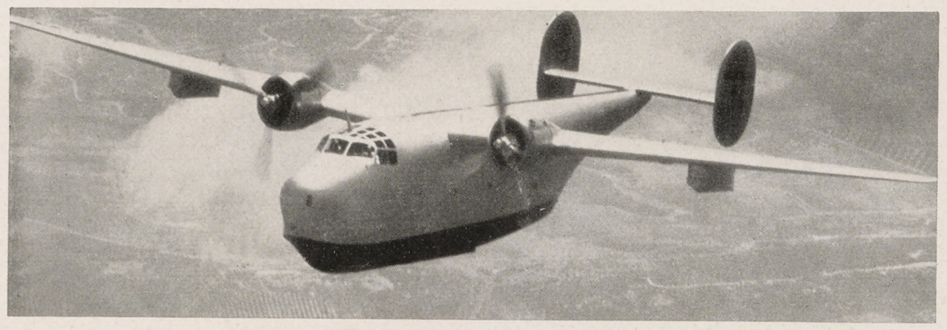
Zwei 18 Zyl. Wright-Doppelstern-Duplex-Cyclone-Motore von je 2000 PS Startleistung. Zwei Dreiblatt-Hamilton-Hydromatic-Luftschrauben von 4,87 m Durchmesser. Boot, zwei Decks. Oben Raum für 2 Führer, 1 Ingenieur, 1 Funker und Navigator. Unterdeck acht Abteile, normal für 28 Fluggäste für Ozeanverkehr, max. 52 Fluggäste für kürzere Strecken. Bootunterseite stark gekielt, einstufig hinter der Stufe in eine senkrechte Schneide auslaufend. (Do X - Erfahrung.)

Leitwerk, Metallbau, leinwandbedeckt. Fahrwerk hydraulisch hochziehbar, vordere Bugräder doppelt, hintere beiden Räder seitlich in den Rumpf einziehbar. Im hochgezogenen Zustand sind die Räder durch Türen verdeckt.



USA. Consolidated Flugboot Modell 31.

Zeichnung Flugsport



USA. Consolidated Zweimotor-Flugboot Typ 31. Werkbild

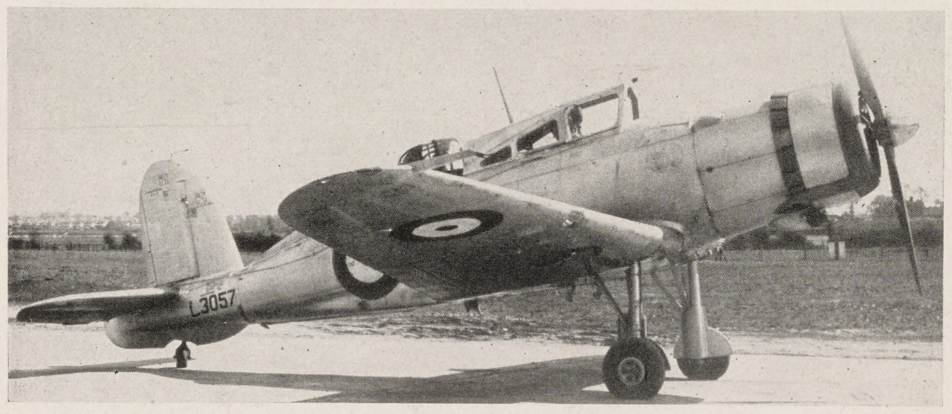
Spannweite 33,52 m, Länge 22,3 m, Höhe 6,70 m, max. Flügeltiefe 4,26 m, Fluggewicht 22 660 kg, Flächenbelast. 225 kg/m². Man hofft, eine Geschwindigkeit von 450 km zu erreichen.

Engl. Marine-Zweisitzer Blackburn „Roc“.

Die engl. Marine hat einen Zweisitzer, konstruiert von Blackburn, als Schiffsbei-, Land- und Zweischwimmerflugzeug entwickelt. Das seitlich hochklappbare Fahrwerk bei der Landmaschine kann gegen zwei nicht hochziehbare Schwimmer ausgewechselt werden. Das Flugzeug ist als Katapultflugzeug mit stationären kleinen Sondereinrichtungen ausgestattet. Der Roc gleicht in seinem konstruktiven Aufbau, dem Skua-Sturzbomber. Flügel zurückklappbar, Rumpf mit tragender Außenhaut und wasserdichten Schotten. Seitenflosse und Ruder sehr weit vor der Höhenflosse liegend. Ueber dem Führersitz Schiebehaube, dahinter drehbarer MG-Turm, Zugang vom Führerraum.

Der hinter dem MG-Turm liegende gewölbte Luftabfluß, in der Abbildung durch die Flügelspitze teilweise verdeckt, kann im Gefecht, um das Schußfeld zu vergrößern, in den Rumpf eingezogen werden.

Spannweite 13,9 m, Länge 10,6 m, Höhe 3,6 m. Herstellerwerk für Serie Boulton-Paul.



Engl. Marine-Zweisitzer Blackburn „Roc“. Archiv Flugsport

USA Allison 24 Zyl. 2600 PS.

Die Allison Engineering Co., Indianapolis, Ind./USA, hat ein Motorenaggregat aus zwei nebeneinander gelagerten, auf einer Schraubenwelle arbeitenden Allison-Motoren herausge-

---

THE SAN

Sun 9-28-39

AIRCRAFT COMPANIES FEAR SABOTAGE

War in Europe has resulted in increased vigilance against sabotage possibilities in Consolidated, Ryan, Solar and other Southern California aircraft plants, it was reported here today.

Employes' fingerprints are checked by the Federal Bureau of Investigation, and movements of workers are restricted to their own departments. In many plants, former police executives and detectives are in charge of the "security units" guarding against sabotage and espionage.

Pac. Coast Ed. Wall St. Journal

Army Plane Contracts

Sept 25-39.

WASHINGTON—The War Department has announced contracts totaling $58,585,061 based on previously announced tentative awards.

Awards included: Glenn L. Martin Co., $16,125,586 for bombardment planes; North American Aviation, Inc., $13,049,601 for bombardment, advance training and basic training planes; Aviation Mannfacturing Corp., Stinson division, $1,853,451 for observation planes; Boeing Airplane Co., Stearman division, $2,843,400 for primary training planes; Bellanca Aircraft Corp., $181,693 for observation planes; Ryan Aeronautical Co., $132,000 for observation planes; Aviation Manufacturing Corp., Vultee Aircraft division, $3,029,036 for basic training planes; Consolidated Aircraft Corp., $8,613,674 for bombardment planes; Boeing Aircraft Co., $8,102,892 for bombardment planes; Lockheed Aircraft Corp., $4,653,703 for pursuit planes.

Consolidated

Romeike & Curtice Ltd.

Telephone CENTRAL 2781 (2 Lines)

35 Shoe Lane LONDON E C 4

EXTRACT FROM Western Mng News

Date 23 NOV 1940

3

NEW 'PLANES FROM U.S.

'Buffalo' May Be In News Soon

'BOSTON' BOMBER FOR R.A.F.

Hudsons Have A Fine Record

By J. M. Spaight, C.B., C.B.E.,

Principal Assistant Secretary of the British Air Ministry (1934-1937).

IT is welcome news for the British public that two further types of American aircraft, both excellent of their kind, are now being delivered in quantity to the Royal Air Force.

One is the Brewster fleet fighter, a single-seater machine of the dumpy appearance, which was developed in the United States for naval service. It is a small machine with a Wright Cyclone engine, and resembles in some respects the Spitfire, but whether it will have a performance equal to the

A Medical Maternity Home; C. of E.—Apply, stating experience, to Lady Superintendent St Olave's Home, Exeter.

WEST of England Nurses' Co-operation, Mannamead — Certificated NURSES for all cases.—Miss Pleasance. Telegrams and Telephone 3977 Plymouth.

WOODSIDE HOME.—Qualified NURSES for all cases. Telephone: Ply. 4342. Telegrams: "Woodside, Plymouth."

SUPERFLUOUS HAIRS, Moles, Veins, &c., permanently removed by Electrolysis.—Mrs. Hustin, Specialist (from Bond-st., London), 9, E Southernhay, Exeter. 'Phone 2571.

TO Hospitals and Others.—Nurse, retiring, offers ELECTRICAL INSTALLATION, including cabinet Radiant Heat Bath 50 lights.—Write D 8, Morning News, Plymouth.

SCHOLASTIC.

WEST BANK SCHOOL, BIDEFORD.—Wanted, immediately, for Supply, during illness, Graduate MISTRESS, to teach mathematics to School Certificate.—Apply Principal.

TUITION.

PIANOFORTE LESSSONS, Mrs. Colma Finch, L.R.A.M., A.R.C.M., Gold Medallist. Pupil of Solomon. Fifteen years' experience teaching adults and children. Preparation for Diploma and Associated Board Examinations.—Write "Clyston," Broad Clyst.

SITUATIONS VACANT.

APPLICANTS are warned against the risk of enclosing Original Testimonials when addressing a reply to a box number.

FEMALE RECEPTIONIST for Garage and Repair Shop, able to receive customers instructions. Previous garage experience essential.—Write full details, age, and experience to Z 45 Morning News, Plymouth.

WANTED. Working RECEPTIONIST, professional house, Plymouth; full particulars, wages required. — Write E 39 Morning News, Plymouth.

BOOK-KEEPER TYPIST.—Write, stating experience, references, and wage required, Secretary, Basket Factory, Calstock, Cornwall.

SHORTHAND-TYPIST (lady), age 17-20, required, for insurance office, Plymouth. School certificate or matriculation standard preferred.—Write, stating experience, F 17, Western Morning News, Plymouth.

FEMALE SHORTHAND-TYPIST required for Insurance Office at Truro; permanent position. State age.—Write E 27, Morning News, Plymouth.

REQUIRED, immediately, Junior SHORTHAND-TYPIST, knowledge book-keeping advantage. Position permanent.—Write E 29, Morning News, Plymouth.

REQUIRED Young Lady SHORTHAND-TYPISTS.—Apply Material Controller, Mumfords, Billacombe.

WANTED, smart GIRLS, for butchery department.—Apply Butchery Office, Plymouth Co-operative Society, Frankfort-street, Monday next November 25th, after 6 p.m.

WANTED, a PERSON capable of taking charge at a country shop and able to do sub-post office work.—Write F 13, Morning News, Plymouth.

EXPERIENCED SALES LADY for Electrical and Lampshade Departments.—Mark Rowe, Ltd., High-street, Exeter.

GOWNS.—Experienced SALES LADIES

GENERAL NEWS
Local, State, National

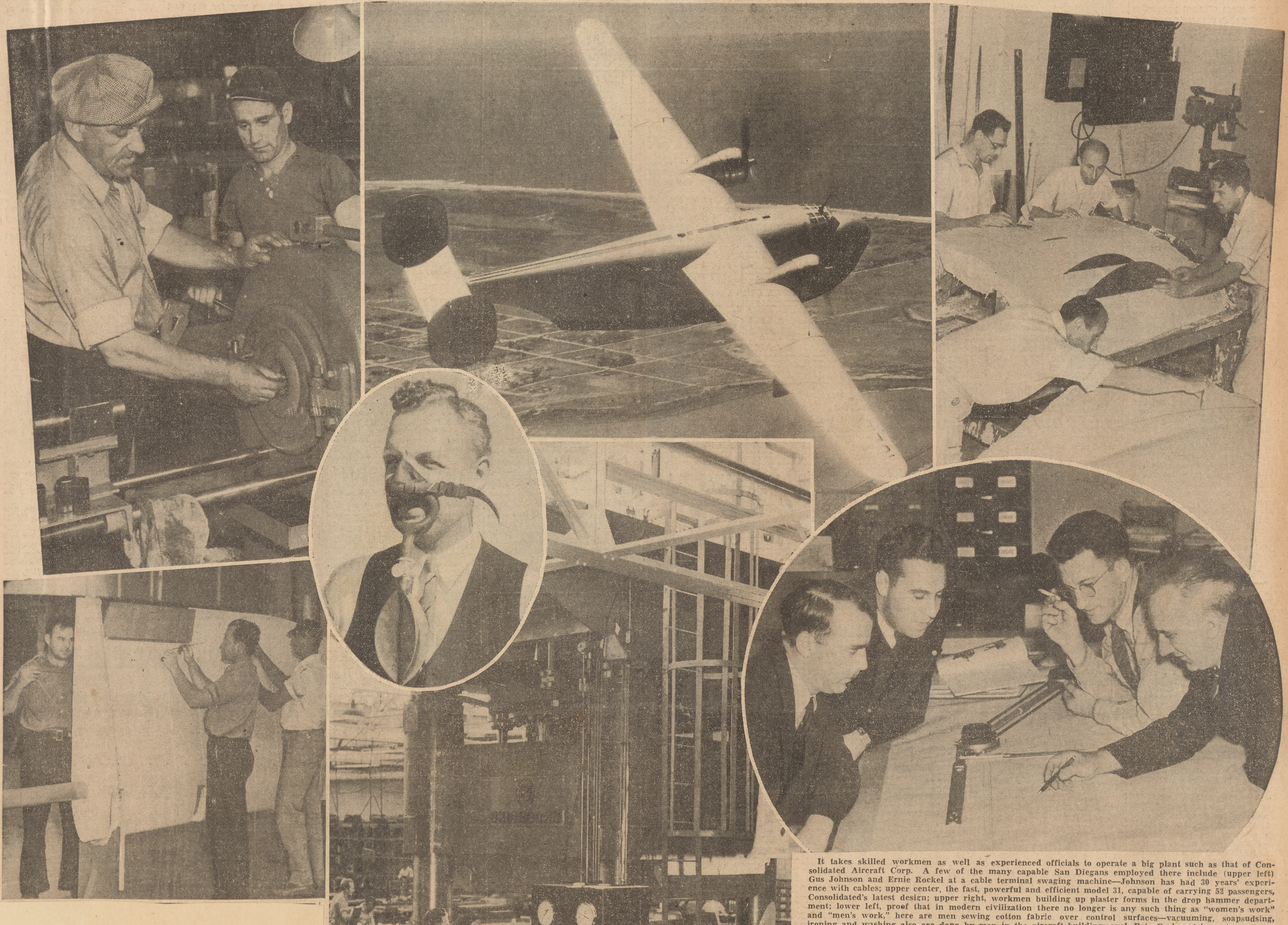
The San Diego Union

GENERAL NEWS
Fraternal Organizations

SAN DIEGO, CALIFORNIA, SUNDAY MORNING, SEPT. 24, 1939

SECTION B

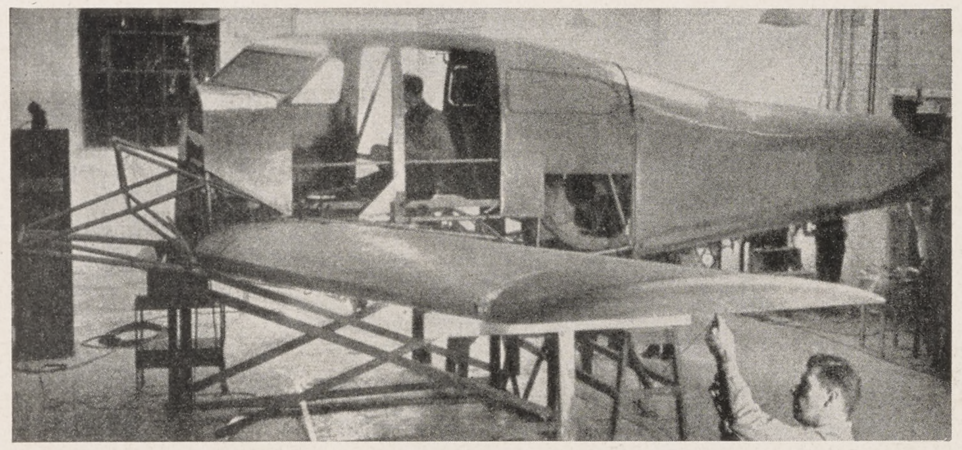
SKILLED WORKMEN IN WIDE VARIETY OF CRAFTS ARE BEING KEPT BUSY AT SAN DIEGO'S LARGEST MANUFACTURING PLANT



It takes skilled workmen as well as experienced officials to operate a big plant such as that of Consolidated Aircraft Corp. A few of the many capable San Diegans employed there include (upper left) Gus Johnson and Ernie Rockel at a cable terminal swaging machine—Johnson has had 30 years' experience with cables; upper center, the fast, powerful and efficient model 31, capable of carrying 52 passengers, Consolidated's latest design; upper right, workmen building up plaster forms in the drop hammer department; lower left, proof that in modern civilization there no longer is any such thing as "women's work" and "men's work," here are men sewing cotton fabric over control surfaces—vacuuming, soapsudsing, ironing and washing also are done by men in the aircraft building; oval, Pete Carlson tries out new oxygen breathing equipment, perfected by Mayo physicians; center, the powerful hydraulic press, capable of exerting pressure equal to weight of three U. S. destroyers; lower right, tooling for production of new model presents engineering problems for (left to right) Charles Taylor, tool room head; Earl West, wood shop; J. A. Van Doren, tool design, and Phil Koenig, tool supervisor.

* * *

Accompanying Story on next page →



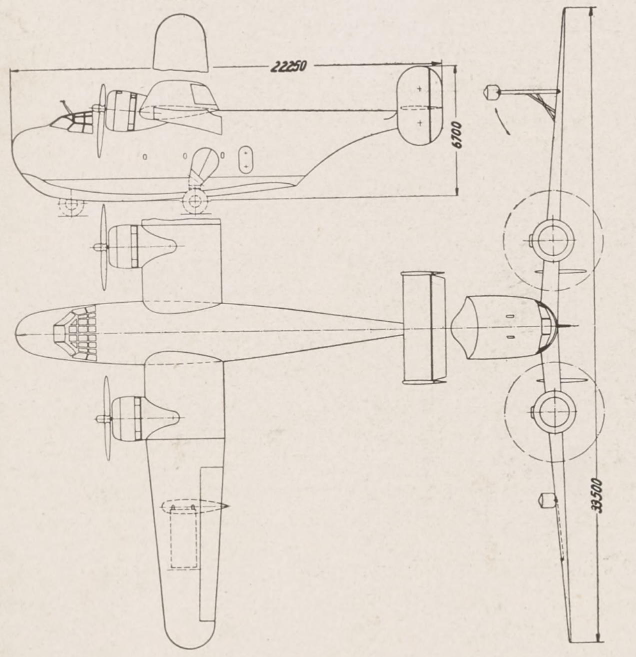
USA. Vega - 2. Bild: Aviation

USA Consolidated-Zweimotor-Flugboot, Modell 31.

Der neue Typ, Modell 31, der Consolidated Corp., San Diego, von der Firma selbständig entwickelt in der Hoffnung, daß es später von der Marine angenommen wird, ist ein Zweimotor-Schulterdecker. Flügel von verhältnismäßig geringer Tiefe und geringer Profilhöhe, größte Wölbung im ersten Drittel, entworfen von Davis. Zwischen Querrudern und Rumpf hydraulisch betätigte Fowler-Klappen. Glattblechflügelhaut, Querruder und Klappen leinwandbedeckt. Betriebsstoffbehälter im Mittelstück, seitliche Stützschwimmer an die Unterseite der Ansatzflügel hochziehbar. Motorachse des Motorenvorbaus geht durch den Flügel. Verkleidung infolge Einbeziehung von Oelkühler, Vergasereinlaß, etwas elliptisch.

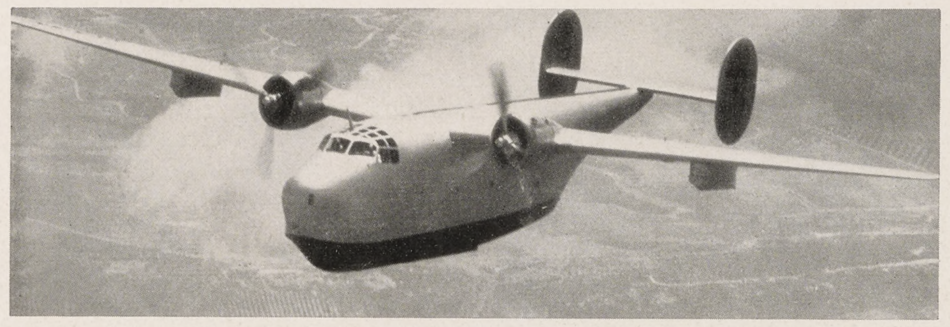
Zwei 18 Zyl. Wright-Doppelstern-Duplex-Cyclone-Motore von je 2000 PS Startleistung. Zwei Dreiblatt-Hamilton-Hydromatic-Luftschrauben von 4,87 m Durchmesser. Boot, zwei Decks. Oben Raum für 2 Führer, 1 Ingenieur, 1 Funker und Navigator. Unterdeck acht Abteile, normal für 28 Fluggäste für Ozeanverkehr, max. 52 Fluggäste für kürzere Strecken. Bootunterseite stark gekielt, einstufig hinter der Stufe in eine senkrechte Schneide auslaufend. (Do X-Erfahrung.)

Leitwerk, Metallbau, leinwandbedeckt. Fahrwerk hydraulisch hochziehbar, vordere Bugräder doppelt, hintere beiden Räder seitlich in den Rumpf einziehbar. Im hochgezogenen Zustand sind die Räder durch Türen verdeckt.



USA. Consolidated Flugboot Modell 31.

Zeichnung Flugsport



USA. Consolidated Zweimotor-Flugboot Typ 31. Werkbild

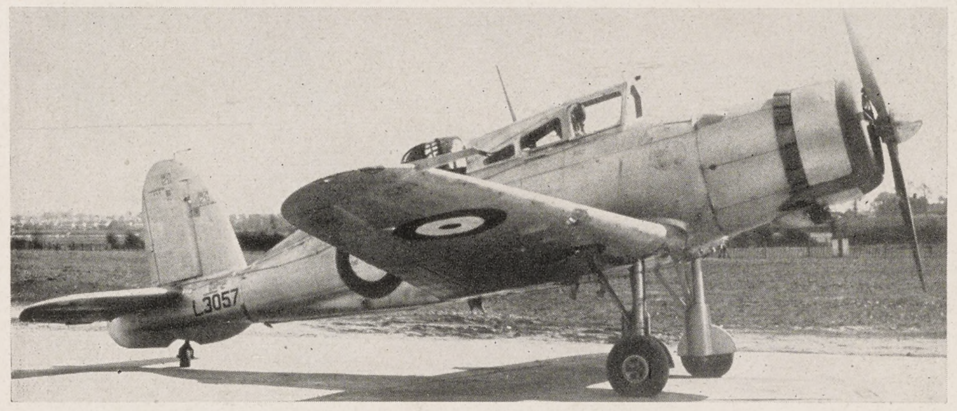
Spannweite 33,52 m, Länge 22,3 m, Höhe 6,70 m, max. Flügeltiefe 4,26 m, Fluggewicht 22 660 kg, Flächenbelast. 225 kg/m^2. Man hofft, eine Geschwindigkeit von 450 km zu erreichen.

Engl. Marine-Zweisitzer Blackburn „Roc".

Die engl. Marine hat einen Zweisitzer, konstruiert von Blackburn, als Schiffsbei-, Land- und Zweischwimmerflugzeug entwickelt. Das seitlich hochklappbare Fahrwerk bei der Landmaschine kann gegen zwei nicht hochziehbare Schwimmer ausgewechselt werden. Das Flugzeug ist als Katapultflugzeug mit stationären kleinen Sondereinrichtungen ausgestattet. Der Roc gleicht in seinem konstruktiven Aufbau, dem Skua-Sturzbomber. Flügel zurückklappbar, Rumpf mit tragender Außenhaut und wasserdichten Schotten. Seitenflosse und Ruder sehr weit vor der Höhenflosse liegend. Ueber dem Führersitz Schiebehaube, dahinter drehbarer MG-Turm, Zugang vom Führerraum.

Der hinter dem MG-Turm liegende gewölbte Luftabfluß, in der Abbildung durch die Flügelspitze teilweise verdeckt, kann im Gefecht, um das Schußfeld zu vergrößern, in den Rumpf eingezogen werden.

Spannweite 13,9 m, Länge 10,6 m, Höhe 3,6 m. Herstellerwerk für Serie Boulton-Paul.



Engl. Marine-Zweisitzer Blackburn „Roc". Archiv Flugsport

USA Allison 24 Zyl. 2600 PS.

Die Allison Engineering Co., Indianapolis, Ind./USA, hat ein Motorenaggregat aus zwei nebeneinander gelagerten, auf einer Schraubenwelle arbeitenden Allison-Motoren herausge-

---

THE SAN

Sun 9-28-39

AIRCRAFT COMPANIES FEAR SABOTAGE

War in Europe has resulted in increased vigilance against sabotage possibilities in Consolidated, Ryan, Solar and other Southern California aircraft plants, it was reported here today.

Employes' fingerprints are checked by the Federal Bureau of Investigation, and movements of workers are restricted to their own departments. In many plants, former police executives and detectives are in charge of the "security units" guarding against sabotage and espionage.

Pac. Coast Ed. Wall St. Journal

Army Plane Contracts

Sept 25-39.

WASHINGTON—The War Department has announced contracts totaling $58,585,061 based on previously announced tentative awards.

Awards included: Glenn L. Martin Co., $16,125,586 for bombardment planes; North American Aviation, Inc., $13,049,601 for bombardment, advance training and basic training planes; Aviation Mannfacturing Corp., Stinson division, $1,853,451 for observation planes; Boeing Airplane Co., Stearman division, $2,843,400 for primary training planes; Bellanca Aircraft Corp., $181,693 for observation planes; Ryan Aeronautical Co., $132,000 for observation planes; Aviation Manufacturing Corp., Vultee Aircraft division, $3,029,036 for basic training planes; Consolidated Aircraft Corp., $8,613,674 for bombardment planes; Boeing Aircraft Co., $8,102,892 for bombardment planes; Lockheed Aircraft Corp., $4,653,703 for pursuit planes.

Consolidated

Romeike & Curtice Ltd.

Telephone
CENTRAL 2781
(2 Lines)

35 Shoe Lane
LONDON
E C 4

EXTRACT FROM Western Mng News

Date 23 NOV 1940

3

NEW 'PLANES FROM U.S.

'Buffalo' May Be In News Soon

'BOSTON' BOMBER FOR R.A.F.

Hudsons Have A Fine Record

By J. M. Spaight, C.B., C.B.E.,
Principal Assistant Secretary of the British Air Ministry (1934-1937).

IT is welcome news for the British public that two further types of American aircraft, both excellent of their kind, are now being delivered in quantity to the Royal Air Force.

One is the Brewster fleet fighter, a single-seater machine of the dumpy appearance, which was developed in the United States for naval service. It is a small machine with a Wright Cyclone engine, and resembles in some respects the Spitfire, but whether it will have a performance equal to the latter's amazing one remains to be seen. It has been renamed the "Buffalo," a title with which the world will become familiar, no doubt, before long.

The other aircraft is the Douglas D.B. 7, a medium bomber with two Pratt and Whitney engines. Contracts for large quantities of this Douglas machine had been placed by the French Government before June, and have now been transferred to the British authorities. This machine, too, has been renamed; in the Royal Air Force it will be known as the Douglas "Boston."

STURDY CONSTRUCTION

Hudson With Nose Shot Off Flew Home

Large numbers of other types of aircraft are under order for Great Britain and Canada in the United States. They include a new type of fighter—the Curtiss P.40 (a successor to the Curtiss Hawk, which did fine service in the French Armée de l'Air). It is a single-engined aircraft. The bombers under construction in the United States on British account include some very heavy models, such as the Consolidated B.24 and the Boeing B.17D, both of which have four engines. Consolidated flying boats are also on order. Lockheed Hudsons and Harvard Trainers are still being delivered in big consignments to Britain and Canada

The two last-named types have already rendered invaluable service to the Royal Air Force. The stout, dependable Harvard has been one of the most useful trainers used for the instruction of both Britain's and Canada's great armies of the air. The Lockheed-Hudson has a wonderful record of service since it became one of the standard machines of the Coastal Command. Intended for reconnaissance work, it has had to turn its hand also to fighting and to bombing, and it has acquitted itself valiantly in each role.

FASTER VEGA COMING.

On June 1, 1940, three Hudsons engaged and shot down five German dive-bombers—two Junkers 87's and three Junkers 88's—near Dunkirk. Hudsons have also carried out many bombing attacks against objectives on the coast of German-occupied territories. Their sturdy construction can be judged from the experience of one of them: it had its nose completely shot off by a shell from a German destroyer and all the windows in the pilot's cockpit blown out, yet it succeeded in flying back to its base, two hours' journey away, through rain and wind that rose at time to the intensity of a typhoon. The pilot's verdict was: "Aircraft that can take punishment like that, and still fly, are pretty good, believe me."

The Hudson will yield its place before long to the "Vega," a larger and faster edition of the same machine, now being built for Great Britain by a subsidiary company of the Lockheed Aircraft Corporation. The Vega, one can safely predict, will maintain the high record of its predecessor. It should be one of the finest reconnaissance-bombers in the air. The other American types will also be first-class machines: of that there is evidence in abundance. There will be plenty of them, too.

AMERICA'S CAUSE, TOO.

The aircraft industry is in process of expansion. The largest of the aircraft firms—the Douglas, Martin, Lockheed, Boeing, North American, and Curtiss companies—have almost doubled their staffs in the last year. Another great increase is now taking place. It is safe to say that America's aircraft industry is on the eve of a period of activity which will rival that of her motor-car industry in its most hectic days.

All that America can send to Britain will be welcome, and it will be used for no selfish purpose. Britain's cause in this war is America's cause, too. That truth is being increasingly recognized in the United States. The Battle of Britain and of London is the battle, too, of America and New York. Democracy is on trial, and any help which Lincoln's country can afford to those who are fighting for democracy will be help for America's own defence.

EMPIRE WILL WIN.

If "government of the people, by the people, for the people" is not to perish, Britain must prevail in this titanic struggle. She will prevail the more surely and speedily if the great Republic of the Western Hemisphere lends her the fullest possible assistance, short of warlike intervention, in her conflict with the forces of evil

There is no shadow of doubt that in the end the British Empire will emerge victorious from the present ordeal. The struggle will be a long and bitter one, for aggression holds necessarily many advantages, and a country which has not made a cult and fetish of war needs time to gird on its armour against a country which has. How long the agony is to endure depends on how soon the huge potential forces of the British Commonwealth of Nations can be marshalled in their full array.

The time will be shorter in proportion as those who see that Britain and the Dominions are upholding the cause of every free nation, the world over, translate that recognition into the kind of action which is in such a crisis not unfairly to be expected by a nation which is fighting alone—to save all.

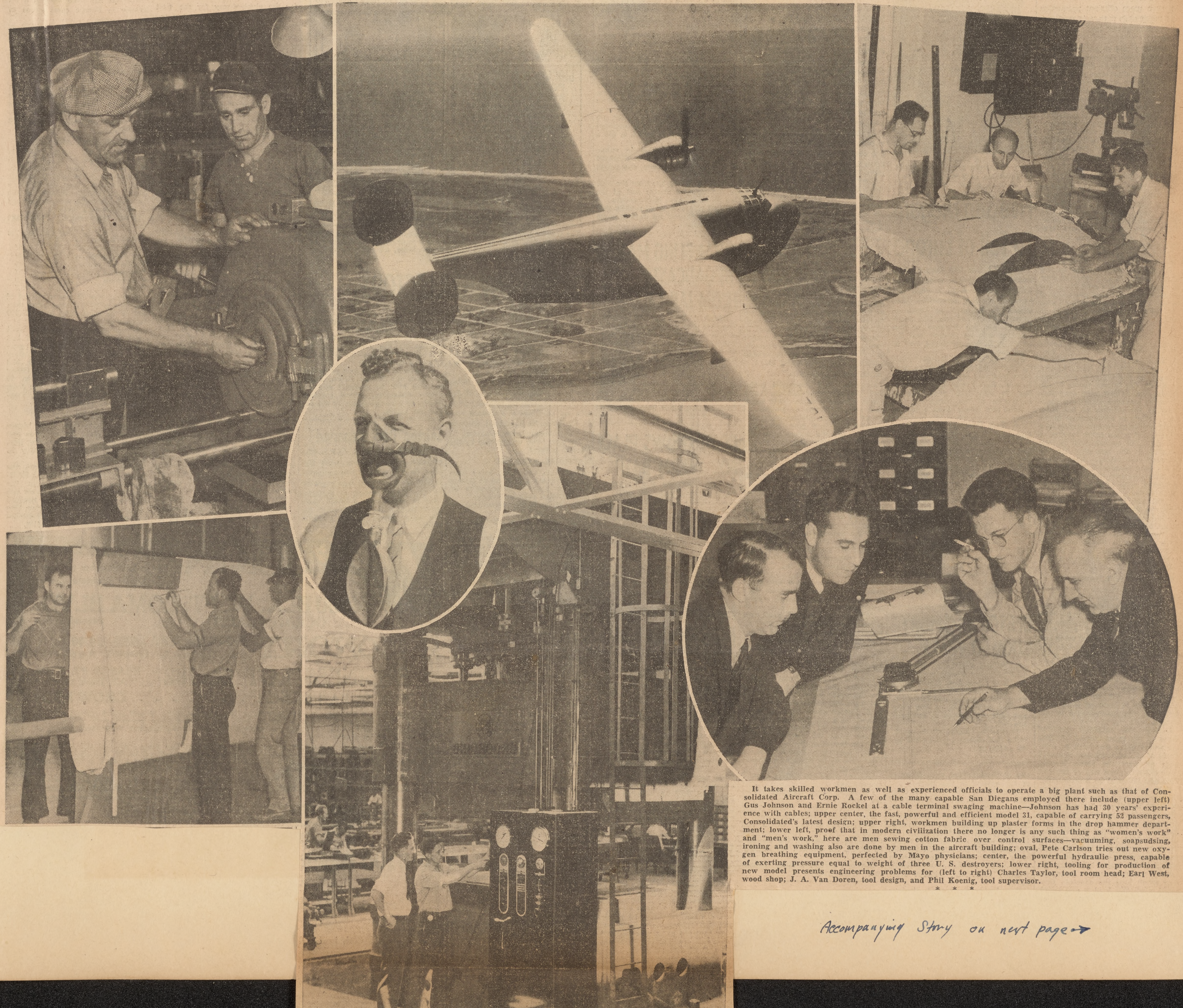
GENERAL NEWS
Local, State, National

The San Diego Union

GENERAL NEWS
Fraternal Organizations

*
SAN DIEGO, CALIFORNIA, SUNDAY MORNING, SEPT. 24, 1939
SECTION B

SKILLED WORKMEN IN WIDE VARIETY OF CRAFTS ARE BEING KEPT BUSY AT SAN DIEGO'S LARGEST MANUFACTURING PLANT



It takes skilled workmen as well as experienced officials to operate a big plant such as that of Consolidated Aircraft Corp. A few of the many capable San Diegans employed there include (upper left) Gus Johnson and Ernie Rockel at a cable terminal swaging machine—Johnson has had 30 years' experience with cables; upper center, the fast, powerful and efficient model 31, capable of carrying 52 passengers, Consolidated's latest design; upper right, workmen building up plaster forms in the drop hammer department; lower left, proof that in modern civilization there no longer is any such thing as "women's work" and "men's work," here are men sewing cotton fabric over control surfaces—vacuuming, soapsudsing, ironing and washing also are done by men in the aircraft building; oval, Pete Carlson tries out new oxygen breathing equipment, perfected by Mayo physicians; center, the powerful hydraulic press, capable of exerting pressure equal to weight of three U. S. destroyers; lower right, tooling for production of new model presents engineering problems for (left to right) Charles Taylor, tool room head; Earl West, wood shop; J. A. Van Doren, tool design, and Phil Koenig, tool supervisor.

* * *

Accompanying Story on next page →

Local Aircraft Factory Makes Aviation History In Four Years of Operation on Waterfront

By N. V. DAVIDSON

Just four years ago this month, San Diego's largest single family of workers, the employes of Consolidated Aircraft Corp., began to "turn to" on what was destined to become, through subsequent contracts, the largest order for twin-engined flying boats ever placed by the U. S. government. During this time, virtually as fast as the plant and personnel could turn out these cruisers of the air, navy pilots and crews, manning them proceeded to build up a remarkable series of massed flight records which have received acclaim throughout the world as an outstanding achievement.

Some 209 of these twin-engined Consolidated Model 28s (designated by the navy as PBYs), have poured forth from the productive efforts of the artisans and engineers working together under the roof of San Diego's largest manufacturing plant. In addition, during the four short years, the remainder of the army contract for 50 "two-seater" pursuit airplanes, the PB2As, was completed and delivered.

Others built included a group of twin-engined P2Y-3As for the Argentine government; a model 82-5 for the British air manistry, which became the first military airplane ever to be flight-delivered across the Atlantic; another model 28, which was purchased by the Russian government and flown over 19,000 miles of Arctic wastes in search of the lost transpolar fliers; Mr. Archbold's famous Guba, and a special survey plane for transatlantic work for the American Export Airlines.

EXPERIMENTAL SHIPS BUILT

As though this were not enough, from behind the carefully guarded doors of the experimental building emerged two large experimental projects. These were the huge four-engined "flying battleship," the XPB2Y-1, upon which was expended in engineering, building and testing nearly $1,000,000, and the recent highly advanced twin-engined flying boat, the Model 31. This latest creation of the local plant set a precedent in large aircraft work in that it was designed, engineered, built, tested and flown in just under 10 months, exemplifying a remarkable coordination of skill and talent.

This program of aircraft building during the past four years at the local plant has given Consolidated a unique distinction among large aircraft builders. Taking as an arbitrary measure of "bigness" any airplane of a wing span of 100 feet or more, and including the airplane equivalent of spread furnished, Consolidated has constructed more than three times as many such airplanes as all other manufacturers combined. This includes those built during the World war period.

Consolidated came into existence after the war, in 1923, and figuring from that time, has constructed approximately four times as many as all other U. S. manufacturers combined. Since a good share of these have been the navy's PBYs, much of the credit is due the plant's force within the four years since Consolidated started here.

EMPLOYMENT INCREASED

Because the greater portion of this production of aircraft has been of a military nature, it has been accomplished behind closed doors, and the company's continual activity has not been realized by those outside. At no time in the four years has the personnel dropped below 1120 persons. Last March this figure was reached when it was difficult to obtain materials because of huge quantities being ordered by the whole industry. During the intervening months a steady increase has swelled the figure to about 1900. Former employes, of course, are given the first opportunity of employment as the total is increased. Based upon the present backlog of work, which is well over $17,000,000, the personnel will probably level off at around 2000 persons.

Taking advantage of a brief breathing spell just prior to the receipt of the latest contracts, a considerable program of rearrangement and placing of new equipment

(Continued on Page 2, Col. 1)

Local Aircraft Plant Makes Aviation History

(Continued From Page 1)

for even more efficient production was undertaken with an expenditure of approximately half a million dollars.

One new and spectacular piece of production equipment is the huge new hydraulic press capable of exerting a pressure of 9,000,000 pounds upon its platens, or the equivalent weight of three U. S. navy destroyers placed one on top of another. Full [illegible] equipped with the latest in cont[illegible], the powerful press employs a [illegible] slab of specially compoun[illegible] ubber in its upper platen. [illegible] ber is 10¼ inches thick, a[illegible] inates the necessity for emp[illegible] ing female dies.

HUGE MACHINES INSTALLED

Such large machinery requires considerable planning in advance of its installation. The hydraulic press was shipped disassembled from its eastern factory. To assemble it necessitated removing a large section of the plant roof and rebuilding a higher portion above it. Special steel re-enforced concrete sub-foundations were required.

Foundation work for the battery of new pneumatically operated drop hammers required a neat bit of engineering. The tremendous impact caused by the dropping of the bulky lead dies, thousands of pounds in weight, ordinarily would create local earthquakes of no mean proportions. The hammers, however, are cleverly mounted on massive inertia blocks resting on coil springs, supported by steel piles driven 60 feet into the ground. The inertia blocks, springs and pile supports, completely absorb the impact forces of the falling dies, so that none are transmitted to precision machinery operating in the vicinity of the hammers. Such an arrangement is literally confining an earthquake in a teacup, and is the exact reverse of the problem encountered in the building of the mounting for the Palomar observatory. The astronomers were concerned with keeping vibrations outside the Consolidated engineers, with keeping the vibrations inside.

Until the facts are brought to light, the amount of experience being brought to bear upon the fabrication of these airplanes is difficult to visualize. In those men who have been with Consolidated for five years or longer, a total of 2500 years of aircraft experience is represented.

TESTS ARE SPECTACULAR

The building of such a huge project as the four engined XPB2Y-1 is an excellent example of how this tremendous amount of experience is called into play to produce the remarkable results. A full sized mock-up first was built of wood and substitute materials to enable the engineers to work out difficult problems of arrangements, controls, etc., and to enable certain specifications to be met. Paralleling this, the test engineers carried out what amounted to the actual building and testing of each part designed before it was incorporated in the design.

Behind the carefully guarded doors of the experimental building the actual plane was built by hundreds of skilled workmen recruited from all over the plant, lending their efforts in one way or another. This was followed by a spectacular test in proofloading the huge wing. Ordinarily a semi-span, or half wing is tested, but due to the size of the structure that would have been necessary to erect, in order to keep the half wing from tipping over under its load, the whole wing was tested by supporting it in the middle. Because of the tremendous test weight which would bear upon the floor, it was necessary to determine how much load the concrete floor could stand. The load, it was found, had to be distributed over an area of 140 square feet of floor area through 1½-inch thick boiler plate. This was done to keep the supporting structure from sinking into the concrete floor.

SANDBAGS COST $5000

The actual loading was accomplished with 5, 10, and 20-pound sandbags specially made. Thousands of these were necessary, and their cost alone amounted to $5000. They were made locally under contract. The sand to fill these bags came from Oceanside. It had first to be carefully washed and dried to remove the salt. Had it not been washed, the salt would have absorbed moisture on a damp day, the sand would have gained weight, and the accuracy of the tests would have been destroyed.

For loading and unloading the sandbags for the various tests, timber platforms were erected alongside the huge wing. Enough lumber was used in these to build four medium-sized houses. The ¾-inch planking used over the wing to protect it during the loading and unloading would have built a two-car garage for each of the four houses!

There seems to be little limit to the tasks undertaken by the skilled artisans employed in the building of these airplanes, and the most difficult problem generally finds one or more persons fully qualified to lend expert knowledge or aid in its solution. Should you require an old-time blacksmith who knows the art of welding by hand forging, you'll find one in the welding department, assisting in the most modern methods of welding. If it's a deep sea diver you want, one qualified for 300-foot depths is to be found in the final assemply beaching gear crew, or if it's a cable or wire maker you can soon locate one at Consolidated with 30 years of background in this line!

Attesting to the skill of these men engaged in producing some of the world's finest aircraft, is the performance of the craft themselves. The first airplane built for Richard Archbold and fitted especially for tropical work, was on short notice purchased by the Russian government and flown for 19,000 miles in polar regions, under adverse Arctic weather conditions, without difficulty.

Mr. Archbold's second airplane was flown in three hops from San Diego to Dutch New Guinea, spent a year operating under severe tropical conditions and then completed the circumnavigatioin of the globe, establishing several records as it did so, and arrived once more in San Diego in excellent condition. Only minor overhaul and checkup was necessary, though the plane had covered approximately 25,000 miles on its return trip from New Guinea alone.

A third plane of this type was flown from San Diego to Felixstowe, England. This was the first flight delivery of a military airplane across the Atlantic. Because the airplane arrived in such a clean and tidy condition after its long flight, one British correspondent remarked that perhaps the clever crew wiped the spots off before the photographers arrived!

P. I.

Post Intelligencer—Seattle about 10 days ago

Scrap Book

SEP 6 - 1939

TELEPHONE MAIN 2000

ON BIG NAVY PLANE

L

L – W

Carp

9/12/39

RHJ – J

9/6/39

OFF FOR FAR NORTH—Rear Admiral A. B. Cook (left) looking out of the door of his flying flagship before leaving for Seattle. With him is Commander Andrew Crinkley, "skipper" of the huge flying boat, which is navy's biggest.

Flying Flagship Hops to Alaska

Flying the two-starred flag of Rear Admiral Arthur B. Cook, commander of the aircraft scouting force, the world's greatest naval airplane took off from San Point yesterday for an extended inspection trip in Alaska.

Admiral Cook is taking Congressman James Schrugham, chairman of the naval subcommittee of the house committee on appropriations, to Alaska to visit the naval air bases under construction in the Northern territory.

The party, numbering sixteen in all, will go direct to Sitka, and thence to various Alaska and Bering Sea points. Admiral Cook's floating flagship, the cruiser Memphis, will meet him somewhere in Alaskan waters and take him on to Honolulu next month, while the plane will proceed back to San Diego without stopping in Seattle.

The flying flagship, the first the navy ever owned, is an experimental plane developed last year by the Consolidated Aircraft Corporation. Weighing 55,000 pounds when fully loaded, she has a wing span of 115 feet and a fuselage 77 feet in length. She carries 3,500 gallons of gasoline, which gives her a cruising radius of 4,000 miles.

Powered with four 1,050 horsepower Pratt and Whitney engines, the huge plane is capable of a speed in excess of 200 miles per hour.

She is smaller than the Boeing Clippers but larger than the flying boats built in Great Britain for trans-Atlantic service.

In addition to Admiral Cook and Congressman Schrugham, the passengers aboard included Commander Ralph Davison, chief of staff; Commander Seth Warner, Lieut. Commander H. H. Goodwin, Lieut. R. S. Purvis, flag lieutenant, and Ensign T. M. Wohl of Issaquah, a reserve pilot who is being taken along because of his knowledge of Alaska flying conditions.

Commander Andrew Crinkley is in command of the plane. His crew comprises Lieut. (junior grade) T. E. Gillespie, Ensign J. A. Ferguson, C. K. Herman, chief radio man; L. A. Flynn and J. A. Peters, aviation chief machinist's mates; R. L. Caron, radio man first class; C. R. Roof, aviation machinist's mate first class, and A. H. Geck, aviation machinist's mate second class.

Pac. Coast Edition Wall St. Journal

Sept 19-39

NO DECLINE IN PLANE OUTTURN

High-Speed Operations Bring Forth Plant Expansion Plans at L. A.

LOS ANGELES—Survey of the activities of airplane manufacturing companies shows a continuance of operations with plants working on commercial and military jobs. Several plants are planning expansion of existing manufacturing facilities. Most important of the plans for expansion is that of North American Aviation, Inc., which has already made provision for a 50% increase of facilities. Plans were confirmed here officially today.

It is learned that North American Aviation will start immediately to build the plant facilities. An increase in capacity of 50% should bring its usable floor space at the Inglewood plant to around 700,000 square feet.

It is estimated that the contemplated expansion of the plant will entail an outlay of upwards of $500,000 and may reach close to $1,000,000. In addition to a large unit for production and assembling of planes, North American will build two smaller buildings to house a die foundry and drop hammer shop. The expansion, it is explained by North American officials, is necessitated by the recent orders from the United States Army Air Corps and is in line with War Department plans for general expansion of United States facilities for plane production.

The Vultee division of Aviation Manufacturing Corp. confirms reports that a major plant expansion is planned and already authorized. According to company officials the expansion is being made to enable handling of existing contracts and to conform with the national policy of increasing plant facilities of the country.

Consolidated Aircraft Corp. officials at San Diego will make no comment on present expansion plans other than to admit extension of facilities is being seriously considered and may take shape shortly.

The newly organized Northrop Aircraft, Inc., yesterday through its president, John K. Northrop, announced that the contract for the construction of its $500,000 plant at Hawthorne, a suburb of Los Angeles, was awarded to E. S. McKittrick Co., Inc.

Construction of the plant will be started immediately and orders are to be placed shortly for machinery and equipment. According to company officials, the plant should get into plane production some time near mid-December.

The new plant will contain 115,550 square feet of floor space, and initial plans call for capacity for production of one plane daily. Arrangements have been made in the design of the plant whereby output can be expanded to meet production schedule of four planes daily.

Navy Plane Orders

NEW YORK—Completion of awards for purchase of Army aircraft under the current expansion program has now focused attention on possibility for additional Navy contracts being announced within the near future.

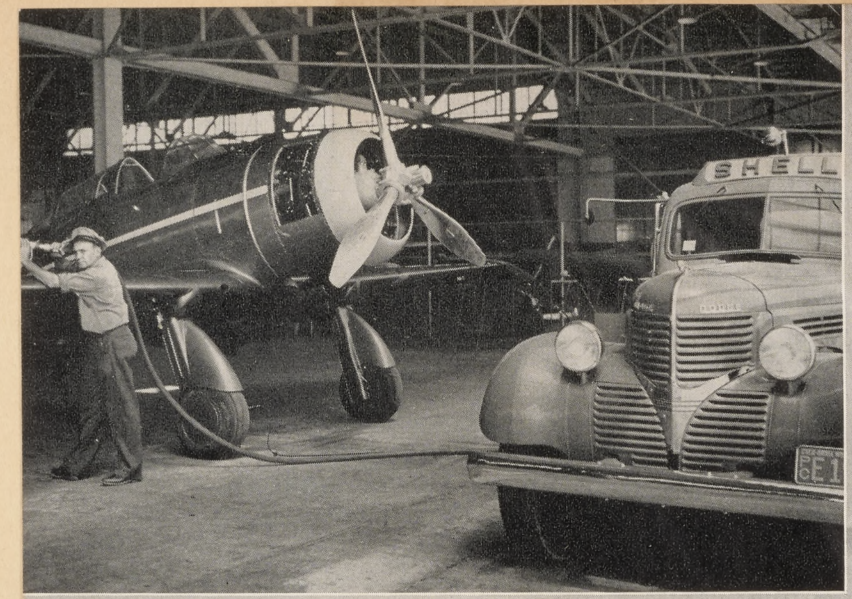
The Naval Bureau of Aeronautics has approximately $37,500,000 of unexpended funds remaining out of the 1940 appropriation for the purchase of aircraft. It is believed likely that a substantial portion of this amount may be used to obtain additional long-range bombers.

Most of the Navy's patrol bombers now in service were made by Consolidated Aircraft Corp., that company having earlier this year completed the last of more than 200 such planes. Glenn L. Martin Co. is now in production on a Navy order for a new type of patrol bomber. Boeing Airplane Co. and the Vought-Sikorsky division of United Aircraft Corp. are equipped for building large flying boats, but heretofore have not been major factors in supplying the Navy with patrol bombers.

As between the two primary sources, it appears that Consolidated is the more likely to obtain important new business at this time, particularly from the standpoint of unused capacity. The company's current backlog in the neighborhood of $17,000,000 is considerably less than its potential annual productive capacity. At the same time, the Martin company has unfilled orders in excess of $50,000,000.

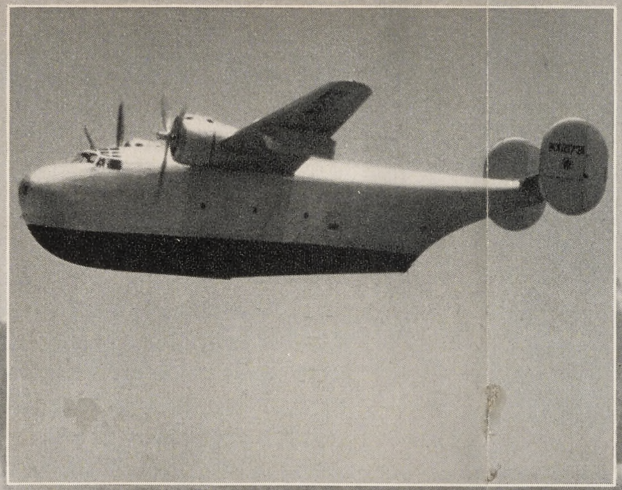
Another source of demand for aircraft is the domestic airlines, which are now shaping their plans for equipment to handle an expected increase in traffic during 1940.

WASHINGTON—(UP)—The Navy Monday awarded a $676,400 contract for airplanes and spare parts to North American Aviation, Inc. It awarded a $558,000 contract to the Standard Oil Co. of New Jersey, for oil and fuel.



(Left) Frank Fuller's fast Seversky job takes on Shell 100 Octane for the Bendix Trophy cross country event. Fuller won with an average speed of 288 m.p.h.

(Right) Consolidated Aircraft Corporation's latest creation — it can carry 52 passengers, has a wing spread of 110 feet; could cross the Atlantic with 28 passengers



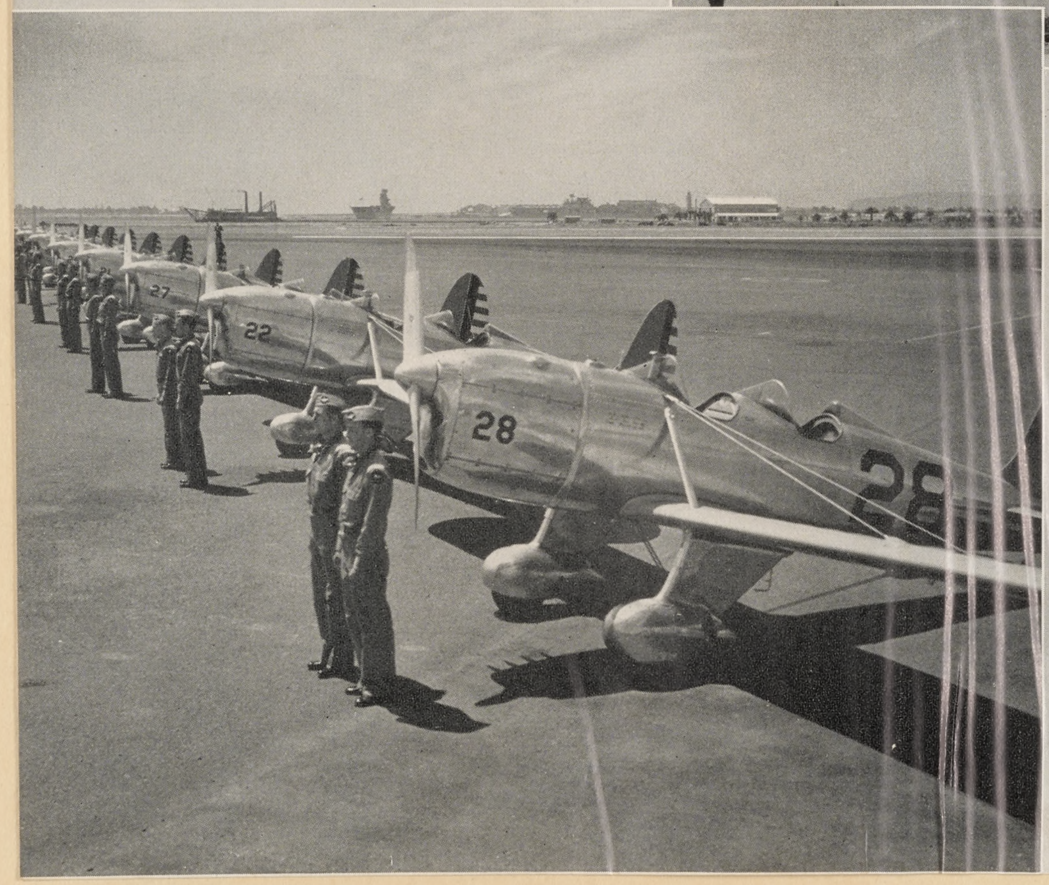
Howard Hughes' big Boeing Stratoliner, which the noted flyer recently purchased in Seattle

Camera Eye-fulls of Shell Fueled Planes

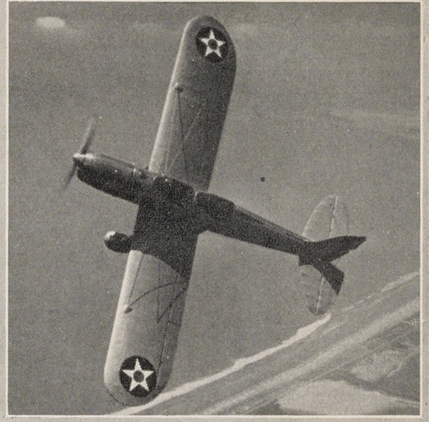
(Right) Grand Central Air Terminal major airport at Glendale, California, and one of Shell's aerial strongholds, seen from beneath the nose of the Shell-using Flagship of the American Airlines

(Below) Low wing monoplanes of the Ryan School of Aeronautics line up for inspection. These ships and cadets are part of the Army's Air Corps Training Detachment. This is said to be the first time this low wing type of monoplane has been used in primary flight training

AMERICAN AIRLINES
FLAGSHIP NEWARK



(Below) A Ryan training plane cuts a few aerial didos. These ships are noted for stability and ease of handling



ON THESE PAGES you see a group of planes which are making, or have made news. Or to go one step farther, will very likely make news.

Take the pictures of the planes being fueled in the lower left hand portion of this spread. One of them is Frank Fuller's speedy Seversky, 1937 Bendix Air Race winner and a repeater again this year. San Francisco's favorite sky-pilot shot his blunt nosed modified pursuit plane across the sky at an average pace of 282 m.p.h. His fuel? Shell 100 Octane — the same as used by all starting planes in the Bendix Trophy; the nation's blue-ribbon cross country air event. Art Bussy and Paul Mantz placed second and third.

But Bendix winners aren't the only winged newsmakers. Down in San Diego, Shell fueled planes of the Ryan School of Aeronautics are being used to teach the Army's fledgling fliers their aerial A.B.Cs. Also using Shell to train Army war birds are Allan Hancock's College of Aeronautics, Santa Maria, California and Major C. C. Mosely's Grand Central Flying School, Glendale, California. It's all part of the United States' great air training program.

Howard Hughes, a headline name known around the world, is again active in his never-ending activity to push back the frontiers of scientific aviation knowledge by actual performance. His new Boeing Stratoliner tuned up its four motors on Shell 100 Octane recently in Portland.

Pictured on these pages you glimpse a soaring plane, graceful as a gull, which may well be a newsmaker of the air in the near future. It's Consolidated Aircraft Corporation's new twin engined flying boat — a big craft that can carry 52 people. As are all Consolidated's planes, it was test flown on Shell Aviation Gasoline.

(Above) Hughes supervises the fueling of the Stratoliner with Shell Aviation Gasoline

(Below) The Northwest Airlines tank truck helps Shell with the big refueling job (1000 gallons of Shell Aviation Gasoline)

SHELL
NORTHWEST A

"Shell Progress" Sept 1939

AMTORG MAG.

CONSOLIDATED AIRCRAFT

CONSOLIDATED

Возможность быстрого производства и своевременной доставки самолетов обуславливается следующими тремя преимуществами фирмы Consolidated: 1 — совершенно новый, специально спроектированный и по последнему слову техники оборудованный завод, 2 — расположение завода у моря и 3 — мягкий климат, допускающий непрерывное производство по намеченным планам.

Фирма доставляет самолеты, отличающиеся продолжительностью полета (редкие посадки), большей грузопод'емностью и быстроходностью. Эти самолеты надежны во всех отношениях.

Фирма основана в 1925 г.

CONSOLIDATED Aircraft CORP.

SAN DIEGO • CALIFORNIA — ESTABLISHED 1925

OCT 2 1939

"Guba" Records

AVIATION OCT '39

A recapitulation of the around-the-world flight of the Consolidated "Guba" flown by Richard Archbold, shows that the following records were established:

1. The first airplane to fly around the world at its greatest diameter.
2. The longest over-ocean non-stop flight by a flying boat, Dakar to St. Thomas, Virgin Islands, 3300 miles.
3. The first flying boat to fly around the world.
4. The first airplane to cross the Indian Ocean from Australia to Africa.
5. The first flying boat to fly across Africa.
6. The first flying boat to fly across Australia.

During the time Archbold operated the Guba in New Guinea, more than 500 hours were flown under extremely primitive operating and service conditions, transporting hundreds of thousands of pounds of supplies and hundreds of people to various points in the interior.

U. S. EXPANDS DEFENSE PLANS AT S. D. BASES

Sun 10-3-39

Construction And Training Programs Provide Activities

Willis Werner's new series, "San Diego Key To Pacific Defense," starts tomorrow in The Sun.

By HAROLD KEEN
Navy Editor

San Diego business today took an optimistic view of the future standing of this community as a base for Naval and Military operations, despite the impending transfer of some 25 warships, with their crews o approximately 6000 officer and enlisted men to Hawaii.

The following development tended to dispel any gloom tha might have threatened to settl locally:

1. Consolidated Aircraft Corp backlog of more than $16,000,0 in contracts for U. S. Army ar Navy planes, on which productic will not reach a peak for sever months. Being added to the pa roll are as many as 100 me weekly, with about 2000 employe at present.

2. Increase in the enliste strength of the Navy from 110,0 to 145,000 has been reflected i sharply raised quotas of recrui at the Naval Training Statio where, for the month of Octob 810 young men will be in trair ing, as compared with 516 for th same period last year.

3. Accelerated activity at th Destroyer Base, where 22 Wor War-built destroyers, recommi sioned last week, are being ou

Turn to Page 2, Col. 1.

U. S. EXPANDS S. D. DEFENSE PLANS

Sun 10-3-39

(Continued from Page 1)

fitted and readied for security patrol.

4. Ryan Aeronautical Co.'s $1,000,000 list of unfilled orders, and Solar Aircraft Co.'s $500,000 backlog, largest in the history of these concerns, which are being fulfilled with unprecedented numbers of employes.

5. Acquisition by Consolidated from the city of 17 acres of tidelands, in anticipation of possible future expansion, and portending receipt of a large contract for construction of military planes.

NEW TRAINING SCHOOL

6. A new $174,000 annual payroll brought to San Diego by the Army Air Corps primary training program inaugurated July 1 at the Ryan School of Aeronautics.

7. Large subsidies by the Civil Aeronautics Authority for ground school training of college students at San Diego State College and flight instruction at Speer Flying Service.

8. Definitely scheduled continuation of the harbor dredging program, the first phase of which, under a $420,000 contract, will be completed about the end of this year. Congress has authorized a $500,000 appropriation for further deepening of warship anchorage areas as part of the $4,184,000 program conceived by the War Department to improve the bay as a naval base.

CARRIER EXPECTED

9. Expected basing in San Diego of the new aircraft carrier Wasp, nearing completion on the east coast. This vessel and its squadrons of combat planes would replace the Enterprise, should the latter, assigned to security patrol in the vicinity of the Hawaiian Islands, remain at the mid-Pacific base indefinitely.

10. Projected expansion of Supply Depot facilities here, including enlargement of the Navy Pier and construction of a six-story warehouse, as urgently requested of Washingtoh officials by 11th Naval District authorities.

AIRCRAFT MEN MEET IN L. A.

Los Angeles Herald and Express

10-5-39

Latest Designs Shown at Session Of Engineers

Delegates representing firms with unfilled orders for more than 275 million dollars worth of aircraft, participated today in the opening of the fourth annual national aircraft production meeting of the Society of Automotive Engineers at the Biltmore Hotel.

The convention is being held by the society in co-operation of its four Pacific Coast sections, namely Southern California, Northern California, Oregon and Northwest, and also the Aeronautical Chamber of Commerce of America and the Air Transport Association of America.

With Mac Short, president of the Vega Airplane Co., as general chairman, sessions will be held tomorrow and Saturday, with time out that afternoon to enable the delegates to see the University of Southern California-Washington State football game at the Los Angeles Memorial Coliseum. The convention will close Saturday night with a banquet at which E. W. Templin will preside and W. J. Davidson, president of the society, will speak.

Highlight of the convention will be an address Louis Johnson, assistant secretary of war, will deliver at the Friday night session when Robert E. Gross will be chairman.

The convention attracted a large gathering of airplane enthusiasts who viewed the extensive exhibits of the most modern designs, models, motors and aircraft materials that are on display. Officers said the exhibit is the most comprehensive and largest ever presented in the west and shows the remarkable strides made in the industry.

Three sessions are scheduled for today. The first was opened this morning with A. L. Klein as chairman. First speaker was Arvid Nelson of Hamilton Standard Propellors, who spoke on "Propellor Production." His talk was accompanied by motion pictures.

Henry H. Kerr and F. C. Frank of the Bendix Products Division, Bendix Aviation Corp., spoke on phases of airplane brake installation and control considerations. Harold W. Adams, Douglas Aircraft Co., discussed design and shop problems in high pressure hydraulic systems.

Another session will be held this afternoon with Courtney Hertel, Douglas Aircraft Co.; H. F. Schwedes, North American Aviation, and P. N. Jansen, Curtiss Aeroplane Division, Curtiss-Wright Corp., as speakers.

At tonight's session W. A. Hite, Vultee Aircraft Division, Aviation Manufacturing Co., and B. W. Sheahan, Consolidated Aircraft Corp., will be the speaker.

AVIATION, OCT. '39

West Coast Business

Completion of negotiations for erection of the new $325,000 Northrop Aircraft Co. plant on a 150-acre site at Hawthorne, Calif., have been announced by John K. Northrop, president. Terms of the contract provide for the outright purchase of 72½ acres of land by Northrop Aircraft from the city of Hawthorne for a consideration of $45,000, with the city to provide the remainder of the 150 acres to be established as a landing field. Construction of the 110,000 square foot factory was to start immediately, with completion scheduled within 90 days. Temporary offices have been opened in Hawthorne and a staff of engineers is already at work on preliminary design layouts. Hawthorne, site of the new factory and flying field, is about three miles east of the Los Angeles airport at Inglewood.

Rushing production plans in connection with contracts for the manufacture of four-engine bombers for the U. S. Army Air Corps, Consolidated Aircraft Corp., San Diego, has installed a huge Birsdboro hydraulic press, capable of exerting a force of 9,000,000 pounds.

Activities of Ryan Aeronautical Company, San Diego, have reached new all-time highs with receipt of additional U. S. Army Air Corps awards, and initiating of production in the new Ryan factory. Air Corps orders so far this year have topped $470,000, representing purchases of Ryan low wing monoplane type primary training planes, of which more than $100,000 worth have already been delivered to the Army. Additional parts orders awarded Ryan by Consolidated, Douglas, Lockheed, and other aircraft firms, have brought total business on hand to approximately $750,000.

American Aircraft Co., Long Beach, Calif., has announced completion of its financing program and early production of the 125 h.p. Security sport training plane which was acquired, with all design and manufacturing rights, through purchase of the Security Aircraft Corp. Factory space is being enlarged to provide for orders of $45,000 now on hand.

Aircraft Accessories Corp. has filed a registration statement with the Securities and Exchange Commission covering 100,000 shares of capital stock under option to underwriters at $1.50 per share. Proceeds from the sale of stock will be used to complete manufacturing facilities at the new Glendale plant and to expand the facilities of the Siebenthaler division in Kansas City. Substantial new orders have recently been received from various manufacturers for the hydraulic actuating devices developed by Aircraft Accessories Corp., and for the various specialties developed by the Siebenthaler division. Sale of the additional stock will bring outstanding shares of the company to 200,000 out of an authorized capital of 500,000 shares.

A special meeting of stockholders has been called by Don P. Smith, president of Interstate Aircraft & Engineering Corp., to act on a proposal to change the capital structure of the company from 500,000 shares of $1 par value to 200,000 shares of $5 par value, and reduce the stated capital from $500,000 to $250,000 through an exchange of one new share for ten shares of outstanding stock. The proposed change would clarify many problems of the company, it was said, and would facilitate plans for an expansion program.

ELECTRIC CLUB OF SAN DIEGO

For the Good of the Community Electrically

The ELECTRIC CLUB of SAN DIEGO

79

OFFICERS AND DIRECTORS - 1939
President: WALTER F. CHAPMAN, San Diego Consolidated Gas & Electric Co.
1st Vice President: GERALD W. HEILBRON, Heilbron Electric Co.
2nd Vice President: WM. H. McKINLEY, Board of Public Works, City of San Diego
Secretary-Treasurer: WM. C. WILT, San Diego Consolidated Gas & Electric Co.
Director: WM. C. GILL, Gill Electric Co.
Director: WM. A. MARSDEN, George Belsey Co.
Director: ROBT. T. REDFIELD, Graybar Electric Co.
Director: LYLE B. JONES, San Diego Consolidated Gas & Electric Co.
Director: E. EVAN SHAFFER, Electrical Inspection Dept., City of San Diego

Tues. Noon - Oct. 3rd 1939

Plata Real - U.S. Grant Hotel

"CONSOLIDATED AIRCRAFT"
SAN DIEGO'S LARGEST INDUSTRIAL PLANT -

Presents

a 40 minute sound movie

BUILDING PBY PLANES

Presented by
MAJOR E. N. GOTT

This is the most outstanding picture of its kind - showing the construction of the PBY plane from the raw material until it goes into the water a finished product plus a few hundred feet of film taken from the picture "Wings of the Navy".

Chairman of the Day
Past President J. F. "Jess" ZWIENER
ZWIENER ELECTRIC CO.

Service Club Golf Tourney - Rancho Santa Fe - date changed to Sunday Oct. 1st

Regular Meetings are held every Tuesday Noon in the Plata Real, U. S. Grant Hotel

Don't miss a meeting!

GUESTS ARE WELCOME AT ALL MEETINGS

---

8 8/15/39

The Aberdeen Daily World
WASHINGTON
W. A. Rupp, Editor and Publisher

Member Associated Press for Full Leased Wire Report

The Associated Press is exclusively entitled to the use for republication of all news dispatches credited to it, or not otherwise credited in this paper, and also o local news published herein. All rights of republication of special dispatches herein are also reserved.

"I pledge allegiance to the Flag of the United States of America and to the Republic for which it stands; one nation indivisible, with Liberty and Justice for all."

SATURDAY, AUGUST 12, 1939

Airplanes And War

MAJOR FLEET presented a thought for consideration when he suggested that the mere possession of a great fleet of military planes might become the best guarantor of peace any nation and the nations in general could have.

Airplanes can not win a war in the sense that they can occupy a territory. Russia has tried to develop a program of landing troops from airplanes by means of parachutes to hold and occupy a country, but the program is doubtful. Airplanes have become the scouting forces of the army and the navy, and are superb for that purpose.

But the main consideration that might deter nations from war is the destructiveness of the airplanes in raids on cities and on the civilian populations behind the front lines. The destructiveness has been attested in Spain and China.

The airplanes did not win the war in Spain and have not won the war in China. Their raids have aroused hatred, and instead of destroying morale have heightened it. But neither of these conflicts have provided such a test as would be provided in war between Britain and Germany, for example.

Whether London or Berlin and other cities would be wiped out by airplane bombs is still to be demonstrated, but, as Major Fleet put it, "possession without employment" of airplane fleets could be a deterrent factor. It has been in fact. There need be little doubt that Hitler would have invaded Danzig and the Polish corridor, probably Poland itself, before this, if in the interval since Munich, Britain had not brought its airplane strength up to a comparable standard with that of Germany. If that is the case, the British planes already have served to keep the peace.

Of course, peace in Europe is now an armed truce, and that is not a solid or permanent foundation for peace, but continued construction of great plane fleets might finally bring the nations to the conclusion that no side could win a war in the final analysis, and that peace should be adopted as a matter of necessity. It is true that the possession of a sharp weapon has not stopped war, and sometimes has encouraged it, but the case might be different if all the great powers possessed the same sharp weapon in equal proportions. In any event, in a world armed with air bombers, this nation can not afford to be without them.

Sun 10-10-39

ARCHBOLD RELATES STORY OF CRUISE

Strange animals he captured in Netherlands New Quinea as leader of an exhibition serviced by the San Diego-built flying boat "Cuba," were described in New York today by Richard Archbold, wealthy research associate of the American Museum of Natural History.

He exhibited a three-foot rat, four-foot fruit bats, a marsupial whose fur has three colors blending into each other, and a foot-long animal called the dactylonax, which plucked bugs and insects from under logs and rocks with a daintly poised forefinger.

Mr. Archbold described an initiation into one of the native tribes in a curious ceremony marked by the slaughtering of a pig, the toasting of its liver and its presentation to the expedition members to eat.

The Archbold plane is in the Consolidated Aircraft Corp. plant here.

Union 10-10-39

Venezuela Plane Mission Due Here

A Venezuelan military mission is expected to visit San Diego plane factories within a few days to inspect local products with a view to purchase of planes for strengthening Venezuela's air defense, it was reported yesterday.

Members of the commission are Lt. Col. Francisco Leonardl and Capt. Jorge Marcano, The Associated Press reported. They arrived in Los Angeles yesterday to make a tour of southern California factories.

T. Claude Ryan, president of the Ryan Aeronautical Co., which has made some sales of private planes in Venezuela, said he had heard the air mission would be in southern California for two weeks. While no definite time has been set for arrival of the officers in San Diego, they are expected to make a visit to check over aircraft available at the Ryan and Consolidated plants.

Scrap Book

CHRISTIAN SCIENCE MONITOR WEEKLY MAGAZINE SECTION

SEPT 23 - 1939

War Confronts America

A Case for United States Trading With Belligerents on a Cash-and-Carry Basis as the Lesser of the Two Un-neutral Concepts of Neutrality

By Erwin D. Canham

Chief of the Washington Bureau of The Christian Science Monitor

AN AMERICAN BUILT 15-TON CONSOLIDATED AIRCRAFT BOMBER THAT FLEW TO BRITAIN Wide World

Piloted by Russel Rogers in July from San Diego, Calif., to Felixstowe, Eng., for Delivery to the Royal Air Force, With Stops at Buffalo, N. Y., and Botwood, Newfoundland. Unless Present Wartime Embargo Law Is Changed, No Further Plane Deliveries Can Be Made. The Picture Below Shows the First of a Lot of 200 Lockheed Planes Ordered by Britain. Squadron Leader James Addams of the British Air Ministry (left), in California in Charge of the Order, Is Talking With C. L. Johnson, Lockheed Engineer

---

The San Diego Sun

Unsettled tonight and Wednesday with showers; cooler tonight; moderate westerly wind. Complete report on Page 4.

SAN DIEGO, CALIFORNIA, TUESDAY, SEPTEMBER 12, 1939

CONSOLIDATED DOUBLING SIZE OF FACTORY

Expects Emergency Orders From U. S. For Warplanes

[illegible]

To enable immediate expansion of the Consolidated Aircraft Corp. plant in view of the existing national emergnecy, the City Council today authorized the Harbor Commission to lease 17 acres to the concern at a yearly rental of $750.

Port Director Joe Brennan revealed that company officials now in Washington, D. C., must give the Federal government assurance that land will be available for enlarging the factory before large orders now pending may be granted Consolidated.

The lease, which is for land adjacent to the 27 acres now occupied by the company, carries the option of leasing 22 more acres within 10 years. It will run concurrent with the original 50-year lease the firm received on moving here from Buffalo in 1935.

LEASE URGENT

"The large contracts expected by Consolidated will require almost immediate doubling of the plant's size," Mr. Brennan said, "and for that reason it is urgent that the lease be granted without delay."

Councilman Addison Housh objected to the "rush act" on such an important deal, but voted with the rest of the Council to approve the lease because of the emergency. "If it were not for present war conditions, I'd never approve of doing it this way," he commented.

1800 ON PAYROLL

As support of his contention that the city will benefit greatly by the lease, Mr. Brennan pointed out that Consolidated has paid more than $111,000 in taxes during the past three years, has employed 3800 men at the peak, and today has 1800 on its payroll.

Fly Engines Here For Army Plane

10-14-39

A big army transport plane dropped down on Lindbergh field yesterday afternoon to discharge two 1600-pound airplane engines for installation in a 4-motored army bomber under construction at the Consolidated Aircraft Corp. plant The engines were rushed here from Hartford, Conn., to speed operations in the construction of the plane. Two more engines will arrive by air within a few days.

The transport, piloted by Lt. Thomas J. Schofield, with Lt. Glenn Holland as co-pilot, is specially designed as an air freighter and has made many flights around the country, although this is the first time engines for a new bomber have been flown here. Schofield and Holland are attached to the 10th transport group, Middletown, Pa.

Secrecy surrounds specifications of the engines, although they are said to develop in the neighborhood of 2000 horsepower each. The engines were inspected by Maj. E. R. McReynolds, army air corps inspector in this area; Edgar Gott, solidated executive, and W. G. Chamberlain, factory representative of the engine company.

~~(FOR WALL ST. JOURNAL [N.Y.] of above - See APRIL 13th)~~

CONSOLIDATED READY TO BUILD

Sun Oct 13 - 39

Permit For Addition To Factory Requested

Extension of Consolidated Aircraft Corp.'s production facilities by 75 per cent is contemplated in plans being prepared by the concern's officers, Plant Engineer William A. Maloney disclosed today in applying to the city for permission to construct a three-story steel building as part of this program.

The structure, he stated, would be 60 by 180 feet large, and would be used temporarily for offices, later to be converted to light manufacturing. It would be situated on part of the 17 acres of land adjacent to the 27 acres now occupied by the company and leased by the Harbor Commission for $750 a year.

PREPAREDNESS AID

The enlargement plans, according to Mr. Maloney, are in anticipation of a national emergency and with the desire to aid in the forthcoming preparedness campaign. Consolidated is known to be negotiating for large Army and Navy plane contracts in Washington,, D. C.

"It is our present desire to ultimately erect an administrative building of suitable size and area on property we now lease on the east side of Pacific Highway across the street from the present factory site," wrote Mr. Maloney.

HALF MILE FRONT

These additions will give the factory buildings a street frontage of 2521 feet, almost one-half mile, he pointed out.

The Board of Examiners and Appeals today recommended that an ordinance be adopted amending the city building code to allow construction of three-story all-steel buildings, providing they are protected by metal laths and plaster. The present regulations permit only frame buildings higher than two stories.

AVIATIONS LEAD STOCKS' RALLY

Sun 10-19-39

New High Recorded By Consolidated

By United Press

NEW YORK, Oct. 19.—Stocks made a feeble rally today under the leadership of the aviation issues which made new highs for the year.

The rails ignored favorable news and turned irregular. Utilities firmed slightly. Farm shares, oils, building issues, mercantile issues and coppers were mixed in a narrow area.

There were a few wide swings succh as American Metal preferred which lost 6½ points to a new low; Norfolk & Western, up 6½ points; Franklin Simon preferred, up 5½; Kinney 5 per cent preferred, up 5½, and William Filene's Sons, up 3.

In the aviations, new highs were made by Douglas. Consolidated, Curtiss Wright, North American Aviation, Glenn Martin, United Aircraft and Wright. These had gains ranging to more than 2 points in Douglas and Wright.

Anticipation of early repeal of he arms embargo helped the aviations. Other favorable market news included the Turkish pact with Great Britain and France, and decision of the Scandinavian countries not to attempt mediation o fthe war at this time.

Consair Officials Will Be Feted

Union 10-19-39

San Diego civic leaders will join with Hi Hatters in a birthday salute to Consolidated Aircraft Corp. tomorrow noon, fourth anniversary of the dedication of the huge local aircraft plant. The luncheon will be held in the San Diego club.

Emil Klicka, harbor board commissioner who is credited with doing much to "sell" Consolidated on moving from Buffalo, N. Y., to San Diego; President Don Hanson of the chamber of commerce; Rear Adm. A. B. Cook, commander of the scouting force; Leroy Richards, chairman of supervisors; City Councilman Fred Simpson, representing the city; T. Claude Ryan, president of Ryan Aeronautical Co., and Edmund Price, president of Solar Aircraft, will speak.

Maj. Reuben H. Fleet, president of Consolidated, and a prominent Hi Hatter, and these officials of the company have been invited as guests of honor: C. A. Van Dusen, C. T. Leigh, I. M. Laddon, William Shanahan and R. A. Stanberry. Specially honored guests will be Rear Adm. Joseph R. Defrees, commandant, 11th Navay district, and his aid, Capt. E. S. Root. Horace E. Rhoads will preside, and Edgar Gott will be chairman.

NEW CONSOLIDATED ENGINES ARRIVE

Sun 10-14-39

The first two giant engines, each weighing 1600 pounds, to be installed in Consolidated Aircraft Corp's. rapidly shaping four-motor Army bomber B-24, have arrived in San Diego by Army "air express" from the Pratt and Whitney plant in Hartford, Conn.

The other pair of power plants, each of which are reported to generate 1000 to 1250 h.p., are due here in the near future.

The San Diego plant may be ready to unveil its latest creation in about a month, the bomber is believed to represent a marked advancement in performance over the Boeing "flying fortress," with a 300-mile per hour capacity and a cruising range of as great as 10,000 miles.

Nr. 33 * 43. Jahrgang
Verlagsort: Oldenburg (Oldbg.)
Berlin, den 18. Auguſt 1939

Deutſche Wehr

Die Zeitſchrift für Wehrmacht und Wehrpolitik
mit den Beilagen „Der Truppendienſt" und „Wehrwiſſenſchaftliche Quellenkunde"

Schriftleitung: Archivrat Major a. D. George Soldan, Generalleutnant a. D. Georg Brandt, Konteradmiral a. D. Reinhold Gadow

Alle Zuſchriften unperſönlich an die Leitung erbeten. Nachdruck ganzer Artikel und Überſetzung nur nach Vereinbarung. Auszüge mit genauer Quellenangabe geſtattet. Für unverlangte Manuſkripte wird keine Gewähr übernommen. Die „Deutſche Wehr" erſcheint jeden Donnerstag. Bezugspreis: In Deutſchland monatlich RM. 1.50; hierzu Verſand- bzw. Zuſtellungsgebühr. Bei Zuſendung unter Kreuzband Porto zu Selbſtkoſten. Anzeigenpreiſe: Die zehngeſpaltene 22 mm breite Millimeterzeile 30 Pfg., die 110 mm breite Reklame-Millimeterzeile RM. 2.25, Familien- und Vereinsanzeigen 50 Pfg. Schluß der Anzeigenannahme: Vierzehn Tage vor Erſcheinen. Poſtſcheckkonto: Poſtſcheckamt Berlin Nr. 173651 (Verlag Deutſche Wehr, Gerhard Stalling, Berlin). Schriftleitung und Anzeigen-Geſchäftsſtelle: Berlin W 35, Potsdamer Straße 84 — Fernſprecher 220778

Druck und Verlag von Gerhard Stalling, Oldenburg i. O. Gründungsjahr der Firma 1789

SEE INSIDE PAGES

Der deutſche und der polniſche Soldat in polniſcher Beleuchtung

Am polniſchen Propagandahimmel iſt in letzter Zeit ein neuer Stern aufgegangen. Es iſt der Dipl.-Fliegerhauptmann Poleſiński, der neben ſeinem militäriſchen Rang auch den wiſſenſchaftlichen Magiſtertitel, in Polen die Vorſtufe zum Doktortitel, beſitzt. Hauptmann Poleſiński, der zweifellos ein gewandter Volksredner iſt, wird in erſter Linie vom Polniſchen Verband der Vaterlandsverteidiger, dem Hauptträger der Propagandaaktion zur Hebung und Befeſtigung der Stimmung unter der polniſchen Bevölkerung für den Fall eines Krieges, immer wieder eingeſetzt, um ſeinen Vortrag über das Thema „Der polniſche Soldat und der deutſche Soldat — Analyſe der kriegeriſchen Werte" zu halten. Hauptmann Poleſiński iſt bereits in allen größeren Zentren Polens, angefangen in Warſchau, über Lemberg, Krakau, Wilna, Kattowitz, Gdingen — um nur die wichtigſten Etappen zu nennen — und endigend beim Polniſchen Rundfunk zu Worte gekommen. Er hat, wenn wir den Berichten der polniſchen Preſſe Glauben ſchenken wollen, die bei den Kundgebungen anweſende Bevölkerung zu wahren Beifalls- und Begeiſterungsſtürmen emporgeriſſen, die letzten Endes ihren Abſchluß fanden in ſcharfen Entſchließungen gegen das Deutſche Reich und mit den bereits ſattſam bekannten uferloſen polniſchen Forderungen hinſichtlich der Verlegung der polniſchen Weſtgrenze mindeſtens bis zur Oder nach der Vernichtung der deutſchen Armee vor den Toren Berlins.

Der Inhalt des vielgehaltenen Vortrages des Hauptmanns Poleſiński wird auch in einer kleinen 48 Seiten ſtarken Broſchüre verbreitet, deren 2. Auflage ich vor mir habe, nachdem die erſte, wie auf der Umſchlagſeite des Titelblattes ſteht, ſchon eine Woche nach Erſcheinen vergriffen war.

Da ich die Vortragstätigkeit Poleſińskis auf Grund der mehr oder weniger eingehenden Berichte der „Polſka Zbrojna", des Organs des polniſchen Kriegsminiſteriums, genau verfolgt habe, bin ich mit großem Intereſſe und einer gewiſſen Neugier an die Lektüre und Durcharbeitung der Broſchüre herangegangen, da die polniſche Preſſe nur kurze Auszüge gebracht hatte, die ein allzu ſchwaches Bild des Ganzen vermitteln.

Ich möchte an dieſer Stelle auf Grund meines Studiums der Broſchüre zu einigen wenigen, beſonders kraß aufgeworfenen Fragen kritiſch Stellung nehmen und Hauptmann Poleſiński antworten, wobei ich vorwegnehmen will, daß ich der augenblicklichen politiſchen Lage entſprechend von einem Polen kein allzu günſtiges Urteil über die deutſche Wehrmacht erwartet habe, daß ich aber durch die Unwahrhaftigkeit des angeführten Materials und durch die zahlloſen Geſchichtsfälſchungen, durch die der Verfaſſer ſeine Behauptungen zu beweiſen und zu erhärten verſucht, einfach erſchüttert bin. Man ſollte es nicht für möglich halten, daß ein polniſcher Generalſtabsoffizier den Mut hat, ſoviel baren Unſinn zuſammenzuſchreiben.

Wenn Hauptmann Poleſiński einleitend bemerkt, daß im nächſten Kriege derjenige gewinnen werde, welcher den ſtärkeren Willen habe und 15 Minuten länger durchzuhalten vermöge, daß das beſte Flugzeug oder der beſte Kampfwagen zu einer wertloſen „Kiſte" wird, wenn der dies Gerät bedienende Menſch moraliſch ſchwach iſt, wenn er als Beweis dafür die tſchecho-ſlowakiſche Armee anführt, wenn er weiter ſagt, daß auf der Wacht der Kultur und Größe eines Volkes die Armee ſteht und daß die Grundlage der Armee der Menſch als das Rohmaterial iſt, aus dem das Hauptwerkzeug des modernen Kampfes — der Soldat — geſchaffen wird, daß der moderne Krieg ein Krieg der Schnelligkeit, ein Krieg von Präziſionsmaſchinen und von Millionen von Geſchoſſen ſein wird, daß ſtarke Nerven, die Beherrſchung der Gedanken und der eiſerne Wille die Hauptbedingungen für den Sieg ſind, daß auf dem modernen Schlachtfelde der moraliſch ſtarke Menſch ſiegt, ſo kann man das alles mit gutem Gewiſſen unterſchreiben. Das ſind Wahrheiten, die nicht nur jedem deutſchen Soldaten, ſondern auch jedem deutſchen Nichtſoldaten in Fleiſch und Blut übergegangen ſind.

Auch wenn der Verfaſſer bei der Überleitung zu dem Kapitel der Analyſe der kriegeriſchen Werte ſagt, daß heute die Möglichkeit eines bewaffneten Konflikts zwiſchen Deutſchland und Polen beſteht und daß es deshalb wichtig iſt, objektiv die Merkmale des deutſchen und polniſchen Soldaten zu vergleichen, ſo iſt das völlig natürlich und zu billigen. Wenn er weiter ſagt, daß die Unterſchätzung des Gegners ein Leichtſinn, ſeine Überſchätzung aber ein Verbrechen ſei, ſo bin ich mit dem erſten Teil des Satzes gern einverſtanden, mache aber hinſichtlich des zweiten gewiſſe Vorbehalte. Ich habe ſtets auf dem Standpunkt geſtanden, und tue es auch heute noch, daß es beſſer iſt, den Gegner etwas zu überſchätzen, als ihn zu unterſchätzen, daß dies aber kein Verbrechen iſt, wie Hauptmann Poleſiński meint, ſondern ein Akt der Klugheit. Von dieſem Geſichtspunkte aus habe ich in meinen zahlreichen Veröffentlichungen, vor allem auch in dieſer militäriſchen Fachzeitſchrift, die polniſche Armee betrachtet, deren Vorzüge ich ſehr wohl kenne und vor deren Aufbau und Entwicklung als das Werk des Marſchalls Piłſudſki ich auch heute noch eine große Hochachtung habe. Aber das hindert nicht, daß auch die teilweiſe nicht geringen Mängel und Unzulänglichkeiten dieſer Armee bekannt ſind, über die Poleſiński gefliſſentlich hinwegſieht. Denn das, was wir in dem kläglichen Machwerk finden, iſt die Verleugnung des mit dem Bruſtton der Überzeugung verkündeten Grundſatzes der Objektivität. Hauptmann Poleſiński ſtellt in der Art von Karlchen Mieſnik in einem bekannten Witzblatt die deutſche und die polniſche Armee einander gegenüber und weiſt mit einer Naivität ſondergleichen nach, daß an der polniſchen Armee alles gut, an der deutſchen Armee alles ſchlecht, daß der polniſche Soldat der Ausbund eines Helden, der deutſche ein Trottel iſt, daß die polniſche Kriegsgeſchichte voll von herrlichen Siegen iſt, die deutſche dagegen nichts als fürchterliche Niederlagen aufweiſt. Alles das wird in einer ſo einfältigen Weiſe dargeſtellt, daß es wirklich nicht lohnt, auch nur flüchtig auf alle dieſe teilweiſe nicht nur dummen, ſondern auch direkt albernen Vergleiche einzugehen.

Wenn der Verfaſſer zum Beweiſe für die hohen kriegeriſchen Werte der polniſchen Armee den polniſch-bolſchewiſtiſchen Krieg 1919/20 heran-

Aus dem Inhalt: Der deutſche und der polniſche Soldat in polniſcher Beleuchtung. — Das Luftverteidigungsproblem der USA., I. Teil. — England gewährt Rüſtungskredite. — Die polniſchen Kriegsleiſtungsgeſetze. — Vor 25 Jahren: Die deutſche Heereskavallerie am Entſcheidungsflügel. — Führergeſtalten aus Öſterreichs Heeren, XII. Fortſetzung: Tegetthoff. — Taktik und Technik: Bewaffnung neuer ausländiſcher Militärflugzeuge. — Panzerabwehr auf dem Marſch. — Aufgaben für die Dolmetſcherprüfung: Polniſche Aufgabe (Auguſt), Ruſſiſche Aufgabe (Auguſt).

OCT 6 1939

S. D. Sun.

ICTION

BRENNAN OFF FOR CAPITAL

To Seek Approval Of Harbor Projects

With the Board of Supervisors hesitant to go into partnership with the city in sponsoring a $150,000 WPA project for construction of a 2000-foot fishing pier at Ocean Beach, Port Director Joe Brennan was scheduled to leave for Washington, D. C., today in an attempt to speed up approval of Federal appropriations for this and other harbor department improvements.

Mr. Brennan was to be accompanied by Maj. Reuben H. Fleet, president of Consolidated Aircraft Corp., who will seek information on the possibility of his concern obtaining further Army and Navy airplane orders. They were to leave by plane at 2 today.

$10,000 ASKED

A delegation of city officials yesterday asked the Board of Supervisors to contibute $10,000 toward the sum needed as the sponsor's contribution to meet material costs. The pleas of Councilman Fred Simpson, representing the beach districts; Mayor Benbough, City Manager Rhodes, and Carl Schroder, Ocean Beach civic leader, had effect only on Supervisor Walter Bellon, whose motion to appropriate the $10,000 failed to get a second.

The Supervisors asked for more time to consider the proposition.

SUBMIT REQUESTS

Mr. Brennan will submit to Washington authorities fund requests for harbor projects totaling more than $1,300,000, with the city as sponsor, due to contribute approximately $1,700,000. Chief among these will be the Ocean Beach pier, Federal $225,168, city $206,792; 10th-st pier, Federal about $800,000, city about $1,200,000; Municipal yacht harbor, Federal $122,282, city $149,128; and Lindbergh Field continuation, Federal $122,296, and city $104,803.

In addition he will give WPA officials plans of the city engineer for a $2,000,000 project to construct a trunk sewer from the Marine Base to the Destroyer Base and a sewage disposal plant. Minor requests will include funds for continuation of improvement, to the 28th-st tidelands, which has sufficient money to continue for some time. Mre. Brennan said he expected to be in the nation's capital for two weeks.

X Scrap Book

CHRISTIAN SCIENCE MONITOR WEEKLY MAGAZINE SECTION

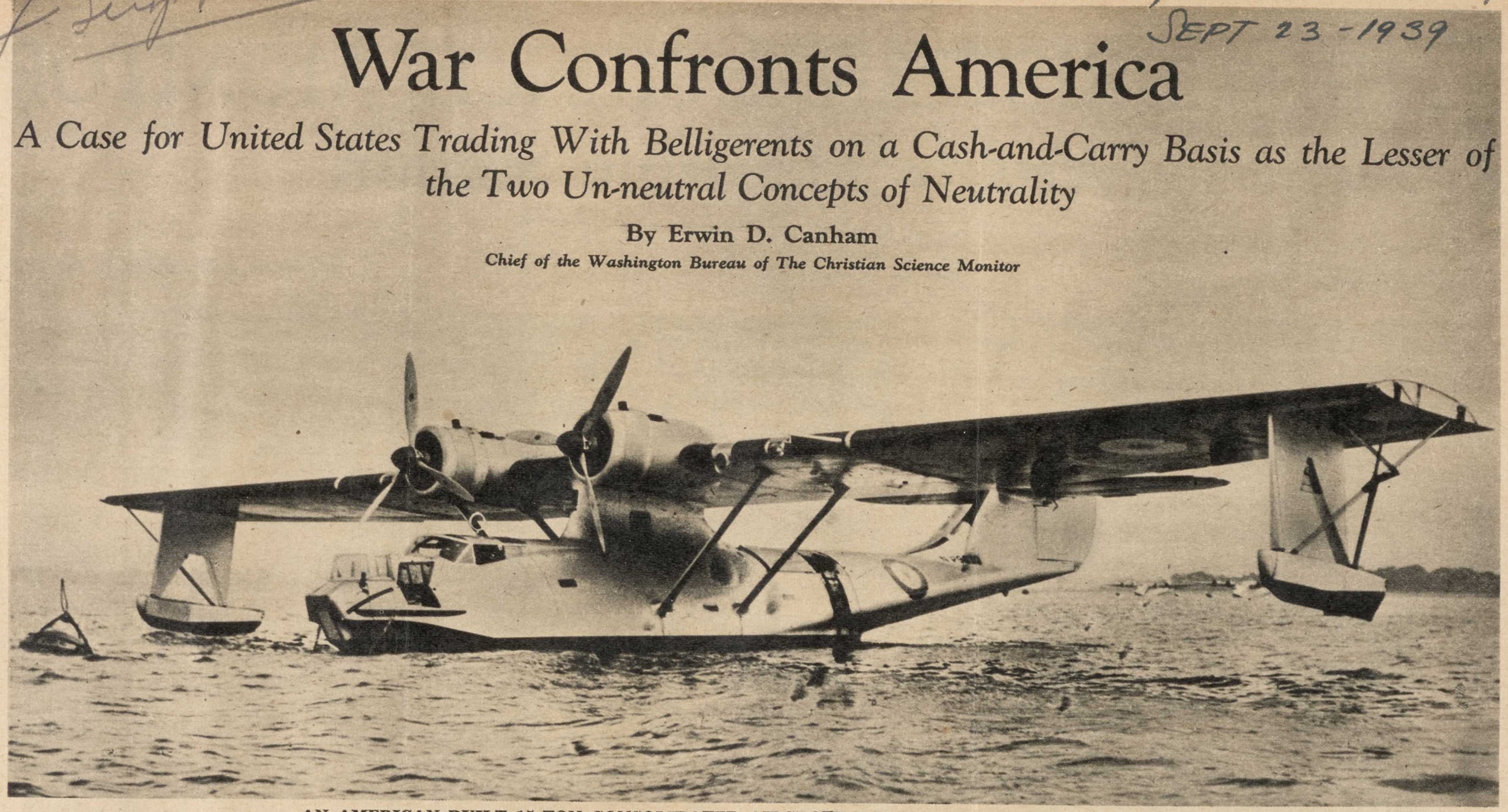
SEPT 23-1939

War Confronts America

A Case for United States Trading With Belligerents on a Cash-and-Carry Basis as the Lesser of the Two Un-neutral Concepts of Neutrality

By Erwin D. Canham

Chief of the Washington Bureau of The Christian Science Monitor



AN AMERICAN BUILT 15-TON CONSOLIDATED AIRCRAFT BOMBER THAT FLEW TO BRITAIN Wide World

Piloted by Russel Rogers in July from San Diego, Calif., to Felixstowe, Eng., for Delivery to the Royal Air Force, With Stops at Buffalo, N. Y., and Botwood, Newfoundland. Unless Present Wartime Embargo Law Is Changed, No Further Plane Deliveries Can Be Made. The Picture Below Shows the First of a Lot of 200 Lockheed Planes Ordered by Britain. Squadron Leader James Addams of the British Air Ministry (left), in California in Charge of the Order, Is Talking With C. L. Johnson, Lockheed Engineer

---

The San Diego Sun

Unsettled tonight and Wednesday with showers; cooler tonight; moderate westerly wind. *Complete report on Page 4.*

SAN DIEGO, CALIFORNIA, TUESDAY, SEPTEMBER 12, 1939

CONSOLIDATED DOUBLING SIZE OF FACTORY

Expects Emergency Orders From U. S. For Warplanes

To enable immediate expansion of the Consolidated Aircraft Corp. plant in view of the existing national emergnecy, the City Council today authorized the Harbor Commission to lease 17 acres to the concern at a yearly rental of $750.

Port Director Joe Brennan revealed that company officials now in Washington, D. C., must give the Federal government assurance that land will be available for enlarging the factory before large orders now pending may be granted Consolidated.

The lease, which is for land adjacent to the 27 acres now occupied by the company, carries the option of leasing 22 more acres within 10 years. It will run concurrent with the original 50-year lease the firm received on moving here from Buffalo in 1935.

LEASE URGENT

"The large contracts expected by Consolidated will require almost immediate doubling of the plant's size," Mr. Brennan said, "and for that reason it is urgent that the lease be granted without delay."

Councilman Addison Housh objected to the "rush act" on such an important deal, but voted with the rest of the Council to approve the lease because of the emergency. "If it were not for present war conditions, I'd never approve of doing it this way," he commented.

1800 ON PAYROLL

As support of his contention that the city will benefit greatly by the lease, Mr. Brennan pointed out that Consolidated has paid more than $111,000 in taxes during the past three years, has employed 3800 men at the peak, and today has 1800 on its payroll.

Fly Engines Here For Army Plane

10-14-39

A big army transport plane dropped down on Lindbergh field yesterday afternoon to discharge two 1600-pound airplane engines for installation in a 4-motored army bomber under construction at the Consolidated Aircraft Corp. plant The engines were rushed here from Hartford, Conn., to speed operations in the construction of the plane. Two more engines will arrive by air within a few days.

The transport, piloted by Lt. Thomas J. Schofield, with Lt. Glenn Holland as co-pilot, is specially designed as an air freighter and has made many flights around the country, although this is the first time engines for a new bomber have been flown here. Schofield and Holland are attached to the 10th transport group, Middletown, Pa.

Secrecy surrounds specifications of the engines, although they are said to develop in the neighborhood of 2000 horsepower each. The engines were inspected by Maj. E. R. McReynolds, army air corps inspector in this area; Edgar Gott, solidated executive, and W. G. Chamberlain, factory representative of the engine company.

CONSOLIDATED READY TO BUILD

Sun Oct 13-39

Permit For Addition To Factory Requested

Extension of Consolidated Aircraft Corp.'s production facilities by 75 per cent is contemplated in plans being prepared by the concern's officers, Plant Engineer William A. Maloney disclosed today in applying to the city for permission to construct a three-story steel building as part of this program.

The structure, he stated, would be 60 by 180 feet large, and would be used temporarily for offices, later to be converted to light manufacturing. It would be situated on part of the 17 acres of land adjacent to the 27 acres now occupied by the company and leased by the Harbor Commission for $750 a year.

PREPAREDNESS AID

The enlargement plans, according to Mr. Maloney, are in anticipation of a national emergency and with the desire to aid in the forthcoming preparedness campaign. Consolidated is known to be negotiating for large Army and Navy plane contracts in Washington,, D. C.

"It is our present desire to ultimately erect an administrative building of suitable size and area on property we now lease on the east side of Pacific Highway across the street from the present factory site," wrote Mr. Maloney.

HALF MILE FRONT

These additions will give the factory buildings a street frontage of 2521 feet, almost one-half mile, he pointed out.

The Board of Examiners and Appeals today recommended that an ordinance be adopted amending the city building code to allow construction of three-story all-steel buildings, providing they are protected by metal laths and plaster. The present regulations permit only frame buildings higher than two stories.

AVIATIONS LEAD STOCKS' RALLY

Sun 10-19-39

New High Recorded By Consolidated

By United Press

NEW YORK, Oct. 19.—Stocks made a feeble rally today under the leadership of the aviation issues which made new highs for the year.

The rails ignored favorable news and turned irregular. Utilities firmed slightly. Farm shares, oils, building issues, mercantile issues and coppers were mixed in a narrow area.

There were a few wide swings succh as American Metal preferred which lost 6½ points to a new low; Norfolk & Western, up 6½ points; Franklin Simon preferred, up 5½; Kinney 5 per cent preferred, up 5½, and William Filene's Sons, up 3.

In the aviations, new highs were made by Douglas. Consolidated, Curtiss Wright, North American Aviation, Glenn Martin, United Aircraft and Wright. These had gains ranging to more than 2 points in Douglas and Wright.

Anticipation of early repeal of he arms embargo helped the aviations. Other favorable market news included the Turkish pact with Great Britain and France, and decision of the Scandinavian countries not to attempt mediation o fthe war at this time.

Consair Officials Will Be Feted

Union 10-19-39

San Diego civic leaders will join with Hi Hatters in a birthday salute to Consolidated Aircraft Corp. tomorrow noon, fourth anniversary of the dedication of the huge local aircraft plant. The luncheon will be held in the San Diego club.

Emil Klicka, harbor board commissioner who is credited with doing much to "sell" Consolidated on moving from Buffalo, N. Y., to San Diego; President Don Hanson of the chamber of commerce; Rear Adm. A. B. Cook, commander of the scouting force; Leroy Richards, chairman of supervisors; City Councilman Fred Simpson, representing the city; T. Claude Ryan, president of Ryan Aeronautical Co., and Edmund Price, president of Solar Aircraft, will speak.

Maj. Reuben H. Fleet, president of Consolidated, and a prominent Hi Hatter, and these officials of the company have been invited as guests of honor: C. A. Van Dusen, C. T. Leigh, I. M. Laddon, William Shanahan and R. A. Stanberry. Specially honored guests will be Rear Adm. Joseph R. Defrees, commandant, 11th Navay district, and his aid, Capt. E. S. Root. Horace E. Rhoads will preside, and Edgar Gott will be chairman.

NEW CONSOLIDATED ENGINES ARRIVE

Sun 10-14-39

The first two giant engines, each weighing 1600 pounds, to be installed in Consolidated Aircraft Corp's. rapidly shaping four-motor Army bomber B-24, have arrived in San Diego by Army "air express" from the Pratt and Whitney plant in Hartford, Conn.

The other pair of power plants, each of which are reported to generate 1000 to 1250 h.p., are due here in the near future.

The San Diego plant may be ready to unveil its latest creation in about a month, the bomber is believed to represent a marked advancement in performance over the Boeing "flying fortress," with a 300-mile per hour capacity and a cruising range of as great as 10,000 miles.

(~~FOR WALL ST. JOURNAL [N.Y.] of above - See~~ APRIL 13th)

zieht, der nach ungeheuren Rückſchlägen und Rückzügen letzten Endes mit dem „Wunder an der Weichſel" endete, ſo vergißt er, daß dieſer glückliche Ausgang einer ganzen Reihe von „Imponderabilien", beſonders dem völligen Verſagen der bolſchewiſtiſchen Führung zu verdanken iſt, daß dieſer Krieg mit einem modernen nicht verglichen werden kann. Das hat kein Geringerer als der polniſche Oberkommandierende in dieſem Feldzuge, Marſchall Pilſudſki, erkannt und umumwunden zugegeben, der ihn eine „Schlägerei" nennt, die ohne alle überkommenen Kriegsregeln und Grundſätze der Strategie und Taktik, ja in zahlreichen Fällen gegen dieſelben durchgekämpft wurde. Das Studium der Werke des Marſchalls Pilſudſki würde ſich überhaupt empfehlen, da ſich in ihnen Urteile finden, die dem Ohr des polniſchen Soldaten nicht beſonders angenehm klingen, die aber den ſoldatiſchen Eigenſchaften des deutſchen volle Gerechtigkeit widerfahren laſſen und zu den Ausführungen Poleſińſkis in einem unüberbrückbaren Gegenſatz ſtehen.

In ähnlicher Weiſe werden die ſoldatiſchen Tugenden der Widerſtandsfähigkeit, des Mutes, der Opferfreudigkeit mit dem Verhältnis zum Leben und zur Ertragung von Wunden, Krankheit und Tod und den Beziehungen zu Gott, der militäriſchen Selbſtändigkeit geſchildert. Der in der harten Schule des Lebens groß gewordene Pole iſt dem „dickbäuchigen", bequemen Deutſchen in allem weit überlegen, was durch zahlreiche Beiſpiele belegt wird. Wie das gemacht wird, dafür nur ein Beiſpiel: daß der deutſche Soldat auch im Kriege nicht auf die Bequemlichkeiten des Lebens verzichten wollte, dafür wird der Ausbau der Weſtbefeſtigungen angeführt, bei deren ausgiebigen Beſchreibungen durch die deutſche Preſſe immer wieder die Bequemlichkeit und Sicherheit hervorgehoben würden, ſo von keinem Geringeren als dem Reichspreſſechef Dr. Dietrich, der mit Stolz hervorhebe, daß das meterdicke Betondach den Soldaten geſtatte, ſelbſt bei den ſchwerſten Kämpfen ruhig im Bett zu ſchlafen, daß durch die ordentliche Beheizung und Lüftung der Räume für die Geſundheit des Soldaten geſorgt werde, daß jeder Soldat ſeine Waſchgelegenheit beſitze, daß ihn nach dem Aufſtehen der Kaffee und am Tage warmes Eſſen erwarte und dergl. mehr.

Ganz anders ſtehe es mit dem polniſchen Bauern, für den die Frage, was er eſſen und wie er leben werde, nicht ſo wichtig ſei.

Das polniſche Offizierkorps ſei im Laufe einer 18jährigen Ausbildung und Erziehung und einer vernünftigen Beförderungspolitik organiſch und ſyſtematiſch gewachſen, die älteren Offiziere ſeien ſämtlich Männer, welche in ihren jungen Jahren die polniſche Armee aus dem Nichts hätten ſchaffen helfen, Männer, welche die Stärke des Geiſtes und die hohen moraliſchen Werte, aber keine Parteizugehörigkeit und Protektion auf ihre jetzigen Poſten gebracht hätte. Ganz anders ſtehe es dagegen mit dem deutſchen Offizierkorps. Der gewaltige Ausbau der deutſchen Wehrmacht im Laufe der letzten Jahre habe einen großen Bedarf an Offizieren zur Folge gehabt. Da die frühere Heranbildung von Offizieren in einem viel engeren Rahmen ſtattgefunden habe, ſo habe man die ſtark vermehrten Offizierſtellen nur mit Mühe und Not beſetzen können, wodurch naturgemäß die an die Offiziersausbildung zu ſtellenden Anforderungen hätten herabgeſetzt werden müſſen. Außerdem ſei der Wert des Offizierkorps durch die Einführung politiſcher Tendenzen in der Armee ſtark herabgemindert worden. Eine größere Verſtändnisloſigkeit gegenüber dem Werden des Offizierkorps der Wehrmacht des Dritten Reichs und der Struktur dieſes Reiches ſelber iſt kaum denkbar. Man darf im Intereſſe Polens nur ſehr beſorgt dieſe Frage ſtellen: denkt man ſo im polniſchen Generalſtab oder iſt dieſer Generalſtabsoffizier nur ein wider beſſeres Wiſſen redender Propagandiſt?

Hinſichtlich des Kriegszieles handle es ſich bei den Polen um einen Krieg um die Exiſtenz, um den Zugang Polens zum Meere, um Sein oder Nichtſein, bei den Deutſchen dagegen werde es ein Kampf um irgendeine Provinzſtadt ſein, die man nach der Beſetzung ſogar noch unterhalten müſſe, um eine Wojewodſchaft, deren Bevölkerung deutſchfeindlich ſei. Ein Krieg mit ſo verſchwindend kleinen Kriegszielen könne nach den bisherigen großen unblutigen Erfolgen im deutſchen Volke nicht populär ſein.

Die Broſchüre ſchließt mit den bezeichnenden Worten: „Heute geſtattet ſchon kein Land mehr, daß ſeine Grenzen ſtraflos verletzt werden." „Polen hat die Pſychoſe Europas gebrochen — Polen hat den Frieden gerettet" rufen alle Zeitungen der Welt. Die Augen der ganzen Welt ſind heute auf uns gerichtet — es iſt eine Ehre, ein Pole zu ſein. Weshalb iſt das geſchehen? Weil wir uns ſchlagen wollten, weil wir bereit waren, uns zu ſchlagen bis zum Umfallen um jede Hütte, um jeden Streifen Landes, weil unſere Hände das Gewehr feſt umſpannten und weil wir ungeduldig auf den Befehl warten: „Marſch! Wir wollen uns ſchlagen." Der Verfaſſer läßt ſeine Ausführungen ausklingen in die erſte Strophe des bekannten deutſchfeindlichen Hetzliedes, der ſogenannten „Rota".

Es müßte ein ganzes Buch geſchrieben werden, um all den Unſinn zu widerlegen, den Hauptmann Poleſińſki hier verzapft. Ich beſchränke mich darauf, dem Verfaſſer zu empfehlen, doch einmal die völkiſche Zuſammenſetzung der polniſchen Armee einer Prüfung zu unterziehen, da er ganz und gar vergeſſen zu haben ſcheint, daß Polen — im Gegenſatz zu Deutſchland — kein Nationalſtaat, ſondern ein Nationalitätenſtaat ſchlimmſter Sorte iſt, in welchem die polniſche Mehrheit im günſtigſten Falle 60% der Bevölkerung beträgt. Ich habe bisher nicht feſtſtellen können, daß Hauptmann Poleſińſki ſeinen Vortrag auch in den polniſchen öſtlichen Grenzgebieten gehalten hat, die in erſter Linie von Ukrainern und Weißruſſen bewohnt werden, wohl in der Befürchtung, daß die dortigen Kundgebungen einen anderen Charakter haben würden als die in Warſchau, Krakau oder Gdingen.

Der Vortrag bzw. die Broſchüre des Hauptmanns Poleſińſki iſt ein weiterer Beweis für die ſchon früher an dieſer Stelle vertretene Anſicht, daß das polniſche Offizierkorps bis zu einem erheblichen Teile jedes Gefühl für die Wirklichkeit der augenblicklichen politiſchen Lage verloren hat und ſich und dem polniſchen Teile der Bevölkerung mit leeren und eitlen Phraſen Mut einzureden verſucht unter völlig falſcher Einſchätzung der kriegeriſchen Werte der polniſchen Armee und unter ganz bewußter Herabſetzung — von einer Verkennung der Lage kann hier keine Rede ſein — der Eigenſchaften der vom Führer geſchaffenen und von ſeinem Geiſte beſeelten deutſchen Wehrmacht. Dies polniſche Maulheldentum wird ſich einmal, das iſt meine feſte Überzeugung, fürchterlich rächen. Die von Schwätzern im polniſchen Offiziersrock geſchmähte deutſche Wehrmacht muß es unter ihrer Würde erachten, auf dem Papier mit den Mitteln dieſes Generalſtabshauptmanns zu kämpfen. Sollte es aber einmal hart auf hart gehen, wird ſie eine beweiskräftige Antwort zu geben wiſſen.

Dr. A. Loeßner.

Das Luftverteidigungsproblem der USA.

I. Teil.

Der Militärſchriftleiter der „New York Times" bringt in der Monatsſchrift „Aviation" einen aufſchlußreichen Aufſatz über das Luftverteidigungsproblem der USA.

„Seit die Luftwaffe ſich zu einem ſo mächtigen Kampffaktor des modernen Krieges entwickelt hat, muß ſie bei faſt jeder größeren Situation, welche den Einſatz militäriſcher Streitkräfte irgendwelcher Art erfordert, eingeſetzt werden oder wenigſtens einſatzbereit ſein. So teilt Amerikas Luftwaffe mit die Verantwortung für

1. Verteidigung der kontinentalen Küſte der USA. im beſonderen und des ganzen Landes im allgeminen. Dies ſchließt ein Verteidigung der Städte gegen Luftangriffe, Verteidigung der ſtrategiſchen Zentren, Schutz der Docks, Brückenköpfe, Kraftwerke, Fabriken uſw.;
2. Verteidigung des Panama-Kanals;
3. Verteidigung Alaskas und der Aleuten;
4. Verteidigung der Hawaii-Inſeln;
5. Verteidigung der amerikaniſchen Inſelbeſitzungen im Karibiſchen Meer und Pazifiſchen Ozean;
6. Schutz des Küſten- und Überſeehandels;
7. Stützung der amerikaniſchen Außenpolitik und (möglicherweiſe) Schutz unſerer Staatsangehörigen und unſerer Intereſſen in Überſee.

Noch, ſo meint Hanſon W. Baldwin weiter, ſei bei dem derzeitigen Wirkungsbereich der Bombenflugzeuge ein ernſthaftes Maſſenbombardement nicht zu befürchten; man müſſe ſich aber heute ſchon für das Morgen ſichern. „Und wenn dieſer Tag kommt, werden alle vorgeſchobenen oder weit draußen liegenden Stützpunkte, wenn ſie den Feind ſchon nicht verhindern können, Amerika zu bombardieren, uns wenigſtens erlauben, mit größerer Ausſichtsmöglichkeit den Feind zu bombardieren.

1. Die Verteidigung der USA.

Das kontinentale USA. iſt wegen ſeiner günſtigen ſtrategiſchen Lage hinter den Baſtionen des Ozeans eigentümlicherweiſe gegen alle Arten militäriſcher Angriffe unverletzlich. Es hat keine ſog. Achillesferſe; keine kleine oder beſchränkte Zone iſt abſolut wichtig für die übrige Nation. Das Land könnte eine beträchtliche Abſchneidung ſeiner verſchiedenen Teile vertragen, ohne deshalb zur Übergabe gezwungen zu ſein. Jedoch gibt es auch ſehr wichtige ſtrategiſche Gegenden. Dieſe ſind, annähernd in der Reihenfolge ihrer Bedeutung:

a) Dreieck, Pittsburgh—Chikago—Detroit.

b) Induſtrie-, Schiffahrt-, Warenhaus-, Dock- und Finanzzentren New York—Philadelphia—Delaware Capes.

c) Ölfelder, Öllager, Docks, Flugzeugfabriken und Schiffahrt in der Zone San Pedro—San Diego (Kalifornien).

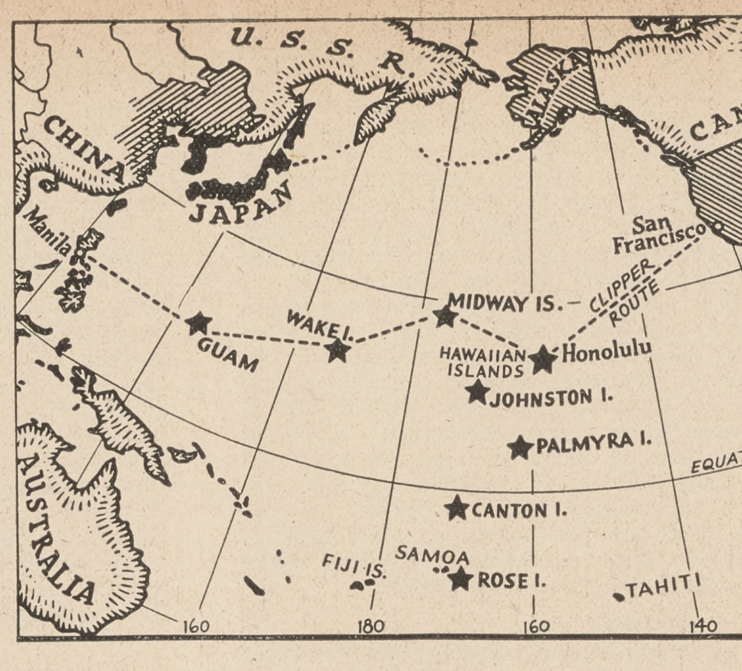
d) Flugzeug- und Munitionsfabriken und dicht konzentrierte Induſtrie des Gebietes von Neu-England, Schiffahrt und Werftanlagen in Boſton, Kraftwerke und Induſtrieanlagen des nördlichen Staates New York.

e) Cheſapeake-Bucht als Tiefſee-Waſſerweg zu Armee- und Marineſtützpunkten und Docks, den Flughäfen des Gebietes von Norfolk, der Induſtrie von Baltimore und der politiſchen Hauptſtadt Waſhington.

f) New-Orleans, Golfküſte und Miſſiſſippi als Einfallstor zu den Reichtümern des Südens und Südweſtens.

Die übrigen Gebiete müßten, wenn nicht vor allem ihrer ſtrategiſchen Bedeutung wegen, ſo doch geſchützt werden, um nicht von einem Angreifer als Operationsbaſis benützt zu werden. Der Verfaſſer ſchlägt ſodann die Errichtung von Hauptſtützpunkten vor, die nach europäiſchem Muſter aus einer Anzahl verſtreuter kleiner Flughäfen beſtünden, um einerſeits einem Bomber kein konzentriertes Ziel zu bieten, andererſeits aber ſchnell genug alle Kräfte dieſes Raumes zuſammenlegen zu können.

„Die Hauptſtützpunkte ſollen ſo angelegt werden, daß ſie dieſe wichtigen Zonen möglichſt gut ſchützen können. Unſere Tendenz iſt heute vielleicht, an einem einzigen Stützpunkt zu viele Flugzeuge zuſammenzufaſſen. Ein großer Hauptſtützpunkt iſt nötig, aber wir ſollten die europäiſche Methode ſtudieren und lieber die Flugzeuge auf zahlreiche kleine Flugplätze verteilen, als ſie auf einem großen Stützpunkt zuſammenlegen. Dieſe ganze Abhandlung hindurch, wenn das Wort Stützpunkt gebraucht wird, iſt es im europäiſchen Sinn zu verſtehen als Stützpunktfläche, mit einer Anzahl kleinerer Stützpunkte, welche zu verſtreut liegen, um ein konzentriertes Ziel für Bomber zu bieten, aber dicht genug, um ſchnelle Zuſammenfaſſung der Kräfte in dieſem Raum zu geſtatten. Wo das Wort „Hilfsſtützpunkt" gebraucht wird, iſt ein einzelner kleiner Flugplatz oder eine Seeflugzeug-Anlegeſtelle zu verſtehen mit Einrichtung, um höchſtens eine Staffel von Flugzeugen aufzunehmen."



Sehen wir uns mit Überlegung die Karte an und ſchauen wir, wie das Netz der angezeichneten Stützpunkte verwendet werden kann,

a) um es heute dem Feind unmöglich zu machen, ernſthafte beſtändige Maſſenluftangriffe gegen das kontinentale USA. zu unternehmen;

b) um in Zukunft als vorgerückte Stützpunkte zu dienen, von denen aus Operationen gegen den Feind beſſer durchgeführt werden können.

Der **Stützpunkt Weſtindien**, vorzugsweiſe in Puerto Rico gelegen (eine große Inſel mit gutem Hafen und Ankermöglichkeit, leicht zu verſorgen und im Rücken gedeckt durch die USA.), mit Hilfsſtützpunkten auf den Jungfrau-Inſeln und dem Marineſtützpunkt Guantánamo auf der Inſel Cuba, kann die Südatlantikküſte (vielleicht am wenigſten von allen Küſten verletzbar durch Luftangriffe wegen der landwirtſchaftlichen Natur des Landes und der Zentraliſation der wichtigeren Induſtrie in Inlandszentren wie Atlanta und Birmingham) ſchützen und 3 Zwecken dienen: Deckung der Anfahrt zum Panamakanal (Verteidigungsproblem Nr. 2), Hilfe bei Verteidigung der amerikaniſchen Inſelbeſitzungen im Karibiſchen Meer (Verteidigungsproblem Nr. 5) und Hilfe bei Durchführung der Monroe-Doktrin (Problem Nr. 7). In Flugweite von Südflorida könnte es unterſtützt durch Marine- und Landſtreitkräfte und die Hilfsſtützpunkte in Cuba und Florida im Rücken jedem Feind den Gebrauch irgendeiner der weſtindiſchen Inſeln oder der nördlichen Küſte Südamerikas als Luftſtützpunkt wirkſam abſchlagen.

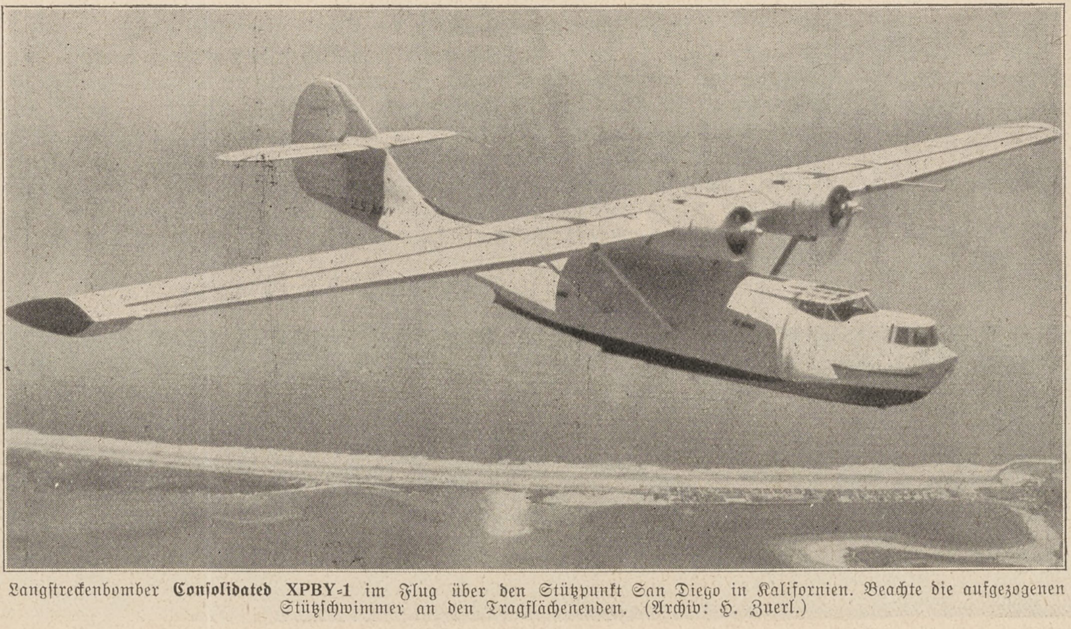
Der **Stützpunkt bei Norfolk** würde die Cheſapeake-Bucht-Zone wirkſam ſchützen und könnte mitwirken zum Schutz der Zone New York—Philadelphia—Delaware Capes ſowie Südatlantik- und Neu-England-Zone. Dieſer Stützpunkt könnte Bermuda beherrſchen und ſeinen Gebrauch jedem Feind verwehren.

In ähnlicher Weiſe würde ein **Stützpunkt in der Gegend von Neufundland**, vorzugsweiſe in Maine, dieſes Induſtriegebiet und das nördliche Gebiet des Staates New York ſchützen und könnte ebenfalls mithelfen bei Verteidigung der New York—Philadelphia—Delaware Capes-Zone. Neufundland und St. Lorenz-Golf (mit ihren zahlreichen Häfen für Seeflugzeuge) wären in ihrem mächtigen Bombenbereich. Selbſt Battle Harbor und die Sandwich-Bucht in Labrador (letzteres bietet im Sommer einen der beſten Häfen des Nordatlantik für Seeflugzeuge oder Flugboote) könnten gegen jeden Feind geſchützt werden. James-Bucht und der ſüdliche Teil der Hudſon-Bucht ſowie ein weiter Teil Kanadas wären ebenfalls im Bombenbereich und ſo der Anflug von Europa her über den Nordatlantik entſprechend geſchützt.

Die ſtrategiſchen Gebiete der Weſtküſte und die ganze Küſte ſelbſt können geeignet geſchützt werden durch zwei oder drei Hauptſtützpunkte: einen im Bereich San Diego—Los Angeles, einen in der Gegend von San Franzisko und ſchließlich einen dritten in der Nähe des Puget-Sunds. Flugzeuge können von dieſen Punkten aus die ganze Weſtküſte von ſüdlich des Kap Falo in Südkalifornien bis hinauf nach Alaska beherrſchen und wären ſo nicht nur in der Lage, die ſtrategiſchen Zonen an der Weſtküſte zu verteidigen, ſondern könnten darüber hinaus noch mitwirken bei Löſung der Probleme Nr. 4 (Hawaii) und Nr. 3 (Alaska). Ferner könnten ſie die Marine unterſtützen bei Überwachung der weiten Seezone, die kürzlich allgemein bekannt wurde unter dem Namen ſtrategiſches Dreieck Aleuten—Hawaii—Weſtküſte.

Stützpunkte bei New-Orleans oder etwas weiter öſtlich **und bei San Antonio in Texas** wären imſtande, in Zuſammenarbeit mit dem Stützpunkt im ſüdlichen Kalifornien den Golf von Mexiko und die Land- und Seezonen Mittelamerikas ſüdlich bis zum Golf von Teguantepec zu beherrſchen, welcher in Reichweite der Stützpunkte in Panama liegt. Die mexikaniſche Grenze iſt durch ſolche Stützpunkte weitgehend verteidigt.

Das wichtige Induſtriedreieck im Norden Pittsburgh—Chikago—Detroit könnte gegen direkte Überſeeangriffe durch unſere Küſtenſtützpunkte, beſonders von dem in Neu-England und im Puget-Sund geſchützt werden. Aber es bleibt die ſchwache und unwahrſcheinliche, ja geradezu phantaſtiſche Möglichkeit von Luftangriffen, die ausgehen von einem durch den Feind in Nord- oder Mittelkanada errichteten Stützpunkt oder gar von einem Waſſer- oder Landſtützpunkt, der am Rand der Arktis in der Hudſon-Bucht errichtet wird. Wie der Gegner ſeine Stützpunkte aufrichten, unterhalten und beliefern könnte, liegt außer der Betrachtung dieſes Artikels. Es genügt zu ſagen, daß wenig wirkliche Gefahr zu beſtehen ſcheint vor Luftangriffen, die von Stützpunkten in dieſen ſtrengen nördlichen Breiten ausgehen. Jedoch nicht nur eine weitere Schierung für unſer wichtiges Induſtriegebiet gilt es zu ſchaffen, ſondern ganz beſonders einen zentralen Stützpunkt inmitten des Kontinents, von dem aus jeder der übrigen Stützpunkte an der Küſte leicht verſtärkt werden könnte. Ein oder mehrere Stützpunkte in der Nähe von Chikago, Minneapolis und St. Louis ſind angezeigt. Soweit das Problem ernſtlicher, kontinuierlicher Fliegerangriffe gegen unſere Grenzen und ſtrategiſche Gebiete, ein



Langſtreckenbomber **Conſolidated XPBY-1** im Flug über den Stützpunkt San Diego in Kalifornien. Beachte die aufgezogenen Stützſchwimmer an den Tragflächenenden. (Archiv: H. Zuerl.)

Tuesday, October 17, 1939

S.D. Sun

ICTION

BRENNAN OFF FOR CAPITAL

To Seek Approval Of Harbor Projects

With the Board of Supervisors hesitant to go into partnership with the city in sponsoring a $150,000 WPA project for construction of a 2000-foot fishing pier at Ocean Beach, Port Director Joe Brennan was scheduled to leave for Washington, D. C., today in an attempt to speed up approval of Federal appropriations for this and other harbor department improvements.

Mr. Brennan was to be accompanied by Maj. Reuben H. Fleet, president of Consolidated Aircraft Corp., who will seek information on the possibility of his concern obtaining further Army and Navy airplane orders. They were to leave by plane at 2 today.

$10,000 ASKED

A delegation of city officials yesterday asked the Board of Supervisors to contibute $10,000 toward the sum needed as the sponsor's contribution to meet material costs. The pleas of Councilman Fred Simpson, representing the beach districts; Mayor Benbough, City Manager Rhodes, and Carl Schroder, Ocean Beach civic leader, had effect only on Supervisor Walter Bellon, whose motion to appropriate the $10,000 failed to get a second.

The Supervisors asked for more time to consider the proposition.

SUBMIT REQUESTS

Mr. Brennan will submit to Washington authorities fund requests for harbor projects totaling more than $1,300,000, with the city as sponsor, due to contribute approximately $1,700,000. Chief among these will be the Ocean Beach pier, Federal $225,168, city $206,792; 10th-st pier, Federal about $800,000, city about $1,200,000; Municipal yacht harbor, Federal $122,282, city $149,128; and Lindbergh Field continuation, Federal $122,296, and city $104,803.

In addition he will give WPA officials plans of the city engineer for a $2,000,000 project to construct a trunk sewer from the Marine Base to the Destroyer Base and a sewage disposal plant. Minor requests will include funds for continuation of improvement, to the 28th-st tidelands, which has sufficient money to continue for some time. Mre. Brennan said he expected to be in the nation's capital for two weeks.

~~X Scrap Book~~

CHRISTIAN SCIENCE MONITOR WEEKLY MAGAZINE SECTION

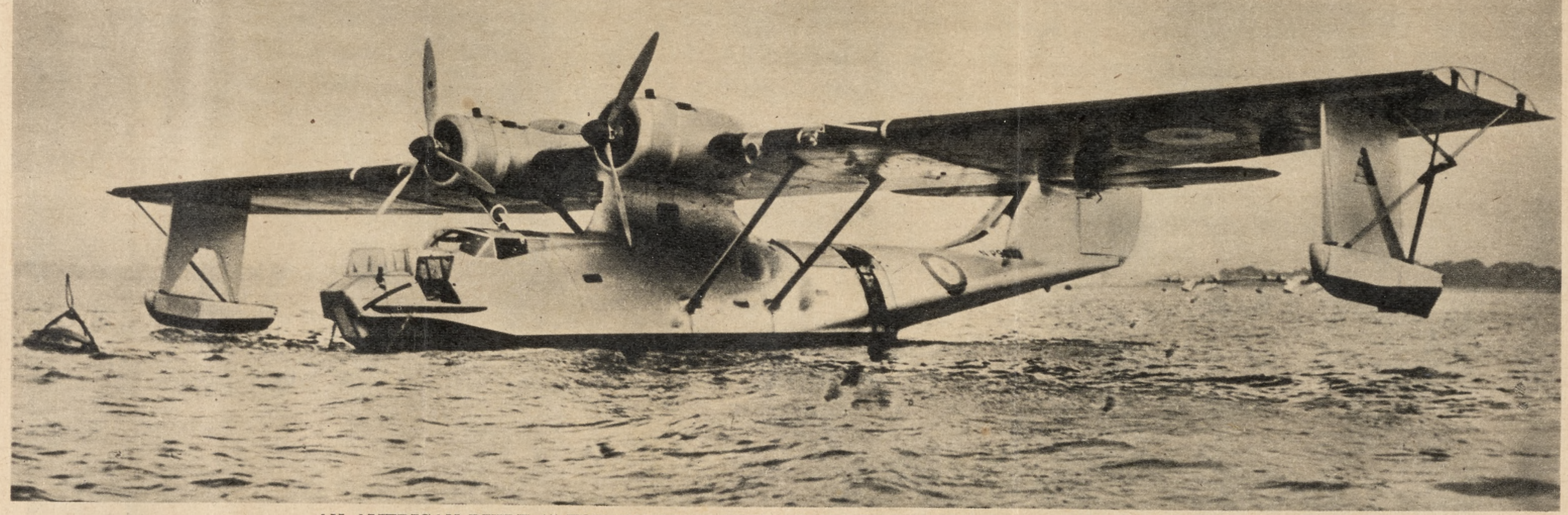
SEPT 23 - 1939

War Confronts America

A Case for United States Trading With Belligerents on a Cash-and-Carry Basis as the Lesser of the Two Un-neutral Concepts of Neutrality

By Erwin D. Canham

Chief of the Washington Bureau of The Christian Science Monitor



AN AMERICAN BUILT 15-TON CONSOLIDATED AIRCRAFT BOMBER THAT FLEW TO BRITAIN Wide World

Piloted by Russel Rogers in July from San Diego, Calif., to Felixstowe, Eng., for Delivery to the Royal Air Force, With Stops at Buffalo, N. Y., and Botwood, Newfoundland. Unless Present Wartime Embargo Law Is Changed, No Further Plane Deliveries Can Be Made. The Picture Below Shows the First of a Lot of 200 Lockheed Planes Ordered by Britain. Squadron Leader James Addams of the British Air Ministry (left), in California in Charge of the Order, Is Talking With C. L. Johnson, Lockheed Engineer

---

The San Diego Sun

Unsettled tonight and Wednesday with showers; cooler tonight; moderate westerly wind. *Complete report on Page 4.*

SAN DIEGO, CALIFORNIA, TUESDAY, SEPTEMBER 12, 1939

CONSOLIDATED DOUBLING SIZE OF FACTORY

Expects Emergency Orders From U. S. For Warplanes

To enable immediate expansion of the Consolidated Aircraft Corp. plant in view of the existing national emergnecy, the City Council today authorized the Harbor Commission to lease 17 acres to the concern at a yearly rental of $750.

Port Director Joe Brennan revealed that company officials now in Washington, D. C., must give the Federal government assurance that land will be available for enlarging the factory before large orders now pending may be granted Consolidated.

The lease, which is for land adjacent to the 27 acres now occupied by the company, carries the option of leasing 22 more acres within 10 years. It will run concurrent with the original 50-year lease the firm received on moving here from Buffalo in 1935.

LEASE URGENT

"The large contracts expected by Consolidated will require almost immediate doubling of the plant's size," Mr. Brennan said, "and for that reason it is urgent that the lease be granted without delay."

Councilman Addison Housh objected to the "rush act" on such an important deal, but voted with the rest of the Council to approve the lease because of the emergency. "If it were not for present war conditions, I'd never approve of doing it this way," he commented.

1800 ON PAYROLL

As support of his contention that the city will benefit greatly by the lease, Mr. Brennan pointed out that Consolidated has paid more than $111,000 in taxes during the past three years, has employed 3800 men at the peak, and today has 1800 on its payroll.

Fly Engines Here For Army Plane

10-14-39

A big army transport plane dropped down on Lindbergh field yesterday afternoon to discharge two 1600-pound airplane engines for installation in a 4-motored army bomber under construction at the Consolidated Aircraft Corp. plant The engines were rushed here from Hartford, Conn., to speed operations in the construction of the plane. Two more engines will arrive by air within a few days.

The transport, piloted by Lt. Thomas J. Schofield, with Lt. Glenn Holland as co-pilot, is specially designed as an air freighter and has made many flights around the country, although this is the first time engines for a new bomber have been flown here. Schofield and Holland are attached to the 10th transport group, Middletown, Pa.

Secrecy surrounds specifications of the engines, although they are said to develop in the neighborhood of 2000 horsepower each. The engines were inspected by Maj. E. R. McReynolds, army air corps inspector in this area; Edgar Gott, solidated executive, and W. G. Chamberlain, factory representative of the engine company.

(~~FOR WALL ST. JOURNAL [N.Y.] of above - See APRIL 13th~~)

CONSOLIDATED READY TO BUILD

Sun Oct 13 - 39

Permit For Addition To Factory Requested

Extension of Consolidated Aircraft Corp.'s production facilities by 75 per cent is contemplated in plans being prepared by the concern's officers, Plant Engineer William A. Maloney disclosed today in applying to the city for permission to construct a three-story steel building as part of this program.

The structure, he stated, would be 60 by 180 feet large, and would be used temporarily for offices, later to be converted to light manufacturing. It would be situated on part of the 17 acres of land adjacent to the 27 acres now occupied by the company and leased by the Harbor Commission for $750 a year.

PREPAREDNESS AID

The enlargement plans, according to Mr. Maloney, are in anticipation of a national emergency and with the desire to aid in the forthcoming preparedness campaign. Consolidated is known to be negotiating for large Army and Navy plane contracts in Washington,, D. C.

"It is our present desire to ultimately erect an administrative building of suitable size and area on property we now lease on the east side of Pacific Highway across the street from the present factory site," wrote Mr. Maloney.

HALF MILE FRONT

These additions will give the factory buildings a street frontage of 2521 feet, almost one-half mile, he pointed out.

The Board of Examiners and Appeals today recommended that an ordinance be adopted amending the city building code to allow construction of three-story all-steel buildings, providing they are protected by metal laths and plaster. The present regulations permit only frame buildings higher than two stories.

AVIATIONS LEAD STOCKS' RALLY

Sun 10-19-39

New High Recorded By Consolidated

By United Press

NEW YORK, Oct. 19.—Stocks made a feeble rally today under the leadership of the aviation issues which made new highs for the year.

The rails ignored favorable news and turned irregular. Utilities firmed slightly. Farm shares, oils, building issues, mercantile issues and coppers were mixed in a narrow area.

There were a few wide swings succh as American Metal preferred which lost 6½ points to a new low; Norfolk & Western, up 6½ points; Franklin Simon preferred, up 5½; Kinney 5 per cent preferred, up 5½, and William Filene's Sons, up 3.

In the aviations, new highs were made by Douglas. Consolidated, Curtiss Wright, North American Aviation, Glenn Martin, United Aircraft and Wright. These had gains ranging to more than 2 points in Douglas and Wright.

Anticipation of early repeal of he arms embargo helped the aviations. Other favorable market news included the Turkish pact with Great Britain and France, and decision of the Scandinavian countries not to attempt mediation o fthe war at this time.

Consair Officials Will Be Feted

Union 10-19-39

San Diego civic leaders will join with Hi Hatters in a birthday salute to Consolidated Aircraft Corp. tomorrow noon, fourth anniversary of the dedication of the huge local aircraft plant. The luncheon will be held in the San Diego club.

Emil Klicka, harbor board commissioner who is credited with doing much to "sell" Consolidated on moving from Buffalo, N. Y., to San Diego; President Don Hanson of the chamber of commerce; Rear Adm. A. B. Cook, commander of the scouting force; Leroy Richards, chairman of supervisors; City Councilman Fred Simpson, representing the city; T. Claude Ryan, president of Ryan Aeronautical Co., and Edmund Price, president of Solar Aircraft, will speak.

Maj. Reuben H. Fleet, president of Consolidated, and a prominent Hi Hatter, and these officials of the company have been invited as guests of honor: C. A. Van Dusen, C. T. Leigh, I. M. Laddon, William Shanahan and R. A. Stanberry. Specially honored guests will be Rear Adm. Joseph R. Defrees, commandant, 11th Navay district, and his aid, Capt. E. S. Root. Horace E. Rhoads will preside, and Edgar Gott will be chairman.

NEW CONSOLIDATED ENGINES ARRIVE

Sun 10-14-39

The first two giant engines, each weighing 1600 pounds, to be installed in Consolidated Aircraft Corp's. rapidly shaping four-motor Army bomber B-24, have arrived in San Diego by Army "air express" from the Pratt and Whitney plant in Hartford, Conn.

The other pair of power plants, each of which are reported to generate 1000 to 1250 h.p., are due here in the near future.

The San Diego plant may be ready to unveil its latest creation in about a month, the bomber is believed to represent a marked advancement in performance over the Boeing "flying fortress," with a 300-mile per hour capacity and a cruising range of as great as 10,000 miles.

Problem, das erſt akut werden kann für unſer Land, wenn die Luftraumgrenzen ſich vorſchieben und Flugzeuge mühelos die ſieben Weltmeere überfliegen können!

Die geſchilderten Stützpunkte zuſammen mit Hilfsſtützpunkten zum Schutz von Schiffanlegeplätzen, Küſtenbefeſtigungen uſw. würden auch gute Dienſte leiſten bei Verteidigung des Landes gegen See- oder Landangriffe. Hier gibt es kein großes Problem; ein ernſtlicher Angriff von Land oder See aus gegen das kontinentale USA. iſt nicht zu erwarten. Angriffe gegen unſere Küſte jedoch, geführt entweder durch ſchnelle Überwaſſerſchiffe, U-Boote oder durch von Flugzeugträgern aus geſtartete Flugzeuge, alſo Angriffe, welche in der Hauptſache gedacht ſind als Waffen gegen die Moral der Zivilbevölkerung oder um die Zerſtreuung und damit Schwächung unſerer Verteidigungskraft zu erreichen, müſſen jedoch ins Auge gefaßt werden. Man könnte hier einwenden, es ſei nicht möglich, mit völliger Beſtimmtheit ſich vor ſolchen Angriffen zu ſchützen, ebenſo wie es heute nicht einmal möglich iſt, ein einzelnes von Stützpunkten in Überſee angreifendes Flugzeug am Bombardieren unſerer Küſtenſtriche zu hindern. Die Frage iſt nicht: wie ſolche Angriffe aufhalten?, denn es gibt keine abſolute Sicherung dagegen, ſondern ſie lautet vielmehr: wie kann man ihren Schaden beſchränken und vermindern? Unſere Großſtädte und Induſtriebezirke werden wahrſcheinlich das Ziel ſolcher einzelner Angriffe ſein. Hilfsſtützpunkte in Nähe von Häfen und Küſtenbefeſtigungen wären alſo bei Verteidigung gegen ſolche Feinde beſonders nützlich.

2. Kanalzone.

Ein ſehr wichtiges Glied im ſtrategiſchen und handelspolitiſchen Leben der Nation und dabei ein konzentriertes Ziel für feindliche Angriffe bietet die Verteidigung des Kanals. Probleme, wie man ihnen nirgends ſonſt begegnet. Nicht, daß ein paar gut gezielte Bomben den Kanal endgültig vernichten könnten! Die Anlagen des Kanals, beſonders ſeine maſſiven Schleuſen, ſind nirgends auch nur annähernd ſo gerwundbar durch Sprengbomben als man bei Lektüre der Sonntagsblätter glauben möchte. Die Schleuſentreppe von Gatun, die berühmten Erdufer im Culebraeinſchnitt, die Kraftwerke, welche die Schleuſenpumpen und -tore betätigen, ſind lohnendere Ziele als die Schleuſen ſelbſt. Bomben, die ſorgfältig auf eines dieſer Ziele gelegt werden, könnten bei genügender Menge einen Schaden anrichten, daß der Kanal für einige Tage oder gar Wochen blockiert wäre. Demzufolge muß die Luftverteidigung des Kanals nicht ſo ſehr vor konzentrierten Angriffen als vielmehr einzeln angreifenden Flugzeugen mit weit größerer Sorgfalt auf der Hut ſein als nötig iſt im Fall der Luftverteidigung der USA., denn die Folge eines ſo ſorgloſen Wagniſſes iſt in Panama weit größer.

Flugſtützpunkte zu beiden Seiten der Kanalzone ſind natürlich weſentlich, aber vorgelagerte Hilfsſtützpunkte, welche ſo liegen, daß verteidigende Flugzeuge angreifende Flugzeuge oder Schiffe abfangen können, ſind faſt ebenſo wichtig. Die Galápagos- und Cocos-Inſeln im Pazifik ſind möglicherweiſe Hilfsſtützpunkte für Seeflugzeuge und würden wahrſcheinlich im Kriegsfall benutzt werden, ſelbſt wenn ſie nicht zu USA. gehören. Auf der Atlantikſeite des Kanals wäre der weſtindiſche Stützpunkt Porto Rico wirkſam imſtande, die Anfahrt in der weſtlichen See zu bewachen. Um jedoch noch größere Sicherheit zu gewährleiſten gegen ſchnelle Überraſchungsangriffe eines feindlichen Flugzeugs, das vielleicht von einem verſteckten Flugplatz in Mittel- oder Südamerika oder einem weit draußen auf See liegenden Flugzeugträger kommt, ſollten Nachforſchungen angeſtellt werden zur Errichtung von defenſiven Hilfsſtützpunkten im Kriegsfall bei Cape Mala (Panama), das die Bucht von Panama beherrſcht, in der Magdalenenbucht (Südamerika), in der Bucht von Fonſeca (Nikaragua) und der Bucht von San Blas bei Bocas del Toro (Panama). Solche Stützpunkte könnten ſehr wohl als Kriegsmaßnahmen nach Konſultierung der freundlichen mittelamerikaniſchen Länder errichtet werden.

3. Alaska.

Alaska und ſein Anhängſel, die Aleuten, ſind wichtig wegen ihrer Bedeutung bei der Verteidigung der USA. Ein Blick auf die Karte des Pazifik zeigt klar, daß die Aleuten und Hawaii den nordöſtlichen Pazifik überwachen. Daher ſind geeignete Flugſtützpunkte in unſerem großen Nordweſten Alaska nötig. Hauptſtützpunkte in Kodiak Island und vielleicht bei Juneau, Fairbanks oder Guſtaſſons Point mit Hilfsſtützpunkten für Patrouillenflugzeuge in Adak oder anderen Häfen der Aleuten würden Alaska hinreichend ſchützen und auch zur Verteidigung Hawaiis beitragen.

(Schluß folgt.) Hanſon W. Baldwin.

England gewährt Rüſtungskredite

Grenzen der engliſchen Finanzkraft.

Englands Reichtum iſt Englands ſchärfſte Waffe! Das iſt die herkömmliche Meinung, und gerade in der letzten Zeit iſt viel von Rüſtungskrediten berichtet worden, die England zur Durchführung ſeiner Einkreiſungspolitik ausgiebig austeile. Nicht ſelten begegnet einem dazu die naive Auffaſſung, daß Englands Wohlſtand groß genug ſei, um ungezählte Hunderte von Millionen Pfund ausleihen zu können. Von dieſem Wahn waren auch die Polen erfaßt, deren urſprüngliche Kreditwünſche wohl 50 Mill. Pfund betragen haben mögen. Selbſt nach dem Abſchluß der ſo viel beſcheidener endenden Kreditverhandlungen ſind polniſche Äußerungen laut geworden, daß man wenigſtens 20 Mill. Pfund erwartet hätte. Statt deſſen bekommt Polen einen Rüſtungskredit in Höhe von 8 Mill. Pfund eingeräumt, der in Waren abzunehmen iſt, und zu dem vielleicht noch ein Barkredit in Höhe von 5 Mill. Pfund hinzukommt, über deſſen Verwendung ſich aber England offenbar die Kontrolle vorbehalten hat. 13 Mill. Pfund ſind es alſo höchſtens, die Polen vom reichen England erhält. Das iſt kein überwältigender Betrag, wenn man die Umſtände der engliſch-polniſchen Annäherung, ihre Motive und ihre offenſichtlichen Zwecke bedenkt. An die geringe Höhe des Kredits ſind mancherlei Vermutungen geknüpft worden, doch ſcheint ein triftiger Grund zu ſein, daß England nicht mehr geben kann. England iſt reich, aber ſein Einkommen reicht nicht aus, allen Anforderungen gerecht zu werden, daher muß es ſeit geraumer Zeit ſeine Subſtanz angreifen.

Englands Kreditfähigkeit hätte demnach Grenzen?

Einer ſolchen Behauptung wird auch heute noch nicht ohne weiteres Glauben geſchenkt, ſo tief verwurzelt iſt die allgemeine Weltmeinung über Größe und Kraft des Pfundes als beſter engliſcher Waffe. Allerdings iſt eine derartige Behauptung auch ungewöhnlich, und ſie wäre geeignet, wenn ſie zutrifft, die Meinung über Englands Schlagkraft zu beeinfluſſen.

England fällt es aber offenſichtlich nicht leicht, den finanziellen Anforderungen ſeiner Freunde voll zu entſprechen. Zunächſt muß man bedenken, daß England 1937 und 1938 eine paſſive Zahlungsbilanz von je etwa 50 Mill. Pfund aufwies. Das heißt, daß nach Verrechnung aller Einnahmen, auch der gewaltigen Zinsbeträge aus ſeinen ſchier endloſen Auslandsguthaben, und nach Abzug aller Ausgaben, insbeſondere für die Wareneinfuhr ein Defizit blieb, deſſen Deckung vermutlich nur durch Auflöſung dieſer oder jener Auslandsguthaben, durch Rückzahlung alter, früher gewährter Kredite erfolgen konnte. Jedes andere Land wäre bei einem ſo hohen Defizit ſeines Zahlungsverkehrs mit dem Ausland finanziell längſt in die ärgſten Schwierigkeiten geraten. England nicht. Das iſt der Beweis für den auch heute noch vorhandenen außerordentlichen Reichtum, aber dieſer Reichtum wächſt nicht mehr. Die ſeit Jahren immer wiederkehrende Schwäche des engliſchen Pfundes und der weitgehende Verzicht Englands auf die Gewährung neuer Auslandsanleihen zeigen ſchon, daß England nicht aus dem Vollen ſchöpfen kann.

Weder die engliſche Regierung noch die engliſchen Banken ſcheinen ſich hier irgendwelchen Täuſchungen hinzugeben. Bereits zu Beginn der polniſchen Kreditverhandlungen war in der Londoner City erklärt worden, England könne ſo hohe Kredite nicht bewilligen, das verbiete ſchon die Rückſicht auf das engliſche Pfund. Zu der ſeit Jahren vom Schatzamt geübten Kontrolle über neu zu gewährende Auslandsanleihen — es iſt eine Kontrolle, die ſich lange Zeit wie eine Sperre ausgewirkt hat! — iſt in jüngſter Zeit mit dem Hinweis auf die hohen Anforderungen, die man zu erfüllen habe, vom Schatzamt wiederholt erklärt worden, das engliſche Publikum möge auf den Erwerb ausländiſcher Wertpapiere verzichten, wobei beſonders an die im engliſchen Effektenpublikum begehrten amerikaniſchen Wertpapiere zu denken iſt.

Die britiſchen Dominien leiden ſchon lange unter der Schwäche des

Im Kampfe gegen Zahnstein
Solvolith
die einzige Zahnpasta mit natürlichem
KARLSBADER SPRUDELSALZ
Normaltube 50 Pfg.
Doppeltube 80 Pfg.
LINGNER-WERKE · DRESDEN

Tuesday, October 17, 1939

S.D. Sun.

ICTION

BRENNAN OFF FOR CAPITAL

To Seek Approval Of Harbor Projects

With the Board of Supervisors hesitant to go into partnership with the city in sponsoring a $150,000 WPA project for construction of a 2000-foot fishing pier at Ocean Beach, Port Director Joe Brennan was scheduled to leave for Washington, D. C., today in an attempt to speed up approval of Federal appropriations for this and other harbor department improvements.

Mr. Brennan was to be accompanied by Maj. Reuben H. Fleet, president of Consolidated Aircraft Corp., who will seek information on the possibility of his concern obtaining further Army and Navy airplane orders. They were to leave by plane at 2 today.

$10,000 ASKED

A delegation of city officials yesterday asked the Board of Supervisors to contibute $10,000 toward the sum needed as the sponsor's contribution to meet material costs. The pleas of Councilman Fred Simpson, representing the beach districts; Mayor Benbough, City Manager Rhodes, and Carl Schroder, Ocean Beach civic leader, had effect only on Supervisor Walter Bellon, whose motion to appropriate the $10,000 failed to get a second.

The Supervisors asked for more time to consider the proposition.

SUBMIT REQUESTS

Mr. Brennan will submit to Washington authorities fund requests for harbor projects totaling more than $1,300,000, with the city as sponsor, due to contribute approximately $1,700,000. Chief among these will be the Ocean Beach pier, Federal $225,168, city $206,792; 10th-st pier, Federal about $800,000, city about $1,200,000; Municipal yacht harbor, Federal $122,282, city $149,128; and Lindbergh Field continuation, Federal $122,296, and city $104,803.

In addition he will give WPA officials plans of the city engineer for a $2,000,000 project to construct a trunk sewer from the Marine Base to the Destroyer Base and a sewage disposal plant. Minor requests will include funds for continuation of improvement, to the 28th-st tidelands, which has sufficient money to continue for some time. Mre. Brennan said he expected to be in the nation's capital for two weeks.

Union 10-10-39

3-FOOT RATS, HUGE BATS FOUND BY ARCHBOLD

★ ★ ★ ★ ★ ★ ★ ★ ★

Aerial Explorer Brings Back Many Specimens, Plans Next Trip

S. D. Flying Boat Boasts Many Flight Records

A native tribe that had never before seen a white man . . . a tree-climbing alligator . . . a white-ring rat three feet long . . . four-foot bats.

These were a few of the things that Richard Archbold, flying explorer of the American Museum of Natural History, who makes headquarters in San Diego and New York, described and exhibited in New York yesterday as the rare items he collected in a New Guinea exploration trip arrived at the museum.

STARTED FROM HERE

Archbold figured prominently in the news last year when he started his New Guinea flight from here in a San Diego-built flying boat. He stroked the back of the huge rat as he described his amazing experiences in New York to a reporter for The Associated Press. The rat—it was dead and in life had been a vegetarian, anyway—was only one of hundreds of rare specimens Archbold obtained in his expedition to the South Pacific islands—an expedition replete with "firsts."

Here are some of the firsts he and his fellow scientists marked down as they traveled 18,000 miles in the $250,000 flying boat Guba:

First to fly around the world at its widest diameter.

First white men to discover an hitherto unknown tribal "nation" of natives in the interior of Dutch New Guinea.

First to fly a flying boat over the Indian ocean.

First to survey and demonstrate the feasibility of a new air route from England via Africa to Australia, thus providing an important link in time of war.

Archbold has been back only since July 1, when the Guba sat down on Jamaica bay. But already, he's planning his next expedition—for "probably November, 1940."

NATIVES EAT BATS

It may take him that time to classify the species of flora and fauna which are arriving now, by the crateful, at the American Museum of Natural History, of which Archbold is a research associate.

He put the rat—it's called a mallornys—back in a huge drawer with a dozen other similar rats, and opened up another drawer.

It was filled with bats — huge, four-foot fruit bats.

"The natives eat 'em," Archbold explained. "I tried that once, too. They're considered quite a delicacy, but my boy didn't think much of it when I told him to cook one."

A musty odor, like old fruit, exuded from the bat.

"The natives cut out a gland, and that's supposed to make it more palatable. But I didn't care much for mine."

SHOWED FURRED ANIMAL

One of the prizes of all the specimens was an animal which would delight—and despair—furriers and women alike.

It's called a phalanger. The female's hide was covered with soft fur of three merging colors, ending in a tail tipped with a tuft of white. The male's coat looks like that of a leopard, with irregular spots.

Their beauty is probably safe from trappers, though, for Archbold explained they are rarely found, and then only at a height of 14,000 feet, after an arduous, dangerous trip through unexplored country. The animals are marsupials, nurturing their young in pouches.

Another curious animal discovered was the foot-long dactylonax, which scoops his food of bugs and insects from beneath logs and rocks with a long, extended forefinger.

"We tried to find a climbing dog the natives told us about," Archbold related. "We never did find it, but one of the natives gave us two teeth which he insisted had come from such an animal. We found out they were tusks from a pig. So another myth was exploded.

"In a previous trip, though, we found a tree-climbing alligator."

FIND NEW TRIBE

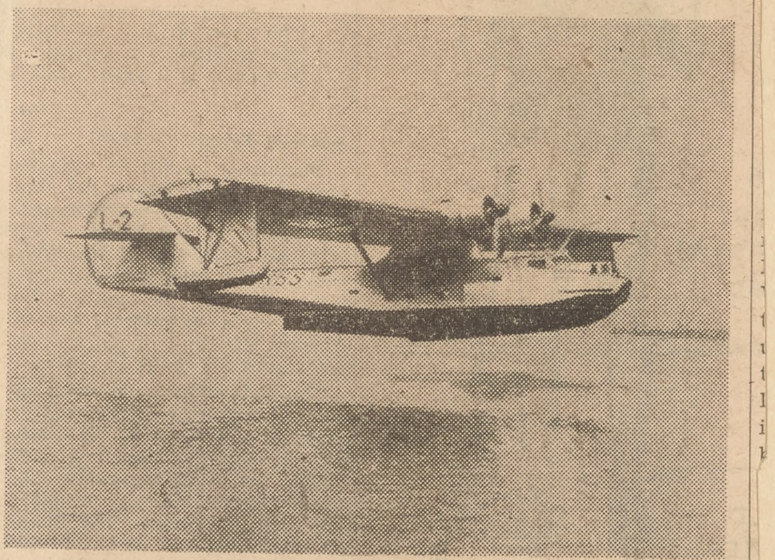
Deep in the interior, the exploring party discovered the new tribe of natives, living in a pleateau country 11,000 feet above sea level.

"They had never seen a white man before," Archbold said. "They called themselves the Witti-Paw and the Assilitti-Paw. They showed a high degree of agricultural development, growing beans, sweet potatoes and taro, principally.

"They had constructed a system of ditches and fences, and an adroit system of rocked-in lanes, down which they could drive their pigs without danger of their getting into the crop-land."

The party was accompanied by detachments of Dutch soldiers but they encountered no hostile inhabitants, he said. Instead, the natives they discovered "adopted" Archbold and other members of the group.

"They slaughtered a pig, toasted the liver and gave it to us to eat. Then they cooked the pig, with elaborate ceremony. Afterward, each of us received a small pig. Then it was set free, and the headman told us that when they had grown up, we would return to the tribe."



Glistening silver wings of his San Diego-built flying boat carried Richard Archbold (lower), flying explorer, into a strange land where a white man had never been seen before.

S. D.-Built Bombers Return to Manila

Union 10-11-39

Fourteen S. D.-built patrol bombers, comprising Squadron 21, that flew from Manila Saturday to Mindanano to escape a typhoon, returned yesterday to the Cavite naval station, The Associated Press reported.

Also arriving at Cavite from duty along the China coast were the destroyer Perry and the cruiser Marblehead.

Squadron 21, commanded by Comdr. Sam La Hache, flew from San Diego to Honolulu last month and after a brief stay at Pearl Harbor, proceeded to the Philippines for neutrality patrol.

Sun

ednesday, October 11, 1939

VENEZUELAN HEADS TO VISIT AIR PLANTS

A Venezuelan military mission which has just arrived in Los Angeles is due to visit the Consolidated and Ryan aircraft plants here, it was learned today.

The officers, Lieut.-Col. Francisco Leonardi and Capt. Jorge Marcano, were reported in the market for planes for the Venezuela air force, and will remain in Southern California for two weeks while touring aviation factories.

HI HATTERS ON OCT. 20 TO HONOR CONSAIR FOURTH ANNIVERSARY OF COMING TO S. D.

High officials of city, county, Army, Navy and government will join in a fourth birthday salute to the Consolidated Aircraft Corp. at a gala program at Hi Hatters luncheon in The San Diego Club on Friday, Oct. 20. That date is the fourth anniversary of the dedication of the big plant in San Diego.

For the first time in Hi Hatters' history, the entire program will be broadcast over KGB of the Don Lee-Mutual Network.

Besides Maj. R. H. Fleet, president of Consair, honored guests will be Vice Pres. C. A. Van Dusen and other high ranking officers of the company. Maj. Edgar Gott, executive vice president, will be chairman of the day.

Emil Klicka, harbor commissioner who was largely instrumental in "selling" Consolidated on moving from Buffalo, N. Y., to San Diego as a permanent home, will speak briefly, as will city and county officials; T. Claude Ryan, president of Ryan Aeronautical Co.; Edmund Price, president of Solar Aircraft Co.; and Don Hanson, president of Chamber of Commerce.

Consair is one of the most important factors in San Diego's civic and business life. Not only is it the biggest industry here, it is one of the largest aircraft plants in the world.

Its PBY planes have set record after record for distance in mass flights, and more Consolidated patrol-bombers have been bought by the Navy than any other manufacturer's planes.

Consair's latest model, produced as a non-military commercial ship, is the "Model 31," a sleek-winged boat with a stubby two-deck hull which can haul a bigger load than has ever been done before on two motors. Her wing is reported to be at least 15 percent more efficient than any other wing yet developed.

The huge four-motored patrol plane built by Consolidated is now the flagship of the admiral commanding the scouting force, marking the first time a heavier-than-air craft has flown the flag of an admiral as a permanent flagship.

TWELVE-TEN CLUB
Thur., Oct. 12

Ritza Reardon
to speak.

HI-HATTERS
Fri., Oct. 13
Union Title Insurance & Trust Co. Program.

LUNCHEON, 70c for members and guests

Conklin To Speak At Hi Hatter Meet This Friday Noon

Harold R. Conklin, chief counsel for the Union Title Insurance & Trust Co., will be speaker on the special program to be put on by that company at Hi Hatters luncheon in The San Diego Club this Friday noon.

A native San Diegan, member of both the state and local bar associations, Mr. Conklin is recognized as an authority on real estate law. His subject will be "Peculiarities of the Community Property Law."

Guests of honor will be James D. Forward, president of the company, and George W. Marston, pioneer citizen.

Special guests will include: Vice Presidents Maj. A. W. Neely, H. D. Barnes, John Gordon McGregor, Rufus Choate and Charles H. Forward, and Joseph C. Forward, James D. Forward, Jr., and J. D. Thompson, assistant secretaries; and the company's board of directors: Mat Heller, Rear Adm. T. J. Senn, USN (ret), George Sawday and B. C. Wohlford.

S. D. Club Barber Shop Offers Best Service

The best of service and individual attention is provided in The San Diego Club's Barber Shop, First Floor, through the expert attention of Barber Harry Fox. He has been with The Club for eight years, and his clientele includes many members who have insisted on having him exclusively for their tonsorial needs during that time.

Complete Sales and Service on FIVE Quality Cars

Ford
'60 — '85 and Deluxe
MERCURY
LINCOLN-ZEPHYR
LINCOLN

Call M-5051 Day or Night

INDIA AT B ST. SAN DIEGO
BROWN MOTOR CO.
Also CORONADO & LA JOLLA

COMING EVENTS in The SAN DIEGO CLUB

WEDNESDAY, Oct. 11—

Opti-Mrs. (Optimists Auxiliary) luncheon.

THURSDAY, Oct. 12—

Executives Association, breakfast meeting.

Lions Club luncheon, 12 noon. Imperial Lounge.

Twelve-Ten luncheon, Main Banquet Hall. Ritza Freeman Reardon to review "escape" books of lighter vein.

S. D. Druggists, luncheon meeting.

Duplicate Contract Tournament, 8 p. m. Lounge.

FRIDAY, Oct. 13—

Hi Hatters luncheon, 12:10 p. m. Main Banquet Hall. Special program by Union Title Insurance Co. Frank Forward as chairman.

Monte Carlo Nite, 8 p. m. Lounge.

"C & D" Bridge Club, dinner.

SATURDAY, Oct. 14—

Saturday Nite Club dance, 9:30 p. m. to 2 a. m. Sans Souci Grill. J. Warde Hutton and his music. For members and accompanying guests. No cover, no admission charge.

Mermaids Swim period, 11 a. m. Plunge.

MONDAY, Oct. 16—

Duplicate Contract Tournament, 1:30 p. m. Lounge.

TUESDAY, Oct. 17—

Kiwanis Club luncheon, 12 noon. Main Banquet Hall.

Jay Gees gym and volleyball, 3:45 p. m.

WEDNESDAY, Oct. 18—

Twelve-Ten annual Fall-Winter Style Show and Fashion Parade, 12:10 p. m. Main Banquet Hall. Reservations must be made in advance. Price $1 per person. Supervised bridge follows program.

THURSDAY, Oct. 19—

Executives Association, breakfast meeting.

Lions Club, luncheon, 12 noon. Main Banquet Hall.

Junior Chamber of Commerce, dinner meeting.

Duplicate Contract Tournament, 8 p. m. Lounge.

FRIDAY, Oct. 20—

Hi Hatters luncheon, 12:10 p. m. Main Banquet Hall. Gala Fourth Birthday program honoring officials of Consolidated Aircraft Corp.

Monte Carlo Nite, 8 p. m. Lounge.

Sun 10-10-39

Naval Air Station Is Hotel For War Birds Of U. S. Fleet

Hundreds Of Planes Soar From Field, But They Belong To Two Other Branches Of Service

Constantly expanding military bases have made San Diego the key to defense of the Pacific Coast—the Navy with 120 ships and 40,000 men, hundreds of planes, the Marine Base, Fort Rosecrans, the Naval Training Station and Coast Guard. The history and present status of the various branches of the service in the community, are being given in 12 articles.—The Editor.

By WILLIS WERNER

Month in, month out, day and night, hundreds of planes soar into the air from North Island. Some of them maneuver over San Diego and some of them don't stop until they reach Coco Solo or Honolulu. But despite all this activity, our Naval Air Station can claim less than a dozen planes of its own!

SIXTH OF A SERIES

Most of the war birds belong to "airbatfor" — aircraft battle force—and are attached to aircraft carriers. They come under authority of admirals afloat. Others are attached to the Scouting Force or the Fleet Marine Force.

Which means that the NAS with its 60 officers, 1250 men, and 2000 civilian employes is actually a hotel for airplanes. The station's job is to provide supplies and maintenance.

A part of the 11th Naval District under Rear Adm. J. R. Defrees, North Island customarily is commanded by a senior captain. In the normal course of events, this means an officer who is likely to become a rear admiral in a couple of years, as was the case with San Diego's popular Capt. John H. Towers, now an admiral stationed in Washington as head of the Bureau of Aeronautics.

At present in command is smiling, quick-spoken Capt. John McCain, a real Southern gentleman from Mississippi, whose record reads like a condensed summary of the Navy's activities.

During the war he spent most of his time on the Atlantic in escort service with the convoys. He was, in fact, aboard the old USS San Diego in June of 1918. That month, however, he was transferred to a post in Washington—and, just a couple of weeks later, the San Diego was sunk by a mine!

Captain McCain has commanded the ammunition ship Nitro, has been with the Bureau of Navigation and three years ago was in command of the fleet air base at Coco Solo. In June, 1937, he took over the ship which was then the smartest in the Navy—the huge, new aircraft carrier Ranger, which sent hundreds of San Diegans to the waterfront for a look when she first arrived here.

It was from the Ranger that Captain McCain came to North Island this June.

With an uncle in the army and a brother at West Point, Captain McCain originally planned to go into the Army himself but there wasn't an appointment available so he gladly accepted an appointment to the Naval Academy in 1902.

Through the years that have

Turn to Page 3, Col. 1.

S. D. Sun

NORTH ISLAND IS HOTEL FOR U. S. WAR BIRDS

Station Planes Are Owned By Other Branches

(Continued from Page 1)

followed, the two brothers have kept pace with each other, one in the Army and the other in the Navy. Capt. McCain's brother is Col. W. A. McCain, at present in command of the Quartermaster Depot in Philadelphia.

SAME DUTY TWICE

Only twice have they found themselves on duty together in the same city—both times Washington. The last time was in 1933-34, when Captain McCain was in the "BuNav" (Bureau of Navigation). Brother W. A. was then president of the Army Industrial College which gave them opportunity for reunion.

Captain McCain, who of course is an aviator or he wouldn't be commanding an air station, did not enter the air service until 1935. Relatively few officials who have been in the Navy for more than 30 years can pass the rigid tests required to get into this branch.

Aviation service is voluntary. Once accepted by the Bureau of Navigation, after meeting a stiff physical examination, an officer goes to Pensacola for flight training. If he is successful he can become a qualified observer in five or six months, while the full course takes six months to a year, producing a Naval aviator. Every Naval aviator commissioned since the war has gone through Pensacola. The men who wear the wings are a class apart.

Enlisted men can become fliers, too, but only officers are called aviators; enlisted men are designated as pilots when they take to the sky.

USUAL ROUTE

Usually an enlisted man gets into the air branch via an aircraft carrier or ship attached to aircraft although for the first time this year a limited number of picked recruits have been given opportunity to qualify as aviation mechanics at the Naval Training Station, going direct from the station into the air service.

An enlisted man who makes the grade and wins special training as a pilot gets a chance at 50 per cent more pay but doesn't necessarily advance his rating. He may be, for example, a first class machinist's mate — and even though he qualifies as a pilot he still must earn his promotion to Chief in the usual way.

Men attached to the air station get the same pay as men in the fleet unless their duties take them into the air for four hours or more per month. If a radioman, for instance, is attached to a plane and finds himself aloft more than four hours during the month, his pay automatically jumps 50 per cent. Less than 10 per cent of the men on North Island draw this extra money.

Some of the men also draw an allowance of 50 cents a day for living "ashore." The Island has 14 houses for officers, and barracks not only for the men stationed on the island but for the personnel of squadrons aboard the carriers when they're in port. The elaborate massing arrangements permit feeding as many as 4000 men per day.

MANY AT HOME

But many of the enlisted men have wives and families and prefer to live in their own homes. Under certain conditions, the commanding officer can allow them 50 cents a day for the food and bunk they don't use.

Otherwise they do as they do in the fleet and make their regular pay cover the extra expense of a home ashore. It's "ashore" even when they're on North Island. Navy men speak of going "aboard" when they go to the air station just as though it were a ship.

Practically everything is double at the air station, however, as fleet aircraft has its own offices, giving the island two officers of the day, etc.—one for Naval Air, the other for Fleet Air.

Unlike aboard ship, Naval Air has a permanent daytime "O.D." because there is so much to keep track of. He's the man to see first if you want anything on the island. He's the man that stores phone to when they want to make deliveries but have a new man on the truck. Everyone must have a pass to enter the air station now and regular delivery men have them. If a different man is going to be at the wheel, his name is phoned in advance of arrival. For a year now, Lieut. Comdr. R. P. Noist has had this duty.

Another busy man is the executive officer, Comdr. H. M. Mullinix, who is directly under Captain McCain. Commander Mullinix also was on convoy duty during the war, looking for submarines, and likes flying considerably better than sitting at a desk.

One of his unusual jobs is handling traffic tickets. The island has rules just like a city and if a civilian gets a ticket for overparking or something, Commander Mullinix can ban his car from the island. It's sometimes more serious when a Navy man is tagged. The man may even find himself brought up before the captain.

The Island has its own stores, barber shops, theater, etc., too, run by the Navy but in many cases employing civilians. The Navy, for example, doesn't train soda jerkers so the two working on the island are hired.

Profits from soda fountain, barber shop, pool room, etc., pay for the nightly films. The projectionist gets extra pay for screening them and usually is an electrician's mate who has been through the school for operators at the Naval Training Station or elsewhere.

Originally a haven for quail and rabbits, North Island made its debut in aviation when Glenn Curtiss established a flying school there in 1911. One of his chief instructors was Maj. T. C. Macauley, now executive secretary of the San Diego Chamber of Commerce.

The precedent for later aerial exploits was set here by a long series of "firsts," including the first seaplane flight in the world by Mr. Curtiss in 1911 and the first night flight by Major Macauley in 1913.

NAVY COMES IN

It wasn't long before the new school was training Army fliers. By 1912, government troops were stationed on the island and military aviation had arrived in San Diego.

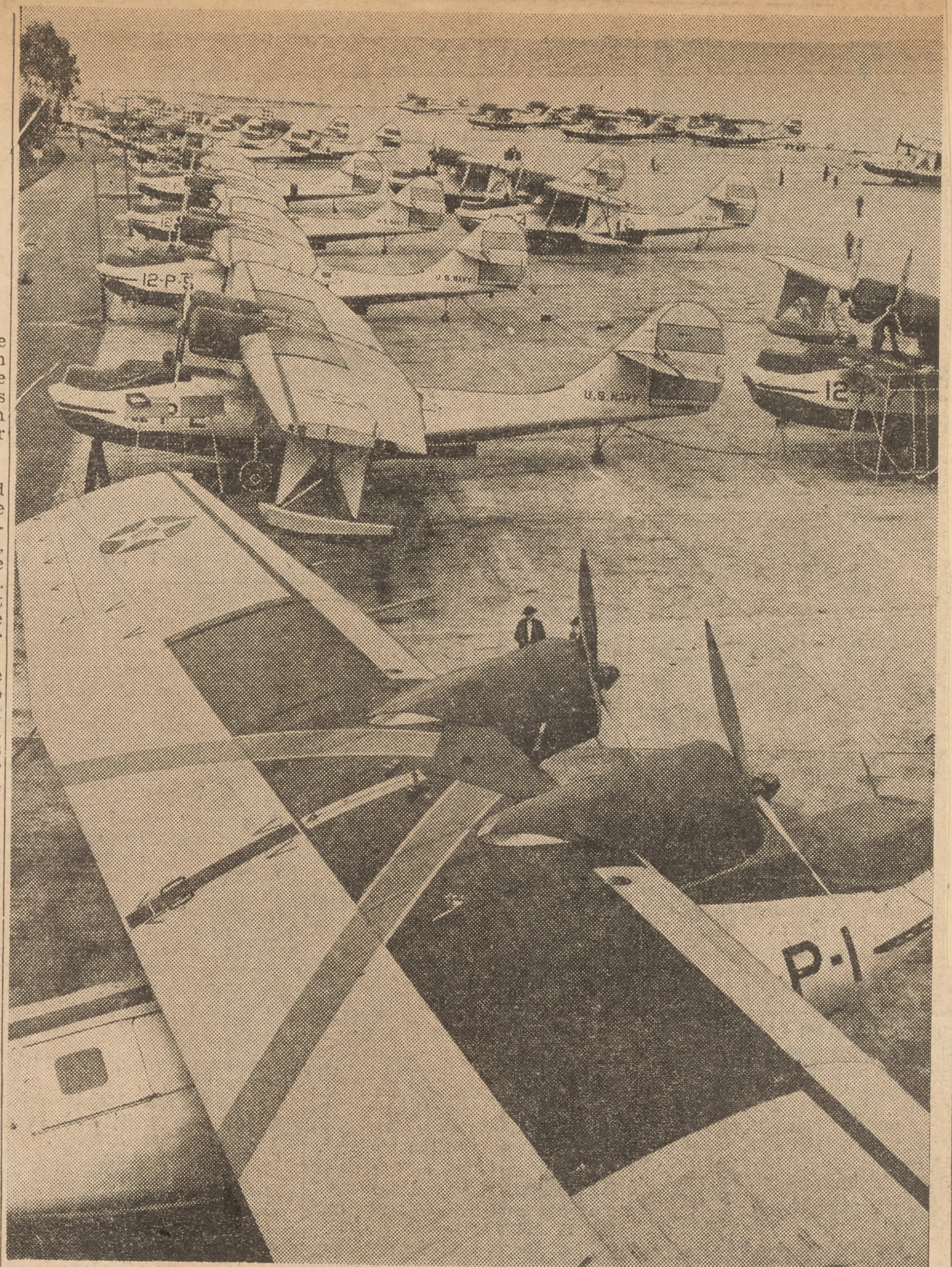
The Navy first gained authority to share the island in 1917, occupying several old buildings. Both the Army and Navy used the island as a training center and after the war the Navy rapidly expanded its facilities on the north end.

After what Major Macauley discreetly terms "difference of opinion on the part of ranking officers of the Army Air Corps," the Navy finally won exclusive use of the island. Since that time it has become the most important air base in the U. S.

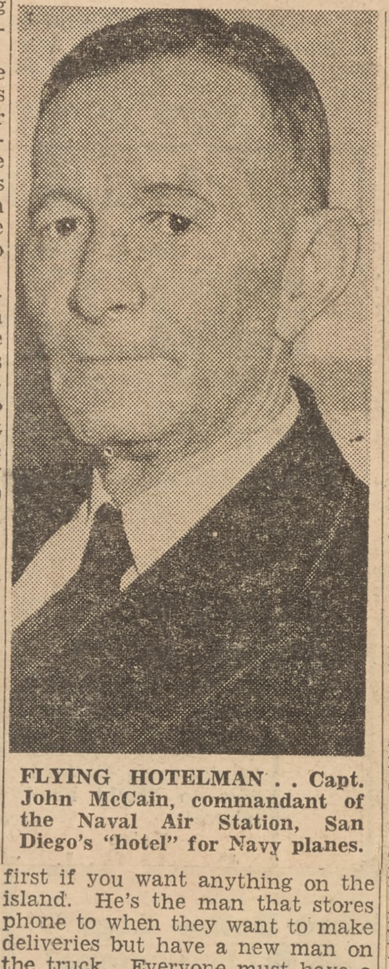
Many civilian employes who first prepared the island for the Navy 20 years ago are still working there. You'll find such old-timers as A. Zitnick, in charge of supply depot shipping; C. L. Downs, head stock man; H. T. Bushart, in charge of the accounting department; S. Pittman in charge of aircraft stores; Maj. W. V. V. Stewart, reserve officer, now chief clerk for the station, and J. N. F. Bishoff, public works foreman, who first went to work for the Navy at Key West in 1930.

Probably best known of the veteran civilians is a San Diego reserve officer, Col. John Sherman. On the island, he is storehouse supervisor for the supply corps; in San Diego he is commander of the National Guard anti-aircraft unit.

As for those 8 or 9 planes which belong to the Air Station, they are used for testing parachutes, taxi service, etc. Every morning one of them spirals 2 or 3 miles into the sky with a recording barograph to take weather observations. It's just part of the day's routine, carried out by whatever pilot is assigned that day.



WINGS AT REST . . . But ready for any emergency. Here are a few of the hundreds of war planes based at North Island. They're groomed for action at a shore tsation, but they come under command of forces afloat.

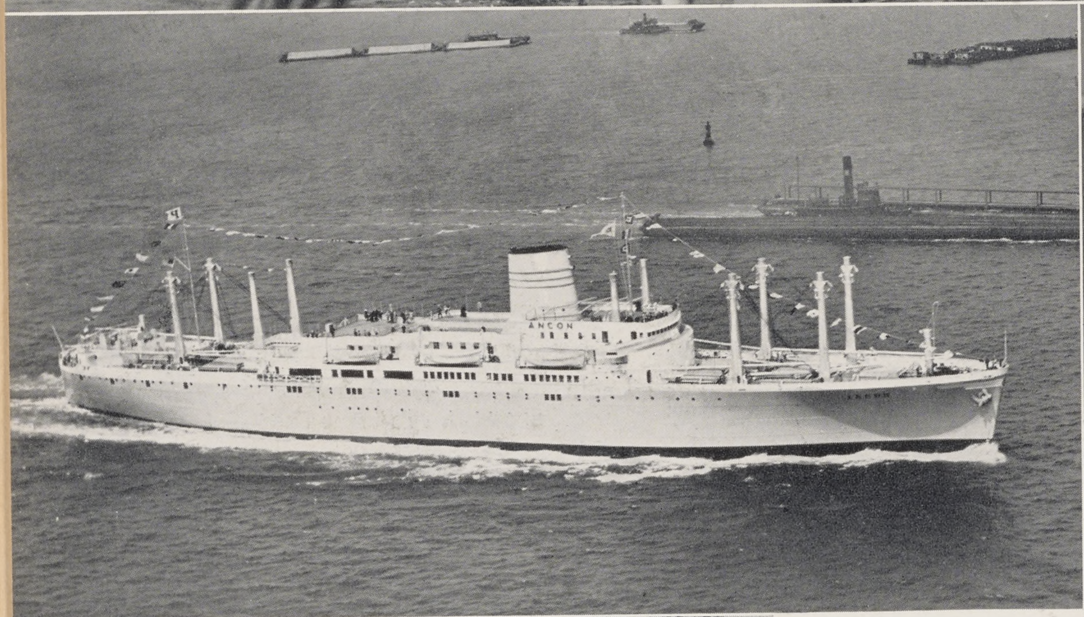


FLYING HOTELMAN . . Capt. John McCain, commandant of the Naval Air Station, San Diego's "hotel" for Navy planes.

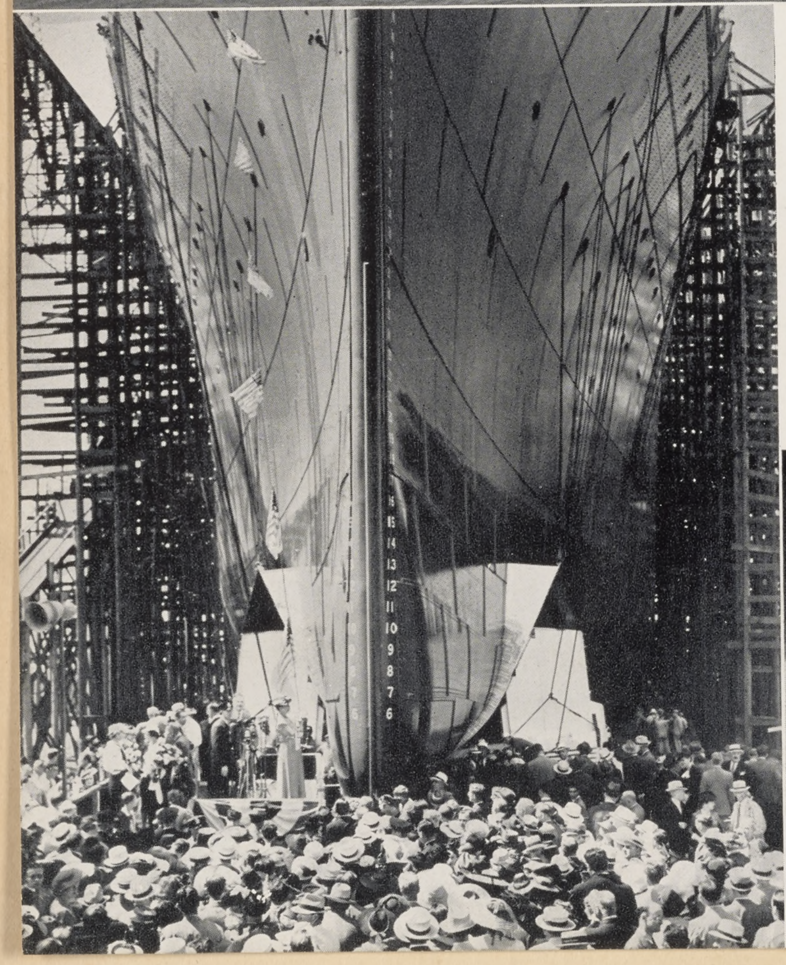
NEW

Cunard White Star liner, the new *Mauretania,* shown arriving in New York June 24 after completing her first east-west crossing of the Atlantic. She is fully Sperry equipped.

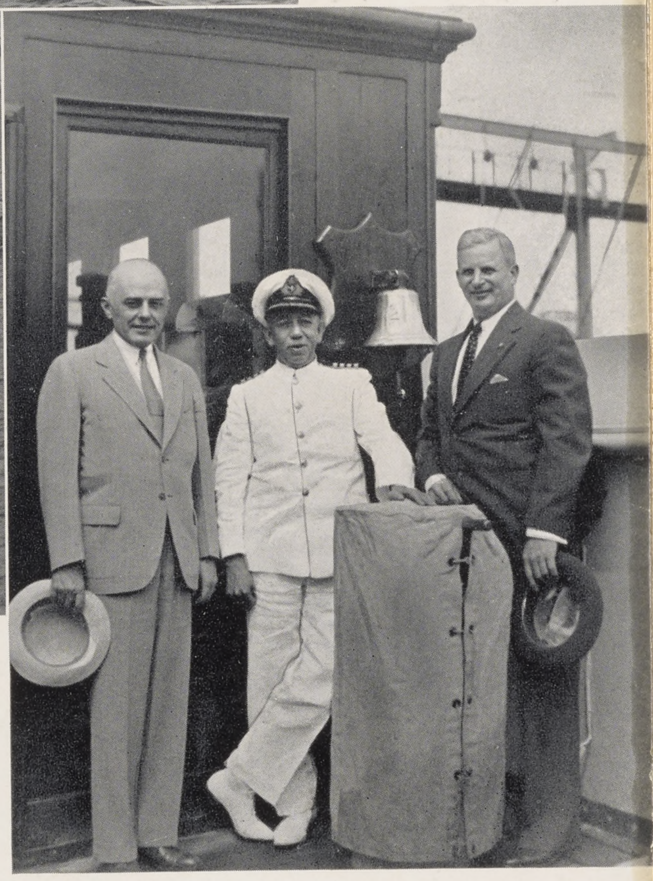
French flying boat, *Ville de St. Pierre,* arriving at Port Washington, Long Island, July 30, on one of a series of survey flights across the Atlantic



Ancon, second of the Panama Railroad Steamship Line's popular new trio to enter service. Sperry Gyro-Compass and Gyro-Pilot are standard equipment on these ships.



The *America,* largest passenger ship ever built in this country, was launched at Newport News, Virginia, on August 31 and christened by Mrs. Franklin D. Roosevelt.



Navy's new Ship-Model Testing Basin at Carderock, Maryland, nears completion. Below, interior view of main basin

---

LUNCHEON HONORS CONSAIR OFFICIALS

Sun 10-20-39

R. H. Fleet, president of Consolidated Aircraft Corp., and officials of that plant, was honored at a program celebrating the fourth anniversary of the dedication of Consolidated's factory here, at Hi Hatters' luncheon today in the San Diego Club.

San Diego's civic leaders joined with Hi Hatters in this gesture. Those to speak briefly were:

Emil Klicka, harbor board commissioner, who is credited with doing most to "sell" Consolidated on moving from Buffalo, N. Y., to San Diego; President Don Hanson of Chamber of Commerce; Rear Adm. A. B. Cook, scouting force commander; Leroy Richards, county supervisors chairman; City Councilman Fred Simpson, representing the city in place of Mayor Benbough, whose recent illness prevents him appearing; T. Claude Ryan, president of Ryan Aeronautical Co., and Edmund Price, president of Solar Aircraft.

Other guests of honor were: Rear Adm. Joseph R. Defrees, commandant 11th Nav. dist.; his aide, Capt. E. S. Root; and these officials of Consolidated: C. A. Van Dusen, C. T. Leigh, I. M. Laddon, William Shanahan, and R. A. Stanberry. Horace E. Rhoads will preside, and chairman will be Edgar Gott.

---

form."

Union Oct 20-39

New Consair Unit O.K.'d

An ordinance amending the building code to permit construction of a three-story steel-frame metal-lathed office building by Consolidated Aircraft Corp., has been approved by board of examiners and appeals and recommended to city council for passage.

---

aviation 9/39

Air Corps In Biggest Spending Splurge

Orders total $85,978,000 in record contract shower.

There was heavy firing along the aviation front Aug. 10, as the War Department reared back and placed the largest single order for war equipment in United States history. Bang! went $85,978,000 of funds made available for new aircraft and equipment by the recently adjourned Congress. Boom! went the country's airplane manufacturing industry as it received in a single day more orders for aircraft than it had ever turned out in any entire year prior to 1937.

The emphasis of the day's procurement was definitely on the heavy "battle-wagon" type of plane. Boeing aircraft got orders for $8,090,000 worth of flying fortresses. Consolidated Aircraft took orders for $8,485,000 worth of similar 4-engine craft. Furthermore "options" for additional planes in this category amounting to $5,400,000 were written into the above contracts. Glenn Martin got the biggest order of all, $15,815,000 for a fleet of its new twin-engined bombers. North American got an order for $11,771,000 worth of its twin-engined bombing planes. Thus a total of $41,076,000 went to strengthen our bombing squadrons. Last April Consolidated got an order for $2,280,000 worth of 4-engined bombers. Douglas contracted to deliver $15,000,000 worth of twin-engined bombers. And Martin and Stearman each undertook orders for a half million for ships of that type. Total current orders for bombers of all classes therefore add up to the very substantial figure of $59,356,000.

Among the Aug. 10 orders, North American also received a $1,326,000 award for advanced training planes and a $2,707,000 contract for basic training planes. The Vultee division of the Aviation Manufacturing Corp. also got an order for $2,489,000 worth of basic training planes.

Lockheed, which on April 26 received a $2,180,728 contract for twin-engined pursuits, last month got a second order for an additional $4,845,000 worth of the same ships.

Stearman received an order for $688,000 worth of basic training planes with provision that the Army might contract at a later date for an additional 2 million dollars worth.

The engine firms likewise came in for big orders. Pratt & Whitney received contracts for $12,320,000. The Wright Company got orders for $7,000,000 worth. Allison received further contracts for $2,375,000 to add to its spectacular 15 million dollar order placed June 29. Lycoming got an order for $270,000.

The War Department announced that its Aug. 10 awards represented "the major portion" of the aircraft purchases it intends to make this fiscal year under the recent air corps Expansion Act. But "additional types are under evaluation at Wright Field, in Dayton and awards will be announced shortly," the Department added. No further details were given but the additional types under consideration were known to be largely single pursuits and the amount involved somewhere between $12,000,000 and $18,000,000.

Wide World

LOUIS JOHNSON

Bang! Went $85,978,000

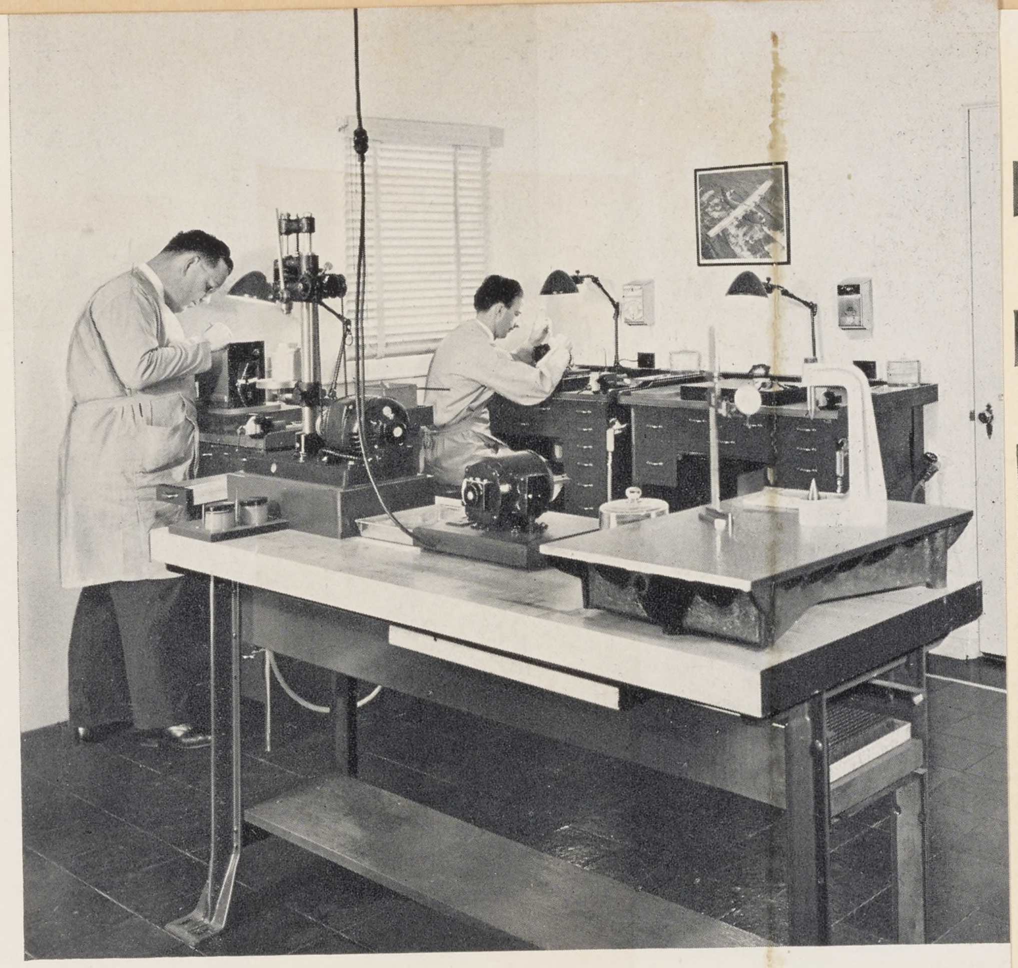
Just for the general interest in the thing, here is a summation of all Air Corps and Navy orders for planes and engines placed since April 3, the date of the act authorizing the Air Corps expansion program. It lists in order of magnitude the total orders placed with each airplane company.

North American $19,809,218; Douglas $15,000,000; Martin

$16,315,000; Curtiss - Wright (Airplane Division) $13,990,209; Consolidated $11,365,000; Boeing $8,778,000; Lockhead $7,025,728; Vultee $3,076,000; Stinson $1,500,000; Beech $1,185,849; Bell $1,073,445; Seversky $974,325; Stearman $500,000; Ryan $152,655; St. Louis $150,002; Waco $100,720; Bellanca $50,000.

Engine contracts awarded during the period by the Army total: Allison $17,355,262; Pratt & Whitney $13,437,872; Wright $7,000,000; Lycoming $270,000.

The Sperryscope Oct. 1939



Aeronautical School, Los Angeles, Instructor Dan L. Garber at left

as China and the Argentine, but by far the majority are from our own Army, Navy and transport lines. Over three hundred students have finished the courses given in our Aeronautical Schools.

The newest and most exclusive of the Sperry Schools exists only for the purpose of training officers, enlisted men and civilians of the U. S. Army, Coast Artillery and Marine Corps in the theory, operation and maintenance of the Sperry apparatus they are required to use. The personnel comes of course principally from the Ordnance Department for whom the Anti-Aircraft Directors and Sound Locators are manufactured.

In the Sperry School the training in anti-aircraft instruments is concentrated upon the maintenance in good condition and effective operation of the Sperry instruments under all conceivable service conditions. The Searchlight and Sound Locator, though less complicated than the Anti-Aircraft Director, also have their problems of effective use and efficient maintenance with which the personnel charged with them must be thoroughly familiar.

From many points of view the functions performed in this School are unusual. There must be few manufacturers in the world whose duties include the instruction of a technical branch of the nation's armed forces in the use of highly specialized military equipment. It need only be said that the position of the Sperry Gyroscope Company in developing anti-aircraft equipment has been so unusual that it has been placed in a position of special service in being so closely connected with this branch of the government service.

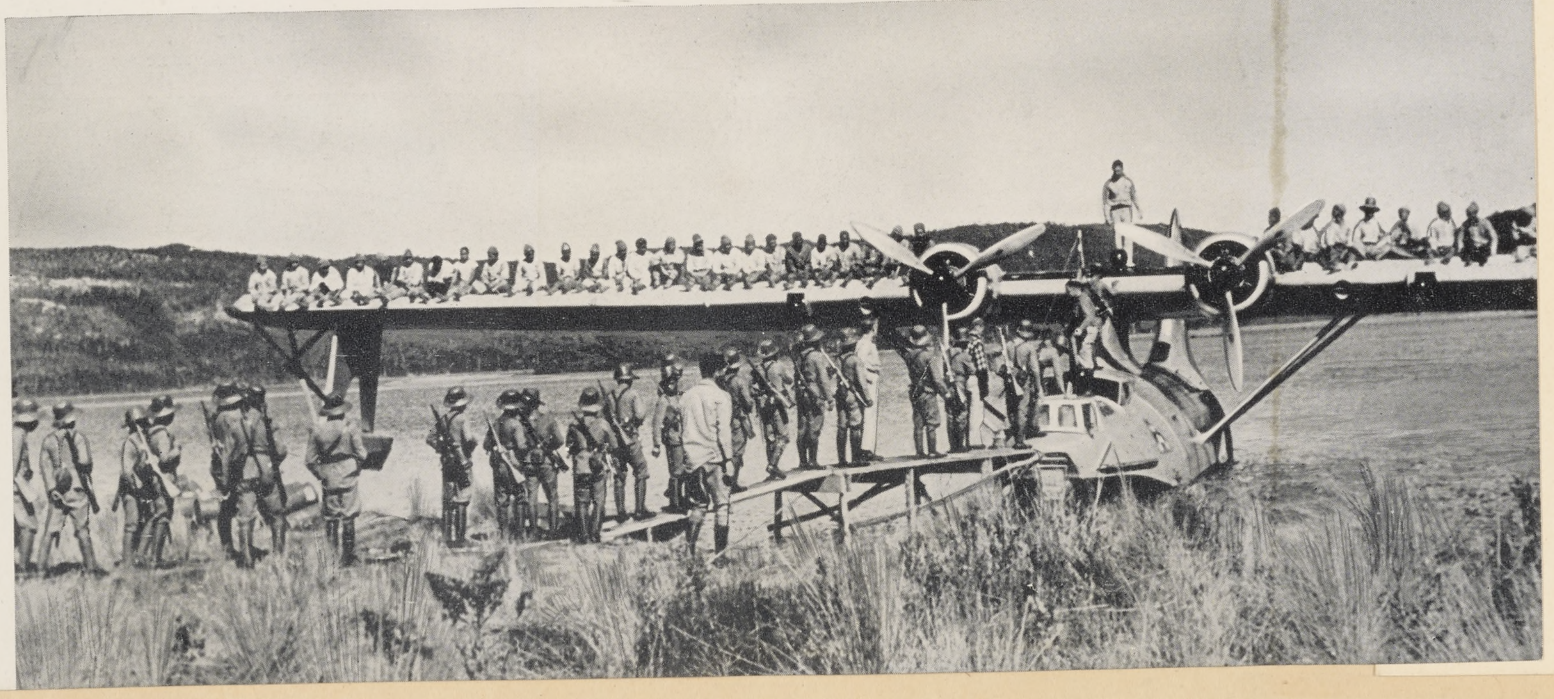
EXPLORING NEW GUINEA BY AIR

Rounding out 40,000 miles of flight and a year in the unexplored wilds of New Guinea, the Archbold Aerial Expedition of the American Museum of Natural Science, under the leadership of Richard Archbold, returned to New York on July 1.

A Twin Wasp-powered Consolidated PBY-1 flying boat named "Guba", equipped with a Sperry Gyropilot, flew the Expedition 7,000 miles across the Pacific to a tiny town on the northern coast of Dutch New Guinea which served as an operating base. From there the Guba was used to fly 130 members of the Expedition and 30 tons of supplies to an advance base on Lake Habbema 200 miles inland. From the lake, 11,800 feet above sea level, dozens of takeoffs and landings were made on exploratory and mapping expeditions.

The return journey was made via Australia, the East Indies, Africa and the Virgin Islands.

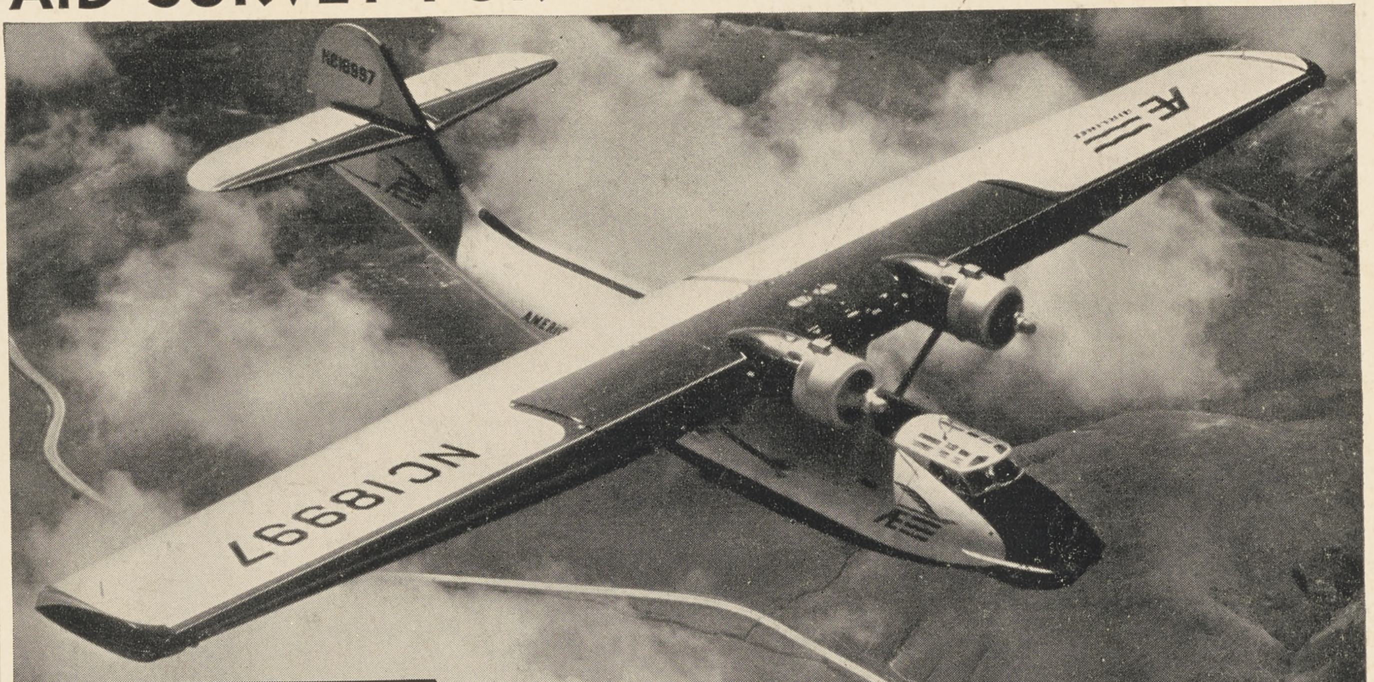
— Wide World



Back Page The Sperryscope Vol. 8 No. 12. (Oct. 1939)

SPERRY INSTRUMENTS

AID SURVEY FOR NEW ATLANTIC SERVICE



Captain P. J. Byrne, commander of American Export Airlines' survey flights

In completing a series of scientific survey flights across the Atlantic, American Export has written a new chapter in aviation history. Long famous for successful steamship operations, the line will soon be ready to accommodate air passengers as well. The routes are ready, the pioneering done.

Referring to the part which Sperry instruments played in this important accomplishment, Captain Byrne reported "During all our flights we relied continually upon the Sperry Gyropilot, Gyro-Horizon, Directional Gyro and Gyro-Magnetic Compass. Their splendid performance was of great assistance to the successful completion of every trip."

SPERRY GYROSCOPE COMPANY, Inc.
BROOKLYN, N.Y.

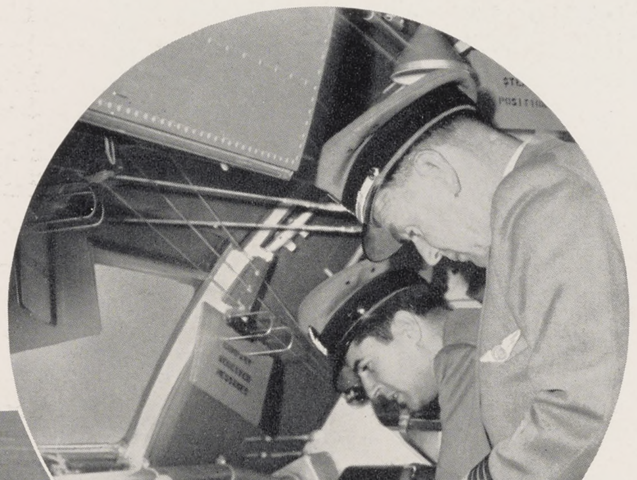
gram would not be simple to carry out. The total number of flights between the United States and Europe would range from ten to twenty per week if foreign flag companies each flew one to two trips weekly and American flag operators flew a corresponding number. On the other hand, if American flag operators were restricted to say four trips a week, then European countries would be restricted to a corresponding number, a total of eight. This would mean that certain countries would be unable to procure permits until the American minimum of four was increased.

If Europe, aviationwise, could organize itself into a United States of Europe, it would be simple for the United States of America to say, "We will run two, four or six schedules a week across the Atlantic, and you can operate an equal number, dividing it any way you see fit between England, France, Germany, Italy, Holland and others." Unfortunately, such is not the case, and an added burden involving decision and procedure is put in the lap of the Authority if America is to hold its position in the air lanes across the Atlantic. It means one country against at least six European countries.

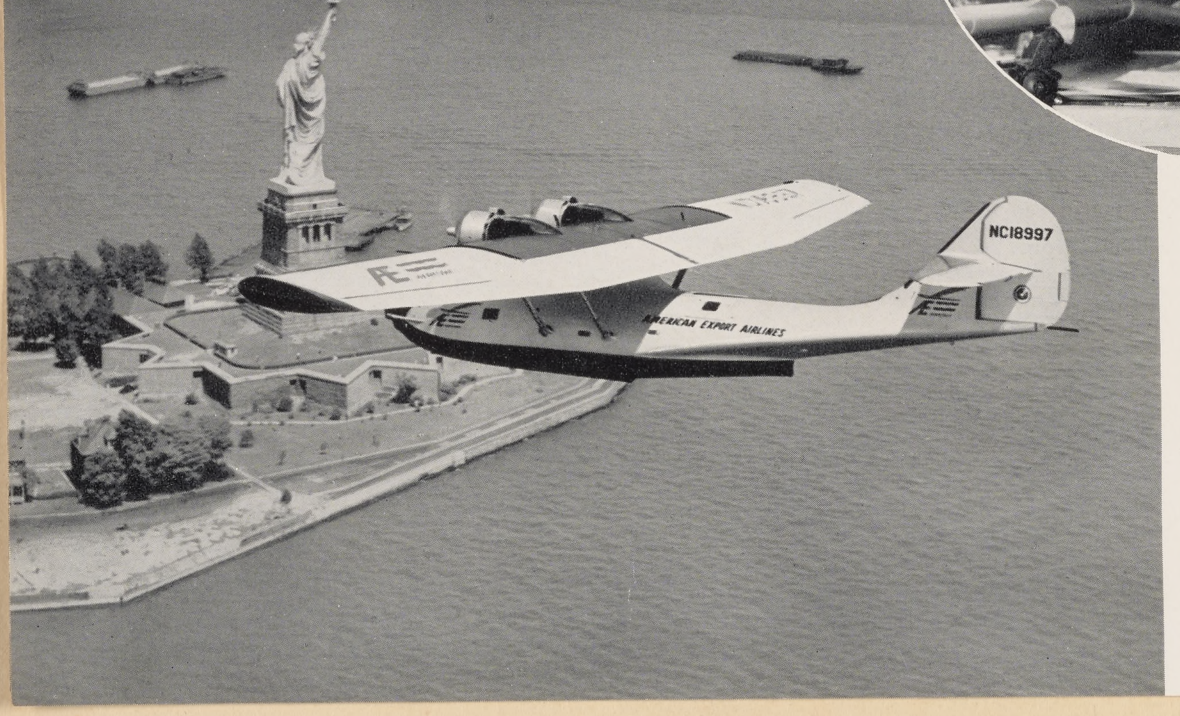
It is perfectly clear that our country should take advantage of the opportunity aviation affords to reclaim its position between here and Europe. It is likewise clear that many interests and groups will be required to supply the organization, engineering talent, adequate equipment, up-to-date ideas and financing, and that all must be, as time goes on, encouraged and fostered by the United States Government.

At the present time aviation appears to be on the threshold of producing more economic equipment than at any other time in its short history, but it has not yet reached the point of self-sufficiency and therefore must be nursed along either by direct subsidy (as in most European countries) or by payment for the carriage of mail (as is the custom in this country). There is a great potential volume of business to be transported across the Atlantic by air, and there is no limit to the amount of mail available if rates are fair and schedules are fast and dependable. On this basis there is adequate mail pay for several companies, and several are required if the United States is to hold its position. They must be strong and alert to recent and future developments.

American Export Airlines has just completed a series of survey flights across the Atlantic, using the various routes—New York, Newfoundland, Ireland, France; New York, Newfoundland, France direct; New York, Azores, Lisbon, France. The flights were laid out and an organization was selected to conduct operations. There was no interruption in the schedule, and the stipulated trips were made on time, leaving New York every other Friday. It is impossible in the limited space allotted to cover the details involved in organization, including personnel, communications and meteorology, but it goes without saying that they received proper attention or results would not have been what they were. Great credit is given the personnel in the organization, including the Captain and his crew, and many pages could be spent on the dependability of the aircraft, engines, radio, instruments and fuel. The flight reports show a perfect score for American equipment.



Capt. Patrick J. Byrne (right) and Co-pilot T. S. Terrill working on navigation charts



American Export Airlines' Consolidated PBY, the *Trans-Atlantic*, piloted by Captain Byrne, as she flew past the Statue of Liberty on a survey flight to Europe

— *Rudy Arnold*

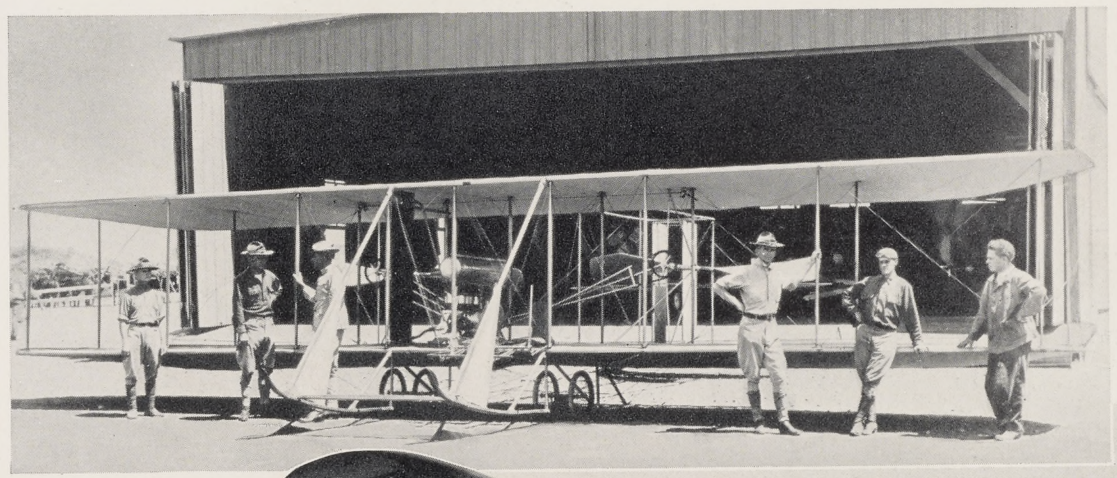
AE AIRLINES

— *Rudy Arnold*

American Export Airlines proposes to run dependable, fast, all-year-round scheduled operation between this country and Europe. It is convinced that if the schedule is to be dependable, it must be conducted on a non-stop basis. The parent company's records, covering years of ocean experience, show that weather conditions throughout the twelve months of the average year cover the full swing of the pendulum from very good to very bad. It is with this information in mind that the importance of long-range equipment, adequate for non-stop, with proper fuel reserves even in the face of high and continuous headwinds, becomes a dominating factor. The aircraft must be able to take off and fly to its destination by whatever route or detour is necessary to avoid bad weather conditions. From all indications at the present time, this means that the winter services must be carried on over a route swinging well south of the bad weather zones and be able at all times to fly a non-stop distance of more than 4,000 miles. Need for dependable engines is recognized, as well as for a sufficient number in case of engine failure; and it is the firm belief of the company that these features, combined into planes able to carry adequate fuel for long non-stop range, will make possible a service that will be popular beyond belief for mail, passengers and express. The size of equipment will be determined by engineering brains as dependability is proven and demand dictates.

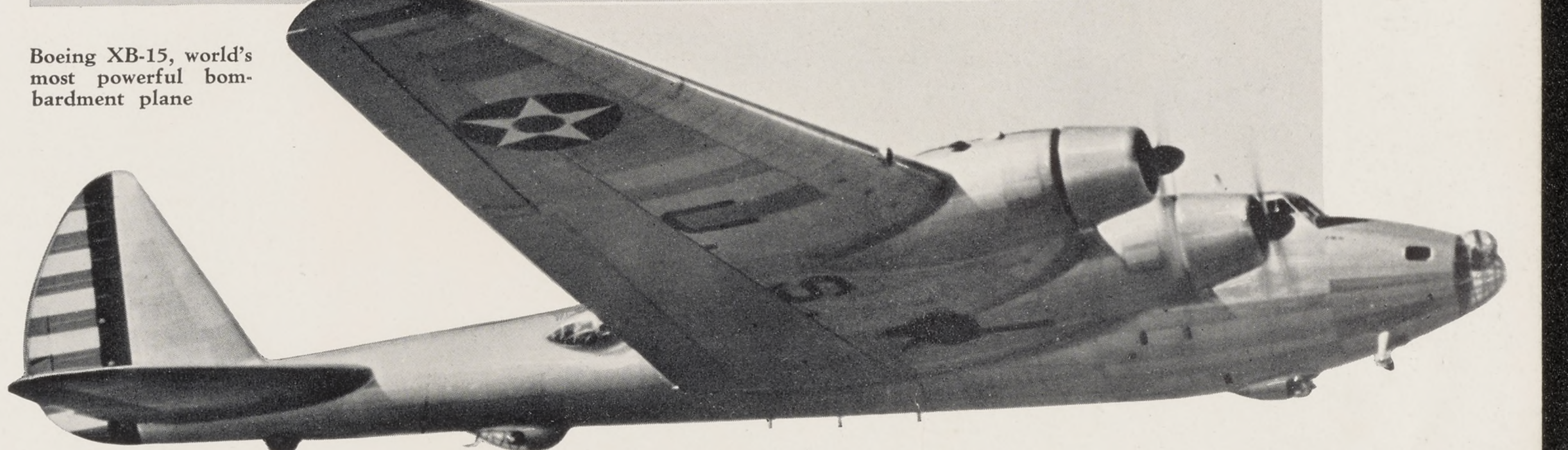
American Export is confident that with such a program it can be an important factor in aiding the United States to reclaim its position in the transportation field between this country and Europe.

U. S. AIR CORPS' OLDEST AND NEWEST



Thirtieth Anniversary of Army's First Airplane, Wright Type B (shown left), was celebrated on August 2.

— *Official Photos U. S. Army Air Corps*



Boeing XB-15, world's most powerful bombardment plane

---

deliver $15,000,000 worth of twin-engined bombers. And Martin and Stearman each undertook orders for a half million for ships of that type. Total current orders for bombers of all classes therefore add up to the very substantial figure of $59,356,000.

Among the Aug. 10 orders, North American also received a $1,326,000 award for advanced training planes and a $2,707,000 contract for basic training planes. The Vultee division of the Aviation Manufacturing Corp. also got an order for $2,489,000 worth of basic training planes.

Lockheed, which on April 26 received a $2,180,728 contract for twin-engined pursuits, last month got a second order for an additional $4,845,000 worth of the same ships.

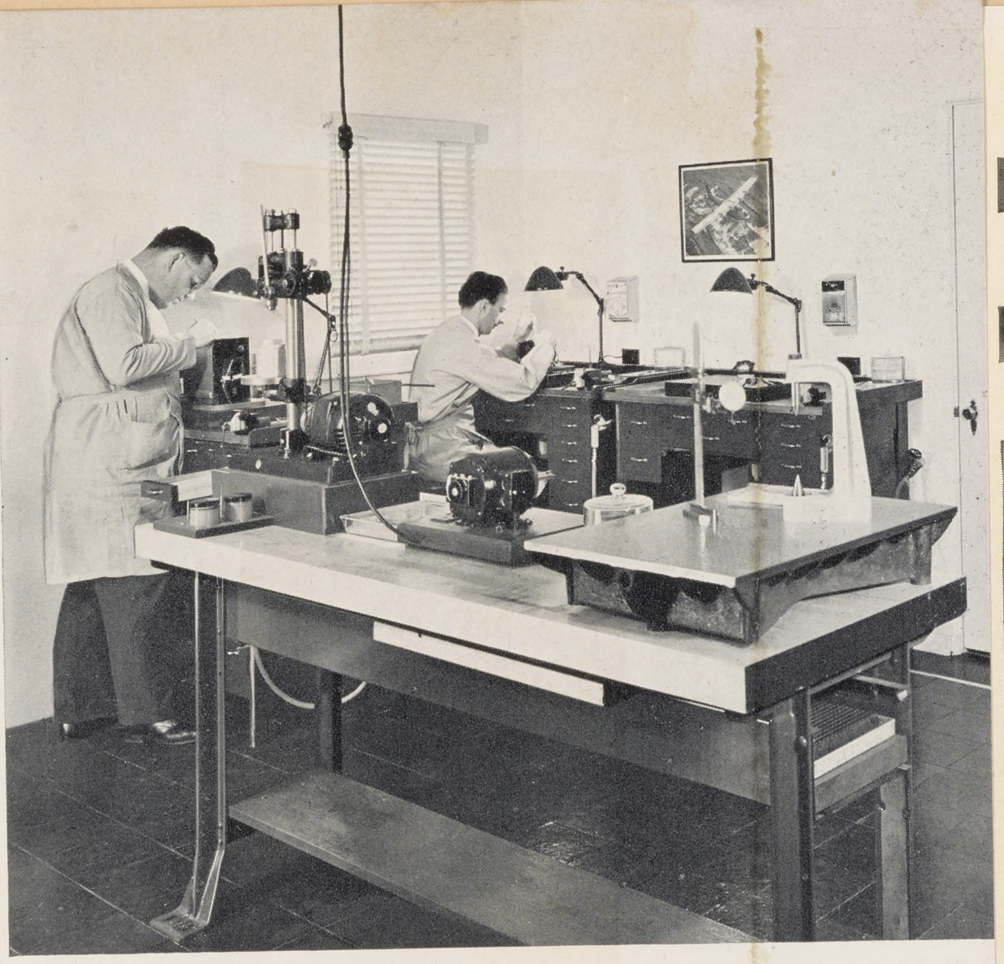
Stearman received an order for $688,000 worth of basic

portion" of the aircraft purchases it intends to make this fiscal year under the recent air corps Expansion Act. But "additional types are under evaluation at Wright Field, in Dayton and awards will be announced shortly," the Department added. No further details were given but the additional types under consideration were known to be largely single pursuits and the amount involved somewhere between $12,000,000 and $18,000,000.

Just for the general interest in the thing, here is a summation of all Air Corps and Navy orders for planes and engines placed since April 3, the date of the act authorizing the Air Corps expansion program. It lists in order of magnitude the total orders placed with each airplane company.

North American $19,809,218; Douglas $15,000,000; Martin

The Sperryscope Oct. 1939



Aeronautical School, Los Angeles,
Instructor Dan L. Garber at left

as China and the Argentine, but by far the majority are from our own Army, Navy and transport lines. Over three hundred students have finished the courses given in our Aeronautical Schools.

The newest and most exclusive of the Sperry Schools exists only for the purpose of training officers, enlisted men and civilians of the U. S. Army, Coast Artillery and Marine Corps in the theory, operation and maintenance of the Sperry apparatus they are required to use. The personnel comes of course principally from the Ordnance Department for whom the Anti-Aircraft Directors and Sound Locators are manufactured.

In the Sperry School the training in anti-aircraft instruments is concentrated upon the maintenance in good condition and effective operation of the Sperry instruments under all conceivable service conditions. The Searchlight and Sound Locator, though less complicated than the Anti-Aircraft Director, also have their problems of effective use and efficient maintenance with which the personnel charged with them must be thoroughly familiar.

From many points of view the functions performed in this School are unusual. There must be few manufacturers in the world whose duties include the instruction of a technical branch of the nation's armed forces in the use of highly specialized military equipment. It need only be said that the position of the Sperry Gyroscope Company in developing anti-aircraft equipment has been so unusual that it has been placed in a position of special service in being so closely connected with this branch of the government service.

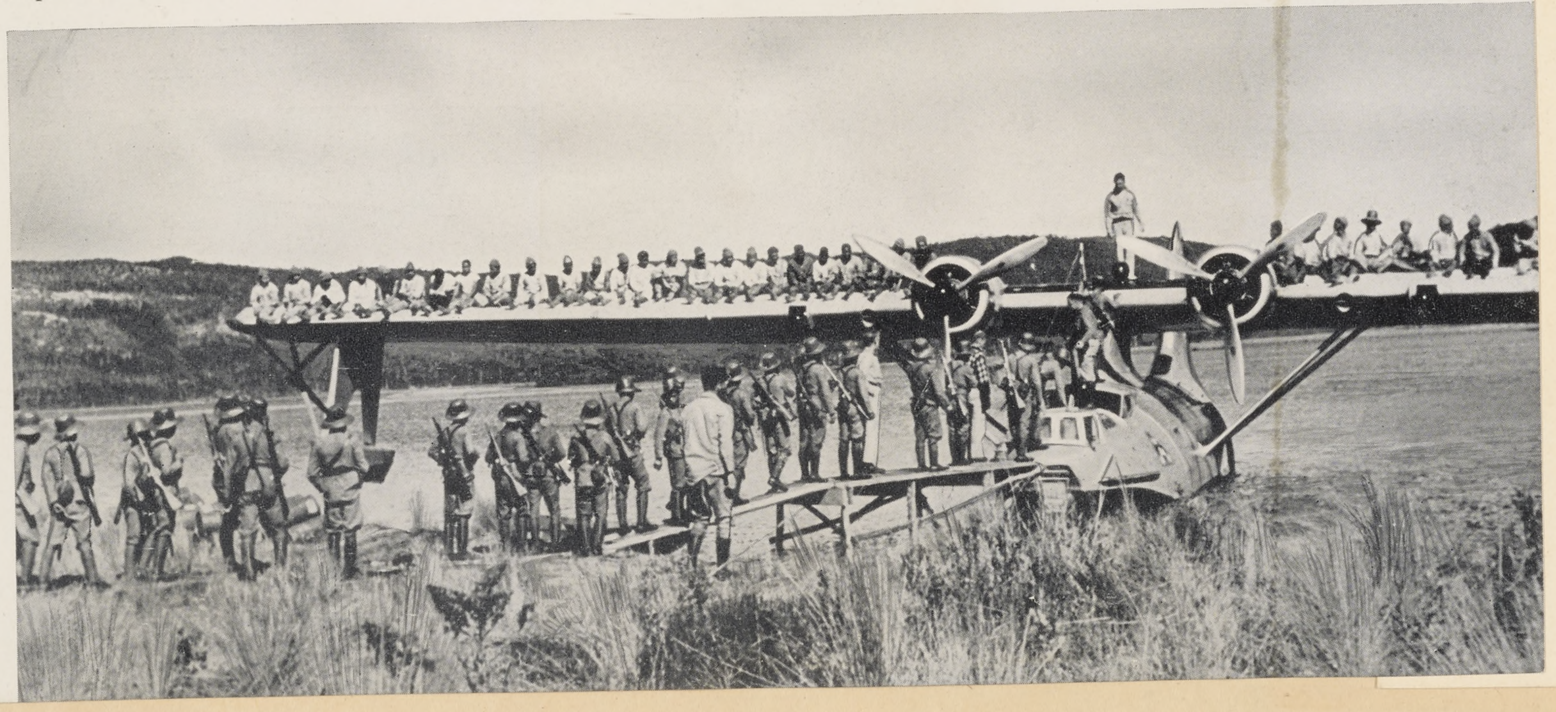
EXPLORING NEW GUINEA BY AIR

Rounding out 40,000 miles of flight and a year in the unexplored wilds of New Guinea, the Archbold Aerial Expedition of the American Museum of Natural Science, under the leadership of Richard Archbold, returned to New York on July 1.

A Twin Wasp-powered Consolidated PBY-1 flying boat named "Guba", equipped with a Sperry Gyropilot, flew the Expedition 7,000 miles across the Pacific to a tiny town on the northern coast of Dutch New Guinea which served as an operating base. From there the Guba was used to fly 130 members of the Expedition and 30 tons of supplies to an advance base on Lake Habbema 200 miles inland. From the lake, 11,800 feet above sea level, dozens of takeoffs and landings were made on exploratory and mapping expeditions.

The return journey was made via Australia, the East Indies, Africa and the Virgin Islands.

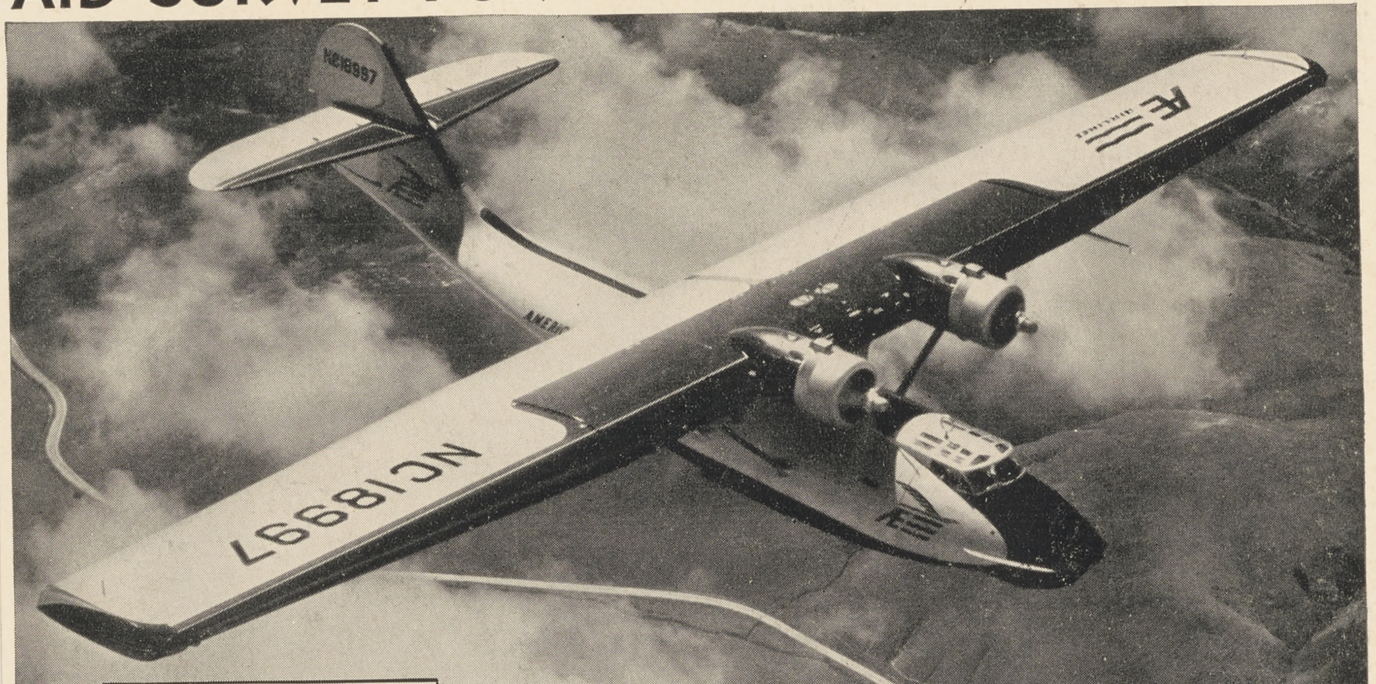
— *Wide World*



Back Page The Sperryscope Vol. 8 No. 12. (Oct. 1939)

SPERRY INSTRUMENTS

AID SURVEY FOR NEW ATLANTIC SERVICE



Captain P. J. Byrne, commander of American Export Airlines' survey flights

In completing a series of scientific survey flights across the Atlantic, American Export has written a new chapter in aviation history. Long famous for successful steamship operations, the line will soon be ready to accommodate air passengers as well. The routes are ready, the pioneering done.

Referring to the part which Sperry instruments played in this important accomplishment, Captain Byrne reported "During all our flights we relied continually upon the Sperry Gyropilot, Gyro-Horizon, Directional Gyro and Gyro-Magnetic Compass. Their splendid performance was of great assistance to the successful completion of every trip."

SPERRY

SPERRY GYROSCOPE COMPANY, Inc.
BROOKLYN, N.Y.

AMERICAN EXPORT LINES ACCEPTS A CHALLENGE

J. M. Eaton

WHEN American Export Lines, one of America's outstanding transportation companies in the foreign field, announced its intention to use the air routes over the Atlantic in addition to its existing surface routes, nationwide attention was attracted. The aircraft, a new vehicle, was again proclaimed as an important economic factor of the future in the field of foreign commerce.

More than two years ago W. H. Coverdale, President of American Export Lines, set a pattern for the up-to-date, well rounded transportation service, in which he included the aircraft for transoceanic trade, when he said:

> "The aircraft puts the United States face to face with another important evolution in the maritime system for foreign trade. It will bring about as definite a transition as when our shipping changed from sailing vessels to steamships back in 1840, but primarily will differ in that it will supplement our present surface vessel rather than supplant it as the steamship did the sailing vessel. The result will be the speeding up of the transportation of persons, mail and goods that require faster carriage and will create an even more important position for the surface borne vessel in the movement of freight and persons not requiring great speeds."

The history of American Export Lines is full of romance and adventure. True, its steamships are small compared with ships of foreign nations, but they carry full cargoes in both directions between a few specified American ports and something over seventy ports in Europe, Asia and Africa. The foreign ports, many of them on the Mediterranean, are as colorful, as gay, as tragic, as historic and as specialized as any ports in the world. For example, there are Lisbon, Marseilles, Athens, Naples, Constantinople, Constanza, Alexandria, Algiers, Gibraltar, with different languages, different climates, different costumes and different habits. These countries ship to the United States cargoes ranging from spices, olives, olive oil, cotton, cork and tomato paste to chromium ore, all expressing in some way the habits and temperaments of the countries where these products are produced. In the opposite direction the United States ships automobiles, machinery, packing house products, steel products, lubricating oil, refrigerators and radios, which in turn are the products of a mechanized multiple production development.

The company has a fleet of eighteen steamships — fourteen freighters and four combination passenger and freight. These four ships are known as the "Ace" boats, accommodate 130 first class passengers, and have become decidedly popular since the "Yankee Cruises" were established several years ago.

One hundred years ago America held first place on the Atlantic and maintained that position up to the time the United States, with Yankee ingenuity, turned from the seas toward the development of its own interior. Railroads, factories, cities, mines, communications, schools, towns — all had to be built. While this great American development was going on, Europe was establishing itself on the Atlantic in order to handle the new and ever increasing American business.

The World War put the United States face to face with the realization of its unimportance in transatlantic transportation, and as a result a concentrated attempt was made to improve the situation. Much could be said regarding the creation of the Shipping Board and the establishment of a number of steamship companies, but the fact was that the foreign companies had become too firmly established, and although plans were made for many American flag companies, they did not carry through.

American Export liner unloading at Alexandria. The four "Ace" ships of this Line have Sperry Gyro-Compasses and Gyro-Pilots.

A SERIES of survey flights across the Atlantic Ocean recently was completed by American Export Airlines, a subsidiary of American Export Lines. The activities of this company are of particular interest to shipping and aviation officials in that surface commerce is being organized with flying boat operations under a joint sponsorship. Mr. J. M. Eaton, Vice President of American Export Airlines, has prepared the accompanying article describing the activities and plans of his company as well as some of the problems involved.

American Export Lines was one of the few that survived and grew to a strong, stable unit in the American Merchant Marine. It faced, however, the serious problem of maintaining its competitive position with the big European lines. It could not stand still, and yet it could not afford to go in for the superliners. There was also the possibility that the great modern steamships would be rendered obsolete within a surprisingly short period by new aircraft.

As stated earlier, the officials were not prejudiced against the adoption of a new and faster vehicle and began a study of the possibilities of improving the service between certain European ports along its route, using aircraft in conjunction with steamship operation across the Atlantic, or advancing the entire service by a supplementary service straight across the Atlantic to European ports. The studies included thorough checks throughout Europe with respect to landing facilities, harbor facilities, equipment, potential mail, passenger and express volume, and led to the conclusion that the company should supplement its freight and limited passenger ocean service with faster through air service for passengers, mail and express.

The next steps included consulting with governmental departments in Washington, establishing relations with proper officials in European countries, incorporating the subsidiary company, American Export Airlines, and making the necessary applications for permission to operate aircraft and other necessary equipment.

The importance of the company's steamships, a large percentage of which are at all times between New York and Gibraltar, to the operation of aircraft with respect to communications, weather reporting and emergency bases was not overlooked. Ready made mobile stations existed and simply needed to be coordinated properly under the same general management. Instructions were immediately issued to the officers of the ships to intensify their weather observations to a degree suitable for aviation meteorological requirements and to take these readings four times daily instead of twice. At the same time all radio equipment was modernized and brought up to the standard required for assisting aircraft.

In the meantime the United States Government passed the new Civil Aviation Act in 1938 and established the Civil Aeronautics Authority. One of the important issues which immediately confronted the Authority was how to prevent aviation from "sideslipping" into the same predicament that had been forced upon the steamships. In other words, could a policy controlling aviation outside its continental borders be so set up that the United States would regain its position with respect to transportation across the Atlantic? It would be necessary for American flag companies to fly as many schedules as the combined schedules of the European countries, and such a pro-

Sea weather studied for transatlantic air line operation. On board SS *Excambion*, first of eighteen weather reporting stations across the Atlantic, left to right: W. H. Slater, Executive Vice-President of the steamship and air line company, W. H. Coverdale, President, Captain W. W. Coney, and L. W. Lewis, meteoroligist

— *Newspictures*

---

deliver $15,000,000 worth of twin-engined bombers. And Martin and Stearman each undertook orders for a half million for ships of that type. Total current orders for bombers of all classes therefore add up to the very substantial figure of $59,356,000.

Among the Aug. 10 orders, North American also received a $1,326,000 award for advanced training planes and a $2,707,000 contract for basic training planes. The Vultee division of the Aviation Manufacturing Corp. also got an order for $2,489,000 worth of basic training planes.

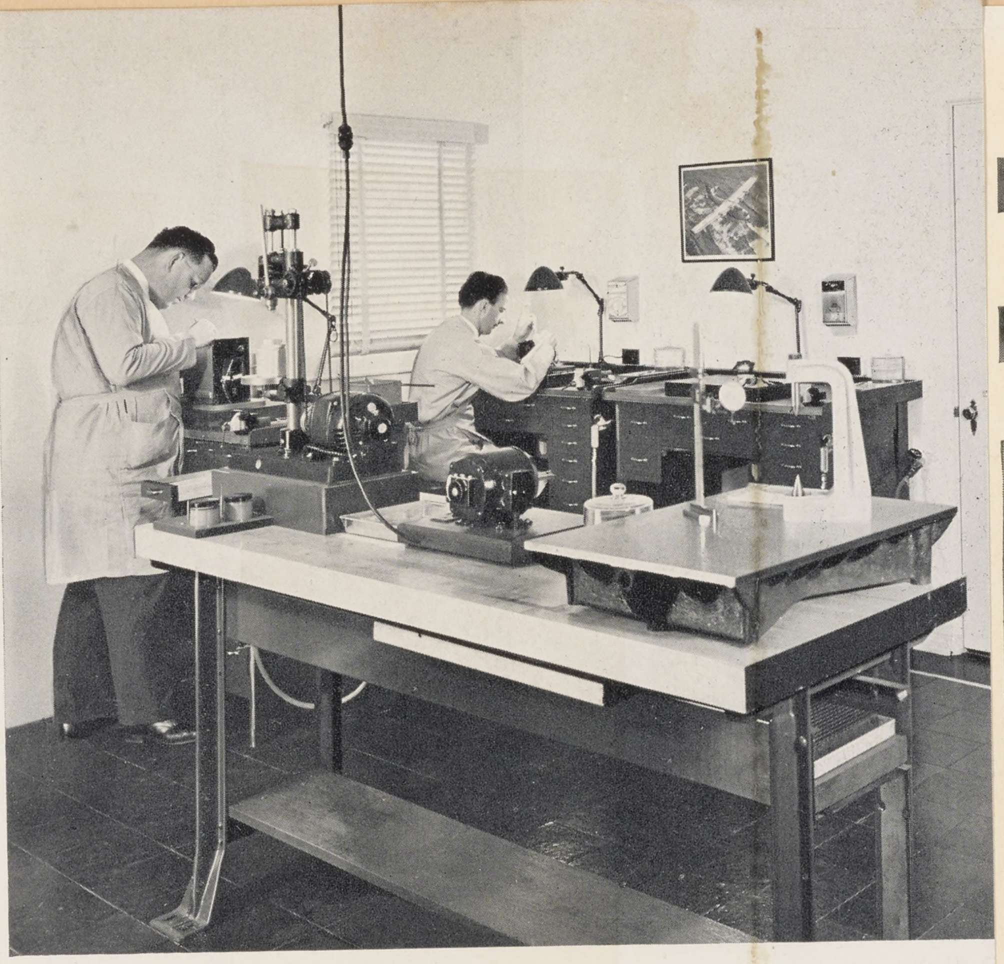
Lockheed, which on April 26 received a $2,180,728 contract for twin-engined pursuits, last month got a second order for an additional $4,845,000 worth of the same ships.

Stearman received an order for $688,000 worth of basic portion" of the aircraft purchases it intends to make this fiscal year under the recent air corps Expansion Act. But "additional types are under evaluation at Wright Field, in Dayton and awards will be announced shortly," the Department added. No further details were given but the additional types under consideration were known to be largely single pursuits and the amount involved somewhere between $12,000,000 and $18,000,000.

Just for the general interest in the thing, here is a summation of all Air Corps and Navy orders for planes and engines placed since April 3, the date of the act authorizing the Air Corps expansion program. It lists in order of magnitude the total orders placed with each airplane company.

North American $19,809,218; Douglas $15,000,000; Martin

The Sperryscope Oct. 1939



Aeronautical School, Los Angeles, Instructor Dan L. Garber at left

as China and the Argentine, but by far the majority are from our own Army, Navy and transport lines. Over three hundred students have finished the courses given in our Aeronautical Schools.

The newest and most exclusive of the Sperry Schools exists only for the purpose of training officers, enlisted men and civilians of the U. S. Army, Coast Artillery and Marine Corps in the theory, operation and maintenance of the Sperry apparatus they are required to use. The personnel comes of course principally from the Ordnance Department for whom the Anti-Aircraft Directors and Sound Locators are manufactured.

In the Sperry School the training in anti-aircraft instruments is concentrated upon the maintenance in good condition and effective operation of the Sperry instruments under all conceivable service conditions. The Searchlight and Sound Locator, though less complicated than the Anti-Aircraft Director, also have their problems of effective use and efficient maintenance with which the personnel charged with them must be thoroughly familiar.

From many points of view the functions performed in this School are unusual. There must be few manufacturers in the world whose duties include the instruction of a technical branch of the nation's armed forces in the use of highly specialized military equipment. It need only be said that the position of the Sperry Gyroscope Company in developing anti-aircraft equipment has been so unusual that it has been placed in a position of special service in being so closely connected with this branch of the government service.

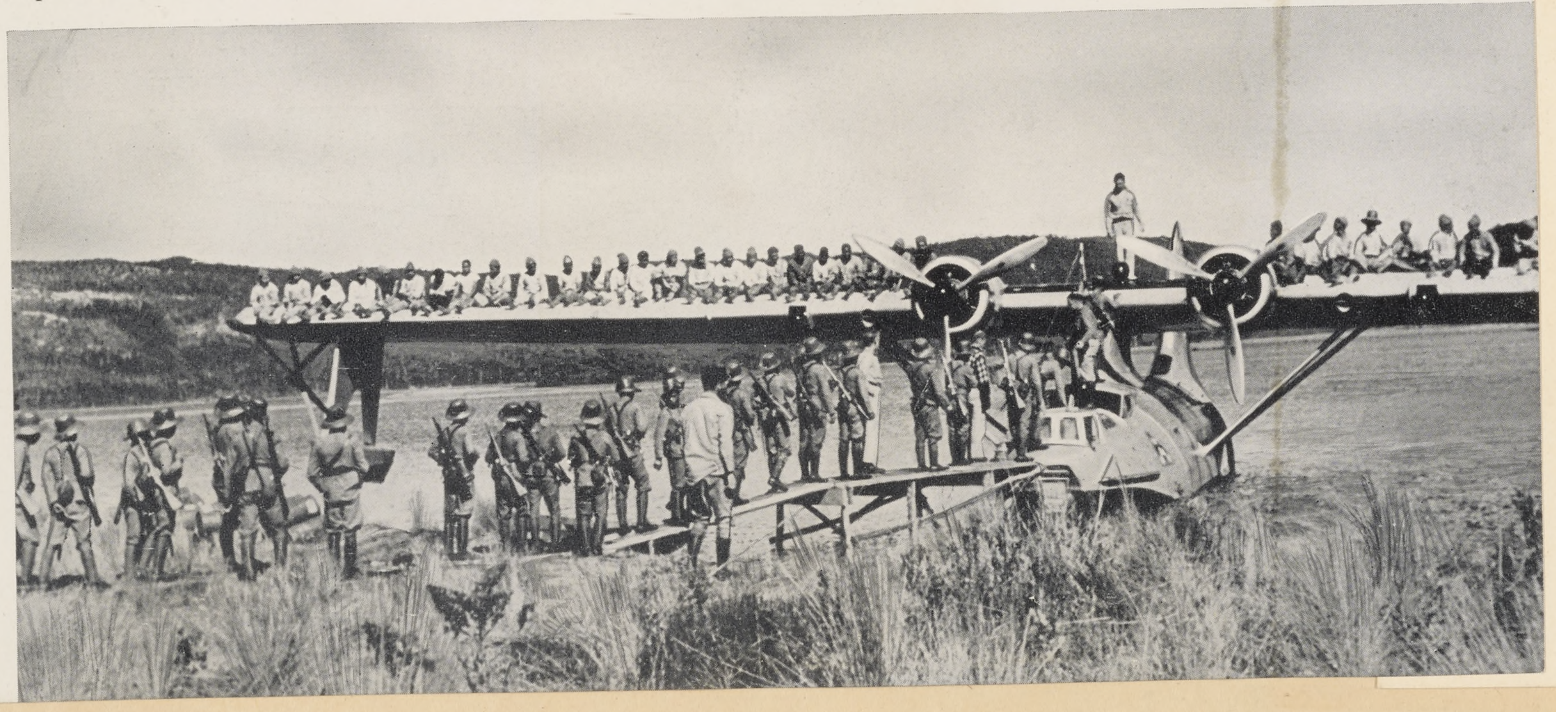
EXPLORING NEW GUINEA BY AIR

Rounding out 40,000 miles of flight and a year in the unexplored wilds of New Guinea, the Archbold Aerial Expedition of the American Museum of Natural Science, under the leadership of Richard Archbold, returned to New York on July 1.

A Twin Wasp-powered Consolidated PBY-1 flying boat named "Guba", equipped with a Sperry Gyropilot, flew the Expedition 7,000 miles across the Pacific to a tiny town on the northern coast of Dutch New Guinea which served as an operating base. From there the Guba was used to fly 130 members of the Expedition and 30 tons of supplies to an advance base on Lake Habbema 200 miles inland. From the lake, 11,800 feet above sea level, dozens of takeoffs and landings were made on exploratory and mapping expeditions.

The return journey was made via Australia, the East Indies, Africa and the Virgin Islands.

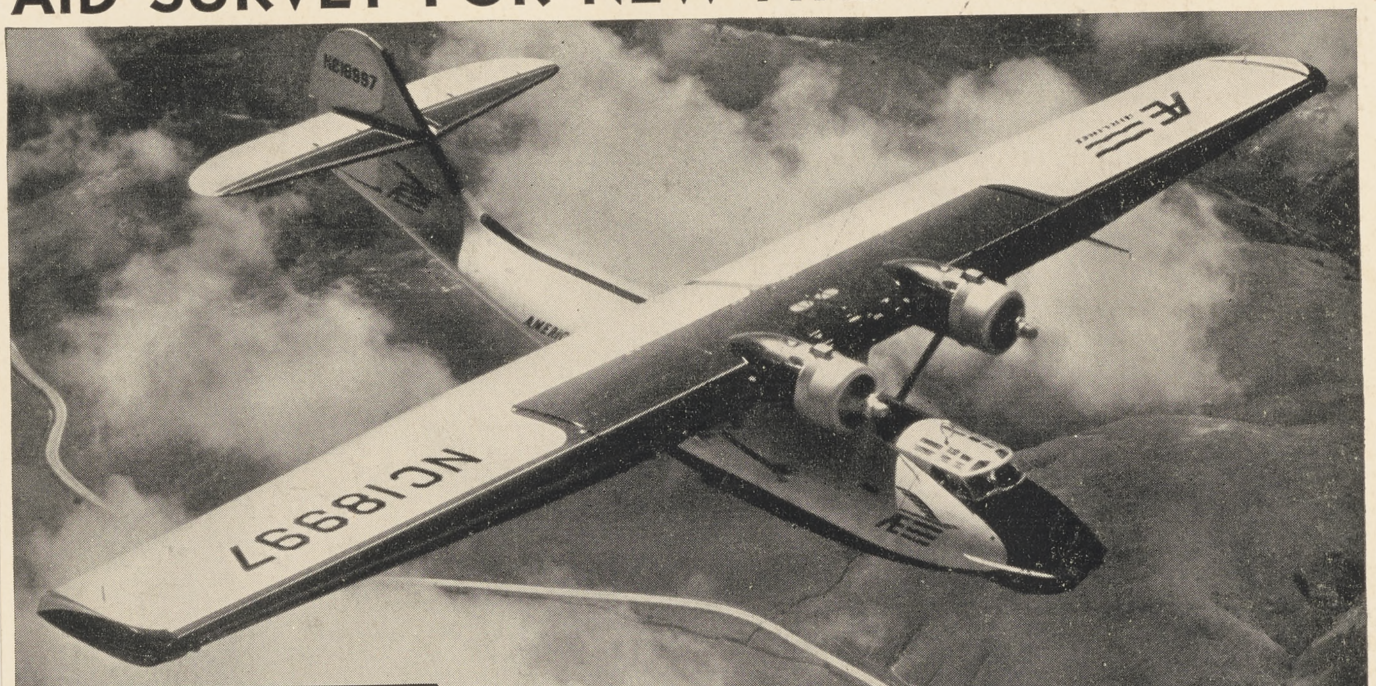
— *Wide World*



Back Page The Sperryscope Vol. 8 No. 12. (Oct. 1939)

SPERRY INSTRUMENTS

AID SURVEY FOR NEW ATLANTIC SERVICE



Captain P. J. Byrne, commander of American Export Airlines' survey flights

In completing a series of scientific survey flights across the Atlantic, American Export has written a new chapter in aviation history. Long famous for successful steamship operations, the line will soon be ready to accommodate air passengers as well. The routes are ready, the pioneering done.

Referring to the part which Sperry instruments played in this important accomplishment, Captain Byrne reported "During all our flights we relied continually upon the Sperry Gyropilot, Gyro-Horizon, Directional Gyro and Gyro-Magnetic Compass. Their splendid performance was of great assistance to the successful completion of every trip."

SPERRY

SPERRY GYROSCOPE COMPANY, Inc.

BROOKLYN, N.Y.

Sat. Oct. 14.

Consair Plans Plant Increase Of 75 Percent

Consolidated Aircraft Corp.'s plans to increase production facilities "by approximately 75 percent" were disclosed yesterday when the municipal board of examiners and appeals recommended to the city council that building code provisions be amended to permit construction of a 3-story steel-frame, metal-lathed building.

The concern recently obtained a long-term lease on 17 additional acres of tidelands adjacent to its present holdings, and if the new building is constructed, said Edgar Gott, vice president, it will be put up on part of that site. He declined to reveal what the proposed improvement will cost.

OFFICES PLANNED

Coincidentally, William A. Maloney, plant engineer, disclosed in the company's application that it is the firm's ultimate desire to "erect an administration building of suitable size and area in a central location, on property we now lease on the east side of Pacific highway across the street from our present factory site."

The building contemplated in the present application would be 60 by 180 feet and temporarily would be used for office space "but later to be converted to light manufacturing usage."

PREPAREDNESS AID

Gott said the company "plans to do nothing until we know whether the U. S. government wants us to carry on additional work." He added that Consolidated wants "to be ready if the government gives us more business." The contemplated expansion program, it was explained in the application, is "in anticipation of a national emergency" and in line with the corporation's "desire to aid our country in the forthcoming preparedness campaign."

The building would have an exterior stucco finish, would be plastered within and would have wood floors of slow-burning construction on steel beams and girders. The amendment is necessary, said Oscar Knecht, chief city building inspector, because present code provisions permit construction of such a building only to a height of two stories.

ARMY FLIERS FERRY HEAVY LOAD ON 'RUSH ORDER'

Planning the discharge of 3200 pounds of aerial horses from a sky freighter are (left to right) Lt. Glenn Holland, Maj. E. R. McReynolds, W. G. Chamberlain, Edgar Gott and Lt. Thomas J. Schofield. Boxed engine parts can be seen in the plane.

* * *

SKY FREIGHTER BRINGS PLANE ENGINES TO S. D.

★ ★ ★ ★ ★ ★ ★ ★ ★

Power Plant for New Consair Bomber Comes by Fast Air Route

Thirty-two hundred pounds of air power, packed in two engines of the latest type, arrived by air from Hartford, Conn., yesterday to speed one phase of America's armament program by 11 days.

Immediately after they arrived aboard an army aerial freighter they were placed in the nacelles of a new bomber Consolidated Aircraft Corp. is building for the army. Construction of the bomber had reached a point where the engines were necessary to expedite operations, and the army air transport service rushed them through.

Although the new bomber is a four-motored craft, only two engines were immediately necessary. The other two are to be sent out by air within a few days.

Military secrecy surrounds specifications of the new engines, but they are said to develop in the neighborhood of 2000 horsepower each. Similar secrecy clothes the new bomber.

The transport plane which brought the engines left Hartford Wednesday and made overnight stops at Pittsburgh and Oklahoma City. It was piloted by Lt. Thomas J. Schofield, with Lt. Glenn Holland as co-pilot. Both are attached to the 10th transport group and are stationed at Middletown, Pa. It is nothing new to them to haul engines around the country in their specially designed aerial freighter, but it was a novelty to have the engines for a new bomber come into San Diego by the sky route.

On arrival the engines were inspected by Maj. E. R. McReynolds, army air corps inspector in this area; Edgar Gott, Consolidated executive, and W. G. Chamberlain, factory represenative of the engine company.

NEW CONSAIR ORDERS LOOM

Congress Expected To Give Army Huge Sum

Sun Oct 24-39

By HAROLD KEEN
Aviation Editor

For many weeks there has been an atmosphere of expectancy in aviation circles regarding Consolidated Aircraft Corp. Big things—meaning large contracts—were said to be in the offing.

Reports now coming out of Washington seen to justify this feeling. The Administration, according to the United Press, may ask Congress early in its next regular session to appropriate about $100,000,000 for 500 so-called "air dreadnaughts" to supplement the fleet of 5500 planes due for completion July 1, 1941, in a $300,000,000 aviation expansion program.

The description of these "dreadnaughts" could very easily be applied to the phenomenal four-motored Army bombers under construction in the San Diego plant.

SPECIFICATIONS LISTED

According to informed quarters in Washington, this type of lethal dispenser would boast superior performance to the present 12-ton flying fortresses, although they would be little, if any, larger. Improved motor designing would lower fuel consumption, increasing cruising range, it was reported. Special wing design would add to speed and operating range.

The Boeing flying fortress can travel faster than 265 miles per hour at cruising speed and have a range with full "death pay load" of 2000 miles.

The Consolidated bomber has been unofficially reported capable of a speed in excess of 300 miles per hour, and an almost unbelievable range. The wing is believed to be similar to the "Davis perfect wing" on the Consolidated Model 31, the twin-engined seaplane with 2000 horsepower engines that is the fastest airboat in this, and probably any other, country.

CONSOLIDATED MUM

Consolidated will not disclose the exact number of these Army bombers it is building at a total cost of more than $11,000,000. The per unit cost, of course, is much higher on such a relatively limited order. Washington authorities estimate that the bombers in huge quantities would cost about $200,000 apiece, the approximate charge made for the two-motored Navy PBY patrol bombers, of which more than 200 were produced.

Should the $100,000,000 project be approved, in whole or in part, Consolidated is certain to receive a large bulk of the work, and it is safe to say that Maj. Reuben H. Fleet, president of the concern now in the nation's capital, is not sparing any effort to emphasize to the War Department his company's ability to produce in large numbers.

POPULAR AVIATION
Aug 39

THE Man UNDER THE Hood

FRANCE has admittedly purchased some 40 flying boats in this country . . . but **French** officials in this country have, to date, refused to name the company from which they purchased them . . . but a little off-the-cuff mathematics by those in the industry who should know seems to indicate clearly that **Consolidated Aircraft** at San Diego has just come into a most welcome windfall . . . it's no secret, of course, that **Consolidated's** PBY patrol boat so popular with the U. S. Navy has been offered—in an export version—to any person or country interested . . . even **Britain** has purchased one "for tests" . . . other PBY-model owners besides the Navy are **American Export Airlines** and Richard Archbold, the wealthy young explorer. . . .

* * *

COASTAL COMMAND CONTROVERSY

Arguments Which Ignore Operational Needs

By the "SUNDAY TIMES" AIR CORRESPONDENT

Controversy has arisen again over a partition of the Royal Air Force. Forceful suggestions have been made that the administrative as well as the operational control of the Coastal Command should be taken from the R.A.F. and handed over to the Royal Navy.

The agitation, presumably resurrected by the present menace to our sea communications by enemy aeroplanes, was evoked not from inside the two Services, which are in perfect accord, but by people not concerned with operational affairs.

The subject is analogous to that of the separation of the Army Co-operation Squadrons from the R.A.F., now happily solved to the complete satisfaction of all parties—except the enemy—by the formation of the Army Co-operation Command of the Royal Air Force, designed to act with but not under the Army.

DIFFERENT PROBLEMS

The Coastal Command is an exact parallel. It is essentially a Naval *Co-operation* Command equipped with shore-based aircraft. Its problems are completely different from those of the Fleet Air Arm operating from warships, and, although 90 per cent. of the flying time of its aircraft is spent over the sea, the Coastal Command remains an essential and integral part of the Royal Air Force as a united and independent Service.

Ever since the war began burdens as great as those endured by any other section of the R.A.F. have been borne by the Coastal Command under Sir Frederick Bowhill. In fact, in the early months of the war the Coastal aircraft put in more flying hours than all the other Commands of the R.A.F. put together. When, with the fall of France, still greater strain was placed on the maintenance of our sea routes because of near-by enemy bases, the Coastal Command excelled its previous efforts.

TWO-ELEMENT CRUISERS

Nevertheless, some reinforcement became an obvious necessity, and the Coastal Command was given squadrons of landplane bombers and fighters to add to its flying-boats and the general reconnaissance and torpedo-carrying landplanes it already possessed. These new squadrons, and essentially units of the R.A.F., add still more strength to the indivisible band between the main Service and its marine branch.

All the C.C. aeroplanes differ greatly from any operated by the Navy. Their work entails as close co-operation with the Navy as does the work of Army Co-operation with the Army. All are types which at any moment might be needed by the Air Staff for independent action to serve the general strategy of the Air Force. When such an occurrence arises, the Coastal Command must not be detached and set apart but must be available as an integral part of an Air Arm which grows daily in power and importance as a decisive instrument in modern warfare.

As new and still bigger flying-boats are evolved they will become light cruisers on their own. Yet they are cruisers which are as likely to have to operate over land as over water.

For instance, the new Consolidated Model 31 flying-boat reported to be ordered from America has a range of some 4,000 miles, carrying a heavy load of bombs, and cruising around 200 m.p.h. That is as formidable as any bomber yet flying. Its high performance is gained partly by a very heavy wing loading, demanding a long take-off, for which big uninterrupted stretches of water make the most convenient and economical aerodromes.

THE SOUNDEST POLICY

The Prime Minister has stated that the operational policy of the Command must be and is determined by the Admiralty in consultation with the Air Officer Commanding-in-Chief. The closest contact exists, and the relations between the two Services are excellent.

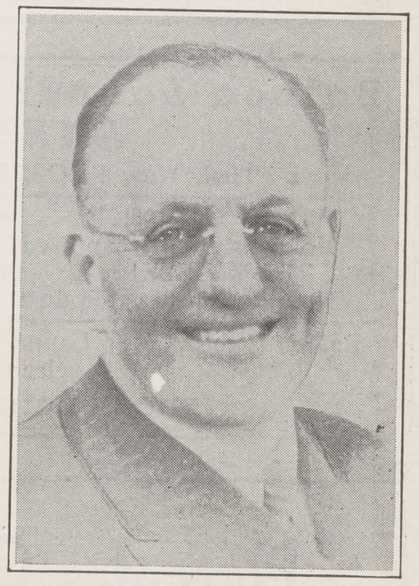
The co-operation is likely to be even closer in the future, when convoys may have dual protection by ship-borne aeroplanes of the Fleet Air Arm and land-based aeroplanes of the Coastal Command. The old ruling by which all aircraft which can be operated from ships belong to the F.A.A. and all other aircraft to the R.A.F. remains the soundest policy for efficient operation.

Big Party Honoring Consair This Friday Noon To Be Broadcast Over Station KGB

For the first time in Hi Hatters' history, the big party honoring Consolidated Aircraft Corp., upon its fourth birthday, this Friday noon in The San Diego Club, will be broadcast over Station KGB of the Don Lee-Mutual network.

The congratulatory messages of at least seven high officials and civic leaders will be put on the air over this radio station which serves an area of the southland containing an estimated 340,000 potential listeners.

CONSAIR LEADER



Maj. R. H. Fleet,

president of Consolidated Aircraft, to be honored at Fourth Anniversary party by fellow Hi Hatters this Friday in The San Diego Club.

Those invited to take part in the program are: Vice-Mayor H. E. Fish, Supr. LeRoy Richards, Don Hanson, president of the Chamber of Commerce; Emil Klicka, harbor commissioner and the man who did most to "sell' Consolidated on moving here; T. Claude Ryan, president of Ryan Aeronautical Co.; Edmund Price, president of Solar Aircraft Co., and Rear Adm. A. B. Cook, commander of the scouting force.

Edgar Gott, vice president of Consolidated and a well-known Hi Hatter, will be chairman. Honored guests will be C. A. Van Dusen, C. T. Leigh, I. M. Laddon and David G. Fleet, executives of Consolidated and Rear Adm. Joseph R. Defrees.

Sidney W. Fuller, manager of Station KGB, will announce and put the program on the air.

It was four years ago on Oct. 20 that Pres. Reuben H. Fleet of Consolidated attended the dedication of the new plant at Lindbergh Field. After years of negotiations and months of herculean efforts in moving the plant here from Buffalo, the thing had become a reality.

Since then—in fact, since Jan. 28, 1937—Consolidated flying boats have set 19 major records, mostly mass nonstop flights across the Pacific, or from the east coast by way of Coco Solo. Richard Archbold, the naturalist of the American Museum, pioneered in his recent exploration to New Guinea and Africa, negotiating country and waters never before spanned.

In those four years Consolidated planes

(Continued on Page 4)

TWELVE-TEN CLUB
Wed., Oct. 18
ANNUAL
Fall-Winter Fashion Show
Main Banquet Hall
Glorious models displaying smart apparel by the Lion Clothing Co.

HI-HATTERS
Fri., Oct. 20
Fourth Birthday Salute to
Maj. Reuben H. Fleet,
president of the
Consolidated Aircraft Corp.,
and the officials of that company

LUNCHEON, 70c — for members and guests

COMING EVENTS in The SAN DIEGO CLUB

WEDNESDAY, Oct. 18—

Twelve-Ten annual Fall-Winter Style Show and Fashion Parade, 12:10 p. m. Main Banquet Hall. Reservations must be made in advance. Price $1 per person. Supervised bridge follows program.

Joseph E. Dryer, luncheon, Heaven-on-Earth Room.

THURSDAY, Oct. 19—

Executives Association, breakfast meeting.

Lions Club, luncheon, 12 noon. Main Banquet Hall.

Junior Chamber of Commerce, dinner meeting.

Duplicate Contract Tournament, 8 p. m. Lounge.

FRIDAY, Oct. 20—

Naiads Swim Period, 10 a. m. Plunge.

Hi Hatters luncheon, 12:10 p. m. Main Banquet Hall. Gala Fourth Birthday program honoring officials of Consolidated Aircraft Corp.

Monte Carlo Nite, 8 p. m. Lounge.

SATURDAY, Oct. 21—

S. D. Bridge League annual Bridge-Dinner, 7 p. m.

Saturday Nite Club dance, 9:30 p. m. to 2 a. m. Sans Souci Grill. J. Warde Hutton and his music. No cover, no admission. For members and their accompanying guests.

MONDAY, Oct. 23—

Mermaids Swim Period, 11 a. m., Plunge.

Duplicate Contract Tournament, 8 p. m. Lounge.

TUESDAY, Oct. 24—

Kiwanis Club luncheon, 12 noon. Main Banquet Hall.

Phi Chi Fraternity, dinner meeting.

WEDNESDAY, Oct. 25—

Commonwealth Club, dinner meeting.

San Diego City Nurses Association, dinner.

THURSDAY, Oct. 26—

Executives Association, breakfast meeting.

Lions Club luncheon, 12 noon. Imperial Lounge.

Twelve-Ten luncheon, Main Banquet Hall. Ritza Freeman Reardon to discuss serious new books.

Duplicate Contract Tournament, 8 p. m. Lounge.

S. D. City Druggists, luncheon meeting.

FRIDAY, Oct. 27—

Hi Hatters luncheon, 12:10 p. m. Main Banquet Hall. Big Navy Day program featuring first showing of Russell Palmer's Spanish war films in sound and color, "Defenders of The Faith."

DRIVE A
FORD
FOR '40
MERCURY
LINCOLN-ZEPHYR
LINCOLN
Call M. 5051 Day or Night
INDIA AT B ST. SAN DIEGO
BROWN MOTOR CO.
Also CORONADO & LA JOLLA

TITLE REGISTERED IN UNITED STATES PATENT OFFICE
San Diego Club Life
PUBLISHED EVERY WEDNESDAY OF THE YEAR IN THE INTERESTS OF ALL CLUBS OF SAN DIEGO COUNTY AND THEIR MEMBERS
One for all - all for one
DEVOTED TO THE ARTS · SCIENCES · SOCIETY BRIDGE · SPORT · CIVIC · GOVERNMENT AND RECREATIONAL ACTIVITIES OF SOUTHERN CALIFORNIA

Entered as second-class matter December 2, 1931, at the Post Office at San Diego, California, under the Act of March 3, 1879.
Published by The San Diego Club, 1250 Sixth Ave., Phone Franklin 6321
Subscription: $1.00 per Year, payable in advance. Single Copies 5 cents
Editor-in-Chief: H. E. Rhoads Bus. Mgr.: M. Gorton Editor: Wm. A. Dennis
New York Representative—FRED B. TRIMM, 110 East 42nd Street, New York City.

HI HATTERS IN BIRTHDAY HONOR TO CONSOLIDATED

A brilliant tribute to Consolidated Aircraft Corp. and its president, Maj. Reuben H. Fleet, was expressed by fellow Hi Hatters at their luncheon meeting in The San Diego Club last Friday noon. Though unable to be present because of government business calling him to Washington, D. C., Maj. Fleet messaged his regrets and thanks to The Club.

Civic leaders joined in congratulating the big aircraft corporation, maker of record-breaking seaplanes and now busy on a big contract for the Army.

The speakers' part of the meeting was broadcast for the first time in Hi Hatters' history, when KGB of the Mutual-Don Lee network picked up the program by remote control.

Those who joined in voicing eloquent praise for, and congratulations to, Consair, were: Donald Hanson, president of the Chamber of Commerce; Earl Prudden, vice president of Ryan Aeronautics Co.; Edmund Price, president of Solar Aircraft Co.; Herbert L. Fish, vice mayor of the city, representing Mayor Benbough, and Emil Klicka, harbor board member and the man credited with doing most to "sell" Consair on making the move to San Diego from Buffalo, N. Y.

Mr. Klicka, also vice president of Bank of America and Life Member of The San Diego Club, recalled the anxious days four years ago when, after many negotiations, the decision to move to San Diego was made by Maj. Fleet.

Able chairman indeed was Edgar N. Gott, vice president of Consair. He introduced the guests of honor who were:

Rear Adm. Joseph R. Defrees, commandant of 11th Naval Dist., who joined in congratulating Consair; his aide, Lt. Comdr. F. W. Benson; Maj. Edwin R. McReynolds, USA, resident inspector at the aircraft plant for the Army Air corps; and these Consair officials: C. A. Van Dusen, vice pres. and manager; C. T. Leigh, vice president; I. M. Laddon, vice president in charge of engineering; William Shanahan, treasurer, and R. A. Stanberry, secretary.

Pres. Horace E. Rhoads presided. Maj. Harry R. Springer, USA (ret) as philosopher, quoted:

"The fly in the air, not in the proverbial ointment, is what has made San Diego famous."

Wednesday Class Is Popular In S. D. Club

Popularity of the exercise and volleyball session on Wednesday and Friday mornings for women members of The San Diego Club is on the increase. The girls also are greatly improving their volleyball games, contributing much to their pleasure of these sessions.

Last Friday these women participated: Mmes. J. H. Lewis, Paul Hornaday, Carl Zaun, Clayton Dible, C. R. Rockwell, H. J. Fulkerson, L. B. Becker, Howard Wessling, C. A. Barnes, Ferdinand T. Fletcher, Myron Insko, Joseph Wagner, James H. Conyne, C. B. Carroll, H. A. Mathias and Miss Elizabeth Kelley.

Squash Tourney Is Under Way In Club

The new squash tournament is under way now in The San Diego Club, but last week found only one recorded match played. That was one in which G. B. Parkinson defeated Herb Sponholz in five straight games.

Dr. Ray Lounsberry, commissioner of the sport, urges all players to play their matches as rapidly as possible.

Hallowe'en
formal
Dinner-Dance

October 28 **8 p. m. to 1:30 a. m.**

Main Banquet Hall
The San Diego Club

$2 per person

- dinner at 8 o'clock. Dancing from 9 p. m.
- top-notch entertainment, two floor spots! J. Warde Hutton and His Music!
- make reservations in advance—phone maitre d'hotel today, at Fr. 6321!
- $2 per person includes dinner, favors, extras, dancing and entertainment!
- first formal dinner-dance of the season—don't miss it!

THE SDC

Sat. Oct. 14.

Consair Plans Plant Increase Of 75 Percent

Consolidated Aircraft Corp.'s plans to increase production facilities "by approximately 75 percent" were disclosed yesterday when the municipal board of examiners and appeals recommended to the city council that building code provisions be amended to permit construction of a 3-story steel-frame, metal-lathed building.

The concern recently obtained a long-term lease on 17 additional acres of tidelands adjacent to its present holdings, and if the new building is constructed, said Edgar Gott, vice president, it will be put up on part of that site. He declined to reveal what the proposed improvement will cost.

OFFICES PLANNED

Coincidentally, William A. Maloney, plant engineer, disclosed in the company's application that it is the firm's ultimate desire to "erect an administration building of suitable size and area in a central location, on property we now lease on the east side of Pacific highway across the street from our present factory site."

The building contemplated in the present application would be 60 by 180 feet and temporarily would be used for office space "but later to be converted to light manufacturing usage."

PREPAREDNESS AID

Gott said the company "plans to do nothing until we know whether the U. S. government wants us to carry on additional work." He added that Consolidated wants "to be ready if the government gives us more business." The contemplated expansion program, it was explained in the application, is "in anticipation of a national emergency" and in line with the corporation's "desire to aid our country in the forthcoming preparedness campaign."

The building would have an exterior stucco finish, would be plastered within and would have wood floors of slow-burning construction on steel beams and girders. The amendment is necessary, said Oscar Knecht, chief city building inspector, because present code provisions permit construction of such a building only to a height of two stories.

ARMY FLIERS FERRY HEAVY LOAD ON 'RUSH ORDER'

Planning the discharge of 3200 pounds of aerial horses from a sky freighter are (left to right) Lt. Glenn Holland, Maj. E. R. McReynolds, W. G. Chamberlain, Edgar Gott and Lt. Thomas J. Schofield. Boxed engine parts can be seen in the plane.

* * *

SKY FREIGHTER BRINGS PLANE ENGINES TO S. D.

★ ★ ★ ★ ★ ★ ★ ★ ★

Power Plant for New Consair Bomber Comes by Fast Air Route

Thirty-two hundred pounds of air power, packed in two engines of the latest type, arrived by air from Hartford, Conn., yesterday to speed one phase of America's armament program by 11 days.

Immediately after they arrived aboard an army aerial freighter they were placed in the nacelles of a new bomber Consolidated Aircraft Corp. is building for the army. Construction of the bomber had reached a point where the engines were necessary to expedite operations, and the army air transport service rushed them through.

Although the new bomber is a four-motored craft, only two engines were immediately necessary. The other two are to be sent out by air within a few days.

Military secrecy surrounds specifications of the new engines, but they are said to develop in the neighborhood of 2000 horsepower each. Similar secrecy clothes the new bomber.

The transport plane which brought the engines left Hartford Wednesday and made overnight stops at Pittsburgh and Oklahoma City. It was piloted by Lt. Thomas J. Schofield, with Lt. Glenn Holland as co-pilot. Both are attached to the 10th transport group and are stationed at Middletown, Pa. It is nothing new to them to haul engines around the country in their specially designed aerial freighter, but it was a novelty to have the engines for a new bomber come into San Diego by the sky route.

On arrival the engines were inspected by Maj. E. R. McReynolds, army air corps inspector in this area; Edgar Gott, Consolidated executive, and W. G. Chamberlain, factory represenative of the engine company.

NEW CONSAIR ORDERS LOOM

Congress Expected To Give Army Huge Sum

Sun Oct. 24-39

By HAROLD KEEN
Aviation Editor

For many weeks there has been an atmosphere of expectancy in aviation circles regarding Consolidated Aircraft Corp. Big things—meaning large contracts—were said to be in the offing.

Reports now coming out of Washington seen to justify this feeling. The Administration, according to the United Press, may ask Congress early in its next regular session to appropriate about $100,000,000 for 500 so-called "air dreadnaughts" to supplement the fleet of 5500 planes due for completion July 1, 1941, in a $300,000,000 aviation expansion program.

The description of these "dreadnaughts" could very easily be applied to the phenomenal four-motored Army bombers under construction in the San Diego plant.

SPECIFICATIONS LISTED

According to informed quarters in Washington, this type of lethal dispenser would boast superior performance to the present 12-ton flying fortresses, although they would be little, if any, larger. Improved motor designing would lower fuel consumption, increasing cruising range, it was reported. Special wing design would add to speed and operating range.

The Boeing flying fortress can travel faster than 265 miles per hour at cruising speed and have a range with full "death pay load" of 2000 miles.

The Consolidated bomber has been unofficially reported capable of a speed in excess of 300 miles per hour, and an almost unbelievable range. The wing is believed to be similar to the "Davis perfect wing" on the Consolidated Model 31, the twin-engined seaplane with 2000 horsepower engines that is the fastest airboat in this, and probably any other, country.

CONSOLIDATED MUM

Consolidated will not disclose the exact number of these Army bombers it is building at a total cost of more than $11,000,000. The per unit cost, of course, is much higher on such a relatively limited order. Washington authorities estimate that the bombers in huge quantities would cost about $200,000 apiece, the approximate charge made for the two-motored Navy PBY patrol bombers, of which more than 200 were produced.

Should the $100,000,000 project be approved, in whole or in part, Consolidated is certain to receive a large bulk of the work, and it is safe to say that Maj. Reuben H. Fleet, president of the concern now in the nation's capital, is not sparing any effort to emphasize to the War Department his company's ability to produce in large numbers.

THE Man UNDER THE Hood

Popular Aviation Aug 39

FRANCE has admittedly purchased some 40 flying boats in this country . . . but **French** officials in this country have, to date, refused to name the company from which they purchased them . . . but a little off-the-cuff mathematics by those in the industry who should know seems to indicate clearly that **Consolidated Aircraft** at San Diego has just come into a most welcome windfall . . . it's no secret, of course, that **Consolidated's** PBY patrol boat so popular with the U. S. Navy has been offered—in an export version—to any person or country interested . . . even **Britain** has purchased one "for tests" . . . other PBY-model owners besides the Navy are **American Export Airlines** and Richard Archbold, the wealthy young explorer. . . .

* * *

COASTAL COMMAND CONTROVERSY

Arguments Which Ignore Operational Needs

By the "SUNDAY TIMES" AIR CORRESPONDENT

Controversy has arisen again over a partition of the Royal Air Force. Forceful suggestions have been made that the administrative as well as the operational control of the Coastal Command should be taken from the R.A.F. and handed over to the Royal Navy.

The agitation, presumably resurrected by the present menace to our sea communications by enemy aeroplanes, was evoked not from inside the two Services, which are in perfect accord, but by people not concerned with operational affairs.

The subject is analogous to that of the separation of the Army Co-operation Squadrons from the R.A.F., now happily solved to the complete satisfaction of all parties—except the enemy—by the formation of the Army Co-operation Command of the Royal Air Force, designed to act with but not under the Army.

DIFFERENT PROBLEMS

The Coastal Command is an exact parallel. It is essentially a Naval *Co-operation* Command equipped with shore-based aircraft. Its problems are completely different from those of the Fleet Air Arm operating from warships, and, although 90 per cent. of the flying time of its aircraft is spent over the sea, the Coastal Command remains an essential and integral part of the Royal Air Force as a united and independent Service.

Ever since the war began burdens as great as those endured by any other section of the R.A.F. have been borne by the Coastal Command under Sir Frederick Bowhill. In fact, in the early months of the war the Coastal aircraft put in more flying hours than all the other Commands of the R.A.F. put together. When, with the fall of France, still greater strain was placed on the maintenance of our sea routes because of near-by enemy bases, the Coastal Command excelled its previous efforts.

TWO-ELEMENT CRUISERS

Nevertheless, some reinforcement became an obvious necessity, and the Coastal Command was given squadrons of landplane bombers and fighters to add to its flying-boats and the general reconnaissance and torpedo-carrying landplanes it already possessed. These new squadrons, and essentially units of the R.A.F., add still more strength to the indivisible band between the main Service and its marine branch.

All the C.C. aeroplanes differ greatly from any operated by the Navy. Their work entails as close co-operation with the Navy as does the work of Army Co-operation with the Army. All are types which at any moment might be needed by the Air Staff for independent action to serve the general strategy of the Air Force. When such an occurrence arises, the Coastal Command must not be detached and set apart but must be available as an integral part of an Air Arm which grows daily in power and importance as a decisive instrument in modern warfare.

As new and still bigger flying-boats are evolved they will become light cruisers on their own. Yet they are cruisers which are as likely to have to operate over land as over water.

For instance, the new Consolidated Model 31 flying-boat reported to be ordered from America has a range of some 4,000 miles, carrying a heavy load of bombs, and cruising around 200 m.p.h. That is as formidable as any bomber yet flying. Its high performance is gained partly by a very heavy wing loading, demanding a long take-off, for which big uninterrupted stretches of water make the most convenient and economical aerodromes.

THE SOUNDEST POLICY

The Prime Minister has stated that the operational policy of the Command must be and is determined by the Admiralty in consultation with the Air Officer Commanding-in-Chief. The closest contact exists, and the relations between the two Services are excellent.

The co-operation is likely to be even closer in the future, when convoys may have dual protection by ship-borne aeroplanes of the Fleet Air Arm and land-based aeroplanes of the Coastal Command. The old ruling by which all aircraft which can be operated from ships belong to the F.A.A. and all other aircraft to the R.A.F. remains the soundest policy for efficient operation.

Consair Program

(Continued from Page 3)

have made the fastest flying boat time to Hawaii, have spanned the U. S. nonstop—proving the usefulness of seaplanes for transcontinental service—and one PBY flew 19,000 miles in arctic wastes, through all kinds of weather, searching for lost Russian fliers.

Every one of those mass flights, each involving a dozen or more planes—and one consisting of 48 planes—was made without fatality or loss to equipment. Never before has any aircraft builder made such a far-flung record of achievement in so short a space of time.

No other aircraft builder has been contracted to make so many flying boats for the Navy in a space of four years—the total being well over 209. And not content with this gigantic record, Consolidated has forged ahead in the experimental field.

The experimental four-motored "flying battleship," built for the Navy, proved successful, and is now the first permanent flagship plying not the seas, but over them, in the air. It is the flagship now of the commander of the scouting force.

Last and certainly not least, Consolidated, quietly and for its own account, designed a revolutionary new craft which carries the largest payload ever weighted onto a two-motored flying boat. It is the so-called "Model 31," with its slender but 15 percent more efficient wing, and 2,000-HP engines which throw 16-foot three-bladed propellers.

Aztec Alumni Group Is Seeking Names Of Former Students

Getting under way with the opening of fall semester, the San Diego State College Alumni association, under the energetic leadership of its new president, Mrs. Lester Earnest, is launching a campaign to bring in all local former students of the college.

J. K. Stickney, Jr., past president of the association, in assisting Mrs. Earnest and the new board to accomplish its objectives, has asked all fellow members of the San Diego Club who attended State to notify him or the association, or communicate with Dr. George Dodson, professor at State.

The program of the association this year will be very interesting. A homecoming luncheon is set for this month on the campus, a dance in November, a World Affairs conference in January, a reading of a late stage success in February, and the annual Founders' Day Dinner in June.

Billiard Tournament Entries Being Taken Now by Pikelhaupt

All billiard addicts are urged to get their entries in for the big handicap straight-rail tournament to be held in The San Diego Club billiard room, starting Nov. 1. Ben Seymour, commissioner of the sport, asks all players to file their entries with John Pikelhaupt, manager of the billiard department.

Ordinarily closed at that time, the billiard department will remain open for play on rainy Sunday afternoons during the winter, from 12 noon to 5 a. m. This will be done because of popular demand.

AUSTEN G. BROWN COMPANY
EVERY FORM OF INSURANCE ★ SURETY BONDS
PHONE MAIN 4851
502 SCRIPPS BUILDING SAN DIEGO, CALIFORNIA

Bay City Market
Owned and Operated by
Young's Market Co.
711 FIFTH AVE. Tel. Franklin 3131
SAN DIEGO'S MODERN FOOD DEPARTMENT STORE
For Home Delivery Tomorrow Call
Franklin 3131 today
You will find shopping a pleasure when you use our free parking lot at Sixth Ave. and G St.

Balboa Laundry & Dry Cleaners
ANNOUNCE
Their New PROSPERIZED Cleaning Plant

- WON'T SHRINK! No moisture or soap used
- GREASELESS! No oily film to catch dust
- ODORLESS Wear your garment immediately
- BRIGHT No foreign substances

Balboa is the ONLY Laundry in San Diego operating its own cleaning plant!
PHONE J. 3147, J. 3148 or M. 2706

Hercules Oil Company
WE FILL ALL OIL REQUIREMENTS
Distributors of PETROL Gasolines
1516 Kettner Boulevard F. 7161

YOU want the best of all good things for your youngsters — good food, a pleasant home, adequate education. So, by all means, give them the best in one of life's necessities—water.

Five gals.—50c.

Phone Franklin 7465 for Home Delivery.

Your CHILDREN DESERVE IT
Cuyamaca Distilled or Spring
Pure BOTTLED WATERS

When you ring the doorbell and find that hubby IS home, brother—sell something—sell something!

SNOWFLAKE Quality BREAD
AT YOUR GROCERS

Where There's Life and Action!
Bohemian Distributing Co.
San Diego

STRAND RADIO CO.
411 "C" Street F. 5397
4991 Newport Ave. B. 4913

Read the Latest Books
VROMAN'S
CIRCULATING LIBRARY
No Membership Fee
529 "B" Street F. 5234

Arey-Jones Company
Commercial Stationers
Fr. 3163 933 FOURTH AVE.
Complete Office Equipment

Since 1920
SENSOR STUDIOS
fine portrait and commercial
PHOTOGRAPHERS
925 "E" Street Franklin 1443

Window Cleaning
CALL MAIN 7013
Floor Waxing, Paint Washing, Window Washing
(Employees Protected by Workmen's Compensation and Public Liability Insurance)
THE ACME CLEANERS
2114 Second Avenue

when we say
Everything for Building
we mean
EVERYTHING
Whiting - Mead Co.
14th and K • 4128 University

EXCLUSIVE Florists
SIXTH and B STREETS
FRANKLIN · 6233

San Diego Jottings

By Wm. A. Dennis

Hubert Martin has returned from a three-weeks business trip up to Seattle, Spokane, San Francisco and way points. He is now back to carry on at Lions Club and other activities.

Mrs. Martin, by the way, and Mrs. Fred A. Rhodes have both just been elected by unanimous vote to the board of directors of San Diego Community Theater. Unanimous election to the board is a rarity, and an unusual honor accorded these two prominent ladies.

Mr. and Mrs. John R. Blackett, ardent dog-lovers, were in Hollywood over the week-end to take in the specialty bulldog show there. Two bulldog clubs up there elected her as steward for the show.

Also up in Los Angeles over the week-end, but for other reasons, were such as Ken Flood, W. Foster Jones, and our very own Bert Lembeck. They went up to the U.S.C.-Illinois game to find out who's doing what to who and who's paying for it.

Bill Van Dusen, the smiling genial Chamber of Commerce executive, returned from his vacation last Monday to find himself shouldered with a new honor, that of being on the resolutions committee of the Air Reserves Association. He flew his vacation back to New York, and around.

Mrs. Clayton Dible, after a summer absence, has returned to full activity in the women's athletic department of The San Diego Club.

And new women participating last week were Mrs. Anita Aldrich and Mrs. Howard O. Wessling.

Albert Dryer, having thoroughly baked himself on the sunporch for the past couple of weeks, now feels fit to go in for some gym activity.

Frank G. Forward had to go up to San Francisco last Thursday in a rush on important highway business directly affecting San Diego County. He also was to go to the State Highway offices at Sacramento, before returning here sometime this week.

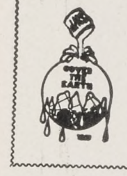
Lara P. Good, manager of Prudential Life Insur. Co. here, was host to a group of friends at the new office headquarters in the First National Building, last Friday. The occasion was the sixth office expansion in the past 16 years of steady growth of this agency.

A Quick Dip, and You're Feeling In Top Shape, in Club!

Many members like to come down at their noon hour to The San Diego Club plunge and take a quick dip. It restores vitality, calms frayed nerves, and gives you that glowing tingle all over!

Futhermore, it doesn't take more than 20 minutes—and you're dressed, freshened, reinvigorated, and off again inside 30 or 40 minutes.

ED HALL Any Key Any Place
AUTO LOCKS OPENED
Locks Changed, Repaired
New Locks Installed
Day or Night, Main 8498
If no answer, Main 3724
DRIVE-IN SHOP
1049 FIRST AVE.



S. R. FRAZEE COMPANY
Broadway at Tenth
Imperial Washable Wallpaper
Sherwin-Williams Paints

Goodwill Industries
of San Diego County
MYRON INSKO, Supt.
402 Fifth Ave. Telephone F. 7401
Cast-off Clothing, Magazines, Furniture, etc., provide jobs for aged, handicapped and needy persons.
"NOT CHARITY BUT A CHANCE"

Jess B. Worthington
Painting
Decorating Contractor
PHONE MAIN 3284
San Diego Trust & Savings Bldg.

To be sure!—Call a
BLUE SEAL LAUNDRY
(See Your Telephone Directory)

"THE QUEST FOR BEAUTY"
S. D. Permanent Wave Shoppe
Frances Dee Peckham, Mgr.
F. 5415 625 Commonwealth Bldg.
OPEN NIGHTS BY APPOINTMENT

GEORGE'S BY THE SEA AT **Cardiff, Calif.**
The World's Best Lobster, Steak or Chicken Dinner
On the Highway, 23 miles north of San Diego

W. P. Fuller & Co.
PAINTS, LACQUERS
GLASS and MIRRORS
7th Ave. and F St. 2911 University

IF IT SWIMS—
WE HAVE IT
People's Fish Co.
869 Harbor St. M-4158, 4159

TITLE REGISTERED IN UNITED STATES PATENT OFFICE

San Diego Club Life

PUBLISHED EVERY WEDNESDAY OF THE YEAR IN THE INTERESTS OF ALL CLUBS OF SAN DIEGO COUNTY AND THEIR MEMBERS

One for all - all for one

DEVOTED TO THE ARTS · SCIENCES · SOCIETY BRIDGE · SPORT · CIVIC · GOVERNMENT AND RECREATIONAL ACTIVITIES OF SOUTHERN CALIFORNIA

Entered as second-class matter December 2, 1931, at the Post Office at San Diego, California, under the Act of March 3, 1879.

Published by The San Diego Club, 1250 Sixtn Ave., Phone Franklin 6321
Subscription: $1.00 per Year, payable in advance. Single Copies 5 cents

Editor-in-Chief: H. E. Rhoads Bus. Mgr.: M. Gorton Editor: Wm. A. Dennis
New York Representative—FRED B. TRIMM, 110 East 42nd Street, New York City.

HI HATTERS IN BIRTHDAY HONOR TO CONSOLIDATED

A brilliant tribute to Consolidated Aircraft Corp. and its president, Maj. Reuben H. Fleet, was expressed by fellow Hi Hatters at their luncheon meeting in The San Diego Club last Friday noon. Though unable to be present because of government business calling him to Washington, D. C., Maj. Fleet messaged his regrets and thanks to The Club.

Civic leaders joined in congratulating the big aircraft corporation, maker of record-breaking seaplanes and now busy on a big contract for the Army.

The speakers' part of the meeting was broadcast for the first time in Hi Hatters' history, when KGB of the Mutual-Don Lee network picked up the program by remote control.

Those who joined in voicing eloquent praise for, and congratulations to, Consair, were: Donald Hanson, president of the Chamber of Commerce; Earl Prudden, vice president of Ryan Aeronautics Co.; Edmund Price, president of Solar Aircraft Co.; Herbert L. Fish, vice mayor of the city, representing Mayor Benbough, and Emil Klicka, harbor board member and the man credited with doing most to "sell" Consair on making the move to San Diego from Buffalo, N. Y.

Mr. Klicka, also vice president of Bank of America and Life Member of The San Diego Club, recalled the anxious days four years ago when, after many negotiations, the decision to move to San Diego was made by Maj. Fleet.

Able chairman indeed was Edgar N. Gott, vice president of Consair. He introduced the guests of honor who were:

Rear Adm. Joseph R. Defrees, commandant of 11th Naval Dist., who joined in congratulating Consair; his aide, Lt. Comdr. F. W. Benson; Maj. Edwin R. McReynolds, USA, resident inspector at the aircraft plant for the Army Air corps; and these Consair officials: C. A. Van Dusen, vice pres. and manager; C. T. Leigh, vice president; I. M. Laddon, vice president in charge of engineering; William Shanahan, treasurer, and R. A. Stanberry, secretary.

Pres. Horace E. Rhoads presided. Maj. Harry R. Springer, USA (ret) as philosopher, quoted:

"The fly in the air, not in the proverbial ointment, is what has made San Diego famous."

Wednesday Class Is Popular In S. D. Club

Popularity of the exercise and volleyball session on Wednesday and Friday mornings for women members of The San Diego Club is on the increase. The girls also are greatly improving their volleyball games, contributing much to their pleasure of these sessions.

Last Friday these women participated: Mmes. J. H. Lewis, Paul Hornaday, Carl Zaun, Clayton Dible, C. R. Rockwell, H. J. Fulkerson, L. B. Becker, Howard Wessling, C. A. Barnes, Ferdinand T. Fletcher, Myron Insko, Joseph Wagner, James H. Conyne, C. B. Carroll, H. A. Mathias and Miss Elizabeth Kelley.

Squash Tourney Is Under Way In Club

The new squash tournament is under way now in The San Diego Club, but last week found only one recorded match played. That was one in which G. B. Parkinson defeated Herb Sponholz in five straight games.

Dr. Ray Lounsberry, commissioner of the sport, urges all players to play their matches as rapidly as possible.

Hallowe'en
formal
Dinner-Dance

October 28 8 p. m. to 1:30 a. m.

Main Banquet Hall
The San Diego Club

$2 per person

- dinner at 8 o'clock. Dancing from 9 p. m.
- top-notch entertainment, two floor spots! J. Warde Hutton and His Music!
- make reservations in advance—phone maitre d'hotel today, at Fr. 6321!
- $2 per person includes dinner, favors, extras, dancing and entertainment!
- first formal dinner-dance of the season—don't miss it!

THE SDC

Coast Leads Nation in Aircraft Production; War Spurs Activity

ADVANCES GREAT IN LAST DECADE

Output of Los Angeles Plants in 1939 Near $75,000,000; New Records Set

By Louis F. Holtzman

Aviation in all its phases, from early pioneer and development work, establishment of national and international flying records down to the present large productive facilities, over the past three decades has played an important role in the history of the Pacific Coast, particularly in Southern California. Today, with our country engaged in a huge military expansion program in the air and with foreign countries unable adequately to supply their own needs, the Pacific Coast is the area destined to fill by far the major part of the demand.

Many favorable conditions, climatic and otherwise, coupled with the early start aviation received on the Pacific Coast a few short years after the Wright brothers showed that man could fly, are responsible for the progress attained here. Many names now at the top in aviation are those of youngsters and pioneers who received their early training in western territory. Somehow, the majority of those responsible for progress in aviation drifted to the Pacific Coast at one time or other. Many stayed and established their own plants. Many others are now executives of the large eastern units.

The history of aviation on the Pacific Coast may be said to date back to 1910, a few years after the Wright brothers' successful experiments at Kitty Hawk. Then a group of hardy souls gathered to put on a show and held the first air meet in California at the Dominguez field, a few miles distant from Los Angeles.

First Field a Pasture

The Dominguez "field" was a handy vacant pasture rolled into a semblance of smoothness, its chief attraction freedom from overhead obstructions. Progress in aviation thereafter was consistent. Throughout the following years California was a mecca of aviation. In 1913, Glenn L. Martin at Los Angeles was tinkering with what might be termed motored box kites.

Today the Coast aviation industry centers in the Los Angeles area where are housed the large plants of Douglas Aircraft Co., Lockheed Aircraft Corp., North American Aviation, Inc., the Vultee division of Aviation Manufacturing Corp. and Vega Airplane Co., subsidiary of Lockheed. Scores of smaller plants providing parts, accessories and other materials going into the manufacture of planes are dotted throughout the area and with the exception of a supply of engines, the Coast is self-sufficient.

Los Angeles is flanked on the north by the Boeing Aircraft Co. plant in Seattle and toward the south by Consolidated Aircraft Co. of San Diego where are also several important accessory manufacturers, including Ryan Aeronautical Co. and Solar Aircraft Co.

Today the War Department is dependent upon Pacific Coast manufacturing facilities to supply the greater part of its rearmament program. Of a total of $98,191,484 Army awards for aircraft made last August, Pacific Coast plants received approximately two-thirds. In addition, $4,700,000 of Navy business was allotted to a Pacific Coast unit.

L. A. Firms' Backlog Now $110,000,000

In terms of backlog, the figure is staggering. Close to $110,000,000 of unfinished business is now on the books of those units centering at Los Angeles, augmented by $40,000,000 or more of business held by the plants at Seattle and San Diego.

The Los Angeles area alone this year will turn out $75,000,000 of planes—and probably more—against $53,000,000 last year. And there is apparently plenty of work ahead. In this connection, plant capacity is being expanded and output already can be stepped up. Output in 1937 was valued at $27,000,000, compared with $16,000,000 in 1936, when aviation manufacturing on a large scale first started in a really serious manner.

Glenn L. Martin came to the conclusion more than 25 years ago that there was something to this flying business. Back in 1913 he started tinkering with his box kites. His plant was located at 943 South Angeles Street in the heart of Los Angeles. Deciding that he should enlarge his activity in the field of aerodynamic engineering, he wrote to the Massachusetts Institute of Technology asking that it send along a bright young man. This was in 1915, and the institute promptly sent Donald W. Douglas. Douglas was not entirely new to aviation, as he had been assistant to Commander J. C. Hunsaker, naval constructor back East who built the world's first wind tunnel.

At Seattle, William E. Boeing, having damaged his seaplane on Union Lake one lazy summer afternoon in 1916, decided to build a new one, with the thought that Seattle was as good a place as any for such an undertaking. Captain J. C. Westervelt, Navy construction corps officer at Bremerton, aided him.

Others Prominent

Other men who started on the Coast who later became prominently identified with aviation include Lawrence Bell, of Bell Aircraft of Buffalo; Charles Van Dusen, now vice president of Consolidated Aircraft; T. C. McMahon, official of Douglas Aircraft Co., and Harry Wetzel of Douglas who died a year ago.

James H. Kindelberger, president of North American Aviation, two decades back was a busy young man working with Glenn L. Martin at Los Angeles. He was a draughtsman under Don Douglas, who was then chief of that department.

Twenty-one years ago, on May 18, 1918, the first official air mail service in this country was started at Washington. The plane, headed for Philadelphia, 20 minutes after taking off had grounded. The pilot had lost his course and in landing nosed over, breaking the propeller. R. H. Fleet, then a major in the United States Army Air Corps and now president of Consolidated Aircraft, was the man in charge of the first air mail route projected from Washington, D. C., to New York.

San Diego on the south was voicing its claims about this time, and several pioneers including Major Fleet were attracted to this area. As far back as January, 1911, Glenn Curtiss operated the first seaplane on record and used San Diego Bay as his base. In 1923, Consolidated Aircraft Corp. went into business at San Diego and its first product was a primary training plane.

Along about 1916 a young man was beginning to achieve considerable prominence in the aviation field. He was John K. Northrop, now president of Northrop Aviation, Inc. At that time he was working for Loughhead Brothers (Lockheed), whose pioneer plant was located at Santa Barbara. This was the remote but direct ancestor of the present Lockheed Aircraft Corp. at Burbank. The present Northrop organization formed early this year is erecting a plant for the production of planes at Hawthorne, near Los Angeles. While no orders have been revealed as yet, it is indicated that some business is in sight and that the plant will be producing probably by the first of the coming year.

While from its start some 30 years ago, the record of the aviation industry on the Pacific Coast has been one of achievement in improving its product, the same cannot be said of the industry from the practical businessman's view. The industry at most times in the past was inadequately financed, and it has only been in very recent years that some semblance of earning power was shown. Aviation in a big way, with some measure of profit for Pacific Coast owners, may be said to date only from two or three years ago.

Generally, the airplane industry on the Pacific Coast ten years ago was still in a bad way financially. Douglas Aircraft Co., Inc., by then had already achieved considerable success and was going ahead steadily with military business. The United States Army was and has been one of Douglas' best customers. A number of smaller units were struggling valiantly but with inadequate financing, including such units as Bach Aircraft, Thunderbird, Kreutzer, Moreland and Emsco, none of which achieved any financial success from operations in the field of aviation. Including the Lockheed predecessor, they either quit or sold out.

Lockheed Revamped

Ten years ago Lockheed was finding the struggle for existence a difficult one. As a result of reorganization proceedings, Lockheed became a subsidiary of Detroit Aircraft Co. and this unit, together with Lockheed, finally wound up in receivership proceedings.

A young man, Robert E. Gross, and a small group of associates with a few thousand dollars purchased the Lockheed plant and nursed the company along until this year it will have a gross of some $30,000,000. Its current pay roll includes over 7,000 employes. Actually, Gross and his associates were able to buy the principal assets of Lockheed for $40,000. He is now president of the company and most of his original associates are still with the organization.

The present Lockheed company was organized in June, 1932, but the first of its all-metal ships did not fly until February, 1934. Its planes now fly on 29 commercial air routes scattered all over the world.

Lockheed received the largest military order on record in 1938 totaling upwards of $30,000,000 from the British and Australian governments. While the company got off to a late start and only really got into production on this order last March, it seems certain that the military jobs will all be completed ahead of schedule and before the end of this year. Backlog is now about $30,000,000.

Douglas Aircraft Co., Inc., has shown a consistent record of earnings over the past decade and has an enviable reputation both in construction of military jobs and commercial models. Douglas' backlog now at $50,000,000 is larger than that of any other Pacific Coast unit and is probably exceeded by that of only one other company in this country, that of Glenn L. Martin Co. Douglas' first success was with military models for the United States Army. Today with two plants—those at Santa Monica and El Segundo—the company has facilities with an area of 1,400,000 square feet.

Douglas Transports Widely Used

Douglas' products are now standard equipment on the major airlines in this country and on the Royal Dutch Airlines (KLM) which operates 32 of the company's models. The original DC-1 model of a decade past was later expanded into the DC-2 which carries 14 passengers. Later this model was expanded to make the DC-3 model with 21-passenger carrying capacity and sleeping accommodations in some planes. The DC-3 has become practically standard airline equipment in this country. The 42-passenger DC-4 model constructed at a cost of upwards of $2,000,000 was apparently too far ahead of the needs of airlines and some months ago was sold to Japanese interests. This does not mean that if there was a call for the larger model, that it could not be supplied as Douglas retains its rights.

Donald W. Douglas, president of the company which bears his name, was born in 1892. He left a promising career in the United States Navy to study at the Massachusetts Institute of Technology. In 1915, only a short time after his graduation, he designed his first ship for Glenn L. Martin, the "Martin R." Douglas left the Martin organization in 1920 to start in business in partnership with David Davis, prominent sportsman. The office was in back of a Los Angeles barbershop. The new Davis, Douglas Co. started in auspiciously with an order for one plane and the first model, the "Cloudster," was born.

With its backlog now at $50,000,000, Douglas Aircraft officials have just announced that they will take on 2,500 additional men at the rate of 400 weekly until the total number of employes reaches 12,000. The company aside from military business is concentrating on two commercial models, the DC-3 and the DC-5. The company originally estimated an ultimate demand for perhaps 50 of the DC-3s. Recently the 350th of this series was delivered, and the company before the end of this year will probably turn out close to its 400th of this model.

North American Aviation, Inc., plays an important role in aviation in Southern California. The history of this organization dates back to 1927, the Fokker Aircraft Corp. in Passaic, N. J., being the original predecessor. The planes built at this plant played an important part in the history of aviation. Commander Byrd of the United States Navy flew one of these ships across the North Pole. Later, Sir Charles Kingsford-Smith made his flight from Australia to the United States in one of these planes.

In 1930, Anthony Fokker sold his interest in the American unit to the General Motors Corp. The name of the company was changed to General Aviation Corp., and the addition of new buildings and equipment to its plant began.

In 1931 General Aviation Corp. purchased the assets of the Pittsburgh Metal Airplane Co. which was renamed the Metalair Corp. Engineering and production work then centered at Dundalk, Md. In April, 1933, General Aviation Corp. exchanged a sizable block of its stock for that of North American Aviation, Inc., then a holding unit. The company began to manufacture planes under the North American name, the name it carries today. The Berliner-Joyce Aircraft Corp. was also acquired in 1933 and merged with the parent unit. General Motors Corp. still retains a modest stock interest in the company.

North American Aviation, Inc., now has a backlog of some $27,000,000, chiefly in United States and French military business. From 144,000 square feet of space in 1936, the plant has been more than doubled and work is now under way to double the plant area again and bring the figure to 700,000 square feet.

Boeing's Development

The year 1916 witnessed the genesis of Boeing Aircraft at Seattle. It now employes 5,000 men, works three shifts daily and has a backlog estimated in the neighborhood of $20,000,000.

Boeing's active interest in aviation had started in 1915 when he went to Santa Ana, Calif., to learn flying from Glenn L. Martin. He had purchased one of the stick and wire planes Martin had built and had taken it back to Seattle with him.

The Pacific Aero Products Co. began operating in 1916. During the next year, having meanwhile acquired the old F. W. Heath shipyard at Seattle, the company changed tis name to Boeing Aircraft Co. and operations were started on a growing scale. The end of the World War made it plain that this country would need planes and more planes and Boeing started making aircraft for the Government.

The history of Boeing is replete with the development of better aircraft. As far back as 1935, Boeing produced the original Flying Fortress, a four engine land bomber.

The testing of the new 74-passenger model 314 clipper for Pan American Airways was completed last year. Six of these clippers delivered during the first half of 1939 are now in service on the Atlantic and Pacific oceans. The model 307 stratoliners have for the past several months been undergoing extensive flight tests which are still in progress. The Boeing B17-A Flying Fortress was delivered to the Army last January. The first of a new fleet of Flying Fortresses was delivered last July. An additional order for $8,000,000 was awarded last August in connection with the national rearmament campaign.

Vultee Started in 1932

Vultee Aircraft division of Aviation Manufacturing Corp. began its life in a hangar at Grand Central Air Terminal at Glendale. Gerard F. Vultee, aeronautical designer and engineer, started work on his first transport prototype on January 1, 1932. The corporate charter recorded the name of the organization as Aircraft Development Corp., which name it held until August, 1936, when it became the Vultee Aircraft division of Aviation Manufacturing Corp. R. W. Palmer, now Vultee's chief engineer, was affiliated during the early days. Palmer left the organization thereafter but returned after Mr. Vultee's untimely death in 1938, assuming the position he now holds.

The Vultee management was reorganized in 1938. During March of that year, R. W. Millar became a vice president of Aviation Manufacturing Corp. and general manager of the Vultee division. Mr. Millar had previously served as a director of Douglas Aircraft for ten years, five of which were spent on the executive committee.

Vultee's history in the succeeding years included an imposing list of records established by its planes. In August, 1936, the same month in which the organization became Vultee Aircraft, Sigismund Levenefsky, famed Russian flyer who was recently lost on a transpolar flight, chose a Vultee craft to carry him to Moscow by way of Alaska and the Bering Straits.

By 1935, Vultee was in the military field with an attack bomber. Amtorg Trading Corp., acting for the Russian government, purchased several attack bombers in 1936. Turkey bought 40 in 1937 and Brazil purchased 26. The United States Army Air Corps purchased 7 last June and gave a $3,000,000 order for planes last August as part of the Army rearmament plans, while Turkey has just ordered $300,000 of spare parts.

Vultee's present backlog is $3,600,000, of which above $3,000,000 is for planes for the Army Air Corps. Last March the organization exercised an option to purchase its plant at Downey, Calif., and has purchased ultra-modern high speed equipment. When the production peak is reached on the present United States Army order, between 2,000 and 2,500 men will be employed at the plant. A plant expansion program now under way will double the present capacity.

Vultee will shortly announce a new type attack bomber with an estimated speed of over 300 miles an hour, powered by a 1,600 hp. Wright Cyclone motor recently released for export.

Vega Airplane Co. whose plant is at Burbank is a subsidiary unit of Lockheed Aircraft Corp. The company has its own modern plant and is doing a substantial amount of parts work for the parent organization. In addition, it is preparing very shortly to offer its own plane, a six-place passenger job powered by a Unitwin engine manufactured by Menasco Manufacturing Co. The power unit represents a new departure in aircraft. It comprises two separate engines hitched to one propellor and has obvious advantages in the event of motor failure by one unit.

The new plane, designed for air transportation lines, on recent tests showed a speed of 200 miles an hour utilizing only 75% of its power. It is expected that production of the new Starliner will start within a few months.

Page 22

Sun 10-26-39

TWIN-ENGINED CRAFT FAVORED

Navy Leans Toward Bi-Motored Planes

By MAJOR AL WILLIAMS

That the United States Navy is leaning toward twin-engined patrol planes for scouting and bombing is indicated in the current edition of the Army and Navy Journal. This comes after much flirting with huge, four-engined flying boats which many of us have held impractical and too easy to shoot down.

"The primary requisite of this type of plane (the flying boat)," the Journal reports, "is that they be extremely seaworthy and capable of operating alone for extended periods. In this connection, while the Navy is experimenting extensively with four-engined patrol planes, performance reports on the latest twin-engined planes have been so favorable that the Navy feels that in the event of emergency it could go along with the twin-engined planes and discard four-engined work for the time being."

Left-handed reason though it is, it may steer the Navy away from the big-size complexe toward mass production of planes that are better fitted for their work.

Two small bombers can be built for approximately the cost of one four-engined giant. The eggs are too much in one basket when a $420,000 four-engined bomber sets out on a war mission. One $30 anti-aircraft shell can destroy a plane of any size. By the same reasoning, no single anti-aircraft shell can destroy two airplanes.

The foreign air strategists have already settled this point to the satisfaction of good sense and logic. Their experimental programs are far ahead of ours.

Our naval air service has spent 20-odd years operating with twin-engined flying boats, and it appears to me that this is the time to get on with mass production of types of flying boats which our crews are trained to fly and our maintenance forces are geared to handle.

SCRIPPS-HOWARD

The San Diego Sun

Fair but with some cloudiness tonight and Tuesday; continued warm; gentle easterly wind, fresh over the mountains.

The Paper with a Personality.

Sunset FINAL

PRICE FIVE CENTS

ESTABLISHED 1881 SAN DIEGO, CALIFORNIA, MONDAY, OCTOBER 30, 1939 VOL. 59 No. 303

20 MILLION | Big Navy Job Due For Consolidated | CONTRACT

Ham and Eggs Clouds Consair Bid on Planes

Union 10-31-39

S. D. Figure Lowest On $20,000,000 Order From Navy

Bringing news that his company is low bidder on a huge order for navy bombers and parts which may run to $20,000,000, Maj. Reuben H. Fleet, president Consolidated Aircraft Corp., returned from Washington by air yesterday.

Huge expansion of plant facilities and increase in number of workmen would be necessary to fill the big order if it is awarded to Consolidated, Maj. Fleet said.

HAM-EGGS IS BID THREAT

But the shadow of ham and eggs hovers over the order and the stimulation it would give to local business. A proviso in Consolidated's bid is that the price would be increased $3000 on each $100,000 of the order in the event new state taxes are imposed. An alternative proposal would be for the government to assume any added state tax imposed after the bid was tendered.

No direct mention of the retirement warrants proposal to be voted on next Tuesday was made. but the figures given—$3000 on each $100,000—are the ones which would be paid under the 3 percent gross income tax which would be levied under ham and eggs.

DESIGNS INSPECTED

"Might not the addition of 3 percent to the bid make Consolidated's offer higher than the next lowest bid?" Consolidated officials were asked.

"There are some states that do not have such a tax in sight," was the reply of E. N. Gott, company vice president.

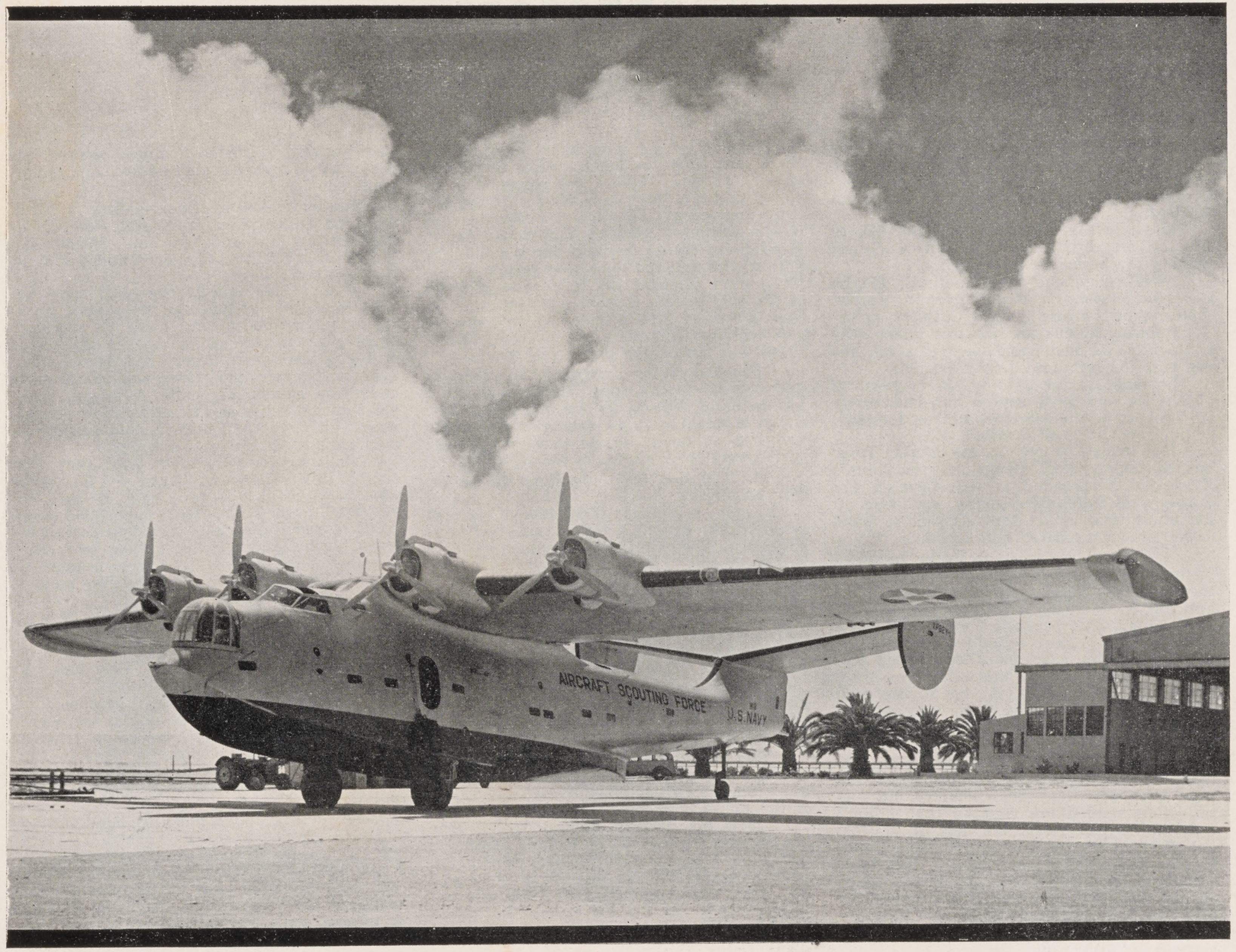
Maj. Fleet said he expected to know within a week or so if the contract would be awarded to Consolidated. Designs submitted with the bid are now being analyzed and navy officials appear favorably impressed, the Consolidated chief added.

EXPANSION PLANNED

Plant expansion needed to carry out the big contract if it is awarded would virtually double the present floor space of the factory. A building 700 by 400 would be required and it would go on land leased recently in anticipation of probable expansion needs. Bids for construction of the new building will not be called for until definite word is received from the navy on the contract.

Consolidated now is working on military orders totaling about $17,000,000 and employs about 2000 men.

"NAVY NEWS" NOVEMBER 1939



FIRST FLAGPLANE OF THE U. S. NAVY... THE XPB2Y-1

—Courtesy Consolidated Magazine

On August 24th, 1939 the Consolidated Aircraft Corporation four engined flying boat XPB2Y-1 became the first airplane to be officially recognized as a Flagplane of the United States Navy. On that date, Admiral A. B. Cook, commanding the Aircraft Squadron of the Aircraft Scouting Force, by dispatch, removed his flag from the USS Memphis at Seattle, and hoisted it aboard the XPB2Y-1. Thereby was established a precedent in Naval history. Never before had such a flag been officially hoisted on an airplane. The huge plane, by formal procedure, thus became the first Flagplane ever to fly for the U. S. Navy—a signal honor. It had been flown to Seattle by Navy personnel commanded by Commander Andrew Crinkley.

Commander Crinkley and his crew, in October of 1938, flew the XPB2Y-1, while still fitted with experimental apparatus and equipment, on a precedent setting flight completely across the United States. The XPB2Y-1 is a flying boat, yet the flight was made entirely over land, expressing confidence in the smooth functioning of the ship. The flight was non-stop from the waters of San Diego Bay, northward over spectacular mountain terrain via Salt Lake City and thence due east to Anacostia (Washington, D. C.). At this destination, the airplane was personally inspected by President Roosevelt. Flight time: 13 hours. Very cold weather, darkness over much of the route ,tailwinds and a closing in fog at Anacosita marked this outstanding transcontinental flight. The return to San Diego, a few days later, was likewise cross-continent, and non-stop. This time by a southern route and against headwinds of considerable magnitude which were met without difficulty.

The casual manner in which these flights were accomplished was expressed by Commander Crinkley soon after the ship's return: 'This flight was made in all respects in a routine operation manner and no special consideration or preparation was necessary in its accomplishment. Upon our return to San Diego the crew felt confident that the ship could have been refueled and departed for Honolulu or any other point immediately."

This double spanning of the continent may, in retrospect, be seen as a striking potentiality, together with the recent honor of becoming the first official Flagplane. Such a performance could easily have been one for transporting the commanding officers and members of their staff, with lightning speed, to positions thousands of miles away, even though the Naval destination might be separated by a whole continent. An official Flagplane thus appears to have in it latent usage of a very wide nature. The recent flight of the XPB2Y-1 to Seattle, for instance, coincided with the arival of Admiral A. B. Cook. The USS Memphis, on which he had arrived, then left immediately for Sitka, Alaska, while the use of the XPB2Y-1 allowed inspection time to be spent in Seattle while the Memphis was under way. The surface ship was passed enroute, and another inspection period was made possible at Sitka while the Memphis was closing up the distance.

As beaching gear had not been shipped in advance, or carried aboard, the Flagplane simply rode at anchor thus becoming a surface vessel, fully equipped as the Admiral's Headquarters. It was the first four engined plane to visit the harbor. Particularly excellent weather prevailed for the official Flagship's flights, and several of these, for observation purposes, were made to take full advantage of the opportunity afforded. One flight took the party over the Juneau, Cross Bay and Inland Passageway which allowed unsurpassed views of some five large glaciers in that region. With the disembarking of Admiral Cook for Kodiak with a patrol formation of Consolidated PBY airplanes, Commander Krinkley headed the huge plane back for San Diego, stopping enroute only at San Francisco. Elapsed time from Alaska to within ten miles of the Mexican Border was just 11 hours.

MAJOR FLEET RETURNS FROM WASHINGTON

Award Job In Week; New Building Planned If S. D. Firm Gets It

By HAROLD KEEN
Aviation Editor

Consolidated Aircraft Corp. was low bidder on an enormous amount of Navy bombers and the San Diego concern will learn possibly within a week whether it is to receive a contract that may run as high as $20,000,000, Maj. Reuben H. Fleet, president, disclosed today on his return from Washington, D. C.

Obviously elated over the results of his 10 days' period of negotiations with the Navy Department, Maj. Fleet, on disembarking from a plane at Lindbergh Field, declared his company would begin immediate construction of a new building to handle the greatly increased production, should the order be awarded.

"The Navy now is analyzing designs," he said, "and officials informed me that they will let us know within a week whether the contract will be let."

FAVORABLY IMPRESSED

It was indicated that the Navy is anxious to expand its force of long-range patrol planes during the existing state of limited national emergency as rapidly as possible.

"The contract may be for equipment valued at between 10 and 20 million dollars," Maj. Fleet said. Navy authorities apparently have been favorably impressed with the Consolidated entry.

It was learned unofficially that as many as 200 twin-engined patrol bombers of the famed PBY type, which has spanned virtually every major water body in the world on spectacular Navy mass flights and those of Richard Archbold's airboat Guba, may be ordered.

NEW DESIGN

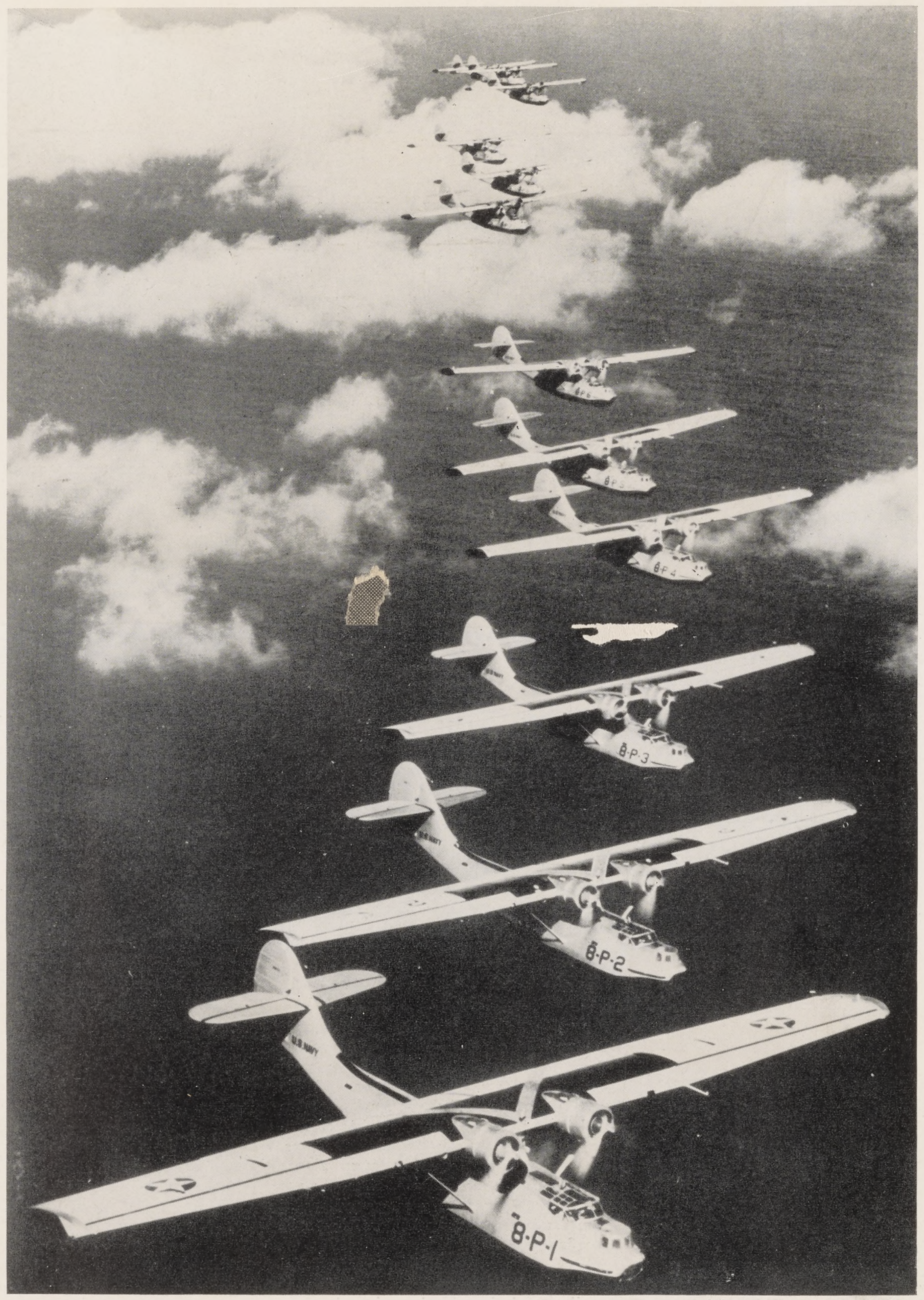
Consolidated has manufactured approximately 225 of these ships in four separate contracts since moving to San Diego in 1935. The new design is believed to be an advancement on the most recent bomber, the PBY-4.

The proposed plant expansion will be to the north of the present structures, and will increase floor space by 92 per cent. The building will be 400 by 900 feet and will be situated on 17 acres of city tideland recently leased to the company by the City Council in anticipation of just such a large order.

PLANS COMPLETED

Specifications are said to be completed and only award of the contract is required before bids will be taken for the construction, an important project in itself.

The factory now has about 2000 employes working on a $17,000,000 backlog of orders for Army and Navy four-motored bombers.



Official photograph, U. S. Navy

CONSOLIDATED PATROL BOMBERS, DESIGNATED IN THE NAVY PBY'S, OF PATROL SQUADRON 8 ATTACHED TO PATROL WING 2, SCOUTING FORCE, AT PEARL HARBOR

939

Ham and Eggs Defeat Big Factor In Consair's Navy Plane Program

Tribune 10-31-39

Voicing optimism over the outlook for San Diego harbor improvement projects, involving $3,000,000 in WPA work, and for the expansion of plane-building activities at the Consolidated Aircraft Corp. plant as a result of Consolidated's being low bidder on a contract for navy bombing planes that is expected to approach $20,000,000, Port Director Joe Brennan and Maj. R. H. Fleet, Consolidated president, were back in San Diego today. The two returned yesterday from Washington, D. C., by airliner.

Consolidated officials are ready to erect an additional building, 700 by 400 feet, to take care of the work in the new navy order, said Fleet. He reported he expected to know within a week or so whether the contract would be awarded to Consolidated. Navy authorities at Washington now are studying designs submitted with the bid, and appear favorably impressed, Fleet declared.

The new Consolidated building will be erected on land recently leased at Lindbergh field in anticipation of the expected need for expansion. Bids will not be called for to construct the building until definite word is received from the navy on the contract, however, it was reported. The new structure would be situated immediately north of the present Consolidated factory.

Price Increase Provided

The outcome of California's "ham and egg" election next Tuesday will have a profound effect on the aviation business in this state, and a proviso in Consolidated's bid is that the price would be increased $3000 on each $100,000 of the anticipated order in event new state taxes are imposed. An alternative proposal would be for the government to assume any added state tax imposed after the bid was tendered. The $3000 on each $100,000 represents the addition that would be required under a 3 percent gross income tax which would be levied under ham and eggs.

Four major harbor improvement projects and several other smaller projects are involved in the $3,000,000 sought by Brennan for San Diego, of which approximately $1,700,000 would be contributed by the city and the remainder by the WPA. Brennan said he spent 10 days conferring with WPA officials in Washington and received assurances from them that favorable consideration would be given a new application for WPA funds to carry out nine projects here. The major projects are the Tenth ave. pier, $2,000,000; Ocean Beach fishing pier, $425,000; additional improvements at Lindbergh field, $225,000, and completion of the yacht harbor, $270,000.

BIG JOB HINGES ON 'HAM &' VOTE

Sun Oct. 31-'39

Consolidated Hints Possible Transfer

Result of the $30-Thursday pension issue in next Tuesday's special election probably will be awaited before the Navy Department acts on Consolidated Aircraft Corp.'s low bid for a Navy bomber contract which may total $20,000,000, it was indicated today.

The offer carries a proviso calling for a $3000 increase of the price for each $100,000 worth of business if there is a new state tax levy, Consair officials disclosed. This sum would cover the 3 per cent gross income tax which would be levied should the Ham and Eggs plan carry.

'OTHER STATES'

A cryptic statement by E. N. Gott, vice-president, to the effect that there are "plenty of other states where no such tax is contemplated" led to conjectures over whether Consolidated, to obtain the huge contract, would consider transferring its activities elsewhere.

Fate of San Diego county's future highway program and work now being performed—valued at $652,000—also hung in the balance, pending outcome of the Ham and Eggs vote.

JOBS JEOPARDIZED

Among projects which would be jeopardized by passage of the pension plan, according to information from the State Department of Public Works office in Los Angeles, were the following:

Grading and paving of 4.6 miles of road west of La Mesa overhead to El Cajon, $255,000; Lakeside bridge over San Diego river, $135,000; grading and paving 2.9 miles of the Coast highway from the border to one mile north of San Ysidro, $170,000; construction of non-skid surface on 7.2 miles of roadway from Las Flores underpass to San Onofre overhead, $15,000; grading and surfacing, one-half mile on Silver Strand highway, $30,000; and approaches to Lakeside bridge over San Diego river, $47,000.

The Federal government already has warned that the state's share of the cost of such work being performed with U. S. assistance would be unacceptable in ham and egg warrants. Contractors have declared they would be unable to meet material and labor bills under such a plan, and would be forced to abandon work.

ARCHBOLD PILOT IN S. D. TO CHECK GUBA

Sun 11-2-39

Russ Rogers, chief pilot of Richard Archbold's Consolidated airboat Guba, was in San Diego today to conduct flight tests on the recently overhauled globe-girdling craft, preparatory to a transcontinental jaunt to the East coast in the near future.

Mr. Rogers, who arrived yesterday from New York City, said that Mr. Archbold, wealthy scientist-aviator and research associate of the American Museum of Natural History, will come here next month to work on plans for a second expedition to Netherlands New Guinea in 1940. The Guba's owner has been in New York since last July, having remained there when the airboat continued to San Diego to complete its round the world trip.

39

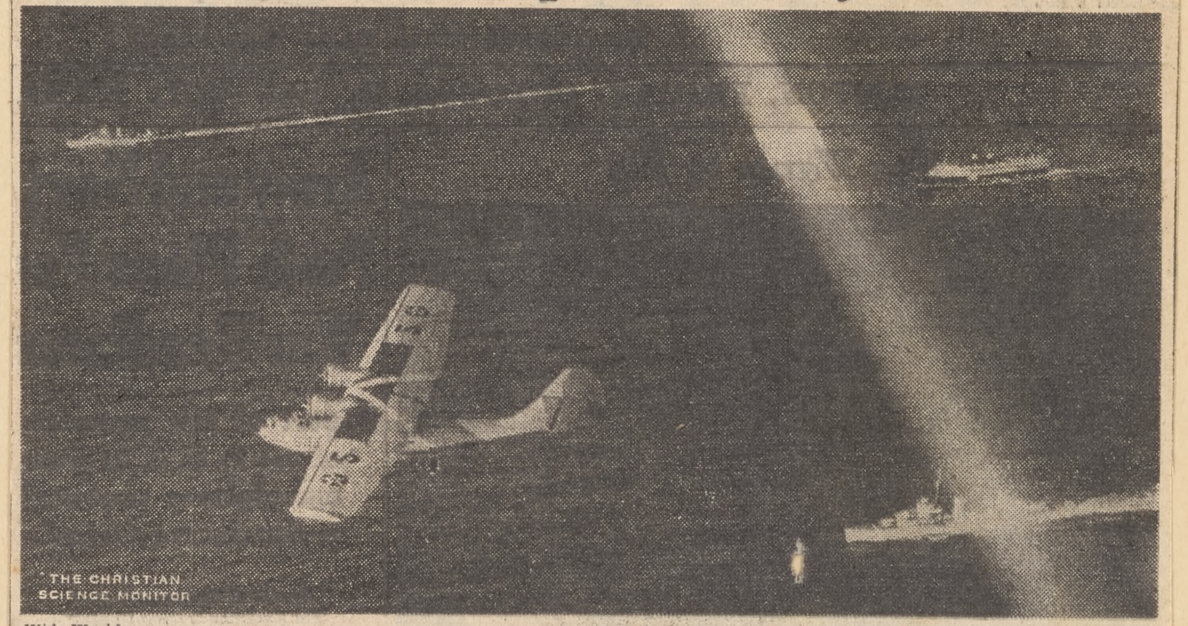
Trib 11-3-39

Archbold Expected In S. D. Next Month

Richard Archbold, research associate of the American Museum of Natural History, is expected back in San Diego next month to complete preparations for another scientific flight to New Guinea. Archbold now is in New York. His plane, the Consolidated-built Guba is to be flown from here to New York by Russell Rogers, chief pilot for Archbold, who arrived here from the east yesterday to make several test flights in the plane. The Guba was flown from San Diego to New Guinea last year.

THE CHRISTIAN SCIENCE MONITOR, BOSTON, FRIDAY, OCTOBER 13, 1939

Convoys See Iroquois Safely to Port



Wide World

The United States Liner 150 Miles at Sea Caught From Air by Camerman

The liner, supposedly under threat of sinking, is in the right background. On right foreground is a United States Navy destroyer, with a second destroyer on the left. A Navy bomber completed the escort.

Iroquois Safe in Port Despite Threat

By a Staff Correspondent of The Christian Science Monitor

NEW YORK, Oct. 12—Despite warnings by Grand Admiral Erich Raeder, Chief of the German Admiralty, that it would be sunk in a manner similar to the Athenia, the steamship Iroquois, chartered by the United States Lines, was tied at its North River Pier today following its arrival here with 577 passengers last night. The Iroquois was convoyed from mid-Atlantic by two American destroyers—the 395 and the 387—to protect it from any underseas craft attack.

No submarines were sighted during the voyage, passengers and crew reported, and a thorough search of baggage and all parts of the vessel by the crew when reports of the warning were received disclosed no explosives.

Storm Was Heavy

Passengers and crew of the vessel, normally plying American coastal ports, did, however, report they had met with an extremely heavy storm, which shook the craft from bow to stern for hours.

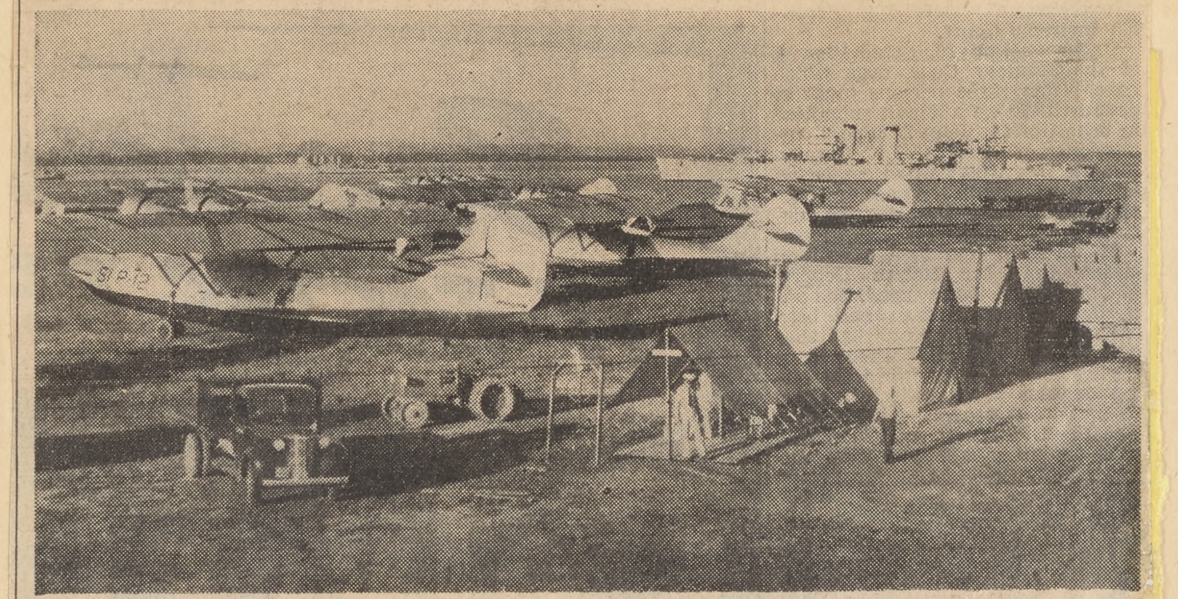
When Capt. Edgar A. Chelton, Master of the Iroquois, received notice from Washington that Germany had warned his vessel would be sunk, he shielded passengers from this knowledge until t
American naval convoy m
on Oct. 8, after thei
from Cobh, Ireland, c
tain Chelton told
he arrived h
removed
sengers
not

Norm Davidson Scrapbook

Oct 25-'39.

NEW YORK HERALD TRIBUNE,

U. S. Keeps Neutrality Patrol in Caribbean on the Alert



Reports of foreign submarines having been ighted in the Caribbean have caused the Navy Department to maintain an active neutrality patrol he Southern waters. Here are a group of Navy flying boats and a cruiser at San Juan, Puerto Rico, base

Associated Press

Trib. 11-3-39

Three S. D. Plane Firms To Benefit From Repeal of Arms Embargo

All southern California aircraft factories, including the three at San Diego, stand to benefit from repeal of the arms embargo, aircraft officials poined out today.

From Los Angeles, The Associated Press reported that new airplane orders totaling $35,000,000 will provide jobs for an estimated 20,000 more men in aircraft factories there. This, it was reported, will represent a 50 percent increase in employment.

The new orders from foreign governments, to be signed as soon as final action is taken on the neutrality bill, include one for $30,000,000 for planes from the Douglas Aircraft factory and one for $5,000,000 from

Firms To Benefit Through Repeal

Trib. 11-3-39

CONTINUED FROM PAGE ONE

Lockheed aircraft. The new orders are additional to a $110,000,000 foreign and domestic backlog already in local plants.

While no foreign orders for planes have been placed with San Diego aircraft factories, the arms embargo repeal "opens up great potential fields" for plants here, an official of one company said. He pointed out that aircraft firms "making planes for Uncle Sam merit immediate recognition for foreign orders because of the high type of workmanship demanded."

Consolidated Aircraft Corp., with a backlog of upwards of $17,000,00, is making planes for the army and navy, with an anticipated additional navy order in the offing. The Ryan Aeronautical Co., in addition to training fliers for the army air corps, is manufacturing primary trainers and observation planes for the army. Solar Aircraft Co. has a large business manufacturing parts and equipment for planes.

Union 11-3-39

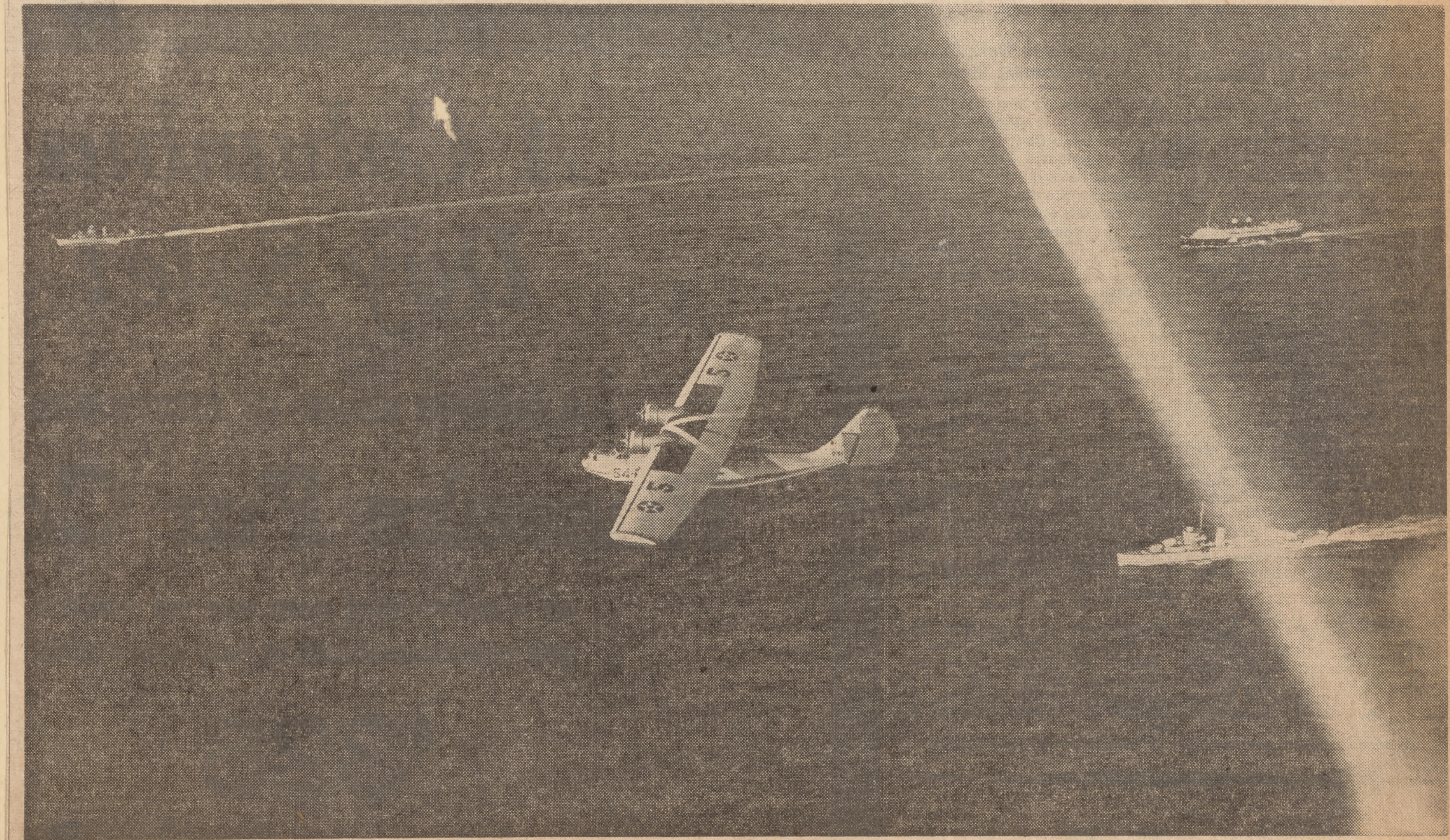
Guba Pilot Here For Plane Tests

Russell Rogers, chief pilot of Richard H. Archbold's Consolidated-built plane Guba, arrived here from New York yesterday to take over command of the big flying boat following extensive overhaul at the Lindbergh field plant.

The Guba, which spent nearly two years in Netherlands New Guinea on a scientific expedition for the American Museum of Natural history of which Archbold is associate director, is to make a number of test flights before beng flown overland to New York. Archbold is expected here next month.

Plans are being made for another expeditionary flight to New Guinea in 1940.

THE NEW YORK TIMES, THURSDAY, OCTOBER 12, 1939.



THE "THREATENED" STEAMSHIP IROQUOIS, DUE YESTERDAY, DOCKED YESTERDAY

The American liner Iroquois, which the German Admiralty intimated would be sunk by an unnamed agency when she neared our coast, is shown (upper right) about 120 miles out of New York yesterday. Ahead of the vessels are two destroyers and above is a navy plane. The light streak is due to the vibrating strut of plane from which picture was taken.

Times Wide World

DAY MORNING, NOV. 13, 1939

S.D. Union

U. S. Aircraft Factories Increase Capacity to 15,000 Planes a Year

Plants Expand; Day-Night Shifts May Boost Total

NEW YORK, Nov. 12 (A.P.)—The Aeronautical Chamber of Commerce of America today made public a survey of aircraft factory expansion which, it said, showed American plants could turn out 15,000 planes a year.

Projects now underway, said John H. Jouett, president of the chamber, would result in even greater production capacity.

"Our survey," he explained, "included 43 airplane and 13 engine manufacturing plants.

"Of the 43 airplane plants, 23 are now working on orders for military equipment. The current capacity of 1250 planes a month, equal to a rate of 15,000 machines a year, is based on several factors.

SPACE INCREASES 17%

"The airplane factory space increased 6,000,000 square feet to 7,025,000 square feet in the first six months of this year an expansion of 17 percent in manufacturing space. At the same time the aircraft engine factory space increased 334,000 square feet, a 20 percent expansion. All that space is now in use."

Jouett said further that while some aircraft plants were working at full capacity, "others have not even approached their limit with single working shifts. When orders are received in sufficient volume to warrant it the plants go into three working shifts a day."

The chamber said that to obtain maximum output, standardization or "freezing" on a single model in one factory would be necessary. Some plants not working at top speed are still producing as many as seven or eight different types of planes.

"Another factor which has increased plant capacity," said Jouett, "is the recent growth of the subcontracting system.

SUB-CONTRACTS AID

"Sub-contracting in the past was a very small part of aircraft production because the manufacturer could not guarantee the sub-contractor continuous business and the sub-contractor could not tool up sufficiently to assure a return on his investment. * * *

"With increased orders and the larger unit volume on each order, all plants in the industry which are not working on their own business and filling original orders of their own are available for sub-contracting. In other words, this opens the entire manufacturing industry to full time production.

"Our survey showed that the industry is capable of rapid expansion of production on all types of military aircraft, including the special types used by the navy air forces."

OVERHAULED GUBA TAKES TEST HOPS

Sun 12-10-39

After more than four months of idleness while receiving a complete overhaul in the Consolidated Aircraft Corp. plant, the widely traveled airboat Guba of Richard Archbold, wealthy scientist-aviator, received its first test hops over the bay yesterday.

Chief Pilot Russ Rogers announced that the craft, which was used to transport personnel and supplies to hitherto inaccessible regions in Netherlands New Guinea during a scientific expedition which ended last summer, may be flown to New York City for the winter unless adequate hangar space can be provided in San Diego.

Mr. Archbold, in a recently purchased Fleetwing four-passenger cabin plane, is expected to arrive here from the East coast next month, according to Mr. Rogers.

AMPHIBIAN FEATURE ADDED TO CONSOLIDATED PBY BOATS

Jan 40 Western Flying.

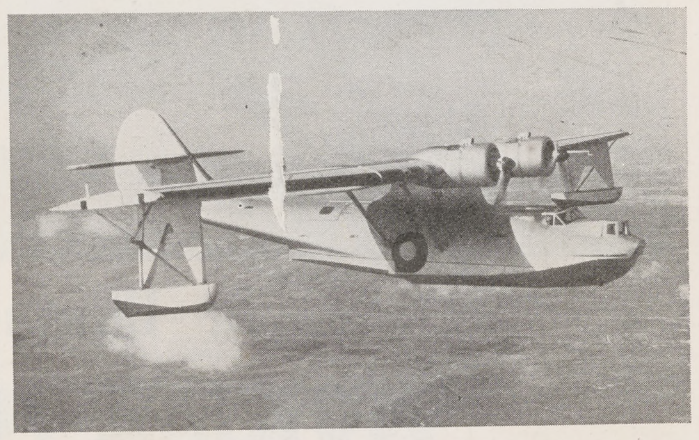
THE Consolidated Aircraft Corporation's new Model 28-5A amphibian, designed by the U. S. Navy for whom it was constructed as the XPBY-5A, has undergone its flight testing and is now in the Navy's hands at Anacostia.

Consolidated announced receipt of an order amounting to $20,016,699 for an undisclosed number of four-engined patrol bombers of the PBY series from the **U. S. Navy Department** on December 20.

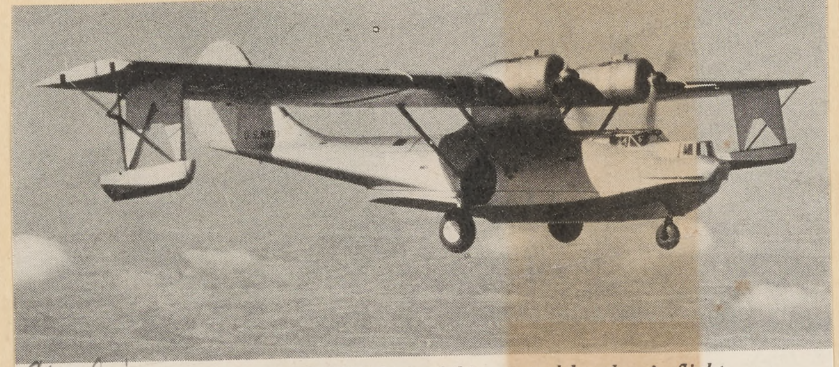
Whether the new patrol boats will incorporate the amphibian feature was not disclosed.

Basically the new Consolidated amphibian is the Model 28 twin engined flying boat which the Navy knows as the PBY, now having incorporated in the structure, the amphibian feature. The inherent advantages of the Model 28 boat have been retained, and the great advantage of land plane operation added.

The landing gear is of the tricycle type, with a single wheel forward and two aft, all fully retractable. The side wheel and supporting mechanism, complete with oleo shock struts, retract into wells in the side of the hull. The nose wheel in the bow is completely closed over in the retracted position by automatically operated hatches so that no resistance to planing is encountered. All three wheels are operated by a central hydraulic power drive, and the operations are carried out in sequence automatically. A single lever controls both the extension and the retraction of the landing gear. Hydraulic pump power is derived from the main power plant or from an auxiliary engine, and may be operated by hand if necessary.



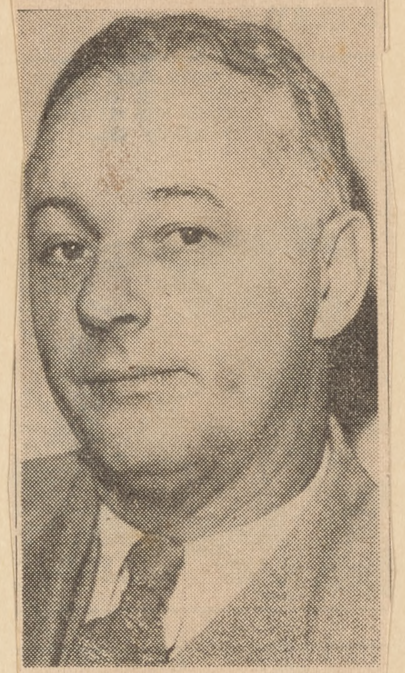
With the order, Consolidated's backlog of unfilled orders zoomed to more than $37,000,000. Reports from the factory said that this new contract will require increased manufacturing facilities and necessitate an expansion program which will cost between $1,500,000 and $2,000,000. The same report said that no outside financing will be required for the expansion, which will increase production facilities by 50 per cent.



Aero Digest 2/40 *Consolidated XPBY-5A amphibian patrol bomber in flight*

L.A. Times

1940 JANUARY 17



INSPECTS PLANT — Maj. Gen. Emmons visits San Diego aircraft plant to view new Army bomber.

Emmons Sees Great Bomber

Air Corps Commander Watches Third Test Flight at San Diego

SAN DIEGO, Jan. 16.—French and Brazilian military officers today stood on the side lines only a few paces away from Maj. Gen. Delos C. Emmons, commander of the Army Air Corps G.H.Q., as the Army's most powerful completed bomber, the four-motored Consolidated XB-24, was given its third test flight on Lindbergh Field.

The foreign observers were here to confer with Consolidated officials in connection with possible acquisition of flying equipment available for export. The local concern manufactures long-range navy patrol boats, as well as giant army planes.

Maj. Gen. Emmons spent several hours inspecting the Consolidated plant and left late today for March Field to observe the G.H.Q. first wing's participation in this week's joint Army-Navy maneuvers which will test California's vulnerability to invasion.

He arrived this afternoon in a Douglas Army transport from his Langley Field (Va.) headquarters. Accompanying him are Capt. W. Goss, pilot and aide; Maj. H. A. McGinnis of the Inspector General's Department and Lieut. Col. Cedric Lewis, signal officer of the G.H.Q.

Air Force Commander Arrives at March Field

MARCH FIELD, Jan. 16.—Maj. Gen. Delos T. Emmons, commanding general, G.H.Q. Air Force, arrived at March Field at 4:25 p.m. today accompanied by Col. A. S. Pederneiras of the Brazilian Air Force. He was accorded a 13-gun salute. Gen. Emmons tomorrow will visit airplane factories in Los Angeles.

HITLER'S AIR PLANS

Building up his Bomber Forces

From Our Air Correspondent

LONDON, Tuesday Night

TO expect the worst and to prepare to meet it is the only sound defensive maxim and it should be rigorously applied at the present time Things have been going well in the Middle East and in Greece, but that does not mean that we should expect them automatically to begin to go well here.

Rather the expectation should be that there will be further and heavier attacks. For although there have been lulls, there has been nothing to suggest that they are of other than tactical origin. On the contrary, the easiest way to interpret them is as periods of recuperation for the *Luftwaffe* to be followed by more intensive action

It is true that, since Friday last, the Royal Air Force has been making raids on German-occupied aerodromes in France and Holland, but I doubt if such raids could do more than diminish very slightly the scale of the attack. The reason is that the Germans enjoy the use of a huge number of aerodromes, both in Germany and in occupied territory.

MANY AERODROMES

In France alone the number must be about 500, and of these a fairly high proportion would be well suited as bases for the night raiders. In Holland and Belgium there are more aerodromes, and behind them, more difficult to reach for our bombers, there are the German aerodromes, of which there must be more than 600.

It is obvious that the task of attacking so large a number of aerodromes that the enemy would be unable to launch his night raids is so immense that no air force could undertake it. The most that can be hoped for is that some of the aerodromes which are most useful to the enemy shall be knocked about, and this, it seems, was successfully done.

The lulls in night raiding may have been partly caused by these attacks, but that is all. For the rest, they may be due to the desire on the part of the enemy to conserve his bomber forces and to build them up to greater strength for some coming offensive of great ferocity.

The *Luftwaffe* has had heavy losses during the summer and autumn. It has, moreover, measured itself against the R.A.F. and found itself relatively less strong than it had thought. Field-Marshal Goering keeps a wary eye on our production and knows that it is swinging up and being augmented still further by United States production.

Yet the attempt to defeat Great Britain in these islands cannot have been abandoned as a primary German objective. It would be the key to saving Italy, it would fulfil Herr Hitler's dearest ambition, it would sort out all the Axis troubles. But to defeat Britain in these islands the Germans now know that a bigger effort than anything they have so far been able to put out is needed.

So they use this period for weakening us so far as they can by submarine warfare and by intermittent night raids, while not risking great numbers of their aircraft in day raids or in night raids when the weather is such that the number of accidents seems likely to be high.

Night flying under war conditions always entails many accidents, and it is surprising what heavy losses a night bomber force can suffer from this cause alone. The *Luftwaffe* bombers may have been depleted by accidents on a big scale during their attempts to sustain the bombardment of these islands during spells of bad weather.

At any rate, the present method does enable aircraft to be conserved and gives Field-Marshal Goering a chance to build up his forces. And that, I think, is the interpretation of it. There may be moves of some machines to another theatre, but if the aim is to strike in the Balkans or the Middle East the conservation and hoarding tactics are still needed. They would not be forced upon the Germans by a move because the aircraft do not take long to shift; it is the ground equipment that takes the time.

Our object then must be to prepare energetically to meet a new German air offensive. To that end we must increase the strength of the Royal Air Force and push forward with technical improvements. Higher speeds and better climb are the needs, for if we beat them once by technical merit we can beat them again by the same means.

It is clear that we have been able to reinforce our Air Force in the Middle East and also to lend fairly substantial air aid to the Greeks. We have been using not only the Gloster Gladiator fighters in those theatres but also the later Hurricanes. In addition, we have used Blenheims in fairly large numbers and some of the Wellington heavy bombers.

STILL MORE 'PLANES

But what we have done in the past in the way of increasing our air strength must be overtopped in the future if we are to meet with full confidence the coming attack wherever it may be launched. Moreover, there is always our own offensive to be considered, for it comes nearer and nearer to the range of practical possibility. So that not only must our fighter forces be enormously increased but so must our bomber forces.

Especially important will be the coastal reconnaissance types of aircraft and the torpedo-carriers. If, as has been suggested, we are to get some of the Consolidated 31 flying boats from America they should be of the greatest help to the Coastal Command in dealing with the submarine menace and also with the menace of the surface raiders.

NAVAL AVIATION

Official Photo, U. S. Navy

SO C-1 Formation. Scout observation planes such as those pictured here are launched by means of a catapult.

National Aeronautics, Sept 39

AND NAVAL POLICY

By Rear Adm. John H. Towers, USN

An unusual aerial photograph of a left echelon formation of patrol planes.

Official Photo, U. S. Navy

THE mission of Naval Aviation in our national defense is, primarily, to increase the efficiency of the naval service.

The basic principle of the national policy of the United States is that our armed forces are maintained for defense purposes, and the basic principle of the Navy policy is to maintain our Navy at sufficient strength to support the national policies and commerce, and to guard the continental and overseas possessions of the United States. To do this, the Navy must be properly equipped with ships, aircraft, and trained personnel. The equipment must be modern and in sufficient quantity successfully to carry out the required and assigned missions.

World conditions in recent years have not improved, and the United States, to safeguard its interests, has been forced to continue construction under the Vinson-Trammell Act of 1934 and the Naval Expansion Act of 1938.

While the governing policy is defensive, it is imperative, in the event that war is forced upon us, that our fleet shall be able to bring the enemy to terms at a safe distance from our shores within the shortest possible interval of time. To accomplish this feat, it must be adequately trained and sufficiently strong in every essential element.

The present authorized building program of ships, planes, and naval air stations is a step in the right direction and should be pushed to an early completion. So, too, should the program of construction of other air, destroyer, and submarine bases recommended during the current calendar year by the Hepburn Board.

The Naval policy in regard to heavier-than-air aviation activities is to build and maintain airplanes to the full complement authorized for aircraft carriers, tenders, battleships, cruisers, and the Fleet Marine Force, and to determine and develop the types of airplanes and appliances which are best suited for increased effectiveness of naval vessels, attacks on all classes of Naval objectives, and for scouting and patrolling.

Aircraft For Increased Effectiveness

An adjunct to this general policy is the aircraft policy which aims to build and to maintain aircraft carriers in the maximum

---

ern
ACHINERY and
TEEL WORLD

Dedication....

Western Machinery and Steel World presents to its readers in the following pages the graphic picture of the Aircraft Industry as it exists today on the West Coast.

In this compilation sharp emphasis is concentrated on the responsibility which Machine Tools have assumed in this gigantic production program.

In expressing our fullest measure of appreciation to the officials of these aircraft manufacturing plants for the close cooperation which has made this volume possible it is with genuine pride and esteem that we dedicate this Edition to the personnel of the entire West Coast Aircraft Industry.

Machine
TOOLS
in the
AIRCRAFT
INDUSTRY

DAY MORNING, NOV. 13, 1939

S.D. Union

U. S. Aircraft Factories Increase Capacity to 15,000 Planes a Year

Plants Expand; Day-Night Shifts May Boost Total

NEW YORK, Nov. 12 (A.P.)—The Aeronautical Chamber of Commerce of America today made public a survey of aircraft factory expansion which, it said, showed American plants could turn out 15,000 planes a year.

Projects now underway, said John H. Jouett, president of the chamber, would result in even greater production capacity.

"Our survey," he explained, "included 43 airplane and 13 engine manufacturing plants.

"Of the 43 airplane plants, 23 are now working on orders for military equipment. The current capacity of 1250 planes a month, equal to a rate of 15,000 machines a year, is based on several factors.

SPACE INCREASES 17%

"The airplane factory space increased 6,000,000 square feet to 7,025,000 square feet in the first six months of this year an expansion of 17 percent in manufacturing space. At the same time the aircraft engine factory space increased 334,000 square feet, a 20 percent expansion. All that space is now in use."

Jouett said further that while some aircraft plants were working at full capacity, "others have not even approached their limit with single working shifts. When orders are received in sufficient volume to warrant it the plants go into three working shifts a day."

The chamber said that to obtain maximum output, standardization or "freezing" on a single model in one factory would be necessary. Some plants not working at top speed are still producing as many as seven or eight different types of planes.

"Another factor which has increased plant capacity," said Jouett, "is the recent growth of the sub-contracting system.

SUB-CONTRACTS AID

"Sub-contracting in the past was a very small part of aircraft production because the manufacturer could not guarantee the sub-contractor continuous business and the sub-contractor could not tool up sufficiently to assure a return on his investment. * * *

"With increased orders and the larger unit volume on each order, all plants in the industry which are not working on their own business and filling original orders of their own are available for sub-contracting. In other words, this opens the entire manufacturing industry to full time production.

"Our survey showed that the industry is capable of rapid expansion of production on all types of military aircraft, including the special types used by the navy air forces."

OVERHAULED GUBA TAKES TEST HOPS

Dun 12-10-39

After more than four months of idleness while receiving a complete overhaul in the Consolidated Aircraft Corp. plant, the widely traveled airboat Guba of Richard Archbold, wealthy scientist-aviator, received its first test hops over the bay yesterday.

Chief Pilot Russ Rogers announced that the craft, which was used to transport personnel and supplies to hitherto inaccessible regions in Netherlands New Guinea during a scientific expedition which ended last summer, may be flown to New York City for the winter unless adequate hangar space can be provided in San Diego.

Mr. Archbold, in a recently purchased Fleetwing four-passenger cabin plane, is expected to arrive here from the East coast next month, according to Mr. Rogers.

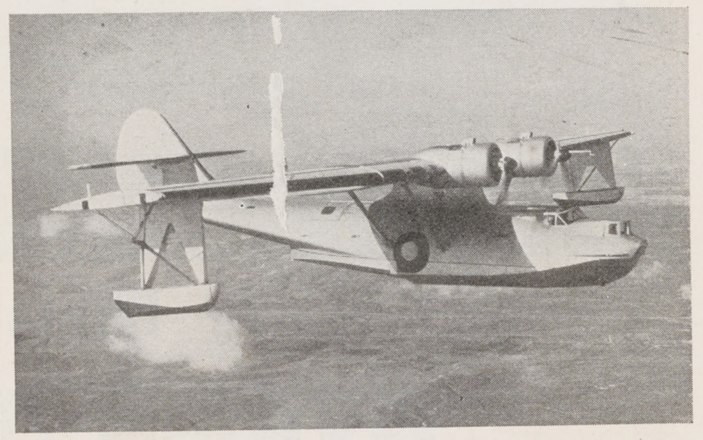
AMPHIBIAN FEATURE ADDED TO CONSOLIDATED PBY BOATS

Jan 40 WESTERN FLYING.

THE Consolidated Aircraft Corporation's new Model 28-5A amphibian, designed by the U. S. Navy for whom it was constructed as the XPBY-5A, has undergone its flight testing and is now in the Navy's hands at Anacostia.

Consolidated announced receipt of an order amounting to $20,016,699 for an undisclosed number of four-engined patrol bombers of the PBY series from the **U. S. Navy Department** on December 20.

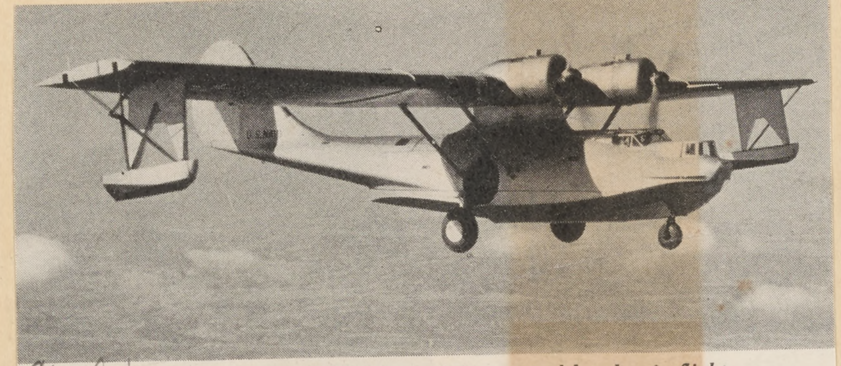
Whether the new patrol boats will incorporate the amphibian feature was not disclosed.



With the order, Consolidated's backlog of unfilled orders zoomed to more than $37,000,000. Reports from the factory said that this new contract will require increased manufacturing facilities and necessitate an expansion program which will cost between $1,500,000 and $2,000,000. The same report said that no outside financing will be required for the expansion, which will increase production facilities by 50 per cent.

Basically the new Consolidated amphibian is the Model 28 twin engined flying boat which the Navy knows as the PBY, now having incorporated in the structure, the amphibian feature. The inherent advantages of the Model 28 boat have been retained, and the great advantage of land plane operation added.

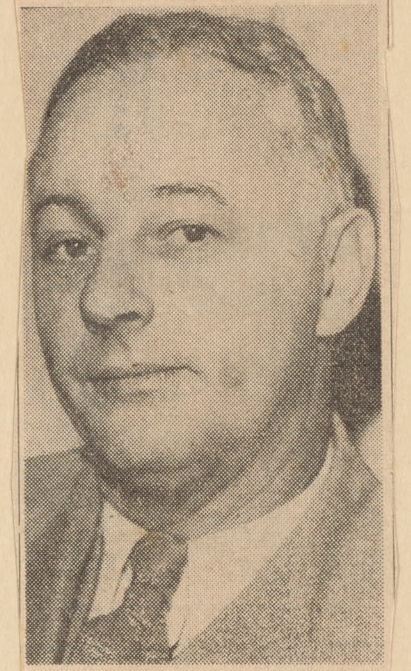
The landing gear is of the tricycle type, with a single wheel forward and two aft, all fully retractable. The side wheel and supporting mechanism, complete with oleo shock struts, retract into wells in the side of the hull. The nose wheel in the bow is completely closed over in the retracted position by automatically operated hatches so that no resistance to planing is encountered. All three wheels are operated by a central hydraulic power drive, and the operations are carried out in sequence automatically. A single lever controls both the extension and the retraction of the landing gear. Hydraulic pump power is derived from the main power plant or from an auxiliary engine, and may be operated by hand if necessary.



Aero Digest 2/40 *Consolidated XPBY-5A amphibian patrol bomber in flight*

L.A. Times

1940 JANUARY 17



INSPECTS PLANT — Maj. Gen. Emmons visits San Diego aircraft plant to view new Army bomber.

Emmons Sees Great Bomber

Air Corps Commander Watches Third Test Flight at San Diego

SAN DIEGO, Jan. 16.—French and Brazilian military officers today stood on the side lines only a few paces away from Maj. Gen. Delos C. Emmons, commander of the Army Air Corps G.H.Q., as the Army's most powerful completed bomber, the four-motored Consolidated XB-24, was given its third test flight on Lindbergh Field.

The foreign observers were here to confer with Consolidated officials in connection with possible acquisition of flying equipment available for export. The local concern manufactures long-range navy patrol boats, as well as giant army planes.

Maj. Gen. Emmons spent several hours inspecting the Consolidated plant and left late today for March Field to observe the G.H.Q. first wing's participation in this week's joint Army-Navy maneuvers which will test California's vulnerability to invasion.

He arrived this afternoon in a Douglas Army transport from his Langley Field (Va.) headquarters. Accompanying him are Capt. W. Goss, pilot and aide; Maj. H. A. McGinnis of the Inspector General's Department and Lieut. Col. Cedric Lewis, signal officer of the G.H.Q.

Air Force Commander Arrives at March Field

MARCH FIELD, Jan. 16.—Maj. Gen. Delos T. Emmons, commanding general, G.H.Q. Air Force, arrived at March Field at 4:25 p.m. today accompanied by Col. A. S. Pederneiras of the Brazilian Air Force. He was accorded a 13-gun salute. Gen. Emmons tomorrow will visit airplane factories in Los Angeles.

HITLER'S AIR PLANS

Building up his Bomber Forces

From Our Air Correspondent

LONDON, Tuesday Night

TO expect the worst and to prepare to meet it is the only sound defensive maxim and it should be rigorously applied at the present time Things have been going well in the Middle East and in Greece, but that does not mean that we should expect them automatically to begin to go well here.

Rather the expectation should be that there will be further and heavier attacks. For although there have been lulls, there has been nothing to suggest that they are of other than tactical origin. On the contrary, the easiest way to interpret them is as periods of recuperation for the *Luftwaffe* to be followed by more intensive action

It is true that, since Friday last, the Royal Air Force has been making raids on German-occupied aerodromes in France and Holland, but I doubt if such raids could do more than diminish very slightly the scale of the attack. The reason is that the Germans enjoy the use of a huge number of aerodromes, both in Germany and in occupied territory.

MANY AERODROMES

In France alone the number must be about 500, and of these a fairly high proportion would be well suited as bases for the night raiders. In Holland and Belgium there are more aerodromes, and behind them, more difficult to reach for our bombers, there are the German aerodromes, of which there must be more than 600.

It is obvious that the task of attacking so large a number of aerodromes that the enemy would be unable to launch his night raids is so immense that no air force could undertake it. The most that can be hoped for is that some of the aerodromes which are most useful to the enemy shall be knocked about, and this, it seems, was successfully done.

The lulls in night raiding may have been partly caused by these attacks, but that is all. For the rest, they may be due to the desire on the part of the enemy to conserve his bomber forces and to build them up to greater strength for some coming offensive of great ferocity.

The *Luftwaffe* has had heavy losses during the summer and autumn. It has, moreover, measured itself against the R.A.F. and found itself relatively less strong than it had thought. Field-Marshal Goering keeps a wary eye on our production and knows that it is swinging up and being augmented still further by United States production.

Yet the attempt to defeat Great Britain in these islands cannot have been abandoned as a primary German objective. It would be the key to saving Italy, it would fulfil Herr Hitler's dearest ambition, it would sort out all the Axis troubles. But to defeat Britain in these islands the Germans now know that a bigger effort than anything they have so far been able to put out is needed.

So they use this period for weakening us so far as they can by submarine warfare and by intermittent night raids, while not risking great numbers of their aircraft in day raids or in night raids when the weather is such that the number of accidents seems likely to be high.

Night flying under war conditions always entails many accidents, and it is surprising what heavy losses a night bomber force can suffer from this cause alone. The *Luftwaffe* bombers may have been depleted by accidents on a big scale during their attempts to sustain the bombardment of these islands during spells of bad weather.

At any rate, the present method does enable aircraft to be conserved and gives Field-Marshal Goering a chance to build up his forces. And that, I think, is the interpretation of it. There may be moves of some machines to another theatre, but if the aim is to strike in the Balkans or the Middle East the conservation and hoarding tactics are still needed. They would not be forced upon the Germans by a move because the aircraft do not take long to shift; it is the ground equipment that takes the time.

Our object then must be to prepare energetically to meet a new German air offensive. To that end we must increase the strength of the Royal Air Force and push forward with technical improvements. Higher speeds and better climb are the needs, for if we beat them once by technical merit we can beat them again by the same means.

It is clear that we have been able to reinforce our Air Force in the Middle East and also to lend fairly substantial air aid to the Greeks. We have been using not only the Gloster Gladiator fighters in those theatres but also the later Hurricanes. In addition, we have used Blenheims in fairly large numbers and some of the Wellington heavy bombers.

STILL MORE 'PLANES

But what we have done in the past in the way of increasing our air strength must be overtopped in the future if we are to meet with full confidence the coming attack wherever it may be launched. Moreover, there is always our own offensive to be considered, for it comes nearer and nearer to the range of practical possibility. So that not only must our fighter forces be enormously increased but so must our bomber forces.

Especially important will be the coastal reconnaissance types of aircraft and the torpedo-carriers. If, as has been suggested, we are to get some of the Consolidated 31 flying boats from America they should be of the greatest help to the Coastal Command in dealing with the submarine menace and also with the menace of the surface raiders.

of poor visibility in a day when there was no radio communication between plane and ground.

Transcontinental Service Begins

On May 15, 1920, the third leg of the transcontinental route, Chicago to Omaha via Iowa City, Iowa, was established and the final leg of the first transcontinental route was placed in operation on September 8 of the same year between Omaha and San Francisco, with stops listed at North Platte, Nebr.; Cheyenne, Rawlins and Rock Springs, Wy.; Salt Lake City, Utah; and Elko and Reno, Nevada.

With a view to further demonstrating the feasibility of the airplane as a swift means of transporting the mails, the Post Office Department was now ready to undertake a through flight from San Francisco to New York. On February 22, 1921, an air mail plane left San Francisco at 4:30 a.m., and at 4:50 p.m. the next afternoon the same plane encircled Hazelhurst Field on Long Island, made a perfect landing, and the first through transcontinental air mail flight was accomplished. The total elapsed time for the trip, including all stops, was 33 hours and 21 minutes. New routes were now gradually being added to the Post Office Department's expanding air mail system, and night and day flying began to take a regular place in the fixing of the various mail schedules.

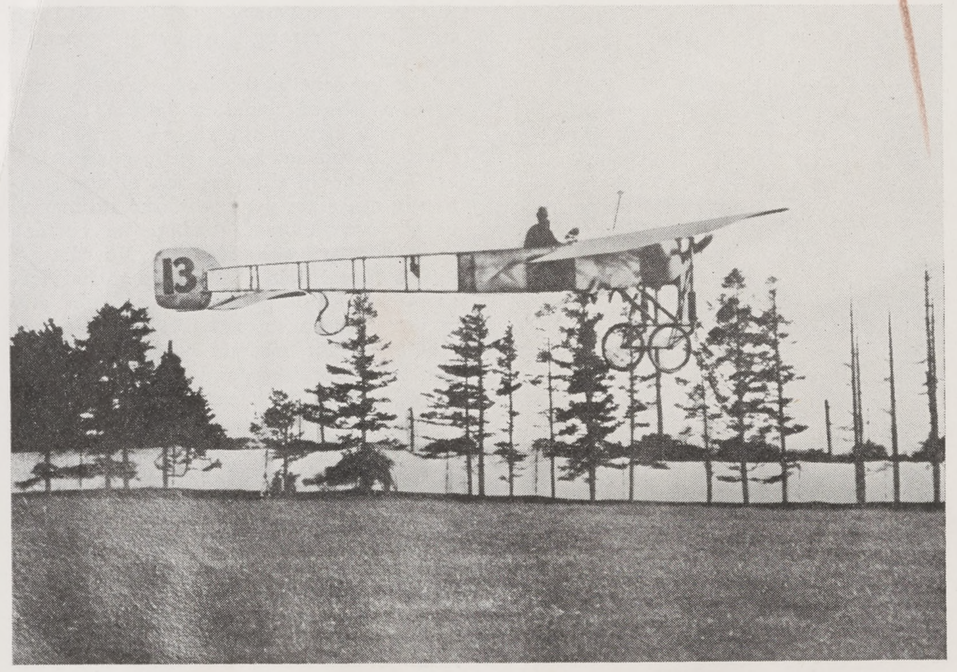
The Post Office Department's Division of Air Mail Service was awarded the Collier Trophy for the most important contribution to the development of aeronautics in 1922 on its outstanding safety record and again the year following for demonstrating the feasibility of night flying. The Harmon Trophy of the United States, offered for the first time in 1926, was awarded by the International League of Aviators to an air mail pilot because of his remarkable record of having flown during that year 718 hours without accident in all kinds of weather, both winter and summer, on regularly scheduled trips, 47 percent of his time having been spent in night flying. It is interesting to note that this feat was considered more meritorious in advancing the cause of aviation during that year than the flight of Admiral Byrd over the North Pole.

Enter the Private Contractors

But it was not the intention of the Post Office Department to operate the air mail service longer than was necessary to clearly demonstrate the practicability of commercial aviation to the general public and thereby induce private enterprise to enter the field and eventually take over the operation of the air mail service. Due to the large measure of success attained in the efficient operation and development of the transcontinental route, the desired interest was rapidly increasing with the result that in 1926 several contract air mail routes were put into operation and contracts on several others awarded. In the spring of 1926, Congress passed a bill, known as the "Air Commerce Act of 1926", which, briefly stated, imposed upon the Secretary of Commerce the duty of fostering the development of commercial aviation in the United States. It authorized the Secretary, among other things, to designate and establish airways and to establish, operate and maintain along such airways all necessary lights and emergency landing fields. But the Postmaster General concluded that the time was at hand when the transcontinental air mail route might be turned over to private contractors and operated successfully and profitably by them.

The first bag of air mail is placed aboard a Queen Monoplane, powered by an Indian Rotary Motor, by Post Office officials at a temporary airport on Nassau Boulevard, Long Island, N. Y. The pilot, Earle L. Ovington, has been sworm in formally as a mail carrier and has accepted orders to deliver the bag of letters at the Mineola Post Office a few miles away. This trip was made on September 23, 1911

Maybe the Post Office officials who sent the first bag of airmail winging its way across the Long Island skies didn't believe in such silly things as hoodos. Maybe there was nothing in the fact that the day was the 23rd and the plane No. 13. The mail was delivered with care and dispatch; but Congress refused for the next 7 years to furnish the Department with funds for other airmail trips



Accordingly, advertisements were issued on November 15, 1926, to expire on January 15, 1927, for proposals for service on the transcontinental route by sections—(1) New York to Chicago, and (2) Chicago to San Francisco. A proposal at a satisfactory rate was received on the Chicago-San Francisco section from the Boeing Airplane Company and accepted. Service began under their contract July 1, 1927, the Post Office Department relinquishing operation at midnight, June 30. As no satisfactory bid was received for the service between New York and Chicago, that section of the route was readvertised under date of March 8, and the bid of the National Air Transport, Inc. of Chicago, was accepted thereunder. This company began service under its contract on September 1, the Post Office Department continuing operation until that date.

Once placed on a contract basis as it was in 1926, the air mail service expanded rapidly as more and more private capital came into the aviation field. New lines were placed in operation in all sections of the country, and a Division of Foreign Air Mail Service was set up under the Department's Division of International Postal Service. Within a comparatively short time air mail routes were in operation on trunk lines from coast to coast, with connecting north-south routes, while air mail contracts had also been let for service to Central and South America, Cuba and the West Indies and also Canada. Air mail service was also placed in operation in Alaska.

Latest Equipment Used

In 1934, the entire air mail system was reorganized and extended. The period from that date to the present day has seen a complete retirement of the old single motor plane. Every plane now in service on both the domestic and foreign air mail routes is of the multimotor type and all are among the finest and most modern in use anywhere in the world. The speed of these great planes, which in many instances is upwards of 200 miles an hour, is more than double that of the earliest air mail planes.

Patronage of the air mail system in the early days of its operation was indeed slight and it is only within the past six years that air mail poundage has mounted to startling figures which are being reported by the Post Office Department each month.

Business and industrial houses, banks, and persons in all walks of life gradually became acquainted with the remarkable service that was now being afforded by the Post Office Department at the very nominal rate of six cents per ounce as

(Continued on page 61)

---

ear Admiral John H. Towers, SN, Chief of the Bureau of Aeroutics, Navy Department, is Na- Aviator Number One by vire of the date of his qualification a pilot in August 1911. Rear dmiral Towers' career, since his try into the Naval Academy in 02, has paralleled the development of the Navy through sails, am, electric drive, and aviation. Editor).

ve tonnage accorded by treaty pros. This aim has been accomplished point where we have the *Saratoga*, *gton*, *Ranger*, *Yorktown*, and *Ense* with the Fleet, and the *Wasp* *ornet* under construction.

geographical position of this y is very favorable for defense pur- The continental United States is open to attack only via the sea, relations with Canada and Mexico, nly immediate neighbors, are such render fantastic attack emanating those governments. Any contemland attack on this country must be direct or must first enter Canada or o. The only way to do this is via the In any event, therefore, the brunt tial phases of defensive operations be borne by the mobile seagoing It is here that Naval Aviation plays t important role in the preservation country's safety, for it is an acedged fact that the successful operaf a modern fleet depends greatly on ficiency of its aircraft.

Mobile Flying Fields

means for carrying and operating t from the carriers, the battleships, e cruisers has been perfected. The s are in reality armed, floating, moing fields, completely equipped with e shops, hangar space, elevators, pair facilities, in addition to berthd messing space for nearly two nd men.

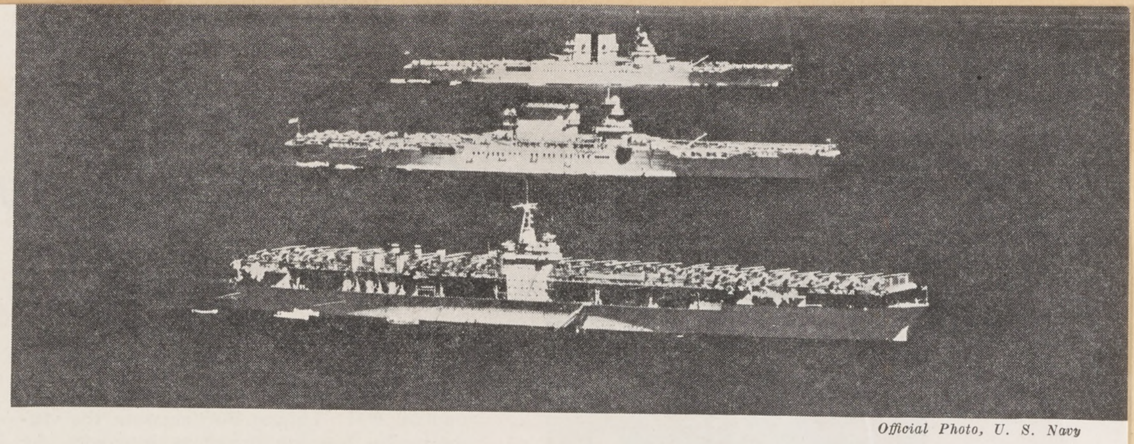
ected and supported by the guns of ttleships and cruisers, they bring complement of fighting, bombing, outing planes to within striking dis- of the enemy, and, from a range many times that of the great guns of the dreadnaughts, launch their squadrons to attack the opposing ships. It should be remembered that these carrier planes are of the landplane type, and their operations from carrier decks and handling on board is a huge engineering problem in itself. Once in the air, the hazards encountered by the pilots in carrying out their missions over open seas in a landplane, where failure of engine or material might result disastrously, have been minimized insofar as possible by the provision of safety devices in the form of flotation gear for both the plane and the personnel. This problem, involving as it does the safety of life, has received continuous study and application.

The planes of the battleships and cruisers differ from those of the carriers in that they are of the seaplane type. Here the method of launching is via the catapult. The Navy has so successfully solved this highly specialized problem that there has never been a fatality in Naval Aviation due to the malfunctioning of the catapult.

The primary mission of battleship aircraft is that of observing and reporting corrections of gunfire while those attached to the cruisers carry out the primary mission of scouting.

Navy Pilots Need Special Training

These missions, and those of the carrier planes, demonstrate clearly the need for specialized knowledge on the part of the naval aviator reaching far beyond the ability to pilot an airplane. Naval strategy and tactics, navigation, radio, gunnery, and other allied activities must be intimately known if the Navy's pilots are to contribute to the efficiency of the Fleet as a whole.


Official Photo, U. S. Navy

Three of Uncle Sam's armed, mobile, flying fields, the airplane carriers, RANGER, (in the foreground) LEXINGTON, (in the middle) and SARATOGA.

With Naval Aviation occupying the position of an integral part of the Navy, a thorough indoctrination in Navy customs and procedures is of paramount importance; for it is through this medium that the officer in the air and the officer on the bridge of a ship may work in complete harmony, each appreciating the limitations and the capabilities of the other craft.

The Patrol or Flying Boat

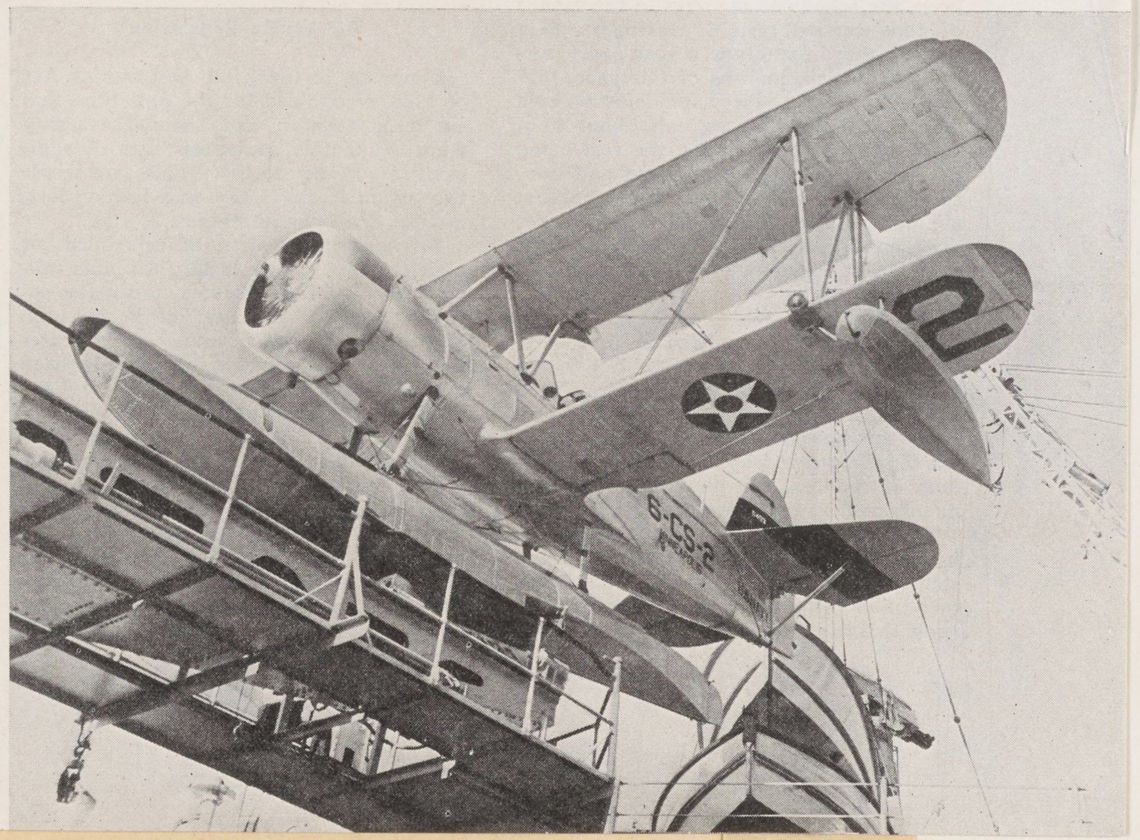
There is another and very important aircraft type employed by the Navy, and that is the patrol or flying boat. This type is more widely known to the layman than either the carrier or combatant ship-based aircraft because of the many long distance mass flights it has successfully carried out and because of the commercial versions flying on transoceanic schedules.

These planes possess a high degree of mobility in themselves and are the largest type used by the Navy. They are capable of operating over great distances at sea, of being powerful offensively and defensively, of being self-sustaining to a large de-

(Continued on page 49)

A close-up of a scout observation plane being catapulted from the U. S. S. Minneapolis.

Official Photo, U. S. Navy



---

tern
ACHINERY
and
TEEL WORLD

Dedication....

Western Machinery and Steel World presents to its readers in the following pages the graphic picture of the Aircraft Industry as it exists today on the West Coast.

In this compilation sharp emphasis is concentrated on the responsibility which Machine Tools have assumed in this gigantic production program.

In expressing our fullest measure of appreciation to the officials of these aircraft manufacturing plants for the close cooperation which has made this volume possible it is with genuine pride and esteem that we dedicate this Edition to the personnel of the entire West Coast Aircraft Industry.

Machine
TOOLS
in the
AIRCRAFT
INDUSTRY

DAY MORNING, NOV. 13, 1939

S.D. Union

U. S. Aircraft Factories Increase Capacity to 15,000 Planes a Year

Plants Expand; Day-Night Shifts May Boost Total

NEW YORK, Nov. 12 (A.P.)—The Aeronautical Chamber of Commerce of America today made public a survey of aircraft factory expansion which, it said, showed American plants could turn out 15,000 planes a year.

Projects now underway, said John H. Jouett, president of the chamber, would result in even greater production capacity.

"Our survey," he explained, "included 43 airplane and 13 engine manufacturing plants.

"Of the 43 airplane plants, 23 are now working on orders for military equipment. The current capacity of 1250 planes a month, equal to a rate of 15,000 machines a year, is based on several factors.

SPACE INCREASES 17%

"The airplane factory space increased 6,000,000 square feet to 7,025,000 square feet in the first six months of this year an expansion of 17 percent in manufacturing space. At the same time the aircraft engine factory space increased 334,000 square feet, a 20 percent expansion. All that space is now in use."

Jouett said further that while some aircraft plants were working at full capacity, "others have not even approached their limit with single working shifts. When orders are received in sufficient volume to warrant it the plants go into three working shifts a day."

The chamber said that to obtain maximum output, standardization or "freezing" on a single model in one factory would be necessary. Some plants not working at top speed are still producing as many as seven or eight different types of planes.

"Another factor which has increased plant capacity," said Jouett, "is the recent growth of the sub-contracting system.

SUB-CONTRACTS AID

"Sub-contracting in the past was a very small part of aircraft production because the manufacturer could not guarantee the sub-contractor continuous business and the sub-contractor could not tool up sufficiently to assure a return on his investment. * * *

"With increased orders and the larger unit volume on each order, all plants in the industry which are not working on their own business and filling original orders of their own are available for sub-contracting. In other words, this opens the entire manufacturing industry to full time production.

"Our survey showed that the industry is capable of rapid expansion of production on all types of military aircraft, including the special types used by the navy air forces."

OVERHAULED GUBA TAKES TEST HOPS

Sun 12-10-39

After more than four months of idleness while receiving a complete overhaul in the Consolidated Aircraft Corp. plant, the widely traveled airboat Guba of Richard Archbold, wealthy scientist-aviator, received its first test hops over the bay yesterday.

Chief Pilot Russ Rogers announced that the craft, which was used to transport personnel and supplies to hitherto inaccessible regions in Netherlands New Guinea during a scientific expedition which ended last summer, may be flown to New York City for the winter unless adequate hangar space can be provided in San Diego.

Mr. Archbold, in a recently purchased Fleetwing four-passenger cabin plane, is expected to arrive here from the East coast next month, according to Mr. Rogers.

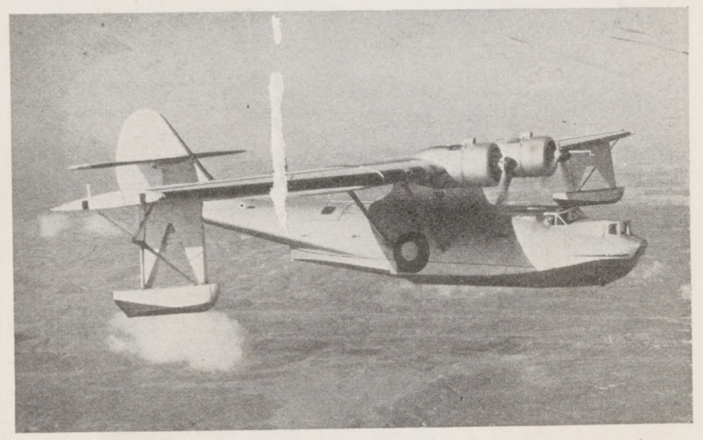
AMPHIBIAN FEATURE ADDED TO CONSOLIDATED PBY BOATS

Jan '40 WESTERN FLYING.

THE Consolidated Aircraft Corporation's new Model 28-5A amphibian, designed by the U. S. Navy for whom it was constructed as the XPBY-5A, has undergone its flight testing and is now in the Navy's hands at Anacostia.

Consolidated announced receipt of an order amounting to $20,016,699 for an undisclosed number of four-engined patrol bombers of the PBY series from the **U. S. Navy Department** on December 20.

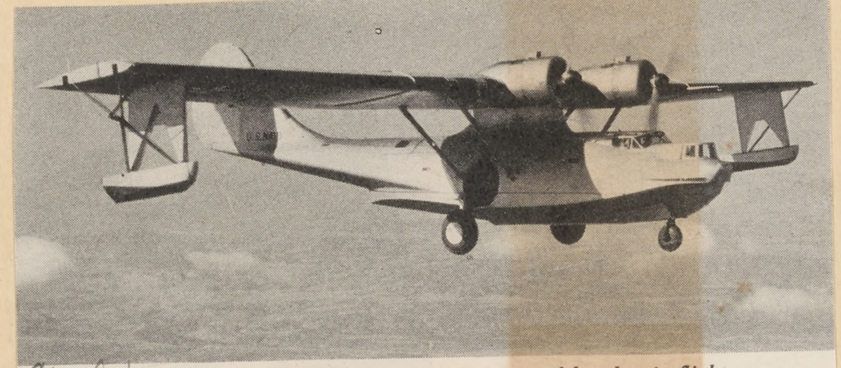
Whether the new patrol boats will incorporate the amphibian feature was not disclosed.



With the order, Consolidated's backlog of unfilled orders zoomed to more than $37,000,000. Reports from the factory said that this new contract will require increased manufacturing facilities and necessitate an expansion program which will cost between $1,500,000 and $2,000,000. The same report said that no outside financing will be required for the expansion, which will increase production facilities by 50 per cent.

Basically the new Consolidated amphibian is the Model 28 twin engined flying boat which the Navy knows as the PBY, now having incorporated in the structure, the amphibian feature. The inherent advantages of the Model 28 boat have been retained, and the great advantage of land plane operation added.

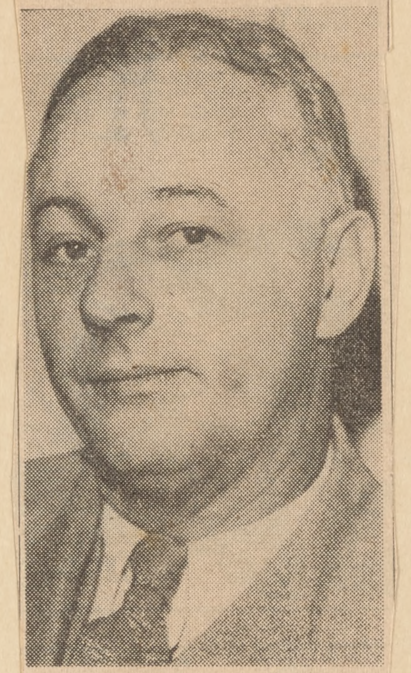
The landing gear is of the tricycle type, with a single wheel forward and two aft, all fully retractable. The side wheel and supporting mechanism, complete with oleo shock struts, retract into wells in the side of the hull. The nose wheel in the bow is completely closed over in the retracted position by automatically operated hatches so that no resistance to planing is encountered. All three wheels are operated by a central hydraulic power drive, and the operations are carried out in sequence automatically. A single lever controls both the extension and the retraction of the landing gear. Hydraulic pump power is derived from the main power plant or from an auxiliary engine, and may be operated by hand if necessary.



Aero Digest 2/40 *Consolidated XPBY-5A amphibian patrol bomber in flight*

L.A. Times

1940 JANUARY 17



INSPECTS PLANT — Maj. Gen. Emmons visits San Diego aircraft plant to view new Army bomber.

Emmons Sees Great Bomber

Air Corps Commander Watches Third Test Flight at San Diego

SAN DIEGO, Jan. 16.—French and Brazilian military officers today stood on the side lines only a few paces away from Maj. Gen. Delos C. Emmons, commander of the Army Air Corps G.H.Q., as the Army's most powerful completed bomber, the four-motored Consolidated XB-24, was given its third test flight on Lindbergh Field.

The foreign observers were here to confer with Consolidated officials in connection with possible acquisition of flying equipment available for export. The local concern manufactures long-range navy patrol boats, as well as giant army planes.

Maj. Gen. Emmons spent several hours inspecting the Consolidated plant and left late today for March Field to observe the G.H.Q. first wing's participation in this week's joint Army-Navy maneuvers which will test California's vulnerability to invasion.

He arrived this afternoon in a Douglas Army transport from his Langley Field (Va.) headquarters. Accompanying him are Capt. W. Goss, pilot and aide; Maj. H. A. McGinnis of the Inspector General's Department and Lieut. Col. Cedric Lewis, signal officer of the G.H.Q.

Air Force Commander Arrives at March Field

MARCH FIELD, Jan. 16.—Maj. Gen. Delos T. Emmons, commanding general, G.H.Q. Air Force, arrived at March Field at 4:25 p.m. today accompanied by Col. A. S. Pederneiras of the Brazilian Air Force. He was accorded a 13-gun salute. Gen. Emmons tomorrow will visit airplane factories in Los Angeles.

HITLER'S AIR PLANS

Building up his Bomber Forces

From Our Air Correspondent

LONDON, Tuesday Night

TO expect the worst and to prepare to meet it is the only sound defensive maxim and it should be rigorously applied at the present time Things have been going well in the Middle East and in Greece, but that does not mean that we should expect them automatically to begin to go well here.

Rather the expectation should be that there will be further and heavier attacks. For although there have been lulls, there has been nothing to suggest that they are of other than tactical origin. On the contrary, the easiest way to interpret them is as periods of recuperation for the *Luftwaffe* to be followed by more intensive action

It is true that, since Friday last, the Royal Air Force has been making raids on German-occupied aerodromes in France and Holland, but I doubt if such raids could do more than diminish very slightly the scale of the attack. The reason is that the Germans enjoy the use of a huge number of aerodromes, both in Germany and in occupied territory.

MANY AERODROMES

In France alone the number must be about 500, and of these a fairly high proportion would be well suited as bases for the night raiders. In Holland and Belgium there are more aerodromes, and behind them, more difficult to reach for our bombers, there are the German aerodromes, of which there must be more than 600.

It is obvious that the task of attacking so large a number of aerodromes that the enemy would be unable to launch his night raids is so immense that no air force could undertake it. The most that can be hoped for is that some of the aerodromes which are most useful to the enemy shall be knocked about, and this, it seems, was successfully done.

The lulls in night raiding may have been partly caused by these attacks, but that is all. For the rest, they may be due to the desire on the part of the enemy to conserve his bomber forces and to build them up to greater strength for some coming offensive of great ferocity.

The *Luftwaffe* has had heavy losses during the summer and autumn. It has, moreover, measured itself against the R.A.F. and found itself relatively less strong than it had thought. Field-Marshal Goering keeps a wary eye on our production and knows that it is swinging up and being augmented still further by United States production.

Yet the attempt to defeat Great Britain in these islands cannot have been abandoned as a primary German objective. It would be the key to saving Italy, it would fulfil Herr Hitler's dearest ambition, it would sort out all the Axis troubles. But to defeat Britain in these islands the Germans now know that a bigger effort than anything they have so far been able to put out is needed.

So they use this period for weakening us so far as they can by submarine warfare and by intermittent night raids, while not risking great numbers of their aircraft in day raids or in night raids when the weather is such that the number of accidents seems likely to be high.

Night flying under war conditions always entails many accidents, and it is surprising what heavy losses a night bomber force can suffer from this cause alone. The *Luftwaffe* bombers may have been depleted by accidents on a big scale during their attempts to sustain the bombardment of these islands during spells of bad weather.

At any rate, the present method does enable aircraft to be conserved and gives Field-Marshal Goering a chance to build up his forces. And that, I think, is the interpretation of it. There may be moves of some machines to another theatre, but if the aim is to strike in the Balkans or the Middle East the conservation and hoarding tactics are still needed. They would not be forced upon the Germans by a move because the aircraft do not take long to shift; it is the ground equipment that takes the time.

Our object then must be to prepare energetically to meet a new German air offensive. To that end we must increase the strength of the Royal Air Force and push forward with technical improvements. Higher speeds and better climb are the needs, for if we beat them once by technical merit we can beat them again by the same means.

It is clear that we have been able to reinforce our Air Force in the Middle East and also to lend fairly substantial air aid to the Greeks. We have been using not only the Gloster Gladiator fighters in those theatres but also the later Hurricanes. In addition, we have used Blenheims in fairly large numbers and some of the Wellington heavy bombers.

STILL MORE 'PLANES

But what we have done in the past in the way of increasing our air strength must be overtopped in the future if we are to meet with full confidence the coming attack wherever it may be launched. Moreover, there is always our own offensive to be considered, for it comes nearer and nearer to the range of practical possibility. So that not only must our fighter forces be enormously increased but so must our bomber forces.

Especially important will be the coastal reconnaissance types of aircraft and the torpedo-carriers. If, as has been suggested, we are to get some of the Consolidated 31 flying boats from America they should be of the greatest help to the Coastal Command in dealing with the submarine menace and also with the menace of the surface raiders.

Robert N. Hinckley, Chairman. Term of office expires 1943.

Civil Aeronautics Authori
BIRTHDA

By Robert H. Hinckley
Chairman

WHEN the members of the Civil Aeronautics Authority, the Administrator and the Air Safety Board took the oath of office slightly more than a year ago, we found ourselves confronted by a threefold task which in all conscience seemed large to us. We were charged by Congress and the President with the new duty of economic regulation as applied to civil aeronautics; we inherited the duty of providing, maintaining, extending and improving the aids to navigation of the common air; we were charged, and in a very particular way this bore upon our conscience, with the duty of increasing the safety, and therefore the utility, of all flying.

Statistics on Growth

Just to indicate what this growth has been, the scheduled air lines in the month of June carried 164,578 passengers, 64¼ percent more than June a year ago. During the first six months of this year, 1627 airplanes were produced for domestic civil use in the United States, only about 40 of them going to the airlines, the rest being purchased and used by private and non-scheduled flyers. Compared to the first six months of 1938, when 850 civil airplanes were made and sold for domestic use, this is an increase of over 90 percent in production and sales.

Today 26,144 pilots hold certificates, 6,000 more than a year ago, an increase of about 30 percent. There are 11,160 certificated airplanes today, 1,400 more than a year ago or an increase of almost 15 percent, an increase that will be moved startlingly upward by the production figures of the first six months if they are maintained on an annual basis.

The increase in pilots according to every indication of our charts will be even more startling. Even without the Authority's own pilot training program, the curves show that there would be 36,000 certificated pilots by the end of 1940, and 43,000 by the end of 1941. Taking into account the student pilot training program, however, the number of pilot certificates in force by the end of 1941 ought to approximate 70,000 of all classes.

Airways Extended

The federal airways within the United States have been increased by about 10 percent in length to a total now over 25,000 miles. The aids to navigation along these airways have been increased by about the same amount. But that is not as good a measure of their increased usefulness as is the almost complete modernization of existing radio and other aids and the plans now under development for their possible conversion into the new ultra-high frequency category, where they will become even more useful and reliable.

Perhaps no occurrence within this year is of more importance to the United States than the extension of our foreign lines across the North Atlantic, where for the first time, under the American flag, airplanes are flying regularly twice a week between here and Europe. Plans have been proposed for the further extension of our lines in the east to New Zealand. Our flag now flies in the air from Nome, Alaska, to Buenos Aires in the Argentine, and from Hong Kong, China, to Marseilles in France.

Backing up all of these extensions and additions to our civil aviation plant, the Authority is at this moment, thanks to the $4,000,000 appropriation in the Third Deficiency Bill, actually making the arrangements for the training of 10,000 student pilots next year by methods we know through test to be methods that produce safe pilots.

Air Traffic Regulation

Congress, in the Civil Aeronautics Act of 1938, recognized for the first time that air transportation had become a utility whose economic soundness was of sufficient importance to the people as a whole to warrant its regulation in a fashion long familiar with public utilities.

The existing system of scheduled air mail carriers is now legally a public utility. All of the certificates under the so-called "grandfather clause" of the Act have been issued to the air mail carriers after the fullest investigation of the adequacy and efficiency of the services they have rendered. This has not been a merely routine procedure. Under the new decisions affecting the validity of administrative law, it was necessary to make court-proof records in all of these determinations. A good result of that necessary step has been the development of a mass of information on air line operation which will be invaluable in the determination of cognate actions.

The development of this inform
has also proved of great use and will
of further use in determining the eco
and efficiency of management as a
in determining rates for the carria
mail, fair to the government, the c
and the public.

Cases Under Consideration

The determination of these mai
cases and the hearing and determi
of applications for new routes is
actively proceeding. Of the 16 ai
rate cases filed, six have been de
eight have been heard and are aw
decision, one has been assigned for
ing, and the other has been postpo
the request of the carrier concern

Of the 59 applications for new
one has already been decided, te
pending decision after hearing, a
have been assigned for hearing.

It thus may be said that for th
time the relation of the federal g
ment to the common carriers of the
now upon a single, unified, rational
as to safety, utility, fairness of posta
ments, and the fairness of rates c
for the carriage of persons and pr
other than mail.

Air Safety Board

The work of the Air Safety Boa
been of invaluable consequence to
dustry, to the Authority and to
public at large. Its prompt indep
and expert analyses of accidents
ready resulted in changes of const
in important groups of aircraft, bot
lic and private, and in changes of pr
in the air and procedures on the
which have undoubtedly contributed
enormous increase in the safety fac

Harris & Ewin
Clinton M. Hester, Administrator

Western MACHINERY and STEEL WORLD

Dedication . . . .

Western Machinery and Steel World presents to its readers in the following pages the graphic picture of the Aircraft Industry as it exists today on the West Coast.

In this compilation sharp emphasis is concentrated on the responsibility which Machine Tools have assumed in this gigantic production program.

In expressing our fullest measure of appreciation to the officials of these aircraft manufacturing plants for the close cooperation which has made this volume possible it is with genuine pride and esteem that we dedicate this Edition to the personnel of the entire West Coast Aircraft Industry.

Machine
TOOLS
in the
AIRCRAFT
INDUSTRY

DAY MORNING, NOV. 13, 1939

S.D. Union

U. S. Aircraft Factories Increase Capacity to 15,000 Planes a Year

Plants Expand; Day-Night Shifts May Boost Total

NEW YORK, Nov. 12 (A.P.)—The Aeronautical Chamber of Commerce of America today made public a survey of aircraft factory expansion which, it said, showed American plants could turn out 15,000 planes a year.

Projects now underway, said John H. Jouett, president of the chamber, would result in even greater production capacity.

"Our survey," he explained, "included 43 airplane and 13 engine manufacturing plants.

"Of the 43 airplane plants, 23 are now working on orders for military equipment. The current capacity of 1250 planes a month, equal to a rate of 15,000 machines a year, is based on several factors.

SPACE INCREASES 17%

"The airplane factory space increased 6,000,000 square feet to 7,025,000 square feet in the first six months of this year an expansion of 17 percent in manufacturing space. At the same time the aircraft engine factory space increased 334,000 square feet, a 20 percent expansion. All that space is now in use."

Jouett said further that while some aircraft plants were working at full capacity, "others have not even approached their limit with single working shifts. When orders are received in sufficient volume to warrant it the plants go into three working shifts a day."

The chamber said that to obtain maximum output, standardization or "freezing" on a single model in one factory would be necessary. Some plants not working at top speed are still producing as many as seven or eight different types of planes.

"Another factor which has increased plant capacity," said Jouett, "is the recent growth of the sub-contracting system.

SUB-CONTRACTS AID

"Sub-contracting in the past was a very small part of aircraft production because the manufacturer could not guarantee the sub-contractor continuous business and the sub-contractor could not tool up sufficiently to assure a return on his investment. * * *

"With increased orders and the larger unit volume on each order, all plants in the industry which are not working on their own business and filling original orders of their own are available for sub-contracting. In other words, this opens the entire manufacturing industry to full time production.

"Our survey showed that the industry is capable of rapid expansion of production on all types of military aircraft, including the special types used by the navy air forces."

OVERHAULED GUBA TAKES TEST HOPS

Sun 12-10-39

After more than four months of idleness while receiving a complete overhaul in the Consolidated Aircraft Corp. plant, the widely traveled airboat Guba of Richard Archbold, wealthy scientist-aviator, received its first test hops over the bay yesterday.

Chief Pilot Russ Rogers announced that the craft, which was used to transport personnel and supplies to hitherto inaccessible regions in Netherlands New Guinea during a scientific expedition which ended last summer, may be flown to New York City for the winter unless adequate hangar space can be provided in San Diego.

Mr. Archbold, in a recently purchased Fleetwing four-passenger cabin plane, is expected to arrive here from the East coast next month, according to Mr. Rogers.

AMPHIBIAN FEATURE ADDED TO CONSOLIDATED PBY BOATS

Jan 40 WESTERN FLYING.

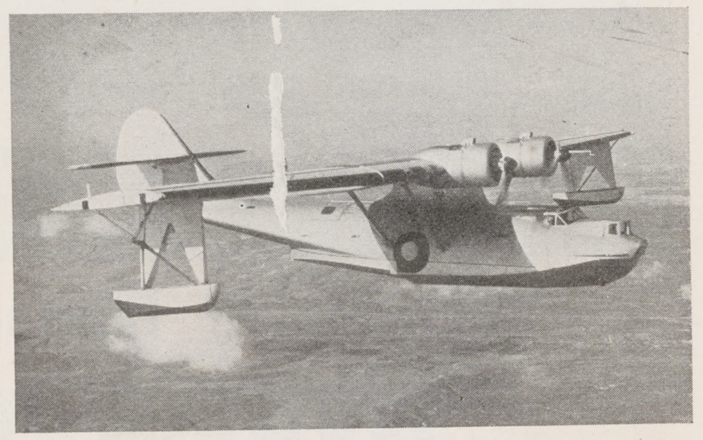
THE Consolidated Aircraft Corporation's new Model 28-5A amphibian, designed by the U. S. Navy for whom it was constructed as the XPBY-5A, has undergone its flight testing and is now in the Navy's hands at Anacostia.

Consolidated announced receipt of an order amounting to $20,016,699 for an undisclosed number of four-engined patrol bombers of the PBY series from the **U. S. Navy Department** on December 20.

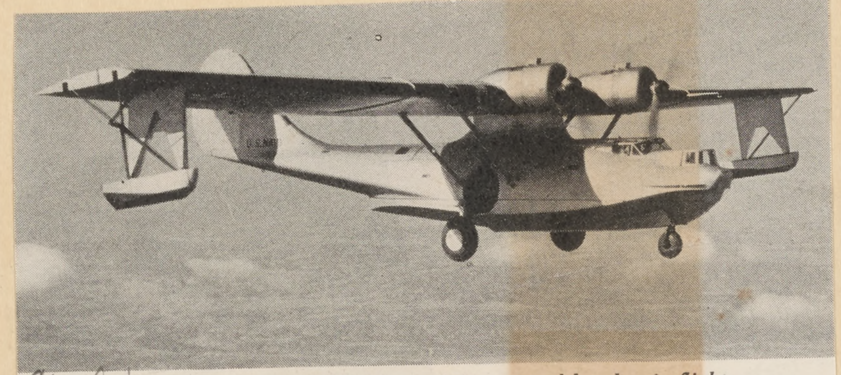
Whether the new patrol boats will incorporate the amphibian feature was not disclosed.

Basically the new Consolidated amphibian is the Model 28 twin engined flying boat which the Navy knows as the PBY, now having incorporated in the structure, the amphibian feature. The inherent advantages of the Model 28 boat have been retained, and the great advantage of land plane operation added.

The landing gear is of the tricycle type, with a single wheel forward and two aft, all fully retractable. The side wheel and supporting mechanism, complete with oleo shock struts, retract into wells in the side of the hull. The nose wheel in the bow is completely closed over in the retracted position by automatically operated hatches so that no resistance to planing is encountered. All three wheels are operated by a central hydraulic power drive, and the operations are carried out in sequence automatically. A single lever controls both the extension and the retraction of the landing gear. Hydraulic pump power is derived from the main power plant or from an auxiliary engine, and may be operated by hand if necessary.



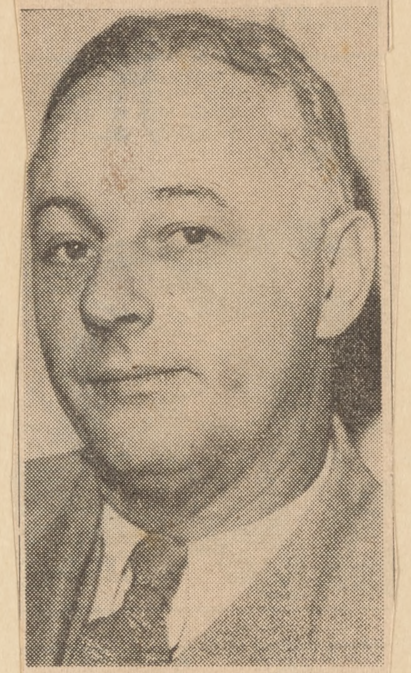
With the order, Consolidated's backlog of unfilled orders zoomed to more than $37,000,000. Reports from the factory said that this new contract will require increased manufacturing facilities and necessitate an expansion program which will cost between $1,500,000 and $2,000,000. The same report said that no outside financing will be required for the expansion, which will increase production facilities by 50 per cent.



Aero Digest 2/40 *Consolidated XPBY-5A amphibian patrol bomber in flight*

L.A. Times

1940 JANUARY 17



INSPECTS PLANT — Maj. Gen. Emmons visits San Diego aircraft plant to view new Army bomber.

Emmons Sees Great Bomber

Air Corps Commander Watches Third Test Flight at San Diego

SAN DIEGO, Jan. 16.—French and Brazilian military officers today stood on the side lines only a few paces away from Maj. Gen. Delos C. Emmons, commander of the Army Air Corps G.H.Q., as the Army's most powerful completed bomber, the four-motored Consolidated XB-24, was given its third test flight on Lindbergh Field.

The foreign observers were here to confer with Consolidated officials in connection with possible acquisition of flying equipment available for export. The local concern manufactures long-range navy patrol boats, as well as giant army planes.

Maj. Gen. Emmons spent several hours inspecting the Consolidated plant and left late today for March Field to observe the G.H.Q. first wing's participation in this week's joint Army-Navy maneuvers which will test California's vulnerability to invasion.

He arrived this afternoon in a Douglas Army transport from his Langley Field (Va.) headquarters. Accompanying him are Capt. W. Goss, pilot and aide; Maj. H. A. McGinnis of the Inspector General's Department and Lieut. Col. Cedric Lewis, signal officer of the G.H.Q.

Air Force Commander Arrives at March Field

MARCH FIELD, Jan. 16.—Maj. Gen. Delos T. Emmons, commanding general, G.H.Q. Air Force, arrived at March Field at 4:25 p.m. today accompanied by Col. A. S. Pederneiras of the Brazilian Air Force. He was accorded a 13-gun salute. Gen. Emmons tomorrow will visit airplane factories in Los Angeles.

HITLER'S AIR PLANS

Building up his Bomber Forces

From Our Air Correspondent

LONDON, Tuesday Night

TO expect the worst and to prepare to meet it is the only sound defensive maxim and it should be rigorously applied at the present time Things have been going well in the Middle East and in Greece, but that does not mean that we should expect them automatically to begin to go well here.

Rather the expectation should be that there will be further and heavier attacks. For although there have been lulls, there has been nothing to suggest that they are of other than tactical origin. On the contrary, the easiest way to interpret them is as periods of recuperation for the *Luftwaffe* to be followed by more intensive action

It is true that, since Friday last, the Royal Air Force has been making raids on German-occupied aerodromes in France and Holland, but I doubt if such raids could do more than diminish very slightly the scale of the attack. The reason is that the Germans enjoy the use of a huge number of aerodromes, both in Germany and in occupied territory.

MANY AERODROMES

In France alone the number must be about 500, and of these a fairly high proportion would be well suited as bases for the night raiders. In Holland and Belgium there are more aerodromes, and behind them, more difficult to reach for our bombers, there are the German aerodromes, of which there must be more than 600.

It is obvious that the task of attacking so large a number of aerodromes that the enemy would be unable to launch his night raids is so immense that no air force could undertake it. The most that can be hoped for is that some of the aerodromes which are most useful to the enemy shall be knocked about, and this, it seems, was successfully done.

The lulls in night raiding may have been partly caused by these attacks, but that is all. For the rest, they may be due to the desire on the part of the enemy to conserve his bomber forces and to build them up to greater strength for some coming offensive of great ferocity.

The *Luftwaffe* has had heavy losses during the summer and autumn. It has, moreover, measured itself against the R.A.F. and found itself relatively less strong than it had thought. Field-Marshal Goering keeps a wary eye on our production and knows that it is swinging up and being augmented still further by United States production.

Yet the attempt to defeat Great Britain in these islands cannot have been abandoned as a primary German objective. It would be the key to saving Italy, it would fulfil Herr Hitler's dearest ambition, it would sort out all the Axis troubles. But to defeat Britain in these islands the Germans now know that a bigger effort than anything they have so far been able to put out is needed.

So they use this period for weakening us so far as they can by submarine warfare and by intermittent night raids, while not risking great numbers of their aircraft in day raids or in night raids when the weather is such that the number of accidents seems likely to be high.

Night flying under war conditions always entails many accidents, and it is surprising what heavy losses a night bomber force can suffer from this cause alone. The *Luftwaffe* bombers may have been depleted by accidents on a big scale during their attempts to sustain the bombardment of these islands during spells of bad weather.

At any rate, the present method does enable aircraft to be conserved and gives Field-Marshal Goering a chance to build up his forces. And that, I think, is the interpretation of it. There may be moves of some machines to another theatre, but if the aim is to strike in the Balkans or the Middle East the conservation and hoarding tactics are still needed. They would not be forced upon the Germans by a move because the aircraft do not take long to shift; it is the ground equipment that takes the time.

Our object then must be to prepare energetically to meet a new German air offensive. To that end we must increase the strength of the Royal Air Force and push forward with technical improvements. Higher speeds and better climb are the needs, for if we beat them once by technical merit we can beat them again by the same means.

It is clear that we have been able to reinforce our Air Force in the Middle East and also to lend fairly substantial air aid to the Greeks. We have been using not only the Gloster Gladiator fighters in those theatres but also the later Hurricanes. In addition, we have used Blenheims in fairly large numbers and some of the Wellington heavy bombers.

STILL MORE 'PLANES

But what we have done in the past in the way of increasing our air strength must be overtopped in the future if we are to meet with full confidence the coming attack wherever it may be launched. Moreover, there is always our own offensive to be considered, for it comes nearer and nearer to the range of practical possibility. So that not only must our fighter forces be enormously increased but so must our bomber forces.

Especially important will be the coastal reconnaissance types of aircraft and the torpedo-carriers. If, as has been suggested, we are to get some of the Consolidated 31 flying boats from America they should be of the greatest help to the Coastal Command in dealing with the submarine menace and also with the menace of the surface raiders.

Robert N. Hinckley, Chairman. Term of office expires 1943.

Civil Aeronautics Authori

BIRTHDA

By Robert H. Hinckley
Chairman

WHEN the members of the Civil Aeronautics Authority, the Administrator and the Air Safety Board took the oath of office slightly more than a year ago, we found ourselves confronted by a threefold task which in all conscience seemed large to us. We were charged by Congress and the President with the new duty of economic regulation as applied to civil aeronautics; we inherited the duty of providing, maintaining, extending and improving the aids to navigation of the common air; we were charged, and in a very particular way this bore upon our conscience, with the duty of increasing the safety, and therefore the utility, of all flying.

Statistics on Growth

Just to indicate what this growth has been, the scheduled air lines in the month of June carried 164,578 passengers, 64¼ percent more than June a year ago. During the first six months of this year, 1627 airplanes were produced for domestic civil use in the United States, only about 40 of them going to the airlines, the rest being purchased and used by private and non-scheduled flyers. Compared to the first six months of 1938, when 850 civil airplanes were made and sold for domestic use, this is an increase of over 90 percent in production and sales.

Today 26,144 pilots hold certificates, 6,000 more than a year ago, an increase of about 30 percent. There are 11,160 certificated airplanes today, 1,400 more than a year ago or an increase of almost 15 percent, an increase that will be moved startlingly upward by the production figures of the first six months if they are maintained on an annual basis.

The increase in pilots according to every indication of our charts will be even more startling. Even without the Authority's own pilot training program, the curves show that there would be 36,000 certificated pilots by the end of 1940, and 43,000 by the end of 1941. Taking into account the student pilot training program, however, the number of pilot certificates in force by the end of 1941 ought to approximate 70,000 of all classes.

Airways Extended

The federal airways within the United States have been increased by about 10 percent in length to a total now over 25,000 miles. The aids to navigation along these airways have been increased by about the same amount. But that is not as good a measure of their increased usefulness as is the almost complete modernization of existing radio and other aids and the plans now under development for their possible conversion into the new ultra-high frequency category, where they will become even more useful and reliable.

Perhaps no occurrence within this year is of more importance to the United States than the extension of our foreign lines across the North Atlantic, where for the first time, under the American flag, airplanes are flying regularly twice a week between here and Europe. Plans have been proposed for the further extension of our lines in the east to New Zealand. Our flag now flies in the air from Nome, Alaska, to Buenos Aires in the Argentine, and from Hong Kong, China, to Marseilles in France.

Backing up all of these extensions and additions to our civil aviation plant, the Authority is at this moment, thanks to the $4,000,000 appropriation in the Third Deficiency Bill, actually making the arrangements for the training of 10,000 student pilots next year by methods we know through test to be methods that produce safe pilots.

Air Traffic Regulation

Congress, in the Civil Aeronautics Act of 1938, recognized for the first time that air transportation had become a utility whose economic soundness was of sufficient importance to the people as a whole to warrant its regulation in a fashion long familiar with public utilities.

The existing system of scheduled air mail carriers is now legally a public utility. All of the certificates under the so-called "grandfather clause" of the Act have been issued to the air mail carriers after the fullest investigation of the adequacy and efficiency of the services they have rendered. This has not been a merely routine procedure. Under the new decisions affecting the validity of administrative law, it was necessary to make court-proof records in all of these determinations. A good result of that necessary step has been the development of a mass of information on air line operation which will be invaluable in the determination of cognate actions.

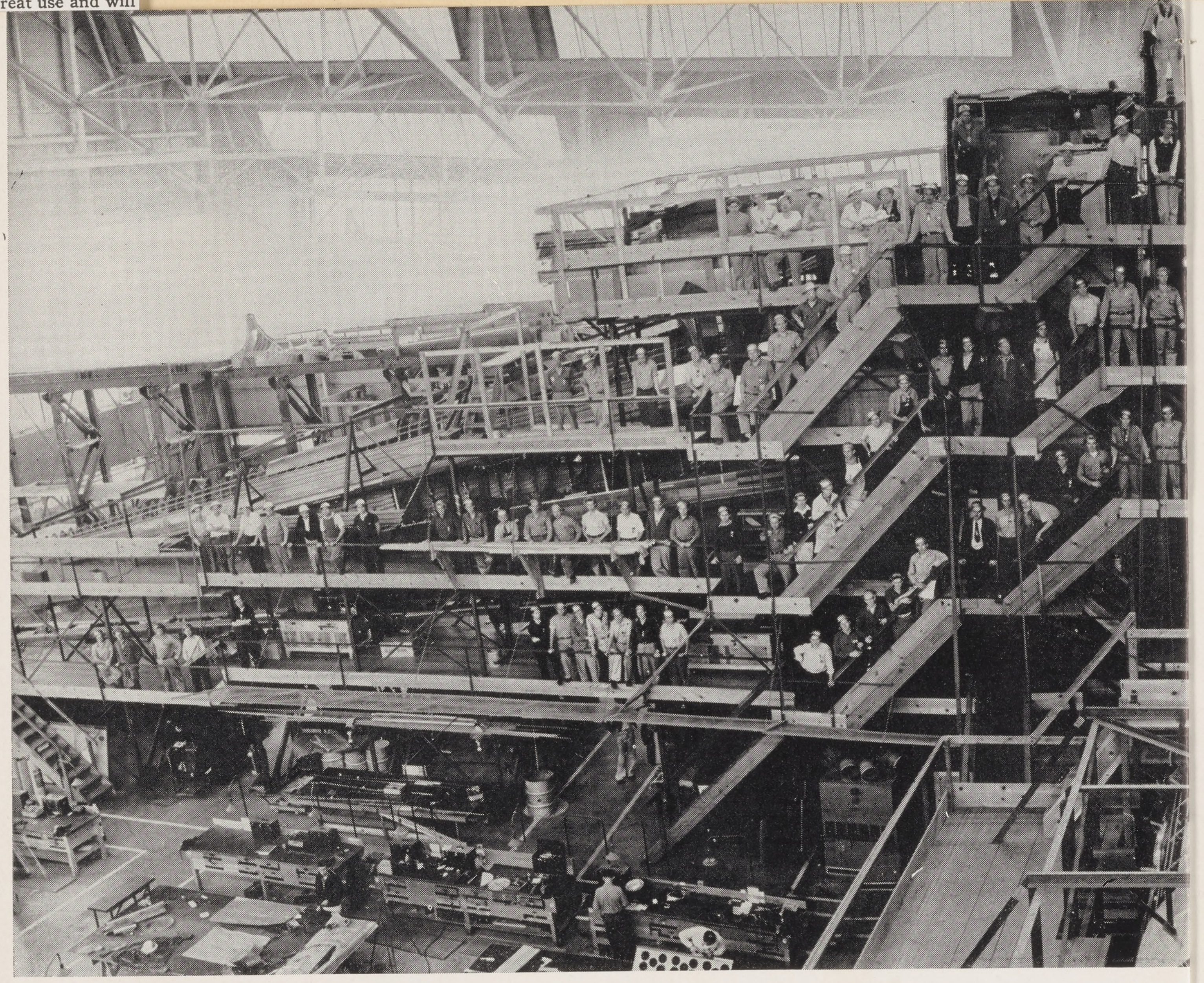
The development of this inform
has also proved of great use and will
of further u
and efficien
in determi
mail, fair t
and the pu

Ca

The dete
cases and
of applicat
actively pr
rate cases
eight have
decision, o
ing, and th
the reques
Of the 5
one has a
pending d
have been
It thus
time the r
ment to th
now upon
as to safety
ments, and
for the ca
other than

The wor
been of inv
dustry, to
public at l
and expert
ready resul
in importa
lic and priv
in the air
which have
enormous i

Clint



Huge jig for wing section of the world's largest airplane, designated by the War Department as B-19. This ship, now nearing completion at Douglas' Santa Monica plant, has a wing spread of 210 feet, and will weigh 70 tons, or three times as much as the Douglas DC-4s. Its useful load will be 28 tons.

(Photos courtesy Douglas Aircraft Co., Inc.)

"Wings for the World" by California's

Ships and Shops of one of the Nation's Leading Aircraft Manufacturers

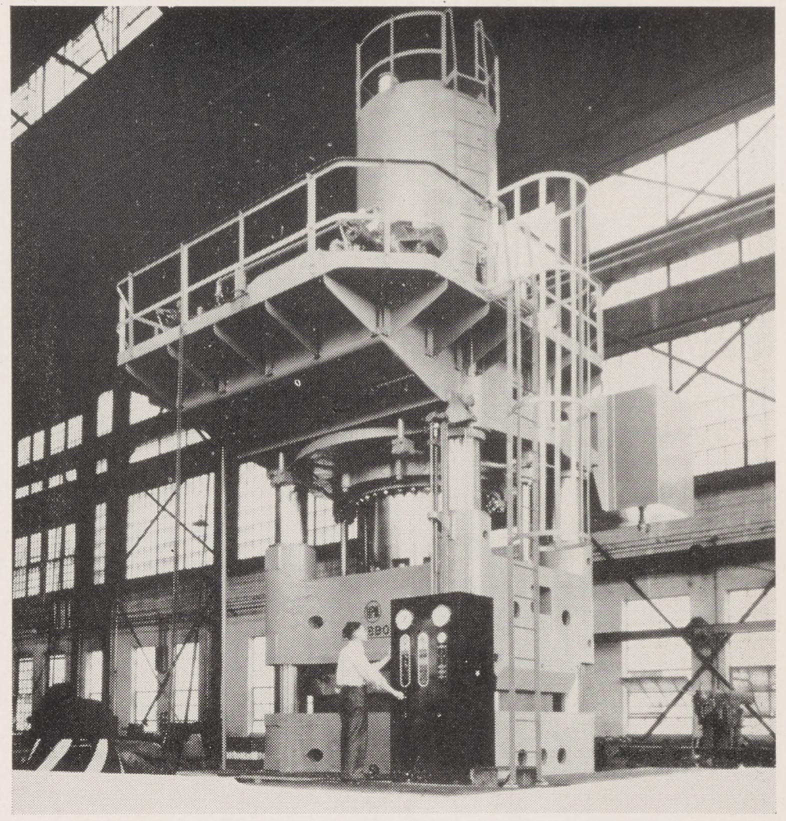
Douglas Aircraft Company, Inc., Santa Monica, California, put 1939 down as the greatest year in its history, and headed into 1940 with further achievements in sight.

Sales, production, pay-rolls and backlog all had reached new peaks. Output was stepped up smoothly as orders of unprecedented proportions poured in from domestic and international airlines, the Army and Navy, and foreign military missions. In early 1940 Douglas was author-

of the plane's inception and its first test flying. Such has been the experience of the past. Yet, illustrative again of the necessity for flexibility and adaptability of aircraft production, Consolidated produced its Model 31 twin-engined flying boat, which can carry 52 passengers, despite its size and inherent large plane complexity, in less than ten months. This was followed with the completion of Consolidated's newest four-engined land bomber, the Model 32, or U.S. Army XB-24, in less than nine months.

This indicates on the surface of things that another change of process of a rather basic nature has been brought about, and a good measure of the credit can be given a new system of lofting which Consolidated has brought into existence. The emphasis in this lofting is a shifting from time-honored engineering scale work to full size, which is almost immediately applicable to shop production. The lofting scheme as worked out sidesteps a tremendous amount of tedious engineering work at a crucial stage in design, and brings the engineering and shop forces into much closer conjunction. Speed, with increased accuracy, is the result.

Change on another front has come about with the installation of very powerful hydraulically-operated presses now being employed by the industry. These utilize rubber in the upper platen to eliminate the female dies in many forming operations. It is often difficult for the layman or uninitiated to realize what can be accomplished with comparative simplicity through the use of this method of forming. Consolidated Aircraft's huge press can exert a pressure of 4,500 tons, which is about the displaced weight of three U.S. destroyers. Under this enormous pressure the sheet dural parts are pressed into shape, and may even be blanked at the same time. Strangely enough, the rubber cannot only form in a downward direction, but press in on the sides and continue to wrap the sheet around the under side of a male die. This is the equivalent of a compound die, with none of its complexity. The action of the rubber is best explained by expressing it as a controlled flow of a liquid. Through the application of this "rubber die" method it can be seen that the emphasis on a lot of the industry's die work has been shifted, and in this case at least, a rather remarkable degree of tool "flexibility" has come into existence.



This 4500-ton press, built by Birdsboro, with H-P-M pump and controls, carries a 10¼-inch thick rubber block on its upper platen for blanking and forming parts from sheet material.

Flexibility in regard to production operations comes into prominence in aircraft production in yet another way. This is brought about by the fact that every ounce of useless metal included in the structure of an airplane is a penalty paid in lost performance, or pay-load capacity. Therefore open structures are quite the rule, and springing or flexing of the work might easily result if such pieces were not adequately supported during machine operations. The machining of aircraft parts calls for supporting the work in perhaps a greater number of cases than in any other field of production. And the tool fixture designer is called upon to exert an extra amount of talent along this line. Aircraft forgings take on greater complexity than elsewhere, due to the battle to save weight, and, of course, clamping and supporting difficulties result. Castings, where used, are light of wall and frequently quite open. Welded structures, such as engine mountings, are even more open, and built-up structures requiring line machining become particularly difficult of solution.

It may easily be seen that the machine tools employed by the industry to handle the constant flux of work must have as wide a degree of adaptability for unusual fixtures as is possible, and be thoroughly capable of handling the gamut of work brought to them. The developments taking place in the aircraft industry can well bear watching, for new methods are bound to arise, particularly since the industry is feeling the necessity for true machine tooling, yet must keep itself agile in the face of each new change.

DAY MORNING, NOV. 13, 1939

S.D. Union

U. S. Aircraft Factories Increase Capacity to 15,000 Planes a Year

Plants Expand; Day-Night Shifts May Boost Total

NEW YORK, Nov. 12 (A.P.)—The Aeronautical Chamber of Commerce of America today made public a survey of aircraft factory expansion which, it said, showed American plants could turn out 15,000 planes a year.

Projects now underway, said John H. Jouett, president of the chamber, would result in even greater production capacity.

"Our survey," he explained, "included 43 airplane and 13 engine manufacturing plants.

"Of the 43 airplane plants, 23 are now working on orders for military equipment. The current capacity of 1250 planes a month, equal to a rate of 15,000 machines a year, is based on several factors.

SPACE INCREASES 17%

"The airplane factory space increased 6,000,000 square feet to 7,025,000 square feet in the first six months of this year an expansion of 17 percent in manufacturing space. At the same time the aircraft engine factory space increased 334,000 square feet, a 20 percent expansion. All that space is now in use."

Jouett said further that while some aircraft plants were working at full capacity, "others have not even approached their limit with single working shifts. When orders are received in sufficient volume to warrant it the plants go into three working shifts a day."

The chamber said that to obtain maximum output, standardization or "freezing" on a single model in one factory would be necessary. Some plants not working at top speed are still producing as many as seven or eight different types of planes.

"Another factor which has increased plant capacity," said Jouett, "is the recent growth of the sub-contracting system.

SUB-CONTRACTS AID

"Sub-contracting in the past was a very small part of aircraft production because the manufacturer could not guarantee the sub-contractor continuous business and the sub-contractor could not tool up sufficiently to assure a return on his investment. * * *

"With increased orders and the larger unit volume on each order, all plants in the industry which are not working on their own business and filling original orders of their own are available for sub-contracting. In other words, this opens the entire manufacturing industry to full time production.

"Our survey showed that the industry is capable of rapid expansion of production on all types of military aircraft, including the special types used by the navy air forces."

OVERHAULED GUBA TAKES TEST HOPS

Sun 12-10-39

After more than four months of idleness while receiving a complete overhaul in the Consolidated Aircraft Corp. plant, the widely traveled airboat Guba of Richard Archbold, wealthy scientist-aviator, received its first test hops over the bay yesterday.

Chief Pilot Russ Rogers announced that the craft, which was used to transport personnel and supplies to hitherto inaccessible regions in Netherlands New Guinea during a scientific expedition which ended last summer, may be flown to New York City for the winter unless adequate hangar space can be provided in San Diego.

Mr. Archbold, in a recently purchased Fleetwing four-passenger cabin plane, is expected to arrive here from the East coast next month, according to Mr. Rogers.

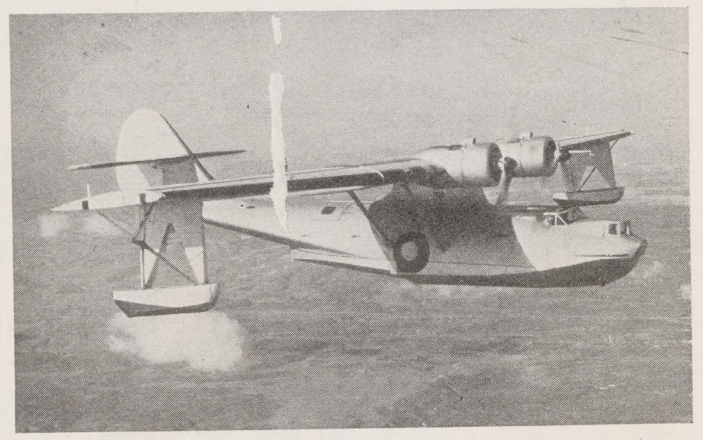
AMPHIBIAN FEATURE ADDED TO CONSOLIDATED PBY BOATS

Jan '40 WESTERN FLYING.

THE Consolidated Aircraft Corporation's new Model 28-5A amphibian, designed by the U. S. Navy for whom it was constructed as the XPBY-5A, has undergone its flight testing and is now in the Navy's hands at Anacostia.

Consolidated announced receipt of an order amounting to $20,016,699 for an undisclosed number of four-engined patrol bombers of the PBY series from the **U. S. Navy Department** on December 20.

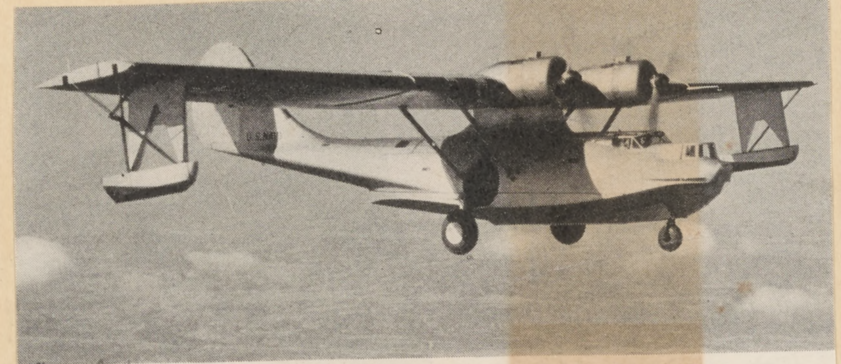
Whether the new patrol boats will incorporate the amphibian feature was not disclosed.



With the order, Consolidated's backlog of unfilled orders zoomed to more than $37,000,000. Reports from the factory said that this new contract will require increased manufacturing facilities and necessitate an expansion program which will cost between $1,500,000 and $2,000,000. The same report said that no outside financing will be required for the expansion, which will increase production facilities by 50 per cent.

Basically the new Consolidated amphibian is the Model 28 twin engined flying boat which the Navy knows as the PBY, now having incorporated in the structure, the amphibian feature. The inherent advantages of the Model 28 boat have been retained, and the great advantage of land plane operation added.

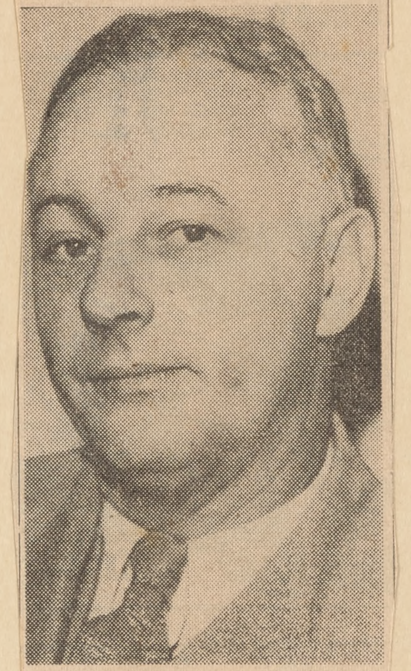
The landing gear is of the tricycle type, with a single wheel forward and two aft, all fully retractable. The side wheel and supporting mechanism, complete with oleo shock struts, retract into wells in the side of the hull. The nose wheel in the bow is completely closed over in the retracted position by automatically operated hatches so that no resistance to planing is encountered. All three wheels are operated by a central hydraulic power drive, and the operations are carried out in sequence automatically. A single lever controls both the extension and the retraction of the landing gear. Hydraulic pump power is derived from the main power plant or from an auxiliary engine, and may be operated by hand if necessary.



Aero Digest 2/40 *Consolidated XPBY-5A amphibian patrol bomber in flight*

L.A. Times

1940 JANUARY 17



INSPECTS PLANT — Maj. Gen. Emmons visits San Diego aircraft plant to view new Army bomber.

Emmons Sees Great Bomber

Air Corps Commander Watches Third Test Flight at San Diego

SAN DIEGO, Jan. 16.—French and Brazilian military officers today stood on the side lines only a few paces away from Maj. Gen. Delos C. Emmons, commander of the Army Air Corps G.H.Q., as the Army's most powerful completed bomber, the four-motored Consolidated XB-24, was given its third test flight on Lindbergh Field.

The foreign observers were here to confer with Consolidated officials in connection with possible acquisition of flying equipment available for export. The local concern manufactures long-range navy patrol boats, as well as giant army planes.

Maj. Gen. Emmons spent several hours inspecting the Consolidated plant and left late today for March Field to observe the G.H.Q. first wing's participation in this week's joint Army-Navy maneuvers which will test California's vulnerability to invasion.

He arrived this afternoon in a Douglas Army transport from his Langley Field (Va.) headquarters. Accompanying him are Capt. W. Goss, pilot and aide; Maj. H. A. McGinnis of the Inspector General's Department and Lieut. Col. Cedric Lewis, signal officer of the G.H.Q.

Air Force Commander Arrives at March Field

MARCH FIELD, Jan. 16.—Maj. Gen. Delos T. Emmons, commanding general, G.H.Q. Air Force, arrived at March Field at 4:25 p.m. today accompanied by Col. A. S. Pederneiras of the Brazilian Air Force. He was accorded a 13-gun salute. Gen. Emmons tomorrow will visit airplane factories in Los Angeles.

HITLER'S AIR PLANS

Building up his Bomber Forces

From Our Air Correspondent

LONDON, Tuesday Night

TO expect the worst and to prepare to meet it is the only sound defensive maxim and it should be rigorously applied at the present time Things have been going well in the Middle East and in Greece, but that does not mean that we should expect them automatically to begin to go well here.

Rather the expectation should be that there will be further and heavier attacks. For although there have been lulls, there has been nothing to suggest that they are of other than tactical origin. On the contrary, the easiest way to interpret them is as periods of recuperation for the *Luftwaffe* to be followed by more intensive action

It is true that, since Friday last, the Royal Air Force has been making raids on German-occupied aerodromes in France and Holland, but I doubt if such raids could do more than diminish very slightly the scale of the attack. The reason is that the Germans enjoy the use of a huge number of aerodromes, both in Germany and in occupied territory.

MANY AERODROMES

In France alone the number must be about 500, and of these a fairly high proportion would be well suited as bases for the night raiders. In Holland and Belgium there are more aerodromes, and behind them, more difficult to reach for our bombers, there are the German aerodromes, of which there must be more than 600.

It is obvious that the task of attacking so large a number of aerodromes that the enemy would be unable to launch his night raids is so immense that no air force could undertake it. The most that can be hoped for is that some of the aerodromes which are most useful to the enemy shall be knocked about, and this, it seems, was successfully done.

The lulls in night raiding may have been partly caused by these attacks, but that is all. For the rest, they may be due to the desire on the part of the enemy to conserve his bomber forces and to build them up to greater strength for some coming offensive of great ferocity.

The *Luftwaffe* has had heavy losses during the summer and autumn. It has, moreover, measured itself against the R.A.F. and found itself relatively less strong than it had thought. Field-Marshal Goering keeps a wary eye on our production and knows that it is swinging up and being augmented still further by United States production.

Yet the attempt to defeat Great Britain in these islands cannot have been abandoned as a primary German objective. It would be the key to saving Italy, it would fulfil Herr Hitler's dearest ambition, it would sort out all the Axis troubles. But to defeat Britain in these islands the Germans now know that a bigger effort than anything they have so far been able to put out is needed.

So they use this period for weakening us so far as they can by submarine warfare and by intermittent night raids, while not risking great numbers of their aircraft in day raids or in night raids when the weather is such that the number of accidents seems likely to be high.

Night flying under war conditions always entails many accidents, and it is surprising what heavy losses a night bomber force can suffer from this cause alone. The *Luftwaffe* bombers may have been depleted by accidents on a big scale during their attempts to sustain the bombardment of these islands during spells of bad weather.

At any rate, the present method does enable aircraft to be conserved and gives Field-Marshal Goering a chance to build up his forces. And that, I think, is the interpretation of it. There may be moves of some machines to another theatre, but if the aim is to strike in the Balkans or the Middle East the conservation and hoarding tactics are still needed. They would not be forced upon the Germans by a move because the aircraft do not take long to shift; it is the ground equipment that takes the time.

Our object then must be to prepare energetically to meet a new German air offensive. To that end we must increase the strength of the Royal Air Force and push forward with technical improvements. Higher speeds and better climb are the needs, for if we beat them once by technical merit we can beat them again by the same means.

It is clear that we have been able to reinforce our Air Force in the Middle East and also to lend fairly substantial air aid to the Greeks. We have been using not only the Gloster Gladiator fighters in those theatres but also the later Hurricanes. In addition, we have used Blenheims in fairly large numbers and some of the Wellington heavy bombers.

STILL MORE 'PLANES

But what we have done in the past in the way of increasing our air strength must be overtopped in the future if we are to meet with full confidence the coming attack wherever it may be launched. Moreover, there is always our own offensive to be considered, for it comes nearer and nearer to the range of practical possibility. So that not only must our fighter forces be enormously increased but so must our bomber forces.

Especially important will be the coastal reconnaissance types of aircraft and the torpedo-carriers. If, as has been suggested, we are to get some of the Consolidated 31 flying boats from America they should be of the greatest help to the Coastal Command in dealing with the submarine menace and also with the menace of the surface raiders.

Robert N. Hinckley, Chairman. Term of office expires 1943.

Civil Aeronautics Authori
BIRTHDA

By Robert H. Hinckley
Chairman

WHEN the members of the Civil Aeronautics Authority, the Administrator and the Air Safety Board took the oath of office slightly more than a year ago, we found ourselves confronted by a threefold task which in all conscience seemed large to us. We were charged by Congress and the President with the new duty of economic regulation as applied to civil aeronautics; we inherited the duty of providing, maintaining, extending and improving the aids to navigation of the common air; we were charged, and in a very particular way this bore upon our conscience, with the duty of increasing the safety, and therefore the utility, of all flying.

Statistics on Growth

Just to indicate what this growth has been, the scheduled air lines in the month of June carried 164,578 passengers, 64¼ percent more than June a year ago. During the first six months of this year, 1627 airplanes were produced for domestic civil use in the United States, only about 40 of them going to the airlines, the rest being purchased and used by private and nonscheduled flyers. Compared to the first six months of 1938, when 850 civil airplanes were made and sold for domestic use, this is an increase of over 90 percent in production and sales.

Today 26,144 pilots hold certificates, 6,000 more than a year ago, an increase of about 30 percent. There are 11,160 certificated airplanes today, 1,400 more than a year ago or an increase of almost 15 percent, an increase that will be moved startlingly upward by the production figures of the first six months if they are maintained on an annual basis.

The increase in pilots according to every indication of our charts will be even more startling. Even without the Authority's own pilot training program, the curves show that there would be 36,000 certificated pilots by the end of 1940, and 43,000 by the end of 1941. Taking into account the student pilot training program, however, the number of pilot certificates in force by the end of 1941 ought to approximate 70,000 of all classes.

Airways Extended

The federal airways within the United States have been increased by about 10 percent in length to a total now over 25,000 miles. The aids to navigation along these airways have been increased by about the same amount. But that is not as good a measure of their increased usefulness as is the almost complete modernization of existing radio and other aids and the plans now under development for their possible conversion into the new ultra-high frequency category, where they will become even more useful and reliable.

Perhaps no occurrence within this year is of more importance to the United States than the extension of our foreign lines across the North Atlantic, where for the first time, under the American flag, airplanes are flying regularly twice a week between here and Europe. Plans have been proposed for the further extension of our lines in the east to New Zealand. Our flag now flies in the air from Nome, Alaska, to Buenos Aires in the Argentine, and from Hong Kong, China, to Marseilles in France.

Backing up all of these extensions and additions to our civil aviation plant, the Authority is at this moment, thanks to the $4,000,000 appropriation in the Third Deficiency Bill, actually making the arrangements for the training of 10,000 student pilots next year by methods we know through test to be methods that produce safe pilots.

Air Traffic Regulation

Congress, in the Civil Aeronautics Act of 1938, recognized for the first time that air transportation had become a utility whose economic soundness was of sufficient importance to the people as a whole to warrant its regulation in a fashion long familiar with public utilities.

The existing system of scheduled air mail carriers is now legally a public utility. All of the certificates under the so-called "grandfather clause" of the Act have been issued to the air mail carriers after the fullest investigation of the adequacy and efficiency of the services they have rendered. This has not been a merely routine procedure. Under the new decisions affecting the validity of administrative law, it was necessary to make court-proof records in all of these determinations. A good result of that necessary step has been the development of a mass of information on air line operation which will be invaluable in the determination of cognate actions.

The development of this inform
has also proved of great use and will
of further
and efficien
in determi
mail, fair
and the pu

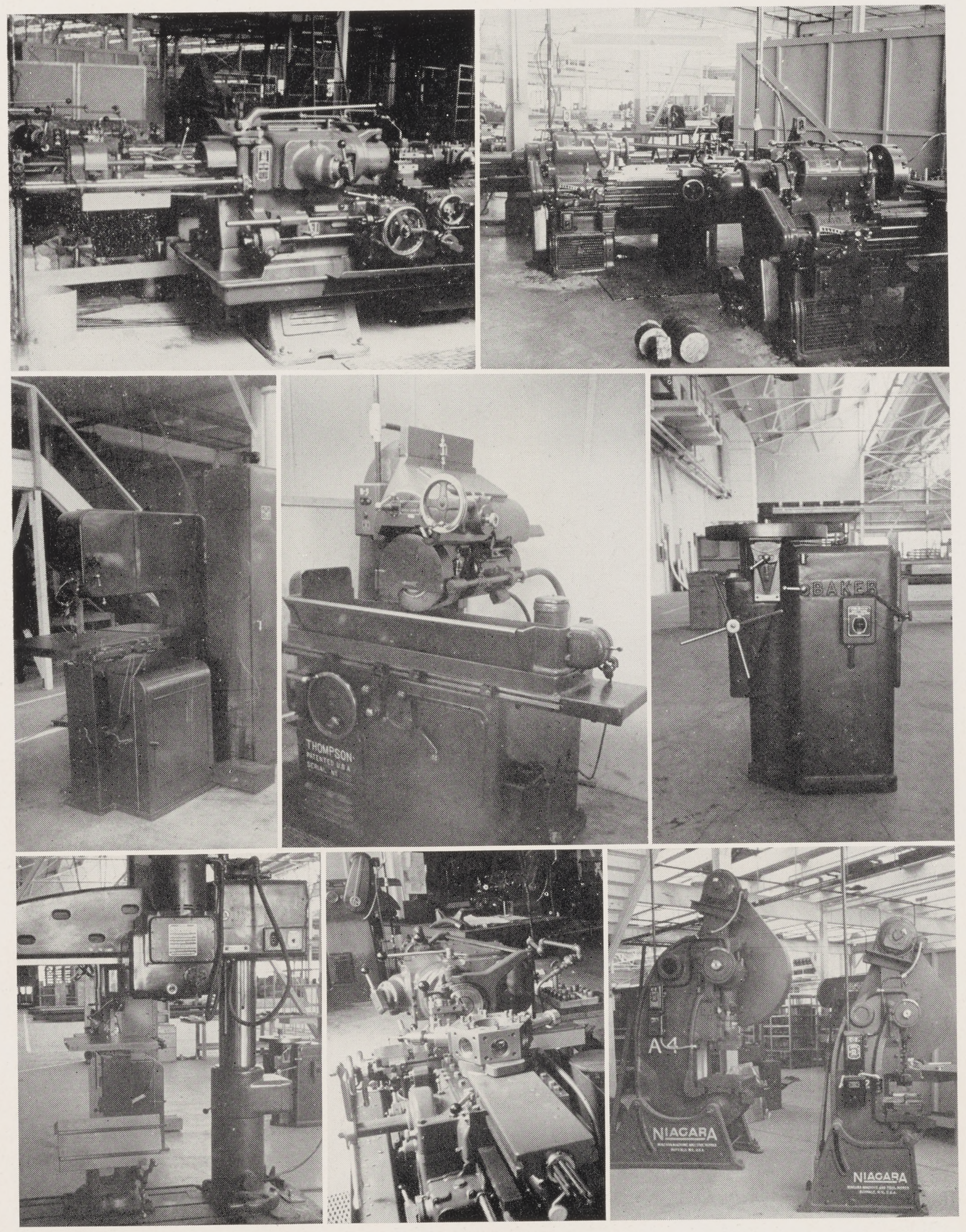
Cas

The dete
cases and
of applicat
actively pr
rate cases
eight have
decision, o
ing, and th
the reques
Of the 5
one has a
pending d
have been
It thus
time the r
ment to th
now upon
as to safety
ments, and
for the car
other than

The wor
been of in
dustry, to
public at
and expert
ready resu
in importa
lic and priv
in the air
which have
enormous

Clint

With the Camera Man at the



Upper left: Jones & Lamson turret lathes. Upper right: Rockford engine lathe. Second row left: Doall contour saw. Center: Thompson surface grinder. Right: Baker contour grinder. Lower left: American Hole Wizard radial. Center: Another J. & L. turret lathe view. Lower right: Niagara presses (Two No. 2s and 2 No. 4s).

(Photos Northrop Aircraft Inc.)

---

speeds between 110 miles per hour and the maximum 2-engine speed, and in this condition it is also possible to make turns with ailerons alone (rudder free). Loaded to its maximum gross weight, the airplane can climb to nearly 8,000 feet with two engines inoperative.

The design of the plane is such that the sudden failure of an engine at any point during takeoff is no cause of concern. In the event of an engine failure at any point beyond 1,750 feet from the start of the takeoff run, it is possible to hold to course and continue the takeoff and climb, or, if a failure should occur within the first 1,750 feet, to bring the airplane to a stop on the airport runway. The plane is also so designed that it is impossible to make a stall takeoff.

● Altitude-Conditioning

The Stratoliner is comfort-conditioned at high altitudes by means of an automatic cabin supercharging, heating and ventilating system. The effect of this is simply to increase the density of rarefied high-altitude air so that it is the equivalent of low-altitude air as it circulates through the cabin.

During high altitude operation, the atmospheric pressure inside the abin exceeds the outside atmospheric pressure by 2½ lbs. per sq. in. This s less than half of the six pounds er square inch differential pressure or which the cabin is designed. With his moderate degree of cabin supercharging, the Stratoliner is able to perate with passenger comfort in he altitude ranges between 14,000 to 0,000 feet.

Advantages of the "altitude-conlitioning" system are: (1) It ineases comfort in the cabin during peration in the upper ranges of conentional flight altitudes, which are ormally limited to the neighborhood f 12,000 feet; (2) It makes it posible to go to higher altitudes at will, n order to override surface weather onditions, gain smoother air, steader winds, and swifter flight because f the decreased air resistance. light research conducted in advance f the Stratoliners by D. W. Tomlinon, T.W.A. chief engineer, has led the conclusion that more than 95 er cent of all "bad weather" is voided at levels of 18,000 to 20,000 eet.

At all altitudes between 8,000 feet and 14,700 feet, the atmospheric conditions in the cabin remain the equivalent of 8,000 feet. At 16,000 feet actual altitude, the "apparent altitude" in the cabin is 9,000 feet. At 18,000 feet, the "cabin altitude" is 10,600 feet, and at 20,000 feet it is 12,300 feet.

The cabin supercharging system is installed completely in duplicate, and can operate on either of the two sets of identical equipment. The automatic cabin-pressure regulation is accomplished in a simple manner by means of a system of control valves that function by natural reaction to the pressures involved. The flight engineer in the control cabin has a compact panel of four instruments to follow the automatic operation of the system, and four simple controls for special regulation if desired.

The routing of ventilation air through either half of the duplicate system may be described briefly as follows:

Fresh air enters an intake in the leading edge of the wing, passes through a water separator and into a mechanical supercharger driven by the inboard engine. Here the air is rotated at high speed and its density is increased. It then passes through a thermostatically-controlled steam heating unit in the engine nacelle.

Before the air enters the cabin, it passes through an automatic flow control valve located in the accessory compartment below deck. It then passes through a distribution valve, to be directed into the cabin either through a series of floor-level grilles or a series of overhead grilles and individual outlets at passenger seats and berths, or both, at the option of the cabin attendant.

After the air has circulated through the cabin it passes through vents in the floor to an automatic outlet control valve in the accessory compartment below deck, where it is discharged to the outside atmosphere. The proper atmospheric pressure in the cabin is automatically maintained by this outlet control valve and the duplicate one in the other half of the system. There is also a relief valve in the rear of the cabin that discharges any excess atmospheric pressures if both main outlet valves should be closed. An auxiliary ventilation system is provided for low-altitude, non-supercharged operation.

● Passenger Accommodations

The Stratoliner's roomy interior is laid out to take full advantage of the size of the plane. A compartment style of interior arrangement is used, with four 6-passenger compartments along the right side of the plane, opposite which are nine individual reclining chairs along the left side of the main aisleway. The compartments have davenport-type seats which are designed for complete relaxation, with large dimensions and an exceptionally soft cushioning substance made of curled and rubberized Australian horsehair. At night these seats are converted into upper and lower berths, which run transversely in the cabin and hence provide exceptional headroom as well as unusual width and length.

Forward of the main passenger cabin, just behind the control cabin, is a large dressing room for men, with two wash basins, wall mirrors, electric razor outlets, and a convenient corner seat. At the left rear of the cabin is the ship's galley, containing complete facilities for rapid service of full-course meals. At the right rear is the women's "Charm Room," a special feature of the plane. It has an expanse of plate-glass mirrors covering the upper wall area, smartly-styled dressing tables and an attractive feminine color scheme.

The passenger cabin is club-like in appearance, with rich carpeting, warm-toned drapes and furniture upholstery, attractive hardwood veneer on compartment walls, and a pleasant color variety, including a different shade of furniture tapestry for each compartment.

Among the interesting features is the hostess call system. Call-buttons at passenger seats and berths are connected with little green signal lights along the main aisleway, which summon one of the two hostesses to the desired location.

The main cabin is indirectly lighted by concealed lights along a central channel at the ceiling, in addition to which there are individual reading lights at seats and berths. The entire airplane is thoroughly soundproofed. Even the individual ventilators—which are neat, adjustable ball-and-socket devices at passenger seats and berths—are made of sound-deadening plastic material, so designed as to be silent in operation.

DAY MORNING, NOV. 13, 1939

S.D. Union

U. S. Aircraft Factories Increase Capacity to 15,000 Planes a Year

Plants Expand; Day-Night Shifts May Boost Total

NEW YORK, Nov. 12 (A.P.)—The Aeronautical Chamber of Commerce of America today made public a survey of aircraft factory expansion which, it said, showed American plants could turn out 15,000 planes a year.

Projects now underway, said John H. Jouett, president of the chamber, would result in even greater production capacity.

"Our survey," he explained, "included 43 airplane and 13 engine manufacturing plants.

"Of the 43 airplane plants, 23 are now working on orders for military equipment. The current capacity of 1250 planes a month, equal to a rate of 15,000 machines a year, is based on several factors.

SPACE INCREASES 17%

"The airplane factory space increased 6,000,000 square feet to 7,025,000 square feet in the first six months of this year an expansion of 17 percent in manufacturing space. At the same time the aircraft engine factory space increased 334,000 square feet, a 20 percent expansion. All that space is now in use."

Jouett said further that while some aircraft plants were working at full capacity, "others have not even approached their limit with single working shifts. When orders are received in sufficient volume to warrant it the plants go into three working shifts a day."

The chamber said that to obtain maximum output, standardization or "freezing" on a single model in one factory would be necessary. Some plants not working at top speed are still producing as many as seven or eight different types of planes.

"Another factor which has increased plant capacity," said Jouett, "is the recent growth of the sub-contracting system.

SUB-CONTRACTS AID

"Sub-contracting in the past was a very small part of aircraft production because the manufacturer could not guarantee the sub-contractor continuous business and the sub-contractor could not tool up sufficiently to assure a return on his investment. * * *

"With increased orders and the larger unit volume on each order, all plants in the industry which are not working on their own business and filling original orders of their own are available for sub-contracting. In other words, this opens the entire manufacturing industry to full time production.

"Our survey showed that the industry is capable of rapid expansion of production on all types of military aircraft, including the special types used by the navy air forces."

OVERHAULED GUBA TAKES TEST HOPS

Sun 12-10-39

After more than four months of idleness while receiving a complete overhaul in the Consolidated Aircraft Corp. plant, the widely traveled airboat Guba of Richard Archbold, wealthy scientist-aviator, received its first test hops over the bay yesterday.

Chief Pilot Russ Rogers announced that the craft, which was used to transport personnel and supplies to hitherto inaccessible regions in Netherlands New Guinea during a scientific expedition which ended last summer, may be flown to New York City for the winter unless adequate hangar space can be provided in San Diego.

Mr. Archbold, in a recently purchased Fleetwing four-passenger cabin plane, is expected to arrive here from the East coast next month, according to Mr. Rogers.

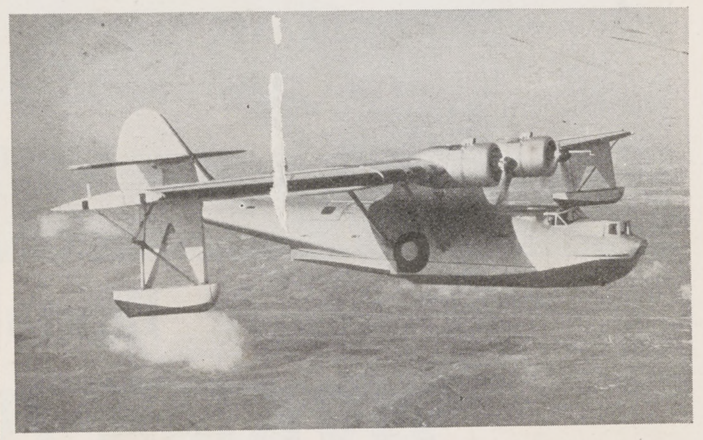
AMPHIBIAN FEATURE ADDED TO CONSOLIDATED PBY BOATS

Jan 40 WESTERN FLYING.

THE Consolidated Aircraft Corporation's new Model 28-5A amphibian, designed by the U. S. Navy for whom it was constructed as the XPBY-5A, has undergone its flight testing and is now in the Navy's hands at Anacostia.

Consolidated announced receipt of an order amounting to $20,016,699 for an undisclosed number of four-engined patrol bombers of the PBY series from the **U. S. Navy Department** on December 20.

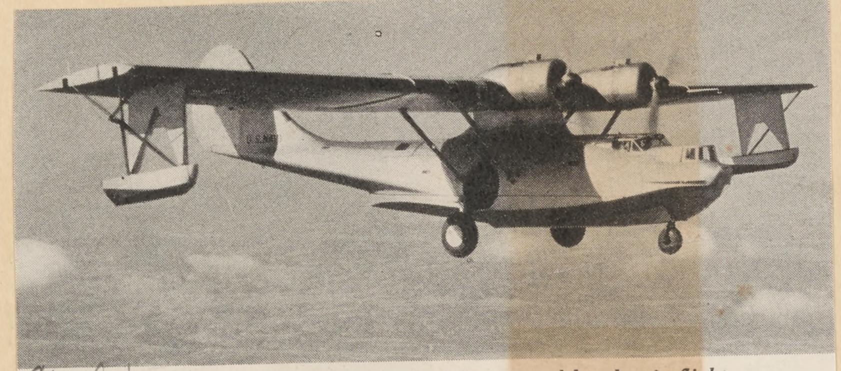
Whether the new patrol boats will incorporate the amphibian feature was not disclosed.



With the order, Consolidated's backlog of unfilled orders zoomed to more than $37,000,000. Reports from the factory said that this new contract will require increased manufacturing facilities and necessitate an expansion program which will cost between $1,500,000 and $2,000,000. The same report said that no outside financing will be required for the expansion, which will increase production facilities by 50 per cent.

Basically the new Consolidated amphibian is the Model 28 twin engined flying boat which the Navy knows as the PBY, now having incorporated in the structure, the amphibian feature. The inherent advantages of the Model 28 boat have been retained, and the great advantage of land plane operation added.

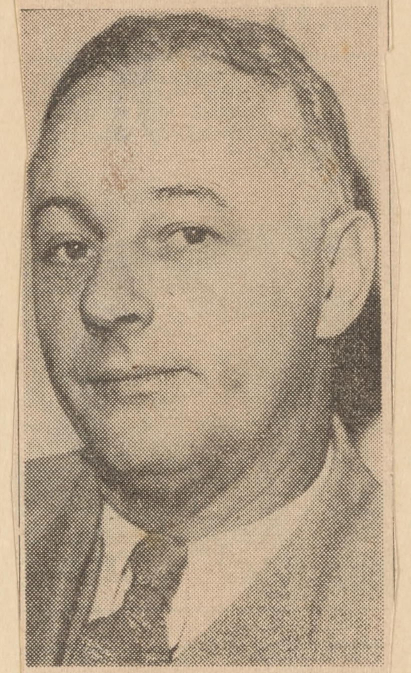
The landing gear is of the tricycle type, with a single wheel forward and two aft, all fully retractable. The side wheel and supporting mechanism, complete with oleo shock struts, retract into wells in the side of the hull. The nose wheel in the bow is completely closed over in the retracted position by automatically operated hatches so that no resistance to planing is encountered. All three wheels are operated by a central hydraulic power drive, and the operations are carried out in sequence automatically. A single lever controls both the extension and the retraction of the landing gear. Hydraulic pump power is derived from the main power plant or from an auxiliary engine, and may be operated by hand if necessary.



Aero Digest 2/40 *Consolidated XPBY-5A amphibian patrol bomber in flight*

L.A. Times

1940 JANUARY 17



INSPECTS PLANT — Maj. Gen. Emmons visits San Diego aircraft plant to view new Army bomber.

Emmons Sees Great Bomber

Air Corps Commander Watches Third Test Flight at San Diego

SAN DIEGO, Jan. 16.—French and Brazilian military officers today stood on the side lines only a few paces away from Maj. Gen. Delos C. Emmons, commander of the Army Air Corps G.H.Q., as the Army's most powerful completed bomber, the four-motored Consolidated XB-24, was given its third test flight on Lindbergh Field.

The foreign observers were here to confer with Consolidated officials in connection with possible acquisition of flying equipment available for export. The local concern manufactures long-range navy patrol boats, as well as giant army planes.

Maj. Gen. Emmons spent several hours inspecting the Consolidated plant and left late today for March Field to observe the G.H.Q. first wing's participation in this week's joint Army-Navy maneuvers which will test California's vulnerability to invasion.

He arrived this afternoon in a Douglas Army transport from his Langley Field (Va.) headquarters. Accompanying him are Capt. W. Goss, pilot and aide; Maj. H. A. McGinnis of the Inspector General's Department and Lieut. Col. Cedric Lewis, signal officer of the G.H.Q.

Air Force Commander Arrives at March Field

MARCH FIELD, Jan. 16.—Maj. Gen. Delos T. Emmons, commanding general, G.H.Q. Air Force, arrived at March Field at 4:25 p.m. today accompanied by Col. A. S. Pederneiras of the Brazilian Air Force. He was accorded a 13-gun salute. Gen. Emmons tomorrow will visit airplane factories in Los Angeles.

HITLER'S AIR PLANS

Building up his Bomber Forces

From Our Air Correspondent

LONDON, Tuesday Night

TO expect the worst and to prepare to meet it is the only sound defensive maxim and it should be rigorously applied at the present time Things have been going well in the Middle East and in Greece, but that does not mean that we should expect them automatically to begin to go well here.

Rather the expectation should be that there will be further and heavier attacks. For although there have been lulls, there has been nothing to suggest that they are of other than tactical origin. On the contrary, the easiest way to interpret them is as periods of recuperation for the *Luftwaffe* to be followed by more intensive action

It is true that, since Friday last, the Royal Air Force has been making raids on German-occupied aerodromes in France and Holland, but I doubt if such raids could do more than diminish very slightly the scale of the attack. The reason is that the Germans enjoy the use of a huge number of aerodromes, both in Germany and in occupied territory.

MANY AERODROMES

In France alone the number must be about 500, and of these a fairly high proportion would be well suited as bases for the night raiders. In Holland and Belgium there are more aerodromes, and behind them, more difficult to reach for our bombers, there are the German aerodromes, of which there must be more than 600.

It is obvious that the task of attacking so large a number of aerodromes that the enemy would be unable to launch his night raids is so immense that no air force could undertake it. The most that can be hoped for is that some of the aerodromes which are most useful to the enemy shall be knocked about, and this, it seems, was successfully done.

The lulls in night raiding may have been partly caused by these attacks, but that is all. For the rest, they may be due to the desire on the part of the enemy to conserve his bomber forces and to build them up to greater strength for some coming offensive of great ferocity.

The *Luftwaffe* has had heavy losses during the summer and autumn. It has, moreover, measured itself against the R.A.F. and found itself relatively less strong than it had thought. Field-Marshal Goering keeps a wary eye on our production and knows that it is swinging up and being augmented still further by United States production.

Yet the attempt to defeat Great Britain in these islands cannot have been abandoned as a primary German objective. It would be the key to saving Italy, it would fulfil Herr Hitler's dearest ambition, it would sort out all the Axis troubles. But to defeat Britain in these islands the Germans now know that a bigger effort than anything they have so far been able to put out is needed.

So they use this period for weakening us so far as they can by submarine warfare and by intermittent night raids, while not risking great numbers of their aircraft in day raids or in night raids when the weather is such that the number of accidents seems likely to be high.

Night flying under war conditions always entails many accidents, and it is surprising what heavy losses a night bomber force can suffer from this cause alone. The *Luftwaffe* bombers may have been depleted by accidents on a big scale during their attempts to sustain the bombardment of these islands during spells of bad weather.

At any rate, the present method does enable aircraft to be conserved and gives Field-Marshal Goering a chance to build up his forces. And that, I think, is the interpretation of it. There may be moves of some machines to another theatre, but if the aim is to strike in the Balkans or the Middle East the conservation and hoarding tactics are still needed. They would not be forced upon the Germans by a move because the aircraft do not take long to shift; it is the ground equipment that takes the time.

Our object then must be to prepare energetically to meet a new German air offensive. To that end we must increase the strength of the Royal Air Force and push forward with technical improvements. Higher speeds and better climb are the needs, for if we beat them once by technical merit we can beat them again by the same means.

It is clear that we have been able to reinforce our Air Force in the Middle East and also to lend fairly substantial air aid to the Greeks. We have been using not only the Gloster Gladiator fighters in those theatres but also the later Hurricanes. In addition, we have used Blenheims in fairly large numbers and some of the Wellington heavy bombers.

STILL MORE 'PLANES

But what we have done in the past in the way of increasing our air strength must be overtopped in the future if we are to meet with full confidence the coming attack wherever it may be launched. Moreover, there is always our own offensive to be considered, for it comes nearer and nearer to the range of practical possibility. So that not only must our fighter forces be enormously increased but so must our bomber forces.

Especially important will be the coastal reconnaissance types of aircraft and the torpedo-carriers. If, as has been suggested, we are to get some of the Consolidated 31 flying boats from America they should be of the greatest help to the Coastal Command in dealing with the submarine menace and also with the menace of the surface raiders.

Robert N. Hinckley, Chairman. Term of office expires 1943.

Civil Aeronautics Authori

BIRTHDA

By Robert H. Hinckley

Chairman

WHEN the members of the Civil Aeronautics Authority, the Administrator and the Air Safety Board took the oath of office slightly more than a year ago, we found ourselves confronted by a threefold task which in all conscience seemed large to us. We were charged by Congress and the President with the new duty of economic regulation as applied to civil aeronautics; we inherited the duty of providing, maintaining, extending and improving the aids to navigation of the common air; we were charged, and in a very particular way this bore upon our conscience, with the duty of increasing the safety, and therefore the utility, of all flying.

Statistics on Growth

Just to indicate what this growth has been, the scheduled air lines in the month of June carried 164,578 passengers, 64¼ percent more than June a year ago. During the first six months of this year, 1627 airplanes were produced for domestic civil use in the United States, only about 40 of them going to the airlines, the rest being purchased and used by private and nonscheduled flyers. Compared to the first six months of 1938, when 850 civil airplanes were made and sold for domestic use, this is an increase of over 90 percent in production and sales.

Today 26,144 pilots hold certificates, 6,000 more than a year ago, an increase of about 30 percent. There are 11,160 certificated airplanes today, 1,400 more than a year ago or an increase of almost 15 percent, an increase that will be moved startlingly upward by the production figures of the first six months if they are maintained on an annual basis.

The increase in pilots according to every indication of our charts will be even more startling. Even without the Authority's own pilot training program, the curves show that there would be 36,000 certificated pilots by the end of 1940, and 43,000 by the end of 1941. Taking into account the student pilot training program, however, the number of pilot certificates in force by the end of 1941 ought to approximate 70,000 of all classes.

Airways Extended

The federal airways within the United States have been increased by about 10 percent in length to a total now over 25,000 miles. The aids to navigation along these airways have been increased by about the same amount. But that is not as good a measure of their increased usefulness as is the almost complete modernization of existing radio and other aids and the plans now under development for their possible conversion into the new ultra-high frequency category, where they will become even more useful and reliable.

Perhaps no occurrence within this year is of more importance to the United States than the extension of our foreign lines across the North Atlantic, where for the first time, under the American flag, airplanes are flying regularly twice a week between here and Europe. Plans have been proposed for the further extension of our lines in the east to New Zealand. Our flag now flies in the air from Nome, Alaska, to Buenos Aires in the Argentine, and from Hong Kong, China, to Marseilles in France.

Backing up all of these extensions and additions to our civil aviation plant, the Authority is at this moment, thanks to the $4,000,000 appropriation in the Third Deficiency Bill, actually making the arrangements for the training of 10,000 student pilots next year by methods we know through test to be methods that produce safe pilots.

Air Traffic Regulation

Congress, in the Civil Aeronautics Act of 1938, recognized for the first time that air transportation had become a utility whose economic soundness was of sufficient importance to the people as a whole to warrant its regulation in a fashion long familiar with public utilities.

The existing system of scheduled air mail carriers is now legally a public utility. All of the certificates under the so-called "grandfather clause" of the Act have been issued to the air mail carriers after the fullest investigation of the adequacy and efficiency of the services they have rendered. This has not been a merely routine procedure. Under the new decisions affecting the validity of administrative law, it was necessary to make court-proof records in all of these determinations. A good result of that necessary step has been the development of a mass of information on air line operation which will be invaluable in the determination of cognate actions.

The development of this inforn
has also proved of great use and will
of further
and efficien
in determi
mail, fair
and the pu

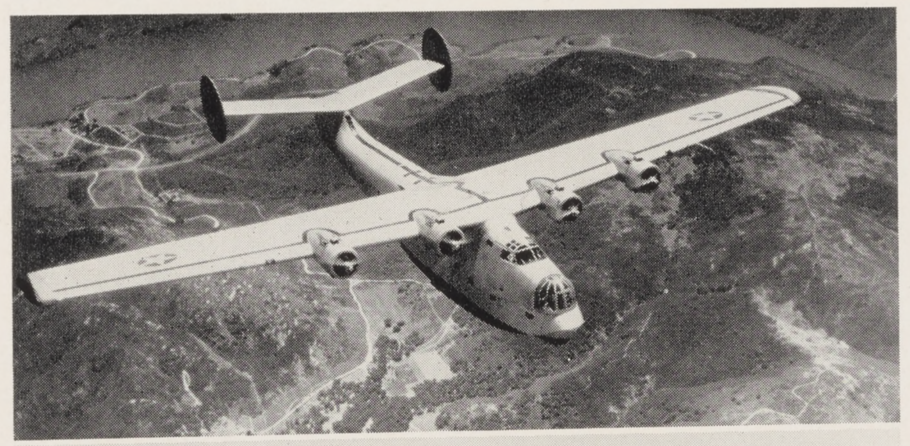
Cas

The dete
cases and
of applicat
actively pr
rate cases
eight have
decision, o
ing, and th
the reques
Of the 5
one has a
pending d
have been
It thus
time the r
ment to th
now upon
as to safety
ments, and
for the ca
other than

The wor
been of inv
dustry, to
public at
and expert
ready resul
in importa
lic and priv
in the air
which have
enormous i

Clint

Machine Tool Flexibility— the Keynote At Consolidated Aircraft in San Diego



Consolidated Model 29 four-engined flying boat prototype, the XPB2Y-1, built for the U. S. Navy.

XB-24 Army bomber on Lindbergh Field.

Famous Consolidated Model 28 twin-engined flying boat which has established remarkable series of long-distance, non-stop massed flights.

Model 28-5A twin-engined amphibian, the world's largest amphibian plane, which can fly to or from practically any spot on the surface of the globe.

(Photos Consolidated Aircraft Corporation)

That the aircraft industry is at this moment in a fluxional stage of development, few will deny. Flexibility, adaptability and speed are the keynotes of the whole atmosphere surrounding the industry's challenge to meet the huge series of orders pouring in. Flexibility and adaptability of the machine tools selected for the industry's use naturally follows, for it may be assumed without question that such equipment will be pressed into a wide range of work, and it goes without saying that the production rate will be high.

Aviation's transition from the wood and fabric days through the gamut of materials to the present, which exemplifies an almost universal leaning upon all-metal construction, has been accomplished through complete flexibility of aircraft production methods. The rapidity with which the changes have come, and their more recent magnitude, have placed particular emphasis upon this ability to meet change both quickly and well. Thus the highly-important phases of aircraft tooling and machine work, which continuously demand a high degree of accuracy, must employ equipment with which it is possible to accomplish, upon short notice, rather radical changes in procedure.

Consolidated Aircraft Corporation at San Diego lends itself as an instance of this. Consolidated's trend has been a virtual specialization upon large craft. This is shown in the fact that it recently sold its rights to the smaller airplane designs upon which it gained its start toward its present position as the world's largest builder of flying boats, and, in the years just past, has built and delivered the largest total order for twin-engined flying boats ever placed by the Government. These were the Model 28s, or, as they are known to the U.S. Navy, the PBYs. Such a specialization might indicate a freezing of production methods, but such is not the case. A rather remarkable flexibility was necessary to meet the production requirements.

In 1935 Consolidated moved its entire plant from Buffalo, N.Y., to San Diego, which was an industrial move of some 3,000 miles. Logically, in so doing, Consolidated shed much of its older machine tool equipment, which ordinarily might have been retained for some time, and acquired new. The new plant at San Diego was specially designed and built to specifications calculated to make it one of the most modern aircraft plants in existence. Thus, less than five years ago, in a completely new plant, with a large proportion of new machine equipment, aircraft production got under way on the first of the Model 28s. But the 28s were destined for more than just this, and shortly thereafter a greater volume of business than was anticipated for the future at the time of the building of the plant was received, and expansion became necessary. Further acquisition of new machinery to complement the building additions was made, and the percentage of factory machine equipment less than five years old was still further raised.

The plant's business has outstripped anticipation, and currently a plant expansion amounting to 87 per cent is under way. The new buildings have been scheduled for completion by August 1. More new equipment is being added—jig borers; millers, both horizontal and vertical; boring machines; threaders; lathes; automatic screw machines; drop hammers; radial drills; shears; tool grinders; power rolls; draw benches and other pieces; are being set up and swung into full production almost as rapidly as received.

When Consolidated Aircraft moved to San Diego, it had received its first order for 60 Model 28 twin-engined flying boats. This, while a large order for craft of this size, did not present a difficult problem of tooling, for 60 ships is not a great number of a single type to make. Assembly boards, assembly fixtures, a great percentage of the necessary form blocks, tools and production aids were constructed of wood. These, in hardwood suitably treated, serve admirably for such a contract of small proportions, and their low cost of production is an item in their favor. Not an exceptional number of special machine fixtures were required for this design and number. But Consolidated's Model 28s were destined to become the outstanding flying boats of their type, and repeat orders followed, until over 200, plus spares, were on the production schedule. It became apparent that the original wood tooling was in places impractical because it would not stand up under continued production. Tooling for such an order, with steel replacing wood, is costly, as may easily be realized. This is especially so because of the thousands of such pieces necessary, and the importance

DAY MORNING, NOV. 13, 1939

S.D. Union

U. S. Aircraft Factories Increase Capacity to 15,000 Planes a Year

Plants Expand; Day-Night Shifts May Boost Total

NEW YORK, Nov. 12 (A.P.)—The Aeronautical Chamber of Commerce of America today made public a survey of aircraft factory expansion which, it said, showed American plants could turn out 15,000 planes a year.

Projects now underway, said John H. Jouett, president of the chamber, would result in even greater production capacity.

"Our survey," he explained, "included 43 airplane and 13 engine manufacturing plants.

"Of the 43 airplane plants, 23 are now working on orders for military equipment. The current capacity of 1250 planes a month, equal to a rate of 15,000 machines a year, is based on several factors.

SPACE INCREASES 17%

"The airplane factory space increased 6,000,000 square feet to 7,025,000 square feet in the first six months of this year an expansion of 17 percent in manufacturing space. At the same time the aircraft engine factory space increased 334,000 square feet, a 20 percent expansion. All that space is now in use."

Jouett said further that while some aircraft plants were working at full capacity, "others have not even approached their limit with single working shifts. When orders are received in sufficient volume to warrant it the plants go into three working shifts a day."

The chamber said that to obtain maximum output, standardization or "freezing" on a single model in one factory would be necessary. Some plants not working at top speed are still producing as many as seven or eight different types of planes.

"Another factor which has increased plant capacity," said Jouett, "is the recent growth of the subcontracting system.

SUB-CONTRACTS AID

"Sub-contracting in the past was a very small part of aircraft production because the manufacturer could not guarantee the sub-contractor continuous business and the sub-contractor could not tool up sufficiently to assure a return on his investment. * * *

"With increased orders and the larger unit volume on each order, all plants in the industry which are not working on their own business and filling original orders of their own are available for sub-contracting. In other words, this opens the entire manufacturing industry to full time production.

"Our survey showed that the industry is capable of rapid expansion of production on all types of military aircraft, including the special types used by the navy air forces."

OVERHAULED GUBA TAKES TEST HOPS

Sun 12-10-39

After more than four months of idleness while receiving a complete overhaul in the Consolidated Aircraft Corp. plant, the widely traveled airboat Guba of Richard Archbold, wealthy scientist-aviator, received its first test hops over the bay yesterday.

Chief Pilot Russ Rogers announced that the craft, which was used to transport personnel and supplies to hitherto inaccessible regions in Netherlands New Guinea during a scientific expedition which ended last summer, may be flown to New York City for the winter unless adequate hangar space can be provided in San Diego.

Mr. Archbold, in a recently purchased Fleetwing four-passenger cabin plane, is expected to arrive here from the East coast next month, according to Mr. Rogers.

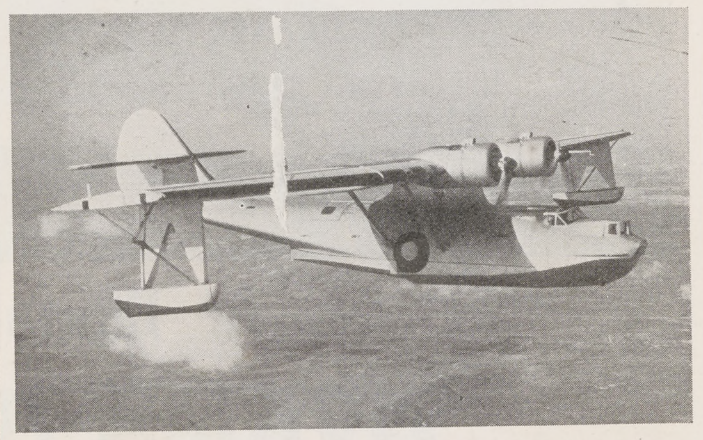
AMPHIBIAN FEATURE ADDED TO CONSOLIDATED PBY BOATS

Jan '40 WESTERN FLYING.

THE Consolidated Aircraft Corporation's new Model 28-5A amphibian, designed by the U. S. Navy for whom it was constructed as the XPBY-5A, has undergone its flight testing and is now in the Navy's hands at Anacostia.

Consolidated announced receipt of an order amounting to $20,016,699 for an undisclosed number of four-engined patrol bombers of the PBY series from the **U. S. Navy Department** on December 20.

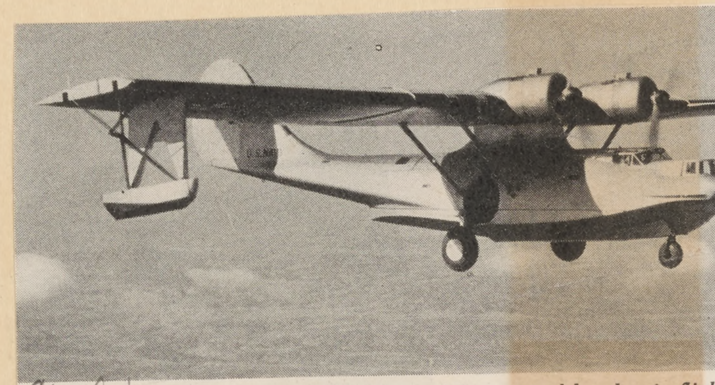
Whether the new patrol boats will incorporate the amphibian feature was not disclosed.



With the order, Consolidated's backlog of unfilled orders zoomed to more than $37,000,000. Reports from the factory said that this new contract will require increased manufacturing facilities and necessitate an expansion program which will cost between $1,500,000 and $2,000,000. The same report said that no outside financing will be required for the expansion, which will increase production facilities by 50 per cent.

Basically the new Consolidated amphibian is the Model 28 twin engined flying boat which the Navy knows as the PBY, now having incorporated in the structure, the amphibian feature. The inherent advantages of the Model 28 boat have been retained, and the great advantage of land plane operation added.

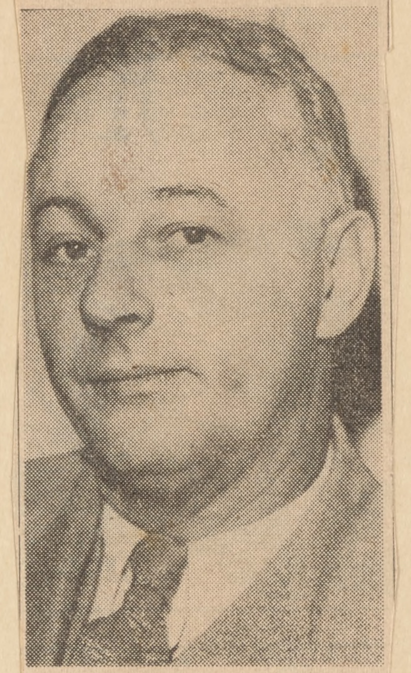
The landing gear is of the tricycle type, with a single wheel forward and two aft, all fully retractable. The side wheel and supporting mechanism, complete with oleo shock struts, retract into wells in the side of the hull. The nose wheel in the bow is completely closed over in the retracted position by automatically operated hatches so that no resistance to planing is encountered. All three wheels are operated by a central hydraulic power drive, and the operations are carried out in sequence automatically. A single lever controls both the extension and the retraction of the landing gear. Hydraulic pump power is derived from the main power plant or from an auxiliary engine, and may be operated by hand if necessary.



Aero Digest 2/40 *Consolidated XPBY-5A amphibian patrol bomber in flight*

L. A. Times

1940 JANUARY 17



INSPECTS PLANT — Maj. Gen. Emmons visits San Diego aircraft plant to view new Army bomber.

Emmons Sees Great Bomber

Air Corps Commander Watches Third Test Flight at San Diego

SAN DIEGO, Jan. 16.—French and Brazilian military officers today stood on the side lines only a few paces away from Maj. Gen. Delos C. Emmons, commander of the Army Air Corps G.H.Q., as the Army's most powerful completed bomber, the four-motored Consolidated XB-24, was given its third test flight on Lindbergh Field.

The foreign observers were here to confer with Consolidated officials in connection with possible acquisition of flying equipment available for export. The local concern manufactures long-range navy patrol boats, as well as giant army planes.

Maj. Gen. Emmons spent several hours inspecting the Consolidated plant and left late today for March Field to observe the G.H.Q. first wing's participation in this week's joint Army-Navy maneuvers which will test California's vulnerability to invasion.

He arrived this afternoon in a Douglas Army transport from his Langley Field (Va.) headquarters. Accompanying him are Capt. W. Goss, pilot and aide; Maj. H. A. McGinnis of the Inspector General's Department and Lieut. Col. Cedric Lewis, signal officer of the G.H.Q.

Air Force Commander Arrives at March Field

MARCH FIELD, Jan. 16.—Maj. Gen. Delos T. Emmons, commanding general, G.H.Q. Air Force, arrived at March Field at 4:25 p.m. today accompanied by Col. A. S. Pederneiras of the Brazilian Air Force. He was accorded a 13-gun salute. Gen. Emmons tomorrow will visit airplane factories in Los Angeles.

HITLER'S AIR PLANS

Building up his Bomber Forces

From Our Air Correspondent

LONDON, Tuesday Night

TO expect the worst and to prepare to meet it is the only sound defensive maxim and it should be rigorously applied at the present time Things have been going well in the Middle East and in Greece, but that does not mean that we should expect them automatically to begin to go well here.

Rather the expectation should be that there will be further and heavier attacks. For although there have been lulls, there has been nothing to suggest that they are of other than tactical origin. On the contrary, the easiest way to interpret them is as periods of recuperation for the *Luftwaffe* to be followed by more intensive action

It is true that, since Friday last, the Royal Air Force has been making raids on German-occupied aerodromes in France and Holland, but I doubt if such raids could do more than diminish very slightly the scale of the attack. The reason is that the Germans enjoy the use of a huge number of aerodromes, both in Germany and in occupied territory.

MANY AERODROMES

In France alone the number must be about 500, and of these a fairly high proportion would be well suited as bases for the night raiders. In Holland and Belgium there are more aerodromes, and behind them, more difficult to reach for our bombers, there are the German aerodromes, of which there must be more than 600.

It is obvious that the task of attacking so large a number of aerodromes that the enemy would be unable to launch his night raids is so immense that no air force could undertake it. The most that can be hoped for is that some of the aerodromes which are most useful to the enemy shall be knocked about, and this, it seems, was successfully done.

The lulls in night raiding may have been partly caused by these attacks, but that is all. For the rest, they may be due to the desire on the part of the enemy to conserve his bomber forces and to build them up to greater strength for some coming offensive of great ferocity.

The *Luftwaffe* has had heavy losses during the summer and autumn. It has, moreover, measured itself against the R.A.F. and found itself relatively less strong than it had thought. Field-Marshal Goering keeps a wary eye on our production and knows that it is swinging up and being augmented still further by United States production.

Yet the attempt to defeat Great Britain in these islands cannot have been abandoned as a primary German objective. It would be the key to saving Italy, it would fulfil Herr Hitler's dearest ambition, it would sort out all the Axis troubles. But to defeat Britain in these islands the Germans now know that a bigger effort than anything they have so far been able to put out is needed.

So they use this period for weakening us so far as they can by submarine warfare and by intermittent night raids, while not risking great numbers of their aircraft in day raids or in night raids when the weather is such that the number of accidents seems likely to be high.

Night flying under war conditions always entails many accidents, and it is surprising what heavy losses a night bomber force can suffer from this cause alone. The *Luftwaffe* bombers may have been depleted by accidents on a big scale during their attempts to sustain the bombardment of these islands during spells of bad weather.

At any rate, the present method does enable aircraft to be conserved and gives Field-Marshal Goering a chance to build up his forces. And that, I think, is the interpretation of it. There may be moves of some machines to another theatre, but if the aim is to strike in the Balkans or the Middle East the conservation and hoarding tactics are still needed. They would not be forced upon the Germans by a move because the aircraft do not take long to shift; it is the ground equipment that takes the time.

Our object then must be to prepare energetically to meet a new German air offensive. To that end we must increase the strength of the Royal Air Force and push forward with technical improvements. Higher speeds and better climb are the needs, for if we beat them once by technical merit we can beat them again by the same means.

It is clear that we have been able to reinforce our Air Force in the Middle East and also to lend fairly substantial air aid to the Greeks. We have been using not only the Gloster Gladiator fighters in those theatres but also the later Hurricanes. In addition, we have used Blenheims in fairly large numbers and some of the Wellington heavy bombers.

STILL MORE 'PLANES

But what we have done in the past in the way of increasing our air strength must be overtopped in the future if we are to meet with full confidence the coming attack wherever it may be launched. Moreover, there is always our own offensive to be considered, for it comes nearer and nearer to the range of practical possibility. So that not only must our fighter forces be enormously increased but so must our bomber forces.

Especially important will be the coastal reconnaissance types of aircraft and the torpedo-carriers. If, as has been suggested, we are to get some of the Consolidated 31 flying boats from America they should be of the greatest help to the Coastal Command in dealing with the submarine menace and also with the menace of the surface raiders.

Civil Aeronautics Authori

BIRTHDA

Robert N. Hinckley, Chairman. Term of office expires 1943.

By Robert H. Hinckley

Chairman

WHEN the members of the Civil Aeronautics Authority, the Administrator and the Air Safety Board took the oath of office slightly more than a year ago, we found ourselves confronted by a threefold task which in all conscience seemed large to us. We were charged by Congress and the President with the new duty of economic regulation as applied to civil aeronautics; we inherited the duty of providing, maintaining, extending and improving the aids to navigation of the common air; we were charged, and in a very particular way this bore upon our conscience, with the duty of increasing the safety, and therefore the utility, of all flying.

Statistics on Growth

Just to indicate what this growth has been, the scheduled air lines in the month of June carried 164,578 passengers, 64¼ percent more than June a year ago. During the first six months of this year, 1627 airplanes were produced for domestic civil use in the United States, only about 40 of them going to the airlines, the rest being purchased and used by private and non-scheduled flyers. Compared to the first six months of 1938, when 850 civil airplanes were made and sold for domestic use, this is an increase of over 90 percent in production and sales.

Today 26,144 pilots hold certificates, 6,000 more than a year ago, an increase of about 30 percent. There are 11,160 certificated airplanes today, 1,400 more than a year ago or an increase of almost 15 percent, an increase that will be moved startlingly upward by the production figures of the first six months if they are maintained on an annual basis.

The increase in pilots according to every indication of our charts will be even more startling. Even without the Authority's own pilot training program, the curves show that there would be 36,000 certificated pilots by the end of 1940, and 43,000 by the end of 1941. Taking into account the student pilot training program, however, the number of pilot certificates in force by the end of 1941 ought to approximate 70,000 of all classes.

Airways Extended

The federal airways within the United States have been increased by about 10 percent in length to a total now over 25,000 miles. The aids to navigation along these airways have been increased by about the same amount. But that is not as good a measure of their increased usefulness as is the almost complete modernization of existing radio and other aids and the plans now under development for their possible conversion into the new ultra-high frequency category, where they will become even more useful and reliable.

Perhaps no occurrence within this year is of more importance to the United States than the extension of our foreign lines across the North Atlantic, where for the first time, under the American flag, airplanes are flying regularly twice a week between here and Europe. Plans have been proposed for the further extension of our lines in the east to New Zealand. Our flag now flies in the air from Nome, Alaska, to Buenos Aires in the Argentine, and from Hong Kong, China, to Marseilles in France.

Backing up all of these extensions and additions to our civil aviation plant, the Authority is at this moment, thanks to the $4,000,000 appropriation in the Third Deficiency Bill, actually making the arrangements for the training of 10,000 student pilots next year by methods we know through test to be methods that produce safe pilots.

Air Traffic Regulation

Congress, in the Civil Aeronautics Act of 1938, recognized for the first time that air transportation had become a utility whose economic soundness was of sufficient importance to the people as a whole to warrant its regulation in a fashion long familiar with public utilities.

The existing system of scheduled air mail carriers is now legally a public utility. All of the certificates under the so-called "grandfather clause" of the Act have been issued to the air mail carriers after the fullest investigation of the adequacy and efficiency of the services they have rendered. This has not been a merely routine procedure. Under the new decisions affecting the validity of administrative law, it was necessary to make court-proof records in all of these determinations. A good result of that necessary step has been the development of a mass of information on air line operation which will be invaluable in the determination of cognate actions.

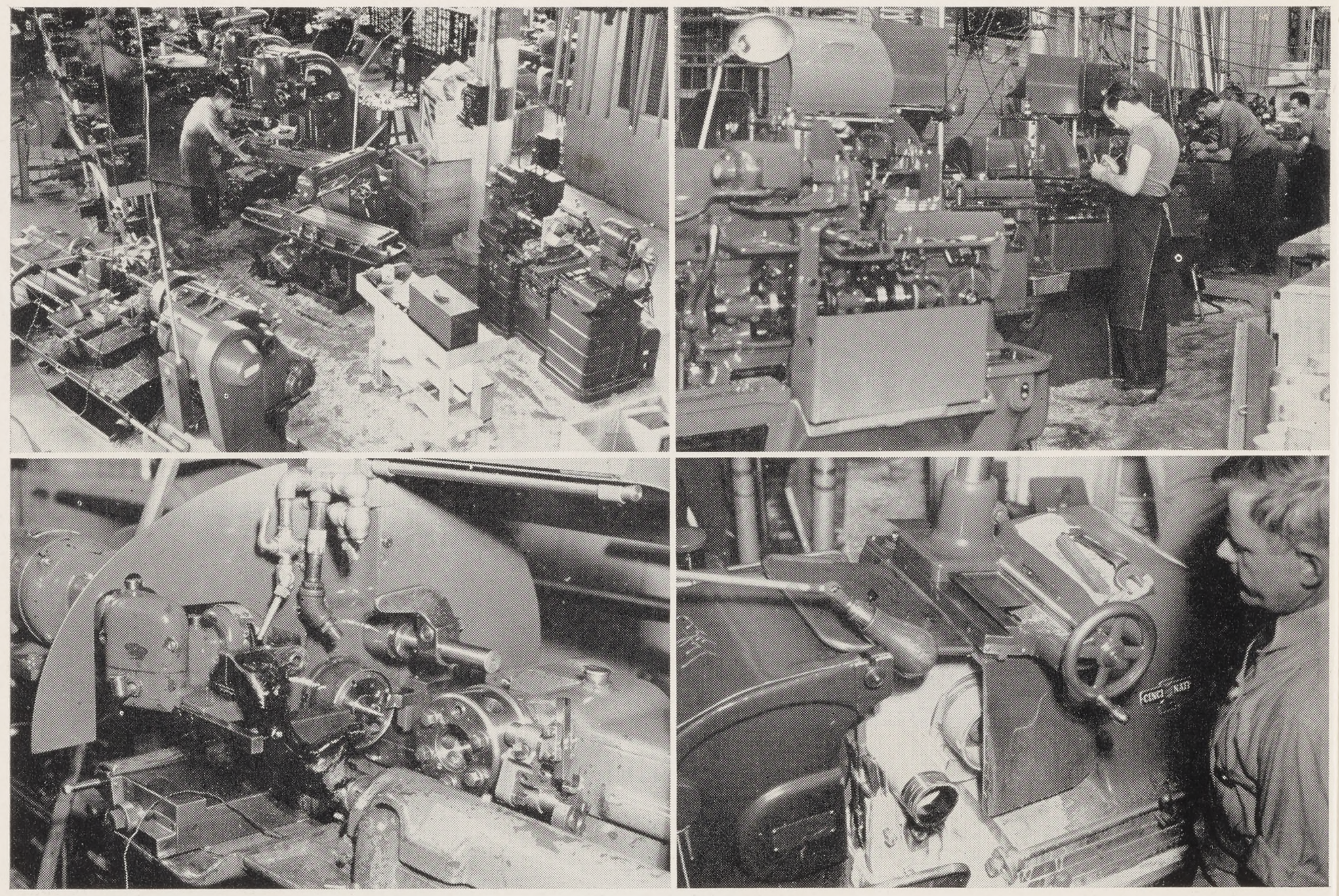
The development of this inforn
has also proved of great use and will
of further u
and efficien
in determi
mail, fair t
and the pu

Cas

The dete
cases and
of applicat
actively pr
rate cases
eight have
decision, o
ing, and th
the reques
Of the 5
one has a
pending d
have been
It thus
time the r
ment to th
now upon
as to safety
ments, and
for the car
other than

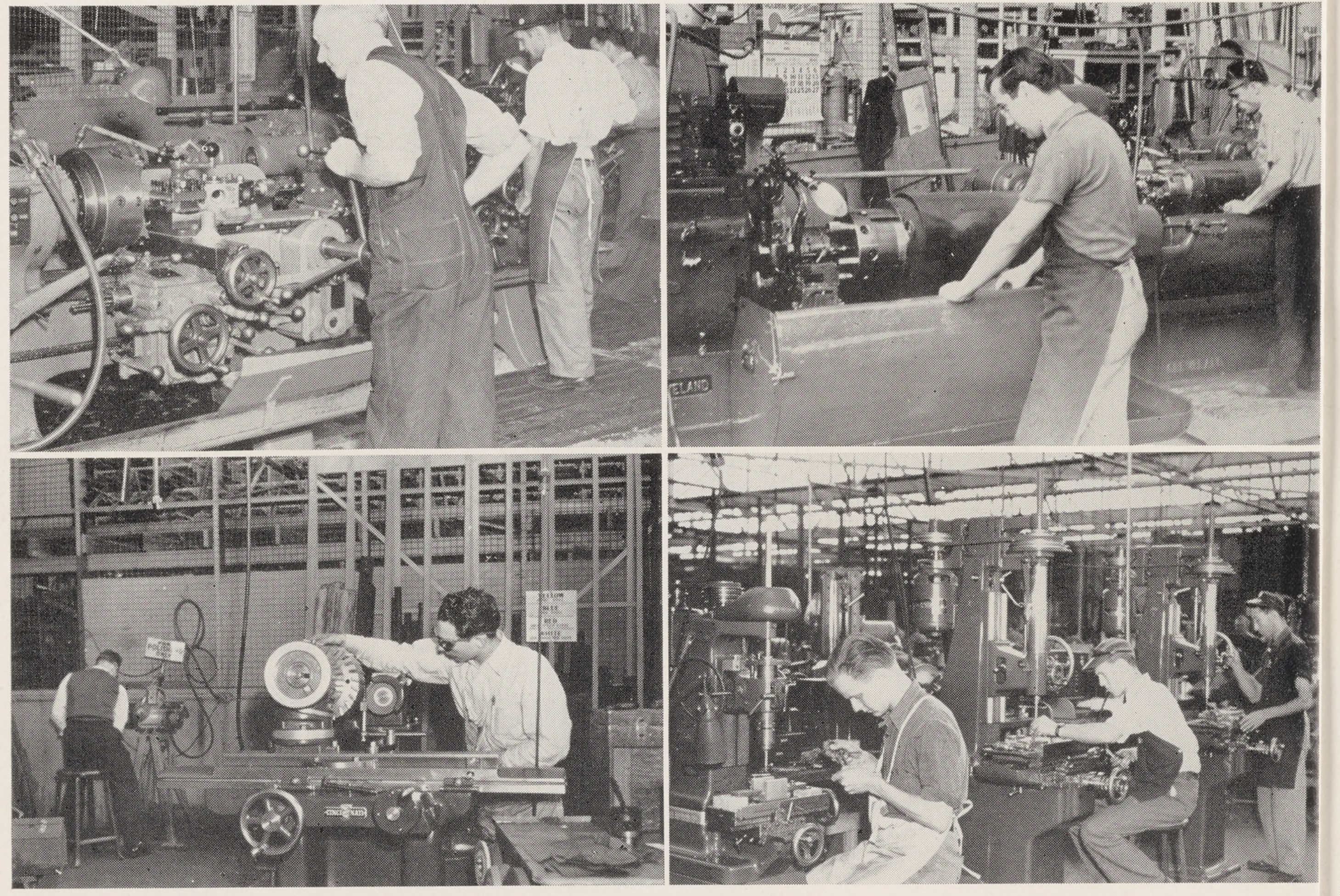
The wor
been of inv
dustry, to
public at l
and expert
ready resul
in importa
lic and priv
in the air
which have
enormous i

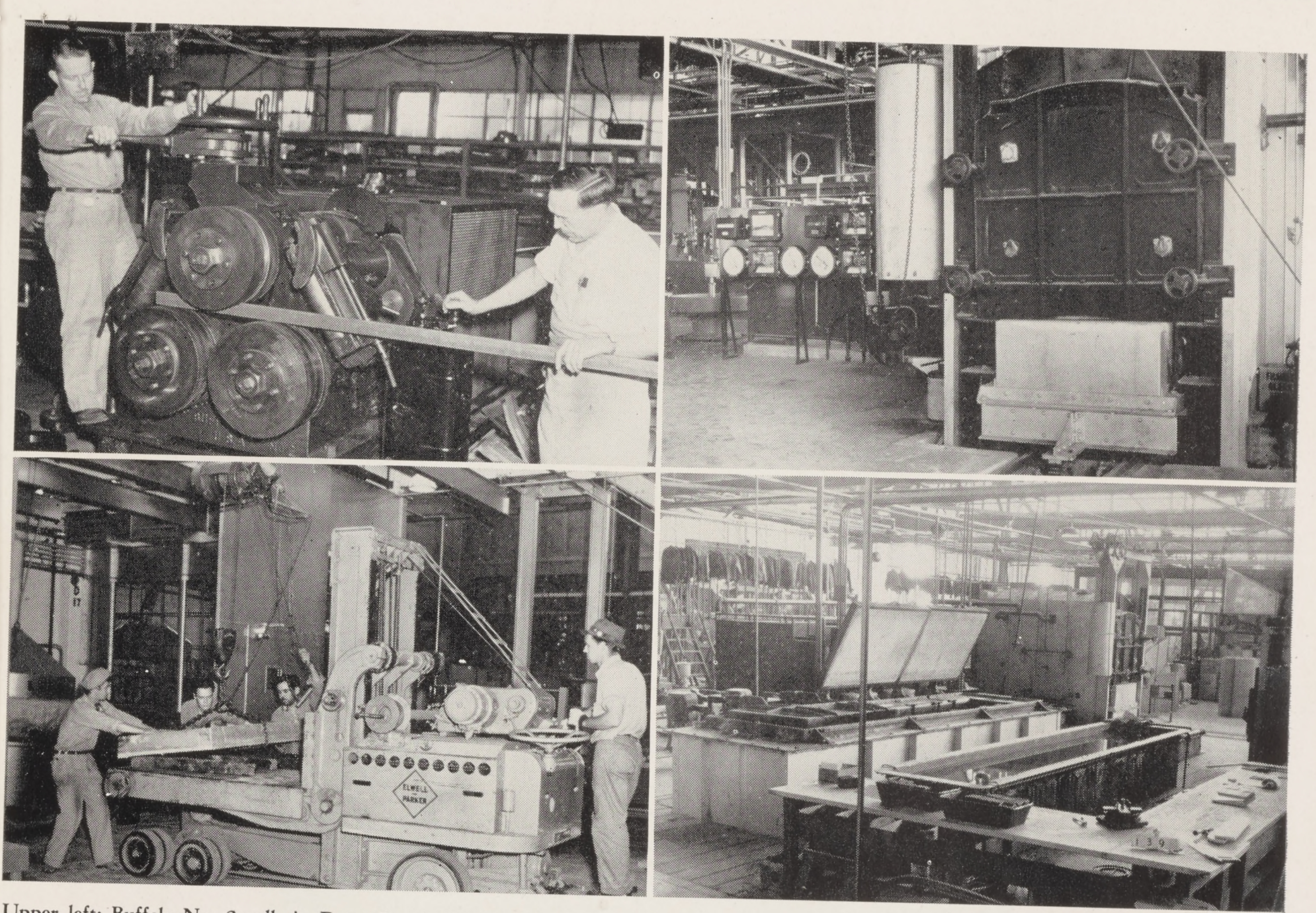
Clint



Upper left: General view in Consolidated machine department. Upper right: Brown & Sharpe automatic screw machines. Cleveland automatic at end of line. Lower left: Close-up of Brown & Sharpe automatic. Lower right: Cincinnati Centerless grinder finishing 3½" hollow shafts.

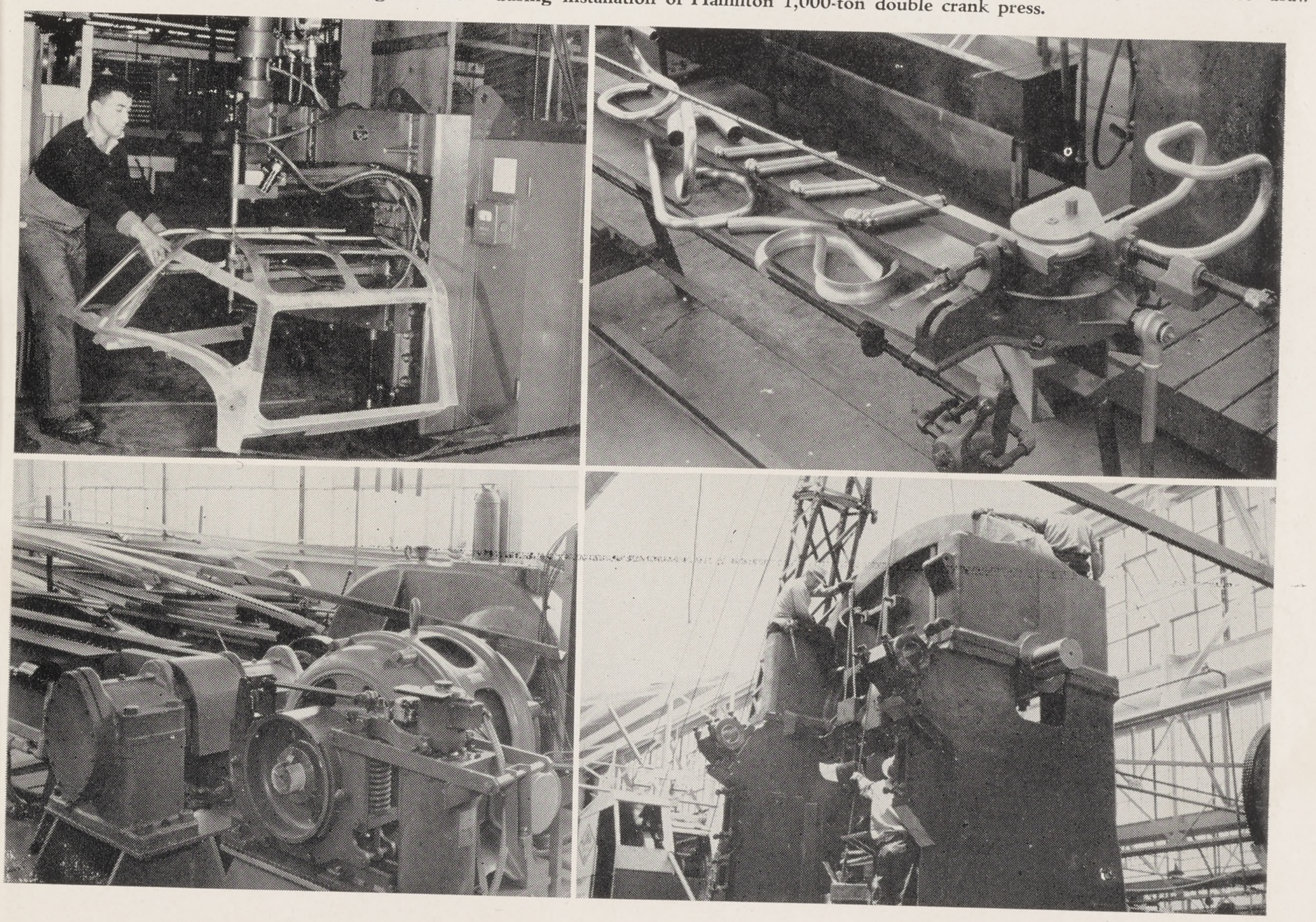
Upper left: Bardons & Oliver turret lathes. Upper right: Battery of Cleveland automatics. Lower left: Cincinnati cutter and tool grinder in tool room. Lower right: Linley vertical machine in foreground. Two Moore jig borers at right.





Upper left: Buffalo No. 2 rolls in Draw Bench department. Upper right: Large heat-treating furnace used principally for steel parts. Automatic recording pyrometers seen at left. Lower left: Elwell-Parker electric truck for moving heavy drop hammer dies. Lower right: Salt bath soaking pit for heat-treating dural parts seen at left; water quenching tank in center. In rear is furnace for heat-treating steel parts such as engine mounts. Some steel parts are oil-quenched; steel tube engine mounts are air-quenched.

Upper left: Sciaky spot and seam welder. Upper right: Tube bending, principally dural tubing. Lower left: Specially-built 60-foot draw bench. Lower right: "Raising the roof" during installation of Hamilton 1,000-ton double crank press.



DAY MORNING, NOV. 13, 1939

S.D. Union

U. S. Aircraft Factories Increase Capacity to 15,000 Planes a Year

Plants Expand; Day-Night Shifts May Boost Total

NEW YORK, Nov. 12 (A.P.)—The Aeronautical Chamber of Commerce of America today made public a survey of aircraft factory expansion which, it said, showed American plants could turn out 15,000 planes a year.

Projects now underway, said John H. Jouett, president of the chamber, would result in even greater production capacity.

"Our survey," he explained, "included 43 airplane and 13 engine manufacturing plants.

"Of the 43 airplane plants, 23 are now working on orders for military equipment. The current capacity of 1250 planes a month, equal to a rate of 15,000 machines a year, is based on several factors.

SPACE INCREASES 17%

"The airplane factory space increased 6,000,000 square feet to 7,025,000 square feet in the first six months of this year an expansion of 17 percent in manufacturing space. At the same time the aircraft engine factory space increased 334,000 square feet, a 20 percent expansion. All that space is now in use."

Jouett said further that while some aircraft plants were working at full capacity, "others have not even approached their limit with single working shifts. When orders are received in sufficient volume to warrant it the plants go into three working shifts a day."

The chamber said that to obtain maximum output, standardization or "freezing" on a single model in one factory would be necessary. Some plants not working at top speed are still producing as many as seven or eight different types of planes.

"Another factor which has increased plant capacity," said Jouett, "is the recent growth of the subcontracting system.

SUB-CONTRACTS AID

"Sub-contracting in the past was a very small part of aircraft production because the manufacturer could not guarantee the sub-contractor continuous business and the sub-contractor could not tool up sufficiently to assure a return on his investment. * * *

"With increased orders and the larger unit volume on each order, all plants in the industry which are not working on their own business and filling original orders of their own are available for sub-contracting. In other words, this opens the entire manufacturing industry to full time production.

"Our survey showed that the industry is capable of rapid expansion of production on all types of military aircraft, including the special types used by the navy air forces."

OVERHAULED GUBA TAKES TEST HOPS

Sun 12-10-39

After more than four months of idleness while receiving a complete overhaul in the Consolidated Aircraft Corp. plant, the widely traveled airboat Guba of Richard Archbold, wealthy scientist-aviator, received its first test hops over the bay yesterday.

Chief Pilot Russ Rogers announced that the craft, which was used to transport personnel and supplies to hitherto inaccessible regions in Netherlands New Guinea during a scientific expedition which ended last summer, may be flown to New York City for the winter unless adequate hangar space can be provided in San Diego.

Mr. Archbold, in a recently purchased Fleetwing four-passenger cabin plane, is expected to arrive here from the East coast next month, according to Mr. Rogers.

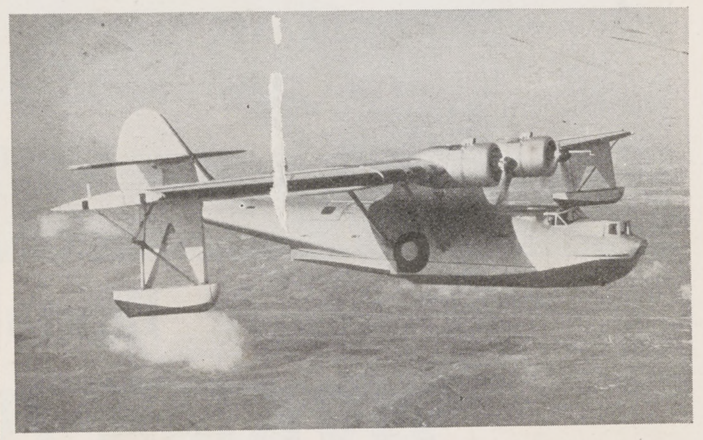
AMPHIBIAN FEATURE ADDED TO CONSOLIDATED PBY BOATS

Jan '40 WESTERN FLYING.

THE Consolidated Aircraft Corporation's new Model 28-5A amphibian, designed by the U. S. Navy for whom it was constructed as the XPBY-5A, has undergone its flight testing and is now in the Navy's hands at Anacostia.

Consolidated announced receipt of an order amounting to $20,016,699 for an undisclosed number of four-engined patrol bombers of the PBY series from the **U. S. Navy Department** on December 20.

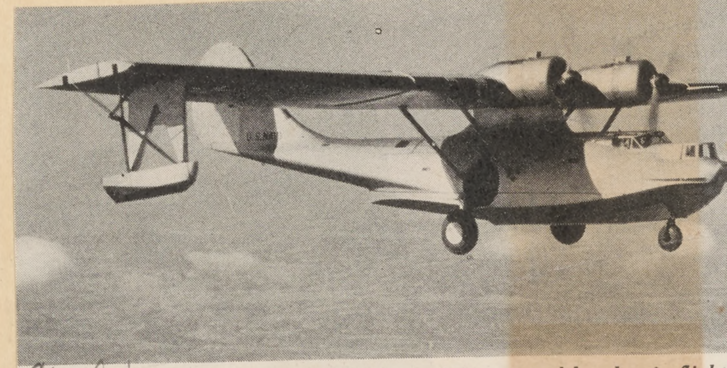
Whether the new patrol boats will incorporate the amphibian feature was not disclosed.



With the order, Consolidated's backlog of unfilled orders zoomed to more than $37,000,000. Reports from the factory said that this new contract will require increased manufacturing facilities and necessitate an expansion program which will cost between $1,500,000 and $2,000,000. The same report said that no outside financing will be required for the expansion, which will increase production facilities by 50 per cent.

Basically the new Consolidated amphibian is the Model 28 twin engined flying boat which the Navy knows as the PBY, now having incorporated in the structure, the amphibian feature. The inherent advantages of the Model 28 boat have been retained, and the great advantage of land plane operation added.

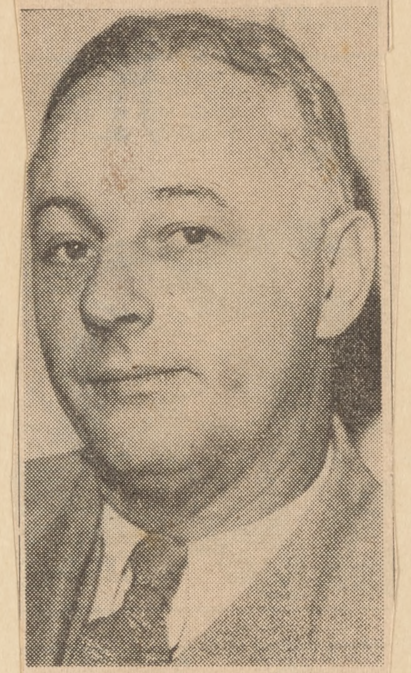
The landing gear is of the tricycle type, with a single wheel forward and two aft, all fully retractable. The side wheel and supporting mechanism, complete with oleo shock struts, retract into wells in the side of the hull. The nose wheel in the bow is completely closed over in the retracted position by automatically operated hatches so that no resistance to planing is encountered. All three wheels are operated by a central hydraulic power drive, and the operations are carried out in sequence automatically. A single lever controls both the extension and the retraction of the landing gear. Hydraulic pump power is derived from the main power plant or from an auxiliary engine, and may be operated by hand if necessary.



Aero Digest 2/40 *Consolidated XPBY-5A amphibian patrol bomber in flight*

L.A. Times

1940 JANUARY 17



INSPECTS PLANT — Maj. Gen. Emmons visits San Diego aircraft plant to view new Army bomber.

Emmons Sees Great Bomber

Air Corps Commander Watches Third Test Flight at San Diego

SAN DIEGO, Jan. 16.—French and Brazilian military officers today stood on the side lines only a few paces away from Maj. Gen. Delos C. Emmons, commander of the Army Air Corps G.H.Q., as the Army's most powerful completed bomber, the four-motored Consolidated XB-24, was given its third test flight on Lindbergh Field.

The foreign observers were here to confer with Consolidated officials in connection with possible acquisition of flying equipment available for export. The local concern manufactures long-range navy patrol boats, as well as giant army planes.

Maj. Gen. Emmons spent several hours inspecting the Consolidated plant and left late today for March Field to observe the G.H.Q. first wing's participation in this week's joint Army-Navy maneuvers which will test California's vulnerability to invasion.

He arrived this afternoon in a Douglas Army transport from his Langley Field (Va.) headquarters. Accompanying him are Capt. W. Goss, pilot and aide; Maj. H. A. McGinnis of the Inspector General's Department and Lieut. Col. Cedric Lewis, signal officer of the G.H.Q.

Air Force Commander Arrives at March Field

MARCH FIELD, Jan. 16.—Maj. Gen. Delos T. Emmons, commanding general, G.H.Q. Air Force, arrived at March Field at 4:25 p.m. today accompanied by Col. A. S. Pederneiras of the Brazilian Air Force. He was accorded a 13-gun salute. Gen. Emmons tomorrow will visit airplane factories in Los Angeles.

HITLER'S AIR PLANS

Building up his Bomber Forces

From Our Air Correspondent

LONDON, Tuesday Night

TO expect the worst and to prepare to meet it is the only sound defensive maxim and it should be rigorously applied at the present time Things have been going well in the Middle East and in Greece, but that does not mean that we should expect them automatically to begin to go well here.

Rather the expectation should be that there will be further and heavier attacks. For although there have been lulls, there has been nothing to suggest that they are of other than tactical origin. On the contrary, the easiest way to interpret them is as periods of recuperation for the *Luftwaffe* to be followed by more intensive action

It is true that, since Friday last, the Royal Air Force has been making raids on German-occupied aerodromes in France and Holland, but I doubt if such raids could do more than diminish very slightly the scale of the attack. The reason is that the Germans enjoy the use of a huge number of aerodromes, both in Germany and in occupied territory.

MANY AERODROMES

In France alone the number must be about 500, and of these a fairly high proportion would be well suited as bases for the night raiders. In Holland and Belgium there are more aerodromes, and behind them, more difficult to reach for our bombers, there are the German aerodromes, of which there must be more than 600.

It is obvious that the task of attacking so large a number of aerodromes that the enemy would be unable to launch his night raids is so immense that no air force could undertake it. The most that can be hoped for is that some of the aerodromes which are most useful to the enemy shall be knocked about, and this, it seems, was successfully done.

The lulls in night raiding may have been partly caused by these attacks, but that is all. For the rest, they may be due to the desire on the part of the enemy to conserve his bomber forces and to build them up to greater strength for some coming offensive of great ferocity.

The *Luftwaffe* has had heavy losses during the summer and autumn. It has, moreover, measured itself against the R.A.F. and found itself relatively less strong than it had thought. Field-Marshal Goering keeps a wary eye on our production and knows that it is swinging up and being augmented still further by United States production.

Yet the attempt to defeat Great Britain in these islands cannot have been abandoned as a primary German objective. It would be the key to saving Italy, it would fulfil Herr Hitler's dearest ambition, it would sort out all the Axis troubles. But to defeat Britain in these islands the Germans now know that a bigger effort than anything they have so far been able to put out is needed.

So they use this period for weakening us so far as they can by submarine warfare and by intermittent night raids, while not risking great numbers of their aircraft in day raids or in night raids when the weather is such that the number of accidents seems likely to be high.

Night flying under war conditions always entails many accidents, and it is surprising what heavy losses a night bomber force can suffer from this cause alone. The *Luftwaffe* bombers may have been depleted by accidents on a big scale during their attempts to sustain the bombardment of these islands during spells of bad weather.

At any rate, the present method does enable aircraft to be conserved and gives Field-Marshal Goering a chance to build up his forces. And that, I think, is the interpretation of it. There may be moves of some machines to another theatre, but if the aim is to strike in the Balkans or the Middle East the conservation and hoarding tactics are still needed. They would not be forced upon the Germans by a move because the aircraft do not take long to shift; it is the ground equipment that takes the time.

Our object then must be to prepare energetically to meet a new German air offensive. To that end we must increase the strength of the Royal Air Force and push forward with technical improvements. Higher speeds and better climb are the needs, for if we beat them once by technical merit we can beat them again by the same means.

It is clear that we have been able to reinforce our Air Force in the Middle East and also to lend fairly substantial air aid to the Greeks. We have been using not only the Gloster Gladiator fighters in those theatres but also the later Hurricanes. In addition, we have used Blenheims in fairly large numbers and some of the Wellington heavy bombers.

STILL MORE 'PLANES

But what we have done in the past in the way of increasing our air strength must be overtopped in the future if we are to meet with full confidence the coming attack wherever it may be launched. Moreover, there is always our own offensive to be considered, for it comes nearer and nearer to the range of practical possibility. So that not only must our fighter forces be enormously increased but so must our bomber forces.

Especially important will be the coastal reconnaissance types of aircraft and the torpedo-carriers. If, as has been suggested, we are to get some of the Consolidated 31 flying boats from America they should be of the greatest help to the Coastal Command in dealing with the submarine menace and also with the menace of the surface raiders.

Civil Aeronautics Authori

BIRTHDA

Robert N. Hinckley, Chairman. Term of office expires 1943.

By Robert H. Hinckley

Chairman

WHEN the members of the Civil Aeronautics Authority, the Administrator and the Air Safety Board took the oath of office slightly more than a year ago, we found ourselves confronted by a threefold task which in all conscience seemed large to us. We were charged by Congress and the President with the new duty of economic regulation as applied to civil aeronautics; we inherited the duty of providing, maintaining, extending and improving the aids to navigation of the common air; we were charged, and in a very particular way this bore upon our conscience, with the duty of increasing the safety, and therefore the utility, of all flying.

Statistics on Growth

Just to indicate what this growth has been, the scheduled air lines in the month of June carried 164,578 passengers, 64¼ percent more than June a year ago. During the first six months of this year, 1627 airplanes were produced for domestic civil use in the United States, only about 40 of them going to the airlines, the rest being purchased and used by private and non-scheduled flyers. Compared to the first six months of 1938, when 850 civil airplanes were made and sold for domestic use, this is an increase of over 90 percent in production and sales.

Today 26,144 pilots hold certificates, 6,000 more than a year ago, an increase of about 30 percent. There are 11,160 certificated airplanes today, 1,400 more than a year ago or an increase of almost 15 percent, an increase that will be moved startlingly upward by the production figures of the first six months if they are maintained on an annual basis.

The increase in pilots according to every indication of our charts will be even more startling. Even without the Authority's own pilot training program, the curves show that there would be 36,000 certificated pilots by the end of 1940, and 43,000 by the end of 1941. Taking into account the student pilot training program, however, the number of pilot certificates in force by the end of 1941 ought to approximate 70,000 of all classes.

Airways Extended

The federal airways within the United States have been increased by about 10 percent in length to a total now over 25,000 miles. The aids to navigation along these airways have been increased by about the same amount. But that is not as good a measure of their increased usefulness as is the almost complete modernization of existing radio and other aids and the plans now under development for their possible conversion into the new ultra-high frequency category, where they will become even more useful and reliable.

Perhaps no occurrence within this year is of more importance to the United States than the extension of our foreign lines across the North Atlantic, where for the first time, under the American flag, airplanes are flying regularly twice a week between here and Europe. Plans have been proposed for the further extension of our lines in the east to New Zealand. Our flag now flies in the air from Nome, Alaska, to Buenos Aires in the Argentine, and from Hong Kong, China, to Marseilles in France.

Backing up all of these extensions and additions to our civil aviation plant, the Authority is at this moment, thanks to the $4,000,000 appropriation in the Third Deficiency Bill, actually making the arrangements for the training of 10,000 student pilots next year by methods we know through test to be methods that produce safe pilots.

Air Traffic Regulation

Congress, in the Civil Aeronautics Act of 1938, recognized for the first time that air transportation had become a utility whose economic soundness was of sufficient importance to the people as a whole to warrant its regulation in a fashion long familiar with public utilities.

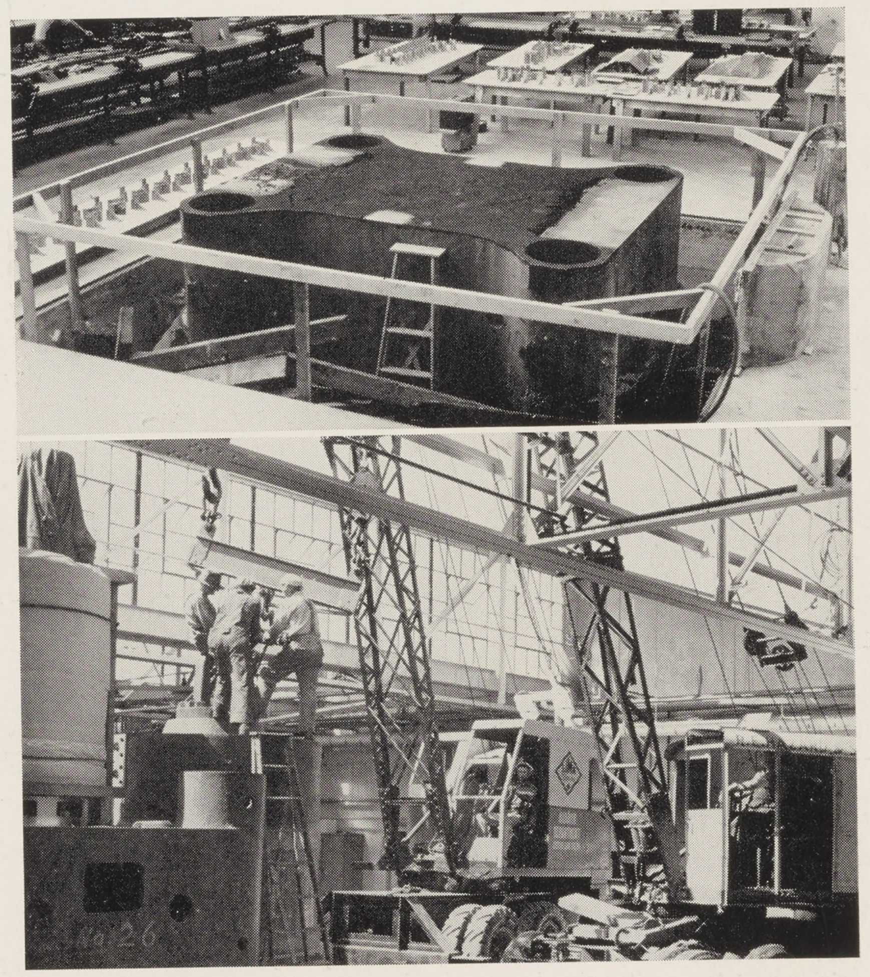
The existing system of scheduled air mail carriers is now legally a public utility. All of the certificates under the so-called "grandfather clause" of the Act have been issued to the air mail carriers after the fullest investigation of the adequacy and efficiency of the services they have rendered. This has not been a merely routine procedure. Under the new decisions affecting the validity of administrative law, it was necessary to make court-proof records in all of these determinations. A good result of that necessary step has been the development of a mass of information on air line operation which will be invaluable in the determination of cognate actions.

The development of this inforn
has also proved of great use and will
of further u
and efficien
in determii
mail, fair t
and the pu

Cas

The dete
cases and
of applicat
actively pr
rate cases
eight have
decision, or
ing, and th
the request
Of the 5
one has a
pending d
have been
It thus
time the r
ment to th
now upon
as to safety
ments, and
for the car
other than

The wor
been of inv
dustry, to
public at l
and expert
ready resul
in importar
lic and priv
in the air
which have
enormous i



Upper: 4,500-ton Birdsboro press foundation with the base platen in place. Lower: Installation of this press required removal of a whole section of the roof and the use of two cranes at assembly.

of the time element. Yet the almost traditional tooling was in for a change.

With the problem of tooling demanding solution, another cropped up. Airplane construction, to save weight in the finished structure, naturally brings about the accumulation of considerable scrap from the trimming and lightening operations. With the increased orders, and these are all-metal craft, what to do with the quantities of scrap became a problem, along with the tooling.

The two problems were solved at once, for Consolidated now melts its scrap dural, casts it into suitable slabs and special shapes, and employs it for tools, fixtures, etc. The dural has several advantages in its favor as compared with wood and steel. It is almost as easily worked as wood, and does not warp or swell. It is far less costly than steel, is lighter to handle in the form of fixtures and jigs, and, best of all, its coefficient of expansion is that of the work itself. It cannot produce inaccuracies due to changes in temperature. Bolts may be tapped into it for assembly purposes, and hardened bushings pressed in for drill jigs and the like. By machining the slabs and shapes to close sizes, assembly work on jigs and fixtures is quite simple. Machine tools, of course, handle it with ease, and it may be hand-worked almost as readily as wood. Thus a phase of the tooling and production work, which a short time ago relied upon wood mill equipment, has swung to machine tools, which illustrates the flexibility necessary for adapting facilities to meet changing conditions.

The large aircraft of today, such as those built by Consolidated,, are intricate planes involving a considerable time to design, engineer and construct. And the material developments and aerodynamic and mechanical advances come so rapidly that the elapsed time from the conception of a new design to its first flying is of vital importance. The prototype, or first plane of a design in one of these large craft, with its complex structure and problems of fabrication and testing, can reasonably be expected to consume from a year and a half to two years or more between the tim

ON

Features,
ns

The San Diego Sun

SAN DIEGO, CALIFORNIA, MONDAY, NOVEMBER 6, 1939

Page 7

SECOND SECTION

Classified Advertising, Sports, and Financial News

CONSOLIDATED SET FOR FOREIGN PLANE JOBS

SECRET ORDERS FOR 250 WAR CRAFT DENIED

Firm Only One Whose Machines Could Fly Atlantic Safely

By HAROLD KEEN
Aviation Editor.

While scoffing at reports that the company had secret orders from both England and France, Consolidated Aircraft Corp. officials today emphasized that their concern is probably the only manufacturer in the United States all of whose products could be delivered over any ocean in the world.

The Consair executives categorically denied that foreign orders were already on the books and had only awaited the arms embargo repeal to signal full speed ahead on actual production.

Announcement in a recent aviation trade journal that the San Diego company had a contract for 250 planes for Great Britain was described as inaccurate.

DELIVERY RECALLED

Significant in connection with any reports of aircraft work for England is the delivery, several months ago, of a PBY-type patrol bomber to the Royal Air Force on a flight across the United States to Botwood, Newfoundland, and across the Atlantic to Britain.

In this manner was dramatically illustrated the possibility of ferrying whole fleets of bombers to distant shores—a valuable feature to be considered by foreign governments buying in the United States. Submarines cannot sink airplanes delivered by air.

CITE GUBA FLIGHT

Flight of the Guba, Richard Archbold's Consolidated seaplane, over every major water body in the world on his globe-girdling jaunt which ended last July, is also used by Consolidated officials as a selling point.

It was learned that inquiries which may lead to orders from foreign governments have been made at the Consolidated plant.

With the European field now left open, the San Diego concern is expected to compete with all other manufacturers in attempting to meet the demand for new planes.

SPUR TO BUSINESS

Just how the regulation requiring cargoes to belligerent nations to be shipped in foreign bottoms would affect the method of trans-oceanic delivery by air is a matter for attorneys to study, Consolidated officials said.

That lifting of the embargo will inevitably spur local airplane business was foreseen here. Solar and Ryan plants supply parts for factories in the Los Angeles area which have millions of dollars worth of contracts to fulfill with England and France.

SERVICE AVIATION

"MONOPLACES DE CHASSE CRACHE FEU": Spitfire eight-gun fighters of the squadron which in company with formations of Hurricanes, Blenheims, Hampdens and Wellingtons represented Great Britain in the great parade of aerial and terrestrial might staged in Paris last week.

Royal Air Force and Official Announcements :

Fleet Air Arm News : Military Aviation Abroad

Higher Appointment

THE Air Ministry announces the appointment of Group Capt. John Walter Cordingley, C.B.E., to assume the duties of Director of Manning, Air Ministry, with effect from July 17.

Group Captain Cordingley, who was born in 1890, joined the Royal Naval Volunteer Reserve in 1905 and in 1918 was appointed to the rank of Major in the Royal Air Force, assuming the duties of Staff Officer, Class 2, in the Directorate of Manning at the Air Ministry.

He was awarded the O.B.E. in 1919, and in the same year was granted a permanent commission in the Royal Air Force with the rank of Squadron Leader. Since 1922 he has been in command of the Record Office, Ruislip, and in the Birthday Honours List of 1937 was promoted to C.B.E.

He was promoted to the rank of Wing Commander in 1924, and to his present rank in 1931.

As Director of Manning he will be responsible to the Air Member for Personnel for planning the man-power requirements of the R.A.F. and for the executive control of recruitment for the R.A.F. and for the Volunteer and Regular Reserves.

R.A.F. Flight Over France

FOLLOWING on the display by Wellingtons and a Hurricane at Evere, on Tuesday, July 11, twelve squadrons of Wellingtons, Hampdens, Blenheims and Battles, numbering in all over 100 aircraft, started off at 08.00 hours from their home stations in the Midlands for a flight over France, which had been arranged by agreement with the French Government.

The long-range craft followed the route Havre, Le Mans, Samur, Bordeaux, Angers, Caen, and so back to England, a non-stop flight of about 1,200 miles. The others followed the route Le Treport, Orleans, Le Mans, and crossed the coast near Cherbourg on their way home, a total of nearly 900 miles. All flew at a height of 2,000 metres (6,500ft.), except when over the larger towns, when they came down to 1,000 metres (3,250ft.) in order to show themselves off to the inhabitants. All the machines returned safely to their home stations. Similar flights are to be made this week.

The arrangement is that French squadrons shall pay a return visit by making a flight over Great Britain—probably it will take place this week.

The Paris Demonstration

ONE squadron each of Spitfires, Hurricanes, Blenheims, Hampdens and Wellingtons joined with Morane 406s, Curtiss P.35s, Potez 63s, Breguet 691s, Bloch 131s and Liore 45s of the French Air Force in a fly-past over Paris preceding the parade in the Champs Elysées last Friday. The fly-past was led by a single-Morane 406, piloted by General d'Harcourt, Inspector-General of the French fighter force. In the first place it was intended that the British fighters should lead, but it was thought that they might experience some difficulty in keeping formation at 175 m.p.h., which was the agreed speed. Instead, the British bombers were in the vanguard, the Spitfires and Hurricanes bringing up the rear and demonstrating their speed by passing the main body as it flew along the Champs Elysées. The squadrons flew at different heights, the lowest being the graceful Potez 63 twin-engined fighter-bombers. In all, 315 aircraft took part, 45 being British. Air Chief Marshal Sir Cyril Newall, Chief of the Air Staff, left for Hendon later in the day in a Percival Q.6.

Distinguished Flying Medal

HIS MAJESTY THE KING has been graciously pleased to approve the undermentioned reward for gallant and distinguished service in Palestine:—

Distinguished Flying Medal.—Sgt. Harry John Goodchild.

On May 23, 1939, Sgt Goodchild located armed rebels near Kh. Wazil and took vigorous air action against them in extremely difficult flying country. The fighter machine which he was flying was subjected to heavy fire from dense coverage, and, after several hits, the air-pressure system was put out of action. Sgt. Goodchild, after flying back to Ramleh, returned to the area in another machine and continued his previous tactics of holding the rebels until the arrival of the British ground forces. He displayed great gallantry, daring and flying skill.

Sgt. Goodchild has taken a conspicuous part in a number of major engagements and his name has twice been brought to the notice of the General Officer Commanding, British Forces in Palestine and Trans-Jordan for distinguished conduct.

The Consolidated Arrives

WHAT is undoubtedly a very fine flying boat arrived at the Marine Aircraft Experimental Establishment, Felixstowe, last Friday. Just how fine a craft it is will be ascertained during the next few weeks.

The machine was a Consolidated 28-5 long-range military boat which had flown non-stop from Botwood, Newfoundland, to Felixstowe.

She left the manufacturers' plant at San Diego, California, at 4.23 p.m. G.M.T. last Monday week to fly non-stop the 3,000 miles to Botwood, Newfoundland, but made an intermediate landing at Buffalo as, having had a 30 m.p.h. wind all the way, fuel was

OVER

Consolidated Air

country. It shows, too, that some of the consequences can be just as serious. Take one remarkable statement of Mr. B. W. Sheahan, one of the chief engineers of the Consolidated Corporation. "We have never," he writes, "had an aeroplane advance from the experimental to the production stage without having out-of-date armament installations."

He goes farther and declares that development has sometimes been so retarded that an aeroplane was often obsolescent by the time it reached production. His company has lately shown what can be done by constructing the prototype Model 31 and getting it flown within ten months. Something of the sort was achieved last year by the de Havilland Co. in building the Flamingo within a year. The latest case is the more striking because the new boat is nearly twice the loaded weight of the Flamingo. How it was done, Mr. Sheahan tells. His description of the time-saving methods will be of interest to everybody concerned with development.

HIGH BIDDING.—Sir Kingsley Wood's incursion into a billet card party during his visit to the R.A.F. in France. Evidently the hosts dealt him a good hand.

But he has perceptive things to say also about those aspects in the control of development by a Government Department which lead to the greatest delay. One of his points is that non-flying features are responsible for most of the conferences, modifications and obstruction. He holds that the armament and interior features might be represented by dummies or ballast, while conferences about them proceed, and that the building of the main structure might go forward without waiting for decisions on those points.

Many an aircraft engineer's heart will warm to Mr. Sheahan. He has done what so few have done—tabulated the causes of delay and proposed methods by which they could be removed. The British Aircraft Industry and the Air Ministry might consider together the advantages to be gained from a system which would allow the development of aircraft and equipment to proceed side by side, without causing either to wait on the other. This is precisely the sort of efficiency which the urgent needs of war should encourage.

The Latest From The N.A.C.A.

THE NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS claims that it has produced a new wing-section which give laminar flow over practically the whole surface.

Dr. G. W. Lewis, Director of the N.A.C.A., who is to deliver the Wilbur Wright Lecture on May 25 (Thursday of this week), spoke of this new section at a recent N.A.C.A. Reception at Langley Field, and claimed a reduction of drag of about 67% by this discovery, but he did not say at what speed.

The announcement of the new N.A.C.A. wing-section may be connected with the release of information about the new two-motor Consolidated Model-31 flying-boat, which had an extremely thin wing for which extraordinary qualities are claimed,—including an increase in maximum speed of about 20% over aeroplanes of the same size with conventional wing-sections.

Although the rumours are probably, as always, exaggerated there is undoubtedly some real point in Dr. Lewis's remarks. Whether the N.A.C.A. is dabbling with some method of boundary layer suction or whether it has made some fundamental discovery to reduce drag is still unknown.

A new low-drag motor-cowling for high-speed aeroplanes, a retractable hydrofoil to help flying-boats to take off, a high-lift low-drag Venetian-blind flap, and petrol injection devices to replace carburetters, were shown at the Reception. The new wing was not.

Two new compressed-air wind-tunnels were opened by Dr. Edward P. Warner, one in which models with spans up to 19 ft. can be tested at wind-speeds of 250 m.p.h., the other a tunnel in which models can be flown freely, operated by remote controls. In both tunnels the engineers actually work in the compressed air and have to be gradually de-compressed, like divers, before they can leave.

A High-Power Allison

A 2,400 H.P. 24-cylinder four-bank liquid-cooled aero-motor has been developed by the Allison Engineering Co., a Division of the General Motors Corp. It is on view in the General Motors Building at the New York's World's Fair.

The new motor is really a combination of two of the earlier Allison 1,200 h.p. 12-cylinder Vee motors on a common crank-case. The centre-lines of the individual Vees are arranged at about 120 degrees to one another but the cylinders are in the upper half of the sector instead of inverted. The dry weight is said to be less than 1 lb. per h.p.

To Wright a Wrong

WITH COMMENDABLE frankness, all to rare in commerce, the Pratt and Whitney people inform us that the 200 North American BT-9 trainers bought for France will not have Pratt and Whitney motors as we said on March 1.

Mr. Norman V. Clements, Advertising and Publicity Manager, says, " We are naturally pleased to see the mention of our equipment in this item but we believe that you will be interested in knowing that the North American airplanes purchased by the French Government are not to be powered by Pratt and Whitney engines.''

What could be fairer? He is a wise father who knows his own child and obviously our French informant on this point was misinformed. We apologise to all concerned.

Rolls-Royce on Clydeside

SIR KINGSLEY WOOD announced in the House of Commons on May 15 that a vast factory for the building of Rolls-Royce aero-motors is to be put up on the Hillingdon Industrial Estate just South-West of Glasgow in Scotland. It will be managed by Rolls-Royce Ltd. on behalf of the Air Ministry. The factory will cost about £4,000,000 and will give employment to about 10,000 men. Scottish firms will be invited to tender.

Rolls-Royce Ltd. have taken over a site of 106 acres. The actual Works will cover about 50 or 60 acres. The rest will be used for recreation grounds or houses. Production should begin in about 12 months and reach a maximum by the beginning of 1941.

This is the biggest engineering development on Clydeside for the past 30 years, and it will be the largest aero-motor factory in the World.

Lord Provost P. J. Dollan, of Glasgow, has for the past six months tried to get work for Clydeside from the Air Ministry. He argues that the West of Scotland is a reservoir of skilled engineers available for aircraft work, and says that the Rolls-Royce factory will be the industrial chance of a lifetime for the people of Clydeside.

A training centre for workmen is to be set up in Glasgow immediately. Boys in the Secondary Schools at Govan, whence much of the labour will be drawn, are to be taught aircraft engineering so that they can be useful in the Rolls-Royce factory and the Maintenance Depot at Abbotsinch. The Air Ministry has supplied aero-motors for instruction in two of the schools. Instruction will be given also to 1,500 of those who are attending junior schools in the South of Glasgow.

Skilled workers must be brought from the Rolls-Royce Works at Derby for a start. Later on Glasgow hopes to supply the whole demand.

More Complications

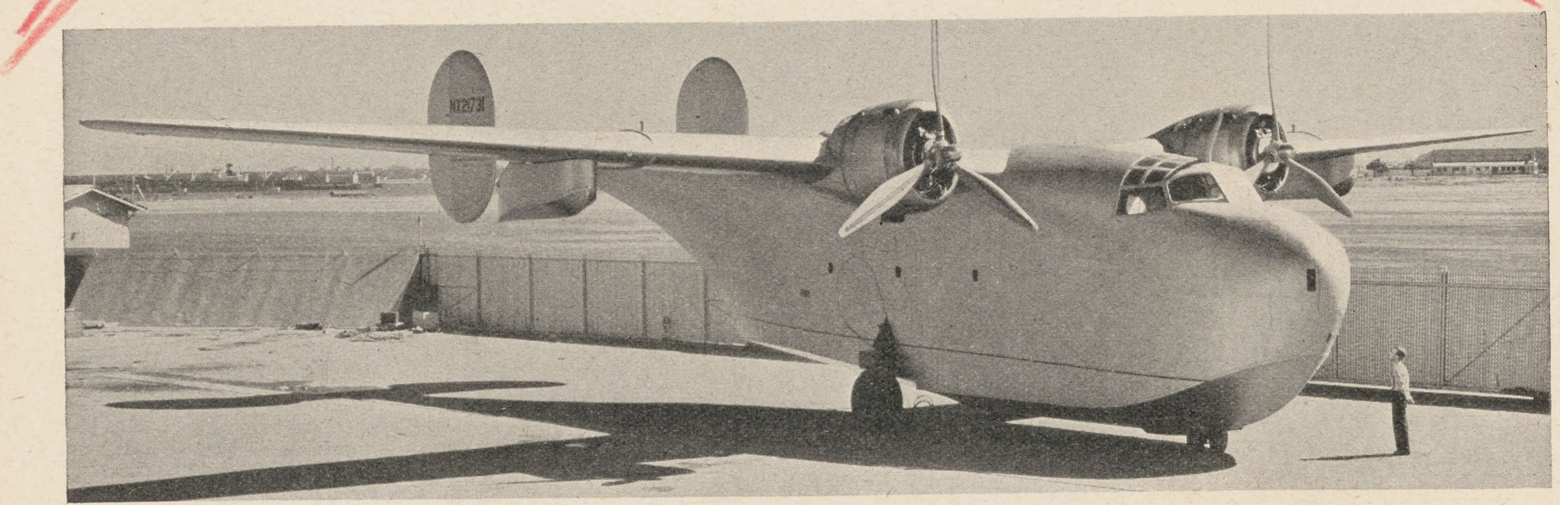
ACCORDING TO A DISPATCH from New York, President Roosevelt before leaving Washington on May 2, told his assembled phalanx of news-hawks that he " Considered a possible air attack in the Caribbean area necessitated an improvement of American defences there.''

As a digger-up of trouble President Roosevelt beats even his predecessor President Wilson. The difference between the two is that whereas President Wilson and his good intentions paved the way for the present Hell in Europe, President Roosevelt seems to be busy digging up the pavement and letting Hell loose.

Just who could attack whom and with what in the Caribbean area will take a bit of working out. Possibly President Roosevelt is thinking of the Mexican Air Force armed with American Grumman airplanes built in Canada bombing the Caribbean end of the Panama Canal. Or perhaps he is afraid that German aeroplanes, operating by collusion with the Netherlands West Indies Colonies from Curaçao may bomb Palm Beach or Miami.

Perhaps President Roosevelt's best and cheapest plan would be to import a section of the Russian Air Force as a Caribbean Air Defence Force.

But seriously, we would really like to know precisely what form of offence President Roosevelt fears in the Caribbean.



AMERICA'S LATEST:—The new Consolidated Flying-Boat Model 31, which has retractable beaching gear, but is not an amphibian. It has two 2,000 h.p. 18 cylinder two-row Wright motors. It weighs 50,000 lb. all up,—which is less than the Short Cabot class. Its alleged speed is more than 300 m.p.h. Rumour says that the wing is the new N.A.C.A. mentioned above.

NOV 6 1939

THE SAN DIEGO SUN

San Diego Sun 11-14-39

One Minute You're Bouncing Along Water, Next You're High Up In Air—That's Taking Off In Archbold's Guba

Sun Aviation Editor Takes Guest Hop

Guest of Russ Rogers, chief pilot of the Consolidated airboat Guba, on one of its first test hops since completion of four months' overhaul in the local plant, was Harold Keen, The Sun's aviation editor, who recounts his experiences below.—The Editor.

By HAROLD KEEN

The most sweeping, completely unhampered view of San Diego is from the snug compartment where the bombing observer sits at the very tip of a Consolidated patrol plane's nose.

Thoughts like that will run through your mind if you ever get a chance to squeeze into the revolving turret-like glass-enclosed cubicle in the snout of a PBY.

Just aft of you, and on a higher level, are the two poker-faced pilots, above them are twin whirling power plants that hurl waves of thunderous sound against your tender ear drums, and still farther back is the majestic, broad expanse of wing, 104 feet from tip to tip.

VIEW UNIMPEDED

But nothing in front or directly below that tiny perch blocks the vision of the occupant whose job it is to sight his target, then touch the levers from which flash electrical impulses release death loads of bombs carried on the under side of the wing.

All 12 tons of the Consolidated PBY is built for the effective use of this space, which occupies perhaps one-twentieth of the entire airboat's area.

The ordinary civilian can barely get within binocular range of a Navy bomber turret, but, once invited, you can come and go as you please in the world's most famous privately owned seaplane, the Guba.

And we did plenty of squirming into and out of the various compartments that make up this useful ship.

PILOT HELD IN ESTEEM

We learned why Russ Rogers, Mr. Archbold's chief pilot, is recognized, even by the Navy, as one of the most skillful airboat operators in the country.

He doesn't tarry on the takeoff. One instant you're bouncing along, like the world's fastest motorboat, with frothy cascades of water splashing against the turret, and the next you're hundreds of feet in the air. That cruiser that looked so formidable a moment ago now is a model floating in a huge bathtub.

A hatch on the floor of the bomber's-observer compartment is pointed out as the location, in a Navy plane, of the bomb-sight set in glass.

With its aid and that of instruments calculating the speed, drift and altitude of the airboat, the flying mathematician determines the exact moment when to drop any or all of the four 1000-pound bombs—or the two torpedoes—a PBY can carry.

MECHANIC GUIDES

Steve Barrinka, the pleasant young mechanic who kept the Guba's engines in good shape on its Netherlands New Guinea expedition, and on its later trip around the world back to San Diego, acts as guide to the "tourists" who fly the craft.

Far back in the ship, near the tail, he shows you a triangular hatch that opens up to the earth below.

"We dropped hundreds of pounds of supplies through this opening to the inland New Guinea camps of the scientists," he explained, sitting precariously at its edge. He answered the unspoken question. "I couldn't fall out of here if I tried. The air pressure would act like a safety net."

Amidships, in the cargo compartment, sitting on a highchair suspended from the ceiling and intently watching a bewildering array of instruments, is a Consolidated employe. "He's the flight engineer on these test hops," Steve commented. "Those instruments tell him whether the cylinder head temperature is safe, whether the carburetor is being supplied with the correct amount of heat, whether the engines are functioning smoothly."

RADIOMAN AT WORK

In another compartment, just behind the pilots, is a broad table covered with charts for the navigator, and on the opposite side of the narrow aisle, Harold Ramm, the radio operator, is dot-dashing Boston.

"Once, when we were in New Guinea, we contacted that Boston station, 10,000 miles away, and a few minutes later, I had a message through to my wife in Maine," Mr. Barrinka recalls. He claims that as the most distant communication ever effected from an airplane.

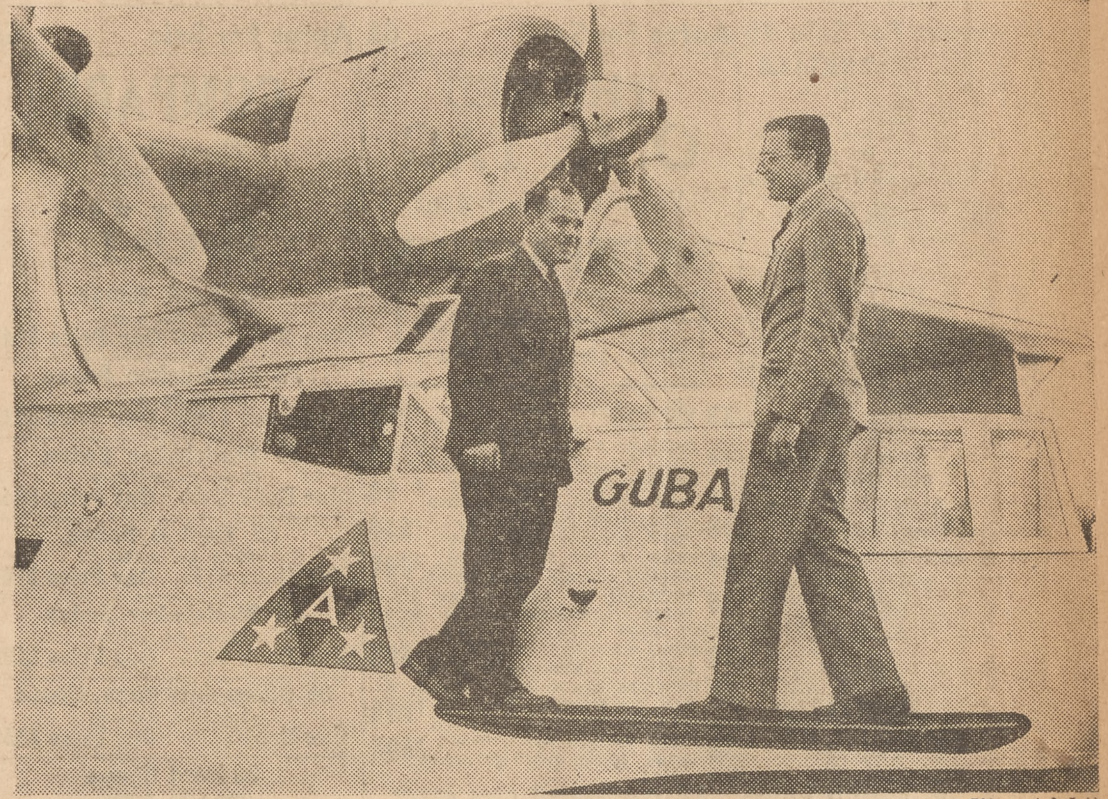
The Guba crew is quite proud of their ship, an exact replica of the Navy's early PBY's. They can point out the fact it is the only plane ever to operate from water at an 11,000 foot elevation, when the motor has little more than half its power available, due to the thin air. That was on Lake Habbema, in New Guinea. It's also the only ship to have flown around the world the longest way—25,000 miles, which included the first flight across the Indian Ocean, on a survey trip for the Australian government.

FOG HORN REQUIRED

Because the Guba is considered no less a vessel than any other surface craft, it must carry a fog horn, bell, and life preservers. There's a collapsible boat for use in emergencies. And a complete galley, with stove and running water. There are four comfortably upholstered leather chairs and bunk space where you can sleep like a log. After you get used to it, the rasping sound from the 1000-hp engines actually lulls you to sleep, says Mr. Barrinka.

Aside from the landings and takeoffs, the Guba in flight is so smooth that your sensations are similar to those of a bus-rider.

Except when, without warning, from a cloud layer on an overcast day such as this particular one, a Navy PBY suddenly dashes out just off your port side, causing even such a veteran aviator as "Red" Harrigan, Lindbergh Field custodian who also went up for the free ride, to whistle.



REPORTER GETS TAKEN FOR A RIDE . . . HAROLD KEEN, The Sun's aviation editor (right), who flew with CHIEF PILOT RUSS ROGERS in the Guba.

ON

Features,
ns

The San Diego Sun

SAN DIEGO, CALIFORNIA, MONDAY, NOVEMBER 6, 1939

Page 7

SECOND SECTION

Classified Advertising, Sports, and Financial News

CONSOLIDATED SET FOR FOREIGN PLANE JOBS

SECRET ORDERS FOR 250 WAR CRAFT DENIED

Firm Only One Whose Machines Could Fly Atlantic Safely

By HAROLD KEEN
Aviation Editor.

While scoffing at reports that the company had secret orders from both England and France, Consolidated Aircraft Corp. officials today emphasized that their concern is probably the only manufacturer in the United States all of whose products could be delivered over any ocean in the world.

The Consair executives categorically denied that foreign orders were already on the books and had only awaited the arms embargo repeal to signal full speed ahead on actual production.

Announcement in a recent aviation trade journal that the San Diego company had a contract for 250 planes for Great Britain was described as inaccurate.

DELIVERY RECALLED

Significant in connection with any reports of aircraft work for England is the delivery, several months ago, of a PBY-type patrol bomber to the Royal Air Force on a flight across the United States to Botwood, Newfoundland, and across the Atlantic to Britain.

In this manner was dramatically illustrated the possibility of ferrying whole fleets of bombers to distant shores—a valuable feature to be considered by foreign governments buying in the United States. Submarines cannot sink airplanes delivered by air.

CITE GUBA FLIGHT

Flight of the Guba, Richard Archbold's Consolidated seaplane, over every major water body in the world on his globe-girdling jaunt which ended last July, is also used by Consolidated officials as a selling point.

It was learned that inquiries which may lead to orders from foreign governments have been made at the Consolidated plant.

With the European field now left open, the San Diego concern is expected to compete with all other manufacturers in attempting to meet the demand for new planes.

SPUR TO BUSINESS

Just how the regulation requiring cargoes to belligerent nations to be shipped in foreign bottoms would affect the method of trans-oceanic delivery by air is a matter for attorneys to study, Consolidated officials said.

That lifting of the embargo will inevitably spur local airplane business was foreseen here. Solar and Ryan plants supply parts for factories in the Los Angeles area which have millions of dollars worth of contracts to fulfill with England and France.

SERVICE AVIATION

"MONOPLACES DE CHASSE CRACHE FEU" : Spitfire eight-gun fighters of the squadron which in company with formations of Hurricanes, Blenheims, Hampdens and Wellingtons represented Great Britain in the great parade of aerial and terrestrial might staged in Paris last week.

Royal Air Force and Official Announcements :

Higher Appointment

THE Air Ministry announces the appointment of Group Capt. John Walter Cordingley, C.B.E., to assume the duties of Director of Manning, Air Ministry, with effect from July 17.

Group Captain Cordingley, who was born in 1890, joined the Royal Naval Volunteer Reserve in 1905 and in 1918 was appointed to the rank of Major in the Royal Air Force, assuming the duties of Staff Officer, Class 2, in the Directorate of Manning at the Air Ministry.

He was awarded the O.B.E. in 1919, and in the same year was granted a permanent commission in the Royal Air Force with the rank of Squadron Leader. Since 1922 he has been in command of the Record Office, Ruislip, and in the Birthday Honours List of 1937 was promoted to C.B.E.

He was promoted to the rank of Wing Commander in 1924, and to his present rank in 1931.

As Director of Manning he will be responsible to the Air Member for Personnel for planning the man-power requirements of the R.A.F. and for the executive control of recruitment for the R.A.F. and for the Volunteer and Regular Reserves.

R.A.F. Flight Over France

FOLLOWING on the display by Wellingtons and a Hurricane at Evere, on Tuesday, July 11, twelve squadrons of Wellingtons, Hampdens, Blenheims and Battles, numbering in all over 100 aircraft, started off at 08.00 hours from their home stations in the Midlands for a flight over France, which had been arranged by agreement with the French Government.

The long-range craft followed the route Havre, Le Mans, Samur, Bordeaux, Angers, Caen, and so back to England, a non-stop flight of about 1,200 miles. The others followed the route Le Treport, Orleans, Le Mans, and crossed the coast near Cherbourg on their way home, a total of nearly 900 miles. All flew at a height of 2,000 metres (6,500ft.), except when over the larger towns, when they came down to 1,000 metres (3,250ft.) in order to show themselves off to the inhabitants. All the machines returned safely to their home stations. Similar flights are to be made this week.

The arrangement is that French squadrons shall pay a return visit by making a flight over Great Britain—probably it will take place this week.

The Paris Demonstration

ONE squadron each of Spitfires, Hurricanes, Blenheims, Hampdens and Wellingtons joined with Morane 406s, Curtiss P.35s, Potez 63s, Breguet 691s, Bloch 131s and Liore 45s of the French Air Force in a fly-past over Paris preceding the parade in the Champs Elysées last Friday. The fly-past was led by a single-Morane 406, piloted by General d'Harcourt, Inspector-General of the French fighter force. In the first place it was intended that the British fighters should lead, but it was thought that they might experience some difficulty in keeping formation at 175 m.p.h., which was the agreed speed. Instead, the British bombers were in the vanguard, the Spitfires and Hurricanes bringing up the rear and demonstrating their speed by passing the main body as it flew along the Champs Elysées. The squadrons flew at different heights, the lowest being the graceful Potez 63 twin-engined fighter-bombers. In all, 315 aircraft took part, 45 being British. Air Chief Marshal Sir Cyril Newall, Chief of the Air Staff, left for Hendon later in the day in a Percival Q.6.

Fleet Air Arm News : Military Aviation Abroad

Distinguished Flying Medal

HIS MAJESTY THE KING has been graciously pleased to approve the undermentioned reward for gallant and distinguished service in Palestine:—

Distinguished Flying Medal.—Sgt. Harry John Goodchild.

On May 23, 1939, Sgt Goodchild located armed rebels near Kh. Wazil and took vigorous air action against them in extremely difficult flying country. The fighter machine which he was flying was subjected to heavy fire from dense coverage, and, after several hits, the air-pressure system was put out of action. Sgt. Goodchild, after flying back to Ramleh, returned to the area in another machine and continued his previous tactics of holding the rebels until the arrival of the British ground forces. He displayed great gallantry, daring and flying skill.

Sgt. Goodchild has taken a conspicuous part in a number of major engagements and his name has twice been brought to the notice of the General Officer Commanding, British Forces in Palestine and Trans-Jordan for distinguished conduct.

The Consolidated Arrives

WHAT is undoubtedly a very fine flying boat arrived at the Marine Aircraft Experimental Establishment, Felixstowe, last Friday. Just how fine a craft it is will be ascertained during the next few weeks.

The machine was a Consolidated 28-5 long-range military boat which had flown non-stop from Botwood, Newfoundland, to Felixstowe.

She left the manufacturers' plant at San Diego, California, at 4.23 p.m. G.M.T. last Monday week to fly non-stop the 3,000 miles to Botwood, Newfoundland, but made an intermediate landing at Buffalo as, having had a 30 m.p.h. wind all the way, fuel was

OVER

Consolidated Air

Romeike & Curtice Ltd

Telephone
CENTRAL 2781
(2 Lines)

R & C

35. Shoe Lane
LONDON
E.C.4.

EXTRACT FROM

2 NOV 1939

Aeroplane

Common Sense in Development

THE belief in this War appears to be that air supremacy will belong to the side which has the greatest number of aeroplanes. In the last war, the emphasis was laid rather on performance and armament than on numbers, though numbers obviously had an important influence. In the present War it would be suicidal to ignore development work, however much the nation may concentrate on raising the output of aeroplanes. Great Britain, on recent showing, can claim to be a little ahead of the enemy with its fighter aeroplanes. Our bombers, likewise, have some advantage in the matter of self-defence, and the best of them are probably equal in performance to the best the enemy can put into the air.

Both nations will be engaged forthwith in seeking to do better. Design and production must march in step if there is not to be a lag in performance. The production of thousands of aeroplanes will be partly wasted if they cannot expect to meet the enemy at least on equal terms in the matters of speed, armament, load and range. Rapid development may mean shortening the War. It might certainly mean avoiding heavy losses of men and materials. The contention of the British Aircraft Industry that much time might be saved in the development of new types if the Air Ministry could give it greater freedom and embarrass it with fewer modifications thus acquires a special significance.

That contention receives support from an unexpected quarter. An article we reproduce this week in the Aeronautical Engineering Section on the construction of the new Consolidated flying-boat prototype, shows that Government Departments in the United States can be responsible for just as much delay on such a job as similar Departments in this country. It shows, too, that some of the consequences can be just as serious. Take one remarkable statement of Mr. B. W. Sheahan, one of the chief engineers of the Consolidated Corporation. "We have never," he writes, "had an aeroplane advance from the experimental to the production stage without having out-of-date armament installations."

He goes farther and declares that development has sometimes been so retarded that an aeroplane was often obsolescent by the time it reached production. His company has lately shown what can be done by constructing the prototype Model 31 and getting it flown within ten months. Something of the sort was achieved last year by the de Havilland Co. in building the Flamingo within a year. The latest case is the more striking because the new boat is nearly twice the loaded weight of the Flamingo. How it was done, Mr. Sheahan tells. His description of the time-saving methods will be of interest to everybody concerned with development.

HIGH BIDDING.—Sir Kingsley Wood's incursion into a billet card party during his visit to the R.A.F. in France. Evidently the hosts dealt him a good hand.

But he has perceptive things to say also about those aspects in the control of development by a Government Department which lead to the greatest delay. One of his points is that non-flying features are responsible for most of the conferences, modifications and obstruction. He holds that the armament and interior features might be represented by dummies or ballast, while conferences about them proceed, and that the building of the main structure might go forward without waiting for decisions on those points.

Many an aircraft engineer's heart will warm to Mr. Sheahan. He has done what so few have done—tabulated the causes of delay and proposed methods by which they could be removed. The British Aircraft Industry and the Air Ministry might consider together the advantages to be gained from a system which would allow the development of aircraft and equipment to proceed side by side, without causing either to wait on the other. This is precisely the sort of efficiency which the urgent needs of war should encourage.

The Latest From The N.A.C.A.

THE NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS claims that it has produced a new wing-section which give laminar flow over practically the whole surface.

Dr. G. W. Lewis, Director of the N.A.C.A., who is to deliver the Wilbur Wright Lecture on May 25 (Thursday of this week), spoke of this new section at a recent N.A.C.A. Reception at Langley Field, and claimed a reduction of drag of about 67% by this discovery, but he did not say at what speed.

The announcement of the new N.A.C.A. wing-section may be connected with the release of information about the new two-motor Consolidated Model-31 flying-boat, which had an extremely thin wing for which extraordinary qualities are claimed,—including an increase in maximum speed of about 20% over aeroplanes of the same size with conventional wing-sections.

Although the rumours are probably, as always, exaggerated there is undoubtedly some real point in Dr. Lewis's remarks. Whether the N.A.C.A. is dabbling with some method of boundary layer suction or whether it has made some fundamental discovery to reduce drag is still unknown.

A new low-drag motor-cowling for high-speed aeroplanes, a retractable hydrofoil to help flying-boats to take off, a high-lift low-drag Venetian-blind flap, and petrol injection devices to replace carburetters, were shown at the Reception. The new wing was not.

Two new compressed-air wind-tunnels were opened by Dr. Edward P. Warner, one in which models with spans up to 19 ft. can be tested at wind-speeds of 250 m.p.h., the other a tunnel in which models can be flown freely, operated by remote controls. In both tunnels the engineers actually work in the compressed air and have to be gradually de-compressed, like divers, before they can leave.

A High-Power Allison

A 2,400 H.P. 24-cylinder four-bank liquid-cooled aero-motor has been developed by the Allison Engineering Co., a Division of the General Motors Corp. It is on view in the General Motors Building at the New York's World's Fair.

The new motor is really a combination of two of the earlier Allison 1,200 h.p. 12-cylinder Vee motors on a common crank-case. The centre-lines of the individual Vees are arranged at about 120 degrees to one another but the cylinders are in the upper half of the sector instead of inverted. The dry weight is said to be less than 1 lb. per h.p.

To Wright a Wrong

WITH COMMENDABLE frankness, all to rare in commerce, the Pratt and Whitney people inform us that the 200 North American BT-9 trainers bought for France will not have Pratt and Whitney motors as we said on March 1.

Mr. Norman V. Clements, Advertising and Publicity Manager, says, " We are naturally pleased to see the mention of our equipment in this item but we believe that you will be interested in knowing that the North American airplanes purchased by the French Government are not to be powered by Pratt and Whitney engines.''

What could be fairer? He is a wise father who knows his own child and obviously our French informant on this point was misinformed. We apologise to all concerned.

Rolls-Royce on Clydeside

SIR KINGSLEY WOOD announced in the House of Commons on May 15 that a vast factory for the building of Rolls-Royce aero-motors is to be put up on the Hillingdon Industrial Estate just South-West of Glasgow in Scotland. It will be managed by Rolls-Royce Ltd. on behalf of the Air Ministry. The factory will cost about £4,000,000 and will give employment to about 10,000 men. Scottish firms will be invited to tender.

Rolls-Royce Ltd. have taken over a site of 106 acres. The actual Works will cover about 50 or 60 acres. The rest will be used for recreation grounds or houses. Production should begin in about 12 months and reach a maximum by the beginning of 1941.

This is the biggest engineering development on Clydeside for the past 30 years, and it will be the largest aero-motor factory in the World.

Lord Provost P. J. Dollan, of Glasgow, has for the past six months tried to get work for Clydeside from the Air Ministry. He argues that the West of Scotland is a reservoir of skilled engineers available for aircraft work, and says that the Rolls-Royce factory will be the industrial chance of a lifetime for the people of Clydeside.

A training centre for workmen is to be set up in Glasgow immediately. Boys in the Secondary Schools at Govan, whence much of the labour will be drawn, are to be taught aircraft engineering so that they can be useful in the Rolls-Royce factory and the Maintenance Depot at Abbotsinch. The Air Ministry has supplied aero-motors for instruction in two of the schools. Instruction will be given also to 1,500 of those who are attending junior schools in the South of Glasgow.

Skilled workers must be brought from the Rolls-Royce Works at Derby for a start. Later on Glasgow hopes to supply the whole demand.

More Complications

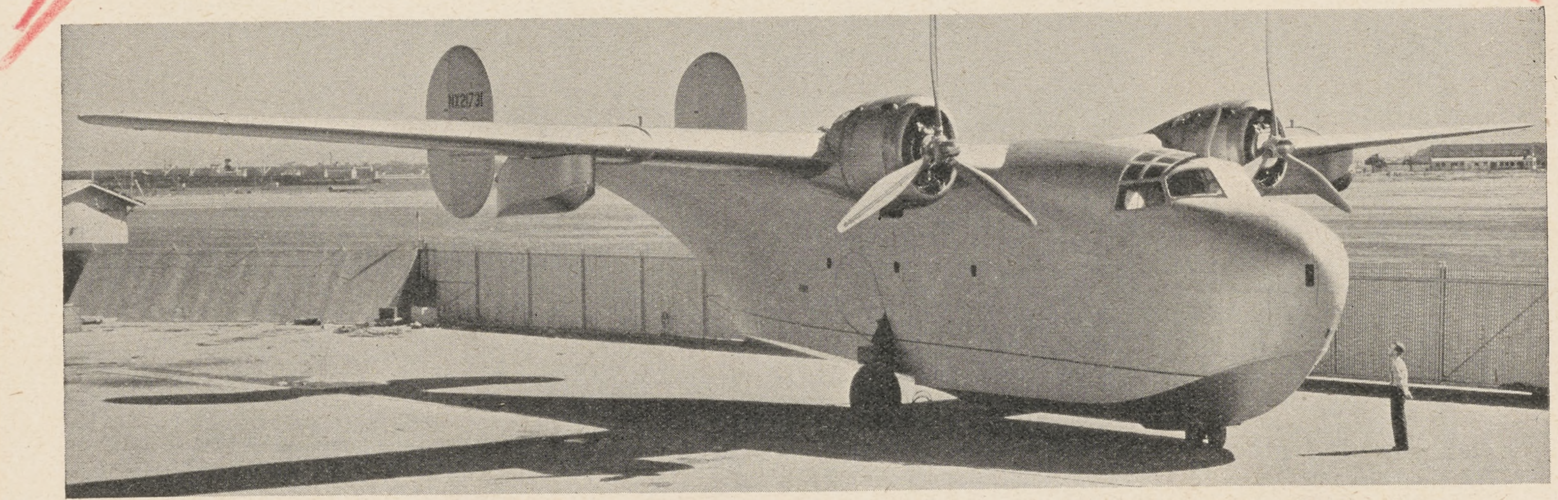
ACCORDING TO A DISPATCH from New York, President Roosevelt before leaving Washington on May 2, told his assembled phalanx of news-hawks that he " Considered a possible air attack in the Caribbean area necessitated an improvement of American defences there.''

As a digger-up of trouble President Roosevelt beats even his predecessor President Wilson. The difference between the two is that whereas President Wilson and his good intentions paved the way for the present Hell in Europe, President Roosevelt seems to be busy digging up the pavement and letting Hell loose.

Just who could attack whom and with what in the Caribbean area will take a bit of working out. Possibly President Roosevelt is thinking of the Mexican Air Force armed with American Grumman airplanes built in Canada bombing the Caribbean end of the Panama Canal. Or perhaps he is afraid that German aeroplanes, operating by collusion with the Netherlands West Indies Colonies from Curaçao may bomb Palm Beach or Miami.

Perhaps President Roosevelt's best and cheapest plan would be to import a section of the Russian Air Force as a Caribbean Air Defence Force.

But seriously, we would really like to know precisely what form of offence President Roosevelt fears in the Caribbean.



AMERICA'S LATEST:—The new Consolidated Flying-Boat Model 31, which has retractable beaching gear, but is not an amphibian. It has two 2,000 h.p. 18 cylinder two-row Wright motors. It weighs 50,000 lb. all up,—which is less than the Short Cabot class. Its alleged speed is more than 300 m.p.h. Rumour says that the wing is the new N.A.C.A. mentioned above.

NOV 6 1939

San Diego Sun 11-14-39

One Minute You're Bouncing Along Water, Next You're High Up In Air—That's Taking Off In Archbold's Guba

Sun Aviation Editor Takes Guest Hop

Guest of Russ Rogers, chief pilot of the Consolidated airboat Guba, on one of its first test hops since completion of four months' overhaul in the local plant, was Harold Keen, The Sun's aviation editor, who recounts his experiences below.—The Editor.

By HAROLD KEEN

The most sweeping, completely unhampered view of San Diego is from the snug compartment where the bombing observer sits at the very tip of a Consolidated patrol plane's nose.

Thoughts like that will run through your mind if you ever get a chance to squeeze into the revolving turret-like glass-enclosed cubicle in the snout of a PBY.

Just aft of you, and on a higher level, are the two poker-faced pilots, above them are twin whirling power plants that hurl waves of thunderous sound against your tender ear drums, and still farther back is the majestic, broad expanse of wing, 104 feet from tip to tip.

VIEW UNIMPEDED

But nothing in front or directly below that tiny perch blocks the vision of the occupant whose job it is to sight his target, then touch the levers from which flash electrical impulses release death loads of bombs carried on the under side of the wing.

All 12 tons of the Consolidated PBY is built for the effective use of this space, which occupies perhaps one-twentieth of the entire airboat's area.

The ordinary civilian can barely get within binocular range of a Navy bomber turret, but, once invited, you can come and go as you please in the world's most famous privately owned seaplane, the Guba.

And we did plenty of squirming into and out of the various compartments that make up this useful ship.

PILOT HELD IN ESTEEM

We learned why Russ Rogers, Mr. Archbold's chief pilot, is recognized, even by the Navy, as one of the most skillful airboat operators in the country.

He doesn't tarry on the takeoff. One instant you're bouncing along, like the world's fastest motorboat, with frothy cascades of water splashing against the turret, and the next you're hundreds of feet in the air. That cruiser that looked so formidable a moment ago now is a model floating in a huge bathtub.

A hatch on the floor of the bomber's-observer compartment is pointed out as the location, in a Navy plane, of the bomb-sight set in glass.

With its aid and that of instruments calculating the speed, drift and altitude of the airboat, the flying mathematician determines the exact moment when to drop any or all of the four 1000-pound bombs—or the two torpedoes—a PBY can carry.

MECHANIC GUIDES

Steve Barrinka, the pleasant young mechanic who kept the Guba's engines in good shape on its Netherlands New Guinea expedition, and on its later trip around the world back to San Diego, acts as guide to the "tourists" who fly the craft.

Far back in the ship, near the tail, he shows you a triangular hatch that opens up to the earth below.

"We dropped hundreds of pounds of supplies through this opening to the inland New Guinea camps of the scientists," he explained, sitting precariously at its edge. He answered the unspoken question. "I couldn't fall out of here if I tried. The air pressure would act like a safety net."

Amidships, in the cargo compartment, sitting on a highchair suspended from the ceiling and intently watching a bewildering array of instruments, is a Consolidated employe. "He's the flight engineer on these test hops," Steve commented. "Those instruments tell him whether the cylinder head temperature is safe, whether the carburetor is being supplied with the correct amount of heat, whether the engines are functioning smoothly."

RADIOMAN AT WORK

In another compartment, just behind the pilots, is a broad table covered with charts for the navigator, and on the opposite side of the narrow aisle, Harold Ramm, the radio operator, is dot-dashing Boston.

"Once, when we were in New Guinea, we contacted that Boston station, 10,000 miles away, and a few minutes later, I had a message through to my wife in Maine," Mr. Barrinka recalls. He claims that as the most distant communication ever effected from an airplane.

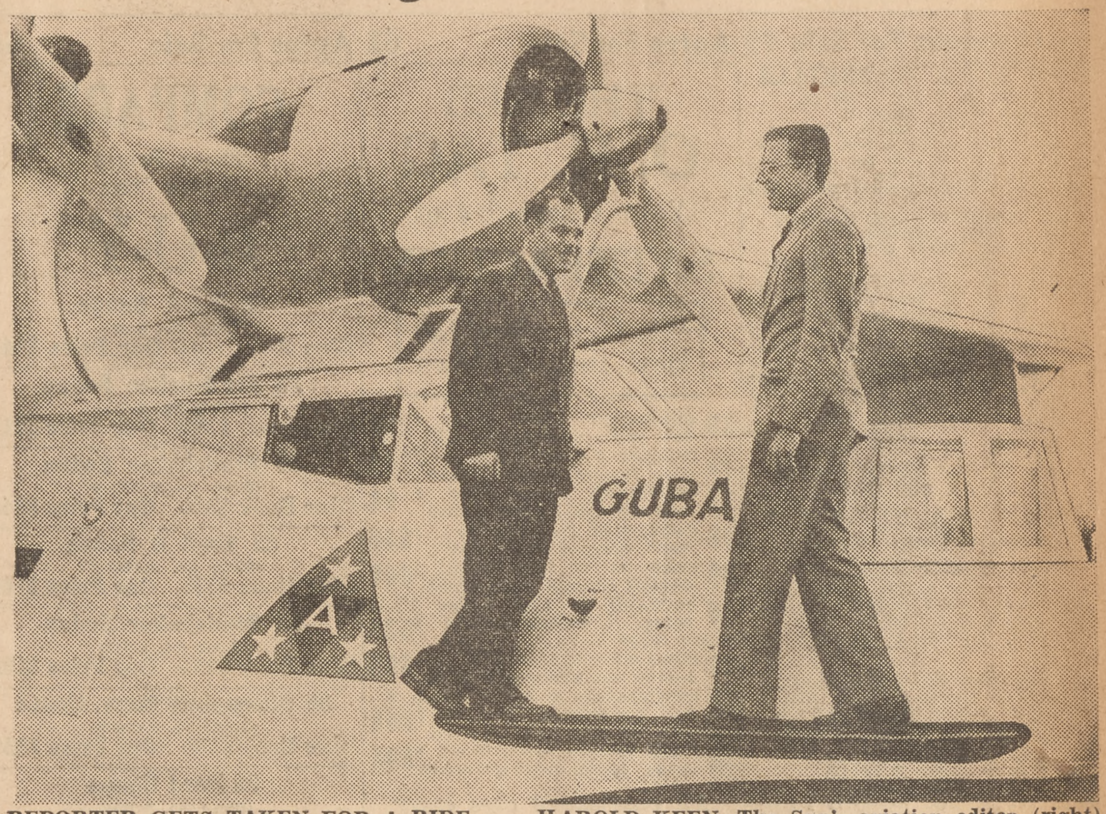
The Guba crew is quite proud of their ship, an exact replica of the Navy's early PBY's. They can point out the fact it is the only plane ever to operate from water at an 11,000 foot elevation, when the motor has little more than half its power available, due to the thin air. That was on Lake Habbema, in New Guinea. It's also the only ship to have flown around the world the longest way—25,000 miles, which included the first flight across the Indian Ocean, on a survey trip for the Australian government.

FOG HORN REQUIRED

Because the Guba is considered no less a vessel than any other surface craft, it must carry a fog horn, bell, and life preservers. There's a collapsible boat for use in emergencies. And a complete galley, with stove and running water. There are four comfortably upholstered leather chairs and bunk space where you can sleep like a log. After you get used to it, the rasping sound from the 1000-hp engines actually lulls you to sleep, says Mr. Barrinka.

Aside from the landings and takeoffs, the Guba in flight is so smooth that your sensations are similar to those of a bus-rider.

Except when, without warning, from a cloud layer on an overcast day such as this particular one, a Navy PBY suddenly dashes out just off your port side, causing even such a veteran aviator as "Red" Harrigan, Lindbergh Field custodian who also went up for the free ride, to whistle.



REPORTER GETS TAKEN FOR A RIDE . . . HAROLD KEEN, The Sun's aviation editor (right), who flew with CHIEF PILOT RUSS ROGERS in the Guba.

ON

Features,

ns

The San Diego Sun

SAN DIEGO, CALIFORNIA, MONDAY, NOVEMBER 6, 1939

Page 7

SECOND SECTION

Classified Advertising, Sports, and Financial News

CONSOLIDATED SET FOR FOREIGN PLANE JOBS

OVER

SERVICE AVIATION (CONTINUED)

beginning to run rather low, but Capt. Rogers says that he could have got to Botwood, though without any reserve petrol. Buffalo is the site of the old Consolidated works.

The boat left Botwood at 2.29 B.S.T. last Thursday afternoon and reached Felixstowe, 2,450 miles away, at 6 a.m. on Friday. Capt. Rogers, in command, did not make straight for Felixstowe, as he understood that machines were flying in the vicinity without lights. The average speed across the Atlantic was about 180 m.p.h. as there was a strong following wind.

The crew was the same as that for the sister machine *Guba*, which recently completed a survey flight of the Indian Ocean: Mr. Russell Rogers, pilot; Capt. Lewis A. Yancey, co-pilot and navigator; Mr. Raymond Boothe, radio operator; and Mr. Gerald Brown, engineer.

A photograph of the machine appears on this page.

Sir Kingsley Wood for Belfast

ACCOMPANIED by senior officers of the Royal Air Force, the Secretary of State for Air will visit the Reserve Units of the R.A.F. in Northern Ireland on Friday and Saturday, July 28 and 29. Sir Kingsley will be the guest of the Prime Minister of Northern Ireland and Viscountess Craigavon, and will discuss with Lord Craigavon the question of recruiting for the Reserve and Auxiliary Units of the R.A.F. in Northern Ireland. On arrival at Belfast Harbour Airport on Friday evening, July 28, Sir Kingsley will drive to the Town Centre of the R.A.F. Volunteer Reserve in Donegall Place. The following morning he will make a tour of the Short and Harland works, where Herefords and Bombays are in production. In the afternoon, with Lord Craigavon, he will attend an air display at the airport in which the local Air Force units and the latest types of Service aircraft will take part. A number of flying boats will fly past, and No. 502 (Ulster) Squadron of the Auxiliary Air Force, returning from its annual camp, will make its ceremonial visit to the City of Belfast to which it is affiliated.

Balloon Squadrons : Minimum Age Limit Raised

WITH a view to assisting the recruitment of young men for the field force units of the Territorial Army and the flying units of the Auxiliary Air Force and Royal Air Force Volunteer Reserve, it has been decided that the lower age limit for entry into the balloon squadrons of the Auxiliary Air Force should, with certain exceptions, be raised from 25 years to 30.

Men under the age of 30 years, however, for whom no vacancies exist in the local flying units of the Auxiliary Air Force or the Royal Air Force Volunteer Reserve or the field units of the Territorial Army, or who are not medically fit for service with field force units, will continue to be eligible for appointment to balloon squadrons.

The New Staff College

"IN this setting will be created a seat of learning, the main objects of which are the preservation of peace and, in case of necessity, as I hope all will realise, the defence of our homes and the principles and ideals which have made England what she is, and the fulfilment of our international obligations," said Air Chief Marshal Sir Cyril Newall when he cut the first turf on the site of the new Royal Air Force Staff College at Ramridge House, Weyhill, on July 15.

Sir Cyril emphasised the value to the youngest of the fighting services of the traditions and ancient historic background of Ramridge House, which dated back to Edward the Confessor. A short appreciation of the Manor of Ramridge, he remarked, appeared in the Domesday Book, and it also had associations with Chaucer. He had no doubt that these connections with ancient traditions, history and art, would be of great value to the Air Force, which was still engaged in building its own traditions and making its own history.

"We may mechanise 100 per cent., but the human element will always remain the predominant factor," he added.

He said that many modifications and additions to the old house would be necessary to make it suitable as a Staff College, but every endeavour would be made to avoid impairing its architectural features. Sir James West, designer of the R.A.F. Cadet College, Cranwell, would be responsible for the various modifications and extensions.

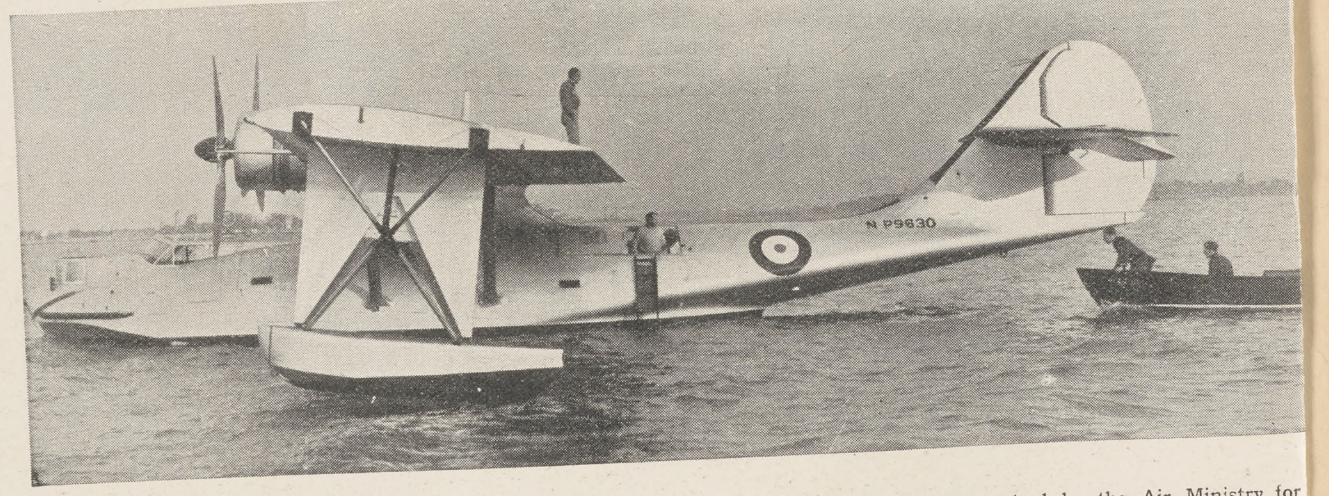
The place where he cut the first turf would be the site of the foundation stone of the new building, to be laid next year.

It was hoped that the new Staff College would be completed by the end of 1941, when it would bear worthy comparison with other public and Service buildings.

Reviewing the history of the present Staff College, Sir Cyril Newall said: "It is over 17 years since the Royal Air Force Staff College was opened in a few war-time huts on Andover aerodrome. I think it is remarkable that throughout that long period it has been possible for instruction to be conducted with such efficiency, bearing in mind the unfavourable conditions under which the college has been working.

"I have heard on numerous occasions from officers of the other Services who have had the privilege of attending our courses at Andover of the great value which they have derived, and that the courses are always regarded as the most instructive and progressive of any of the similar institutions in the country.

"It is not easy to teach or to learn unless conditions and surroundings are favourable to concentration and research, but in this future home at Ramridge Manor both instructors and pupils will be able to work in an atmosphere of quiet and dignified beauty conditions far more appropriate to a seat of learning than hutments with aeroplanes taking off and landing nearby at frequent intervals."



WELCOME STRANGER : The American Consolidated 28-5 flying boat which has been acquired by the Air Ministry for experimental work and which was delivered by air last week. It is said to have a range, with a small military load, of over 4,000 miles. The stabilising floats retract outward and upward to form wing-tips.

Consolidated Air

country. It shows, too, that some of the consequences can be just as serious. Take one remarkable statement of Mr. B. W. Sheahan, one of the chief engineers of the Consolidated Corporation. "We have never," he writes, "had an aeroplane advance from the experimental to the production stage without having out-of-date armament installations."

He goes farther and declares that development has sometimes been so retarded that an aeroplane was often obsolescent by the time it reached production. His company has lately shown what can be done by constructing the prototype Model 31 and getting it flown within ten months. Something of the sort was achieved last year by the de Havilland Co. in building the Flamingo within a year. The latest case is the more striking because the new boat is nearly twice the loaded weight of the Flamingo. How it was done, Mr. Sheahan tells. His description of the time-saving methods will be of interest to everybody concerned with development.

HIGH BIDDING.—Sir Kingsley Wood's incursion into a billet card party during his visit to the R.A.F. in France. Evidently the hosts dealt him a good hand.

But he has perceptive things to say also about those aspects in the control of development by a Government Department which lead to the greatest delay. One of his points is that non-flying features are responsible for most of the conferences, modifications and obstruction. He holds that the armament and interior features might be represented by dummies or ballast, while conferences about them proceed, and that the building of the main structure might go forward without waiting for decisions on those points.

Many an aircraft engineer's heart will warm to Mr. Sheahan. He has done what so few have done—tabulated the causes of delay and proposed methods by which they could be removed. The British Aircraft Industry and the Air Ministry might consider together the advantages to be gained from a system which would allow the development of aircraft and equipment to proceed side by side, without causing either to wait on the other. This is precisely the sort of efficiency which the urgent needs of war should encourage.

The Latest From The N.A.C.A.

THE NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS claims that it has produced a new wing-section which give laminar flow over practically the whole surface.

Dr. G. W. Lewis, Director of the N.A.C.A., who is to deliver the Wilbur Wright Lecture on May 25 (Thursday of this week), spoke of this new section at a recent N.A.C.A. Reception at Langley Field, and claimed a reduction of drag of about 67% by this discovery, but he did not say at what speed.

The announcement of the new N.A.C.A. wing-section may be connected with the release of information about the new two-motor Consolidated Model-31 flying-boat, which had an extremely thin wing for which extraordinary qualities are claimed,—including an increase in maximum speed of about 20% over aeroplanes of the same size with conventional wing-sections.

Although the rumours are probably, as always, exaggerated there is undoubtedly some real point in Dr. Lewis's remarks. Whether the N.A.C.A. is dabbling with some method of boundary layer suction or whether it has made some fundamental discovery to reduce drag is still unknown.

A new low-drag motor-cowling for high-speed aeroplanes, a retractable hydrofoil to help flying-boats to take off, a high-lift low-drag Venetian-blind flap, and petrol injection devices to replace carburetters, were shown at the Reception. The new wing was not.

Two new compressed-air wind-tunnels were opened by Dr. Edward P. Warner, one in which models with spans up to 19 ft. can be tested at wind-speeds of 250 m.p.h., the other a tunnel in which models can be flown freely, operated by remote controls. In both tunnels the engineers actually work in the compressed air and have to be gradually de-compressed, like divers, before they can leave.

A High-Power Allison

A 2,400 H.P. 24-cylinder four-bank liquid-cooled aero-motor has been developed by the Allison Engineering Co., a Division of the General Motors Corp. It is on view in the General Motors Building at the New York's World's Fair.

The new motor is really a combination of two of the earlier Allison 1,200 h.p. 12-cylinder Vee motors on a common crank-case. The centre-lines of the individual Vees are arranged at about 120 degrees to one another but the cylinders are in the upper half of the sector instead of inverted. The dry weight is said to be less than 1 lb. per h.p.

To Wright a Wrong

WITH COMMENDABLE frankness, all to rare in commerce, the Pratt and Whitney people inform us that the 200 North American BT-9 trainers bought for France will not have Pratt and Whitney motors as we said on March 1.

Mr. Norman V. Clements, Advertising and Publicity Manager, says, " We are naturally pleased to see the mention of our equipment in this item but we believe that you will be interested in knowing that the North American airplanes purchased by the French Government are not to be powered by Pratt and Whitney engines."

What could be fairer? He is a wise father who knows his own child and obviously our French informant on this point was misinformed. We apologise to all concerned.

Rolls-Royce on Clydeside

SIR KINGSLEY WOOD announced in the House of Commons on May 15 that a vast factory for the building of Rolls-Royce aero-motors is to be put up on the Hillingdon Industrial Estate just South-West of Glasgow in Scotland. It will be managed by Rolls-Royce Ltd. on behalf of the Air Ministry. The factory will cost about £4,000,000 and will give employment to about 10,000 men. Scottish firms will be invited to tender.

Rolls-Royce Ltd. have taken over a site of 106 acres. The actual Works will cover about 50 or 60 acres. The rest will be used for recreation grounds or houses. Production should begin in about 12 months and reach a maximum by the beginning of 1941.

This is the biggest engineering development on Clydeside for the past 30 years, and it will be the largest aero-motor factory in the World.

Lord Provost P. J. Dollan, of Glasgow, has for the past six months tried to get work for Clydeside from the Air Ministry. He argues that the West of Scotland is a reservoir of skilled engineers available for aircraft work, and says that the Rolls-Royce factory will be the industrial chance of a lifetime for the people of Clydeside.

A training centre for workmen is to be set up in Glasgow immediately. Boys in the Secondary Schools at Govan, whence much of the labour will be drawn, are to be taught aircraft engineering so that they can be useful in the Rolls-Royce factory and the Maintenance Depot at Abbotsinch. The Air Ministry has supplied aero-motors for instruction in two of the schools. Instruction will be given also to 1,500 of those who are attending junior schools in the South of Glasgow.

Skilled workers must be brought from the Rolls-Royce Works at Derby for a start. Later on Glasgow hopes to supply the whole demand.

More Complications

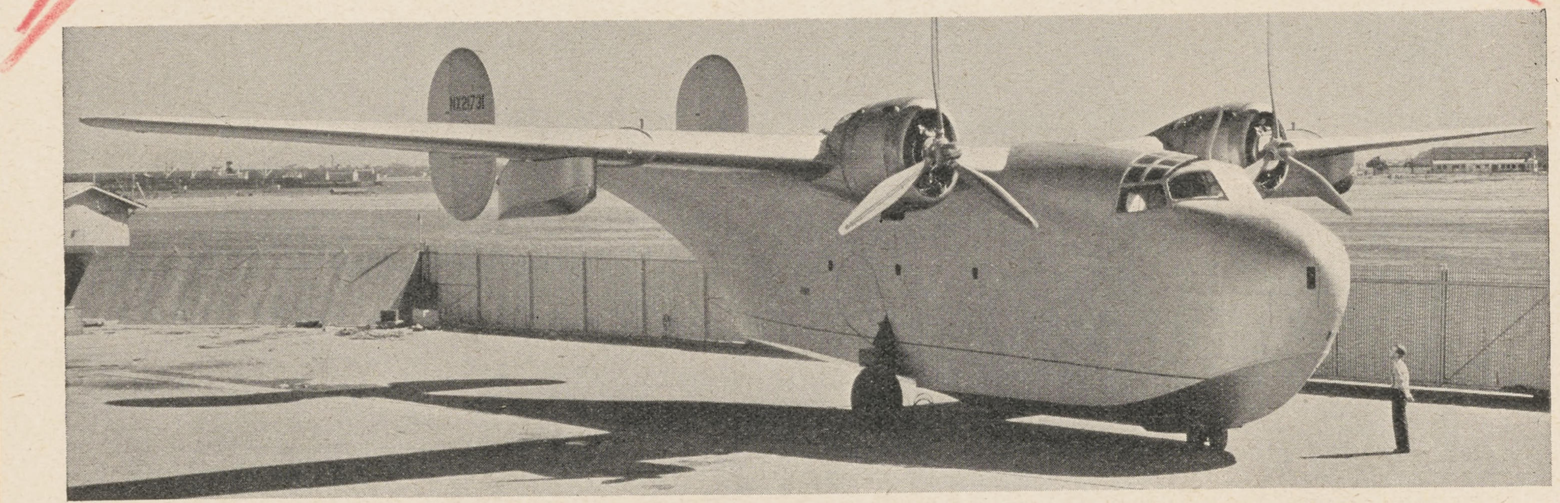
ACCORDING TO A DISPATCH from New York, President Roosevelt before leaving Washington on May 2, told his assembled phalanx of news-hawks that he " Considered a possible air attack in the Caribbean area necessitated an improvement of American defences there."

As a digger-up of trouble President Roosevelt beats even his predecessor President Wilson. The difference between the two is that whereas President Wilson and his good intentions paved the way for the present Hell in Europe, President Roosevelt seems to be busy digging up the pavement and letting Hell loose.

Just who could attack whom and with what in the Caribbean area will take a bit of working out. Possibly President Roosevelt is thinking of the Mexican Air Force armed with American Grumman airplanes built in Canada bombing the Caribbean end of the Panama Canal. Or perhaps he is afraid that German aeroplanes, operating by collusion with the Netherlands West Indies Colonies from Curaçao may bomb Palm Beach or Miami.

Perhaps President Roosevelt's best and cheapest plan would be to import a section of the Russian Air Force as a Caribbean Air Defence Force.

But seriously, we would really like to know precisely what form of offence President Roosevelt fears in the Caribbean.



AMERICA'S LATEST:—The new Consolidated Flying-Boat Model 31, which has retractable beaching gear, but is not an amphibian. It has two 2,000 h.p. 18 cylinder two-row Wright motors. It weighs 50,000 lb. all up,—which is less than the Short Cabot class. Its alleged speed is more than 300 m.p.h. Rumour says that the wing is the new N.A.C.A. mentioned above.

NOV 6 1939

THE SAN DIEGO SUN

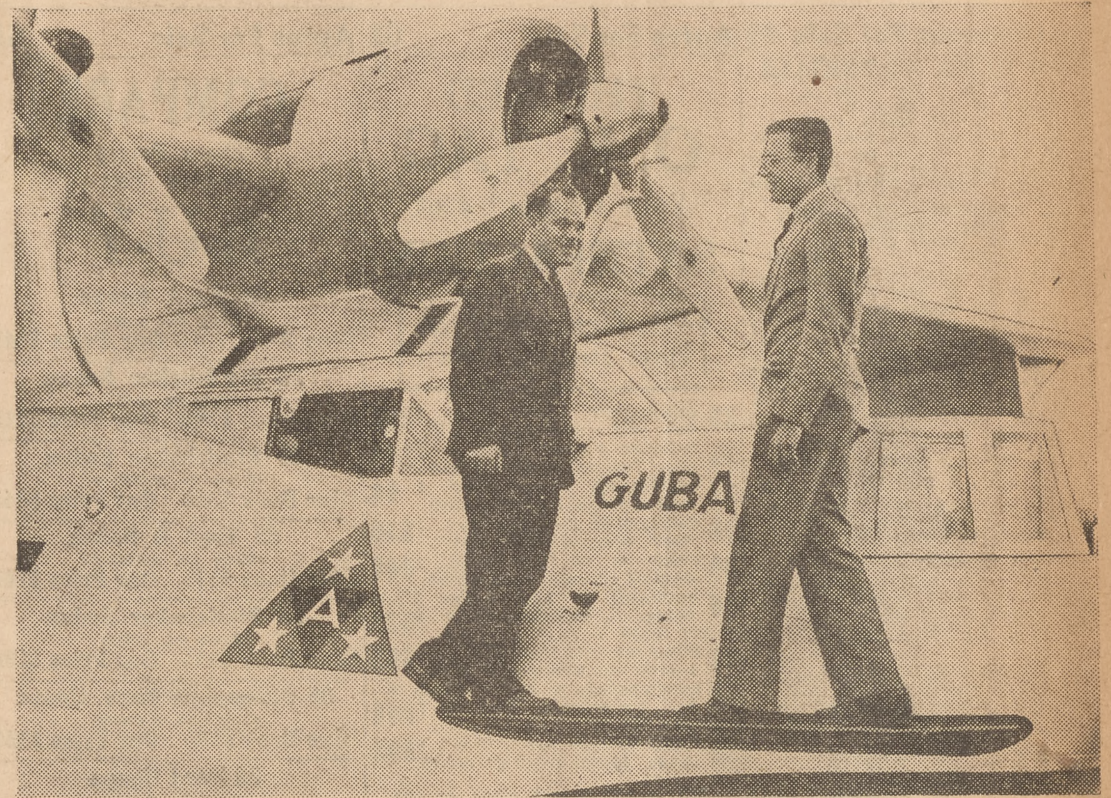
San Diego Sun 11-14-39

One Minute You're Bouncing Along Water, Next You're High Up In Air—That's Taking Off In Archbold's Guba

Sun Aviation Editor Takes Guest Hop

Guest of Russ Rogers, chief pilot of the Consolidated airboat Guba, on one of its first test hops since completion of four months' overhaul in the local plant, was Harold Keen, The Sun's aviation editor, who recounts his experiences below.—The Editor.

By HAROLD KEEN



REPORTER GETS TAKEN FOR A RIDE . . . HAROLD KEEN, The Sun's aviation editor (right), who flew with CHIEF PILOT RUSS ROGERS in the Guba.

The most sweeping, completely unhampered view of San Diego is from the snug compartment where the bombing observer sits at the very tip of a Consolidated patrol plane's nose.

Thoughts like that will run through your mind if you ever get a chance to squeeze into the revolving turret-like glass-enclosed cubicle in the snout of a PBY.

Just aft of you, and on a higher level, are the two poker-faced pilots, above them are twin whirling power plants that hurl waves of thunderous sound against your tender ear drums, and still farther back is the majestic, broad expanse of wing, 104 feet from tip to tip.

VIEW UNIMPEDED

But nothing in front or directly below that tiny perch blocks the vision of the occupant whose job it is to sight his target, then touch the levers from which flash electrical impulses release death loads of bombs carried on the under side of the wing.

All 12 tons of the Consolidated PBY is built for the effective use of this space, which occupies perhaps one-twentieth of the entire airboat's area.

The ordinary civilian can barely get within binocular range of a Navy bomber turret, but, once invited, you can come and go as you please in the world's most famous privately owned seaplane, the Guba.

And we did plenty of squirming into and out of the various compartments that make up this useful ship.

PILOT HELD IN ESTEEM

We learned why Russ Rogers, Mr. Archbold's chief pilot, is recognized, even by the Navy, as one of the most skillful airboat operators in the country.

He doesn't tarry on the takeoff. One instant you're bouncing along, like the world's fastest motorboat, with frothy cascades of water splashing against the turret, and the next you're hundreds of feet in the air. That cruiser that looked so formidable a moment ago now is a model floating in a huge bathtub.

A hatch on the floor of the bomber's-observer compartment is pointed out as the location, in a Navy plane, of the bomb-sight set in glass.

With its aid and that of instruments calculating the speed, drift and altitude of the airboat, the flying mathematician determines the exact moment when to drop any or all of the four 1000-pound bombs—or the two torpedoes—a PBY can carry.

MECHANIC GUIDES

Steve Barrinka, the pleasant young mechanic who kept the Guba's engines in good shape on its Netherlands New Guinea expedition, and on its later trip around the world back to San Diego, acts as guide to the "tourists" who fly the craft.

Far back in the ship, near the tail, he shows you a triangular hatch that opens up to the earth below.

"We dropped hundreds of pounds of supplies through this opening to the inland New Guinea camps of the scientists," he explained, sitting precariously at its edge. He answered the unspoken question. "I couldn't fall out of here if I tried. The air pressure would act like a safety net."

Amidships, in the cargo compartment, sitting on a highchair suspended from the ceiling and intently watching a bewildering array of instruments, is a Consolidated employe. "He's the flight engineer on these test hops," Steve commented. "Those instruments tell him whether the cylinder head temperature is safe, whether the carburetor is being supplied with the correct amount of heat, whether the engines are functioning smoothly."

RADIOMAN AT WORK

In another compartment, just behind the pilots, is a broad table covered with charts for the navigator, and on the opposite side of the narrow aisle, Harold Ramm, the radio operator, is dot-dashing Boston.

"Once, when we were in New Guinea, we contacted that Boston station, 10,000 miles away, and a few minutes later, I had a message through to my wife in Maine," Mr. Barrinka recalls. He claims that as the most distant communication ever effected from an airplane.

The Guba crew is quite proud of their ship, an exact replica of the Navy's early PBY's. They can point out the fact it is the only plane ever to operate from water at an 11,000 foot elevation, when the motor has little more than half its power available, due to the thin air. That was on Lake Habbema, in New Guinea. It's also the only ship to have flown around the world the longest way—25,000 miles, which included the first flight across the Indian Ocean, on a survey trip for the Australian government.

FOG HORN REQUIRED

Because the Guba is considered no less a vessel than any other surface craft, it must carry a fog horn, bell, and life preservers. There's a collapsible boat for use in emergencies. And a complete galley, with stove and running water. There are four comfortably upholstered leather chairs and bunk space where you can sleep like a log. After you get used to it, the rasping sound from the 1000-hp engines actually lulls you to sleep, says Mr. Barrinka.

Aside from the landings and takeoffs, the Guba in flight is so smooth that your sensations are similar to those of a bus-rider.

Except when, without warning, from a cloud layer on an overcast day such as this particular one, a Navy PBY suddenly dashes out just off your port side, causing even such a veteran aviator as "Red" Harrigan, Lindbergh Field custodian who also went up for the free ride, to whistle.

ON

Features,

ns

The San Diego Sun

SAN DIEGO, CALIFORNIA, MONDAY, NOVEMBER 6, 1939

CONSOLIDATED SET FOR FOREIGN PLA

SECRET ORDERS FOR 250 WAR CRAFT DENIED

Firm Only One Whose Machines Could Fly Atlantic Safely

By HAROLD KEEN
Aviation Editor.

While scoffing at reports that the company had secret orders from both England and France, Consolidated Aircraft Corp. officials today emphasized that their concern is probably the only manufacturer in the United States all of whose products could be delivered over any ocean in the world.

The Consair executives categorically denied that foreign orders were already on the books and had only awaited the arms embargo repeal to signal full speed ahead on actual production.

Announcement in a recent aviation trade journal that the San Diego company had a contract for 250 planes for Great Britain was described as inaccurate.

DELIVERY RECALLED

Significant in connection with any reports of aircraft work for England is the delivery, several months ago, of a PBY-type patrol bomber to the Royal Air Force on a flight across the United States to Botwood, Newfoundland, and across the Atlantic to Britain.

In this manner was dramatically illustrated the possibility of ferrying whole fleets of bombers to distant shores—a valuable feature to be considered by foreign governments buying in the United States. Submarines cannot sink airplanes delivered by air.

CITE GUBA FLIGHT

Flight of the Guba, Richard Archbold's Consolidated seaplane, over every major water body in the world on his globe-girdling jaunt which ended last July, is also used by Consolidated officials as a selling point.

It was learned that inquiries which may lead to orders from foreign governments have been made at the Consolidated plant.

With the European field now left open, the San Diego concern is expected to compete with all other manufacturers in attempting to meet the demand for new planes.

SPUR TO BUSINESS

Just how the regulation requiring cargoes to belligerent nations to be shipped in foreign bottoms would affect the method of trans-oceanic delivery by air is a matter for attorneys to study, Consolidated officials said.

That lifting of the embargo will inevitably spur local airplane business was foreseen here. Solar and Ryan plants supply parts for factories in the Los Angeles area which have millions of dollars worth of contracts to fulfill with England and France.

SERVICE AVIATION

"MONOPLACES DE CHASSE CRACHE FEU": Spitfire eight-gun fighters of the squadron which in company with formations of Hurricanes, Blenheims, Hampdens and Wellingtons represented Great Britain in the great parade of aerial and terrestrial might staged in Paris last week.

Royal Air Force and Official Announcements : *Fleet Air Arm News : Military Aviation Abroad*

Higher Appointment

THE Air Ministry announces the appointment of Group Capt. John Walter Cordingley, C.B.E., to assume the duties of Director of Manning, Air Ministry, with effect from July 17.

Group Captain Cordingley, who was born in 1890, joined the Royal Naval Volunteer Reserve in 1905 and in 1918 was appointed to the rank of Major in the Royal Air Force, assuming the duties of Staff Officer, Class 2, in the Directorate of Manning at the Air Ministry.

He was awarded the O.B.E. in 1919, and in the same year was granted a permanent commission in the Royal Air Force with the rank of Squadron Leader. Since 1922 he has been in command of the Record Office, Ruislip, and in the Birthday Honours List of 1937 was promoted to C.B.E.

He was promoted to the rank of Wing Commander in 1924, and to his present rank in 1931.

As Director of Manning he will be responsible to the Air Member for Personnel for planning the man-power requirements of the R.A.F. and for the executive control of recruitment for the R.A.F. and for the Volunteer and Regular Reserves.

R.A.F. Flight Over France

FOLLOWING on the display by Wellingtons and a Hurricane at Evere, on Tuesday, July 11, twelve squadrons of Wellingtons, Hampdens, Blenheims and Battles, numbering in all over 100 aircraft, started off at 08.00 hours from their home stations in the Midlands for a flight over France, which had been arranged by agreement with the French Government.

The long-range craft followed the route Havre, Le Mans, Samur, Bordeaux, Angers, Caen, and so back to England, a non-stop flight of about 1,200 miles. The others followed the route Le Treport, Orleans, Le Mans, and crossed the coast near Cherbourg on their way home, a total of nearly 900 miles. All flew at a height of 2,000 metres (6,500ft.), except when over the larger towns, when they came down to 1,000 metres (3,250ft.) in order to show themselves off to the inhabitants. All the machines returned safely to their home stations. Similar flights are to be made this week.

The arrangement is that French squadrons shall pay a return visit by making a flight over Great Britain—probably it will take place this week.

The Paris Demonstration

ONE squadron each of Spitfires, Hurricanes, Blenheims, Hampdens and Wellingtons joined with Morane 406s, Curtiss P.35s, Potez 63s, Breguet 691s, Bloch 131s and Liore 45s of the French Air Force in a fly-past over Paris preceding the parade in the Champs Elysées last Friday. The fly-past was led by a single-Morane 406, piloted by General d'Harcourt, Inspector-General of the French fighter force. In the first place it was intended that the British fighters should lead, but it was thought that they might experience some difficulty in keeping formation at 175 m.p.h., which was the agreed speed. Instead, the British bombers were in the vanguard, the Spitfires and Hurricanes bringing up the rear and demonstrating their speed by passing the main body as it flew along the Champs Elysées. The squadrons flew at different heights, the lowest being the graceful Potez 63 twin-engined fighter-bombers. In all, 315 aircraft took part, 45 being British. Air Chief Marshal Sir Cyril Newall, Chief of the Air Staff, left for Hendon later in the day in a Percival Q.6.

Distinguished Flying Medal

HIS MAJESTY THE KING has been graciously pleased to approve the undermentioned reward for gallant and distinguished service in Palestine:—

Distinguished Flying Medal.—Sgt. Harry John Goodchild.

On May 23, 1939, Sgt Goodchild located armed rebels near Kh. Wazil and took vigorous air action against them in extremely difficult flying country. The fighter machine which he was flying was subjected to heavy fire from dense coverage, and, after several hits, the air-pressure system was put out of action. Sgt. Goodchild, after flying back to Ramleh, returned to the area in another machine and continued his previous tactics of holding the rebels until the arrival of the British ground forces. He displayed great gallantry, daring and flying skill.

Sgt. Goodchild has taken a conspicuous part in a number of major engagements and his name has twice been brought to the notice of the General Officer Commanding, British Forces in Palestine and Trans-Jordan for distinguished conduct.

The Consolidated Arrives

WHAT is undoubtedly a very fine flying boat arrived at the Marine Aircraft Experimental Establishment, Felixstowe, last Friday. Just how fine a craft it is will be ascertained during the next few weeks.

The machine was a Consolidated 28-5 long-range military boat which had flown non-stop from Botwood, Newfoundland, to Felixstowe.

She left the manufacturers' plant at San Diego, California, at 4.23 p.m. G.M.T. last Monday week to fly non-stop the 3,000 miles to Botwood, Newfoundland, but made an intermediate landing at Buffalo as, having had a 30 m.p.h. wind all the way, fuel was

OVER

Germany and the Netherlands

Stubborn little nat[illegible] in the W[illegible] e enclosing and restricting the Nazis t[illegible] far more [illegible] ie Polish corridor and the stubborn P[illegible] State pr[illegible] the Nazi Reich from inflating its [illegible] and blowin[illegible] its cheeks. All the forces that go out against the British must go out over the widest part of the North Sea. If their objective is anywhere south of Yarmouth, they must move first westwards and then must change course towards the south-west. And the British Navy, aware of this, can lay its plans accordingly. When its scouts report movement, there is still a margin of time in which to array the defences. If the Nazi forces were able to move out of a Netherlands port, the margin would be halved.

Holland is apprehensive and alarmed with good cause. In the last war the Netherlands saw the devastation of Belgium but had no share, except the profitable one of a trading neutral, in other people's quarrels. But on that occasion the main objective of the Germans was France and the Channel ports. This time, the principal enemy is England. Fortified lines have forestalled any plan for a dash to Calais. The nearest way to England is also the easiest way. Holland has no formidable system of defences. Belgium is better prepared. Neither has an air force

EDWIN COLSTO
B.A., B.Litt

IATTERS C

The War

ARMAMENTS can now be had from the United States if Great Britain can pay for them and transport them. Supplies can still be obtained from other neutrals if they can be got into the country. Similar goods, commodities, arms and supplies can be kept out of Germany in large measure as long as the Navy remains strong enough and active enough to pursue its scheme of intercepting contraband. The Soviets may protest, but they have no opportunity to do anything about it, except perhaps to use the grievance as excuse for some fresh acquisitive operations of their own. The Nazis, passing beyond fulmination, are doing all they can to oppose it.

Battleships, submarines and aeroplanes are being thrown into this war of supplies. The sinews of war have become more decisive than war itself. Battles are still, as they have always been, a means to an end. The end used to be the domination of an enemy Power by military force. Now the end is approached in two stages. The first seeks to deprive the enemy of the means of war so that the second stage may be swift and inexpensive or unnecessary and superfluous. The battles of to-day are for cargoes and credits rather than for redoubts and railheads.

Feathering the Nest

The non-combatants sit by, while the belligerents struggle for what they need and pay high prices for it. The Soviets get their gains from the Nazis for a bag of gold which looks big but is a fraction of what those gains might have cost in the course of war. Turkey receives a loan from the Allies as the reward of good faith. Italy mops up German trade in the Balkans. The Scandinavian countries pour what they can into the shopping baskets of both sides. The United States, shocked at the vicious misdeeds of a degenerate Europe and scared of their repercussions in a saner continent, agrees after pious consideration to accept Europe's trade and no responsibilities.

The World is open to the war of supplies. All that remains to the belligerents is to destroy or capture them before they can be delivered and to interfere with their manufacture or exploitation at the point of delivery. That in turn must determine the strategy of the War. Nerves have proved stronger than the gangster chief of the Nazis believed. Loyalties, incomprehensible to one who never troubled to honour his bond, have endured far beyond his calculations. Resolution among people, who abhorred the thought of war, has shown itself proof against the temptation of easy if procrastinate relief. Threats come too late to the man who is stripped and ready to meet blows.

Skimming the cream off the Nazi imports may be counted

The Latest From The N.A.C.A.

THE NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS claims that it has produced a new wing-section which give laminar flow over practically the whole surface.

Dr. G. W. Lewis, Director of the N.A.C.A., who is to deliver the Wilbur Wright Lecture on May 25 (Thursday of this week), spoke of this new section at a recent N.A.C.A. Reception at Langley Field, and claimed a reduction of drag of about 67% by this discovery, but he did not say at what speed.

The announcement of the new N.A.C.A. wing-section may be connected with the release of information about the new two-motor Consolidated Model-31 flying-boat, which had an extremely thin wing for which extraordinary qualities are claimed,—including an increase in maximum speed of about 20% over aeroplanes of the same size with conventional wing-sections.

Although the rumours are probably, as always, exaggerated there is undoubtedly some real point in Dr. Lewis's remarks. Whether the N.A.C.A. is dabbling with some method of boundary layer suction or whether it has made some fundamental discovery to reduce drag is still unknown.

A new low-drag motor-cowling for high-speed aeroplanes, a retractable hydrofoil to help flying-boats to take off, a high-lift low-drag Venetian-blind flap, and petrol injection devices to replace carburetters, were shown at the Reception. The new wing was not.

Two new compressed-air wind-tunnels were opened by Dr. Edward P. Warner, one in which models with spans up to 19 ft. can be tested at wind-speeds of 250 m.p.h., the other a tunnel in which models can be flown freely, operated by remote controls. In both tunnels the engineers actually work in the compressed air and have to be gradually de-compressed, like divers, before they can leave.

A High-Power Allison

A 2,400 H.P. 24-cylinder four-bank liquid-cooled aero-motor has been developed by the Allison Engineering Co., a Division of the General Motors Corp. It is on view in the General Motors Building at the New York's World's Fair.

The new motor is really a combination of two of the earlier Allison 1,200 h.p. 12-cylinder Vee motors on a common crank-case. The centre-lines of the individual Vees are arranged at about 120 degrees to one another but the cylinders are in the upper half of the sector instead of inverted. The dry weight is said to be less than 1 lb. per h.p.

To Wright a Wrong

WITH COMMENDABLE frankness, all to rare in commerce, the Pratt and Whitney people inform us that the 200 North American BT-9 trainers bought for France will not have Pratt and Whitney motors as we said on March 1.

Mr. Norman V. Clements, Advertising and Publicity Manager, says, " We are naturally pleased to see the mention of our equipment in this item but we believe that you will be interested in knowing that the North American airplanes purchased by the French Government are not to be powered by Pratt and Whitney engines."

What could be fairer? He is a wise father who knows his own child and obviously our French informant on this point was misinformed. We apologise to all concerned.

Rolls-Royce on Clydeside

SIR KINGSLEY WOOD announced in the House of Commons on May 15 that a vast factory for the building of Rolls-Royce aero-motors is to be put up on the Hillingdon Industrial Estate just South-West of Glasgow in Scotland. It will be managed by Rolls-Royce Ltd. on behalf of the Air Ministry. The factory will cost about £4,000,000 and will give employment to about 10,000 men. Scottish firms will be invited to tender.

Rolls-Royce Ltd. have taken over a site of 106 acres. The actual Works will cover about 50 or 60 acres. The rest will be used for recreation grounds or houses. Production should begin in about 12 months and reach a maximum by the beginning of 1941.

This is the biggest engineering development on Clydeside for the past 30 years, and it will be the largest aero-motor factory in the World.

Lord Provost P. J. Dollan, of Glasgow, has for the past six months tried to get work for Clydeside from the Air Ministry. He argues that the West of Scotland is a reservoir of skilled engineers available for aircraft work, and says that the Rolls-Royce factory will be the industrial chance of a lifetime for the people of Clydeside.

A training centre for workmen is to be set up in Glasgow immediately. Boys in the Secondary Schools at Govan, whence much of the labour will be drawn, are to be taught aircraft engineering so that they can be useful in the Rolls-Royce factory and the Maintenance Depot at Abbotsinch. The Air Ministry has supplied aero-motors for instruction in two of the schools. Instruction will be given also to 1,500 of those who are attending junior schools in the South of Glasgow.

Skilled workers must be brought from the Rolls-Royce Works at Derby for a start. Later on Glasgow hopes to supply the whole demand.

More Complications

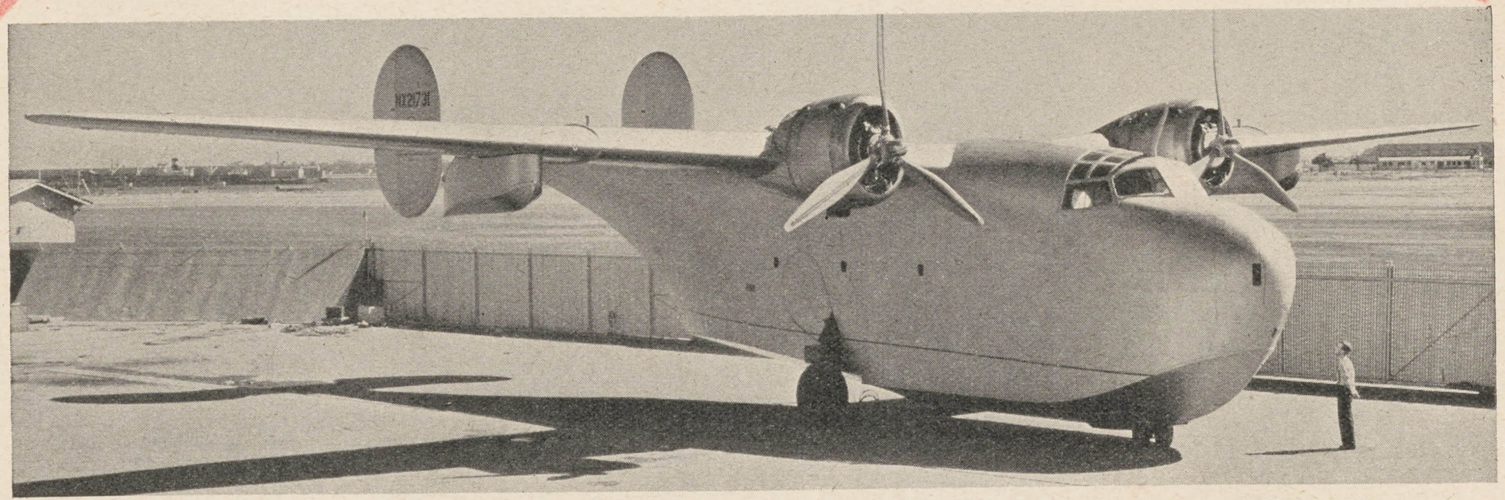
ACCORDING TO A DISPATCH from New York, President Roosevelt before leaving Washington on May 2, told his assembled phalanx of news-hawks that he " Considered a possible air attack in the Caribbean area necessitated an improvement of American defences there."

As a digger-up of trouble President Roosevelt beats even his predecessor President Wilson. The difference between the two is that whereas President Wilson and his good intentions paved the way for the present Hell in Europe, President Roosevelt seems to be busy digging up the pavement and letting Hell loose.

Just who could attack whom and with what in the Caribbean area will take a bit of working out. Possibly President Roosevelt is thinking of the Mexican Air Force armed with American Grumman airplanes built in Canada bombing the Caribbean end of the Panama Canal. Or perhaps he is afraid that German aeroplanes, operating by collusion with the Netherlands West Indies Colonies from Curaçao may bomb Palm Beach or Miami.

Perhaps President Roosevelt's best and cheapest plan would be to import a section of the Russian Air Force as a Caribbean Air Defence Force.

But seriously, we would really like to know precisely what form of offence President Roosevelt fears in the Caribbean.



AMERICA'S LATEST:—The new Consolidated Flying-Boat Model 31, which has retractable beaching gear, but is not an amphibian. It has two 2,000 h.p. 18 cylinder two-row Wright motors. It weighs 50,000 lb. all up,—which is less than the Short Cabot class. Its alleged speed is more than 300 m.p.h. Rumour says that the wing is the new N.A.C.A. mentioned above.

NOV 6 1939

San Diego Sun 11-14-39

One Minute You're Bouncing Along Water, Next You're High Up In Air—That's Taking Off In Archbold's Guba

Sun Aviation Editor Takes Guest Hop

Guest of Russ Rogers, chief pilot of the Consolidated airboat Guba, on one of its first test hops since completion of four months' overhaul in the local plant, was Harold Keen, The Sun's aviation editor, who recounts his experiences below.—The Editor.

By HAROLD KEEN

The most sweeping, completely unhampered view of San Diego is from the snug compartment where the bombing observer sits at the very tip of a Consolidated patrol plane's nose.

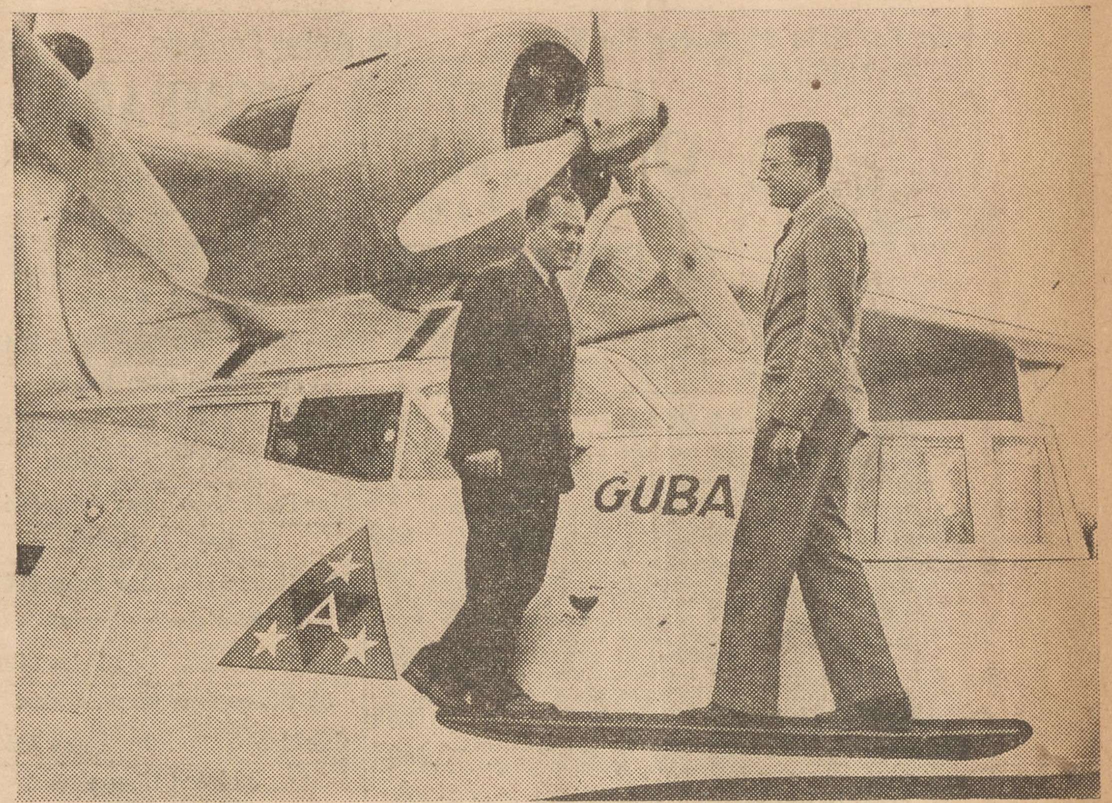
Thoughts like that will run through your mind if you ever get a chance to squeeze into the revolving turret-like glass-enclosed cubicle in the snout of a PBY.

Just aft of you, and on a higher level, are the two poker-faced pilots, above them are twin whirling power plants that hurl waves of thunderous sound against your tender ear drums, and still farther back is the majestic, broad expanse of wing, 104 feet from tip to tip.

VIEW UNIMPEDED

But nothing in front or directly below that tiny perch blocks the vision of the occupant whose job it is to sight his target, then touch the levers from which flash electrical impulses release death loads of bombs carried on the under side of the wing.

All 12 tons of the Consolidated PBY is built for the effective use of this space, which occupies perhaps one-twentieth of the entire airboat's area.



REPORTER GETS TAKEN FOR A RIDE . . . HAROLD KEEN, The Sun's aviation editor (right), who flew with CHIEF PILOT RUSS ROGERS in the Guba.

The ordinary civilian can barely get within binocular range of a Navy bomber turret, but, once invited, you can come and go as you please in the world's most famous privately owned seaplane, the Guba.

And we did plenty of squirming into and out of the various compartments that make up this useful ship.

PILOT HELD IN ESTEEM

We learned why Russ Rogers, Mr. Archbold's chief pilot, is recognized, even by the Navy, as one of the most skillful airboat operators in the country.

He doesn't tarry on the takeoff. One instant you're bouncing along, like the world's fastest motorboat, with frothy cascades of water splashing against the turret, and the next you're hundreds of feet in the air. That cruiser that looked so formidable a moment ago now is a model floating in a huge bathtub.

A hatch on the floor of the bomber's-observer compartment is pointed out as the location, in a Navy plane, of the bomb-sight set in glass.

With its aid and that of instruments calculating the speed, drift and altitude of the airboat, the flying mathematician determines the exact moment when to drop any or all of the four 1000-pound bombs—or the two torpedoes—a PBY can carry.

MECHANIC GUIDES

Steve Barrinka, the pleasant young mechanic who kept the Guba's engines in good shape on its Netherlands New Guinea expedition, and on its later trip around the world back to San Diego, acts as guide to the "tourists" who fly the craft.

Far back in the ship, near the tail, he shows you a triangular hatch that opens up to the earth below.

"We dropped hundreds of pounds of supplies through this opening to the inland New Guinea camps of the scientists," he explained, sitting precariously at its edge. He answered the unspoken question. "I couldn't fall out of here if I tried. The air pressure would act like a safety net."

Amidships, in the cargo compartment, sitting on a highchair suspended from the ceiling and intently watching a bewildering array of instruments, is a Consolidated employe. "He's the flight engineer on these test hops," Steve commented. "Those instruments tell him whether the cylinder head temperature is safe, whether the carburetor is being supplied with the correct amount of heat, whether the engines are functioning smoothly."

RADIOMAN AT WORK

In another compartment, just behind the pilots, is a broad table covered with charts for the navigator, and on the opposite side of the narrow aisle, Harold Ramm, the radio operator, is dot-dashing Boston.

"Once, when we were in New Guinea, we contacted that Boston station, 10,000 miles away, and a few minutes later, I had a message through to my wife in Maine," Mr. Barrinka recalls. He claims that as the most distant communication ever effected from an airplane.

The Guba crew is quite proud of their ship, an exact replica of the Navy's early PBY's. They can point out the fact it is the only plane ever to operate from water at an 11,000 foot elevation, when the motor has little more than half its power available, due to the thin air. That was on Lake Habbema, in New Guinea. It's also the only ship to have flown around the world the longest way—25,000 miles, which included the first flight across the Indian Ocean, on a survey trip for the Australian government.

FOG HORN REQUIRED

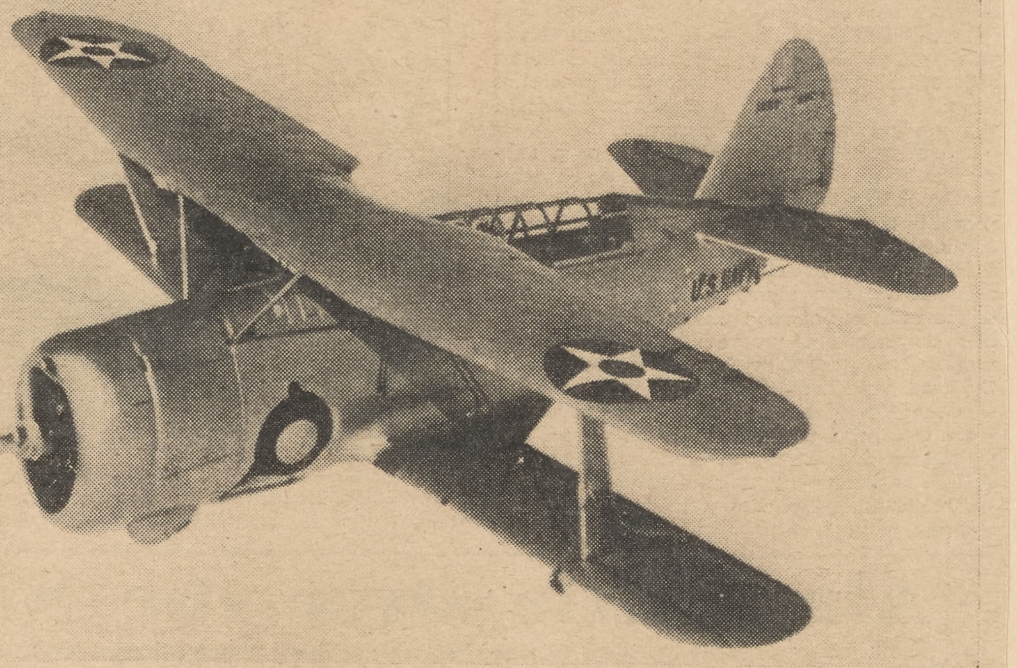
Because the Guba is considered no less a vessel than any other surface craft, it must carry a fog horn, bell, and life preservers. There's a collapsible boat for use in emergencies. And a complete galley, with stove and running water. There are four comfortably upholstered leather chairs and bunk space where you can sleep like a log. After you get used to it, the rasping sound from the 1000-hp engines actually lulls you to sleep, says Mr. Barrinka.

Aside from the landings and takeoffs, the Guba in flight is so smooth that your sensations are similar to those of a bus-rider.

Except when, without warning, from a cloud layer on an overcast day such as this particular one, a Navy PBY suddenly dashes out just off your port side, causing even such a veteran aviator as "Red" Harrigan, Lindbergh Field custodian who also went up for the free ride, to whistle.

Cargo of Bombs

Highly-important—and deeply dreaded—the aerial bomb plays a tremendous part in the formulating of military schemes



This Curtiss SBC-4 dive-bomber biplane has been ordered in large numbers by the U.S. Navy Department as equipment for its aircraft carrier fleet.

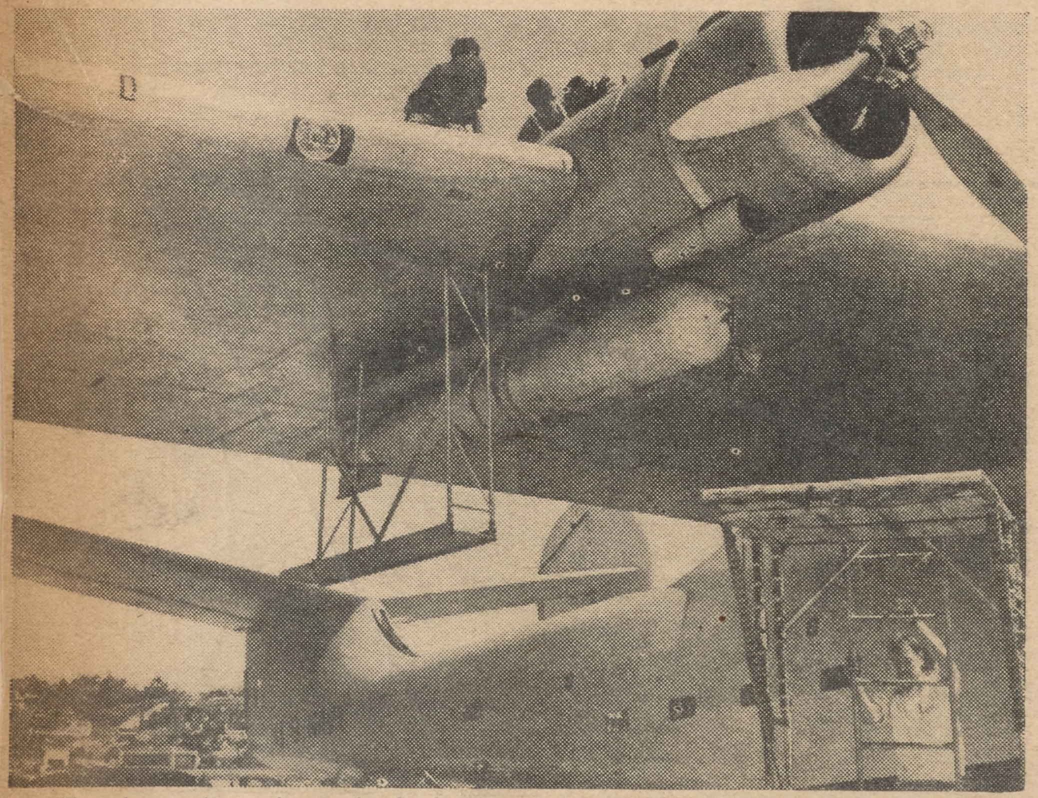
THE most important weapon in the air forces of the combatants in the present war is the bomber. If the bomber is not used, then the fighter has no duty to perform, and these two between them account for 80 per cent. of the aircraft in the air forces of any country.

The bomber must form the striking force. It must take the initiative. It can help to secure a decision. Its very existence has struck fear into the hearts of millions of people. It has been responsible for a complete change-over in our lives, for the A.R.P. organisation, for the darkening of streets.

In Poland the bomber has been used to prevent the concentration of troops, supplies, guns and tanks, so that nowhere were the Poles able to deploy a large army and make a stand, which is why the campaign against 33,000,000 people ended in three weeks.

The strategy of the employment of the bomber has been closely studied by the air staffs of many countries, and by none so much as ours. The Air Staff would like the bomber to be fast enough to outpace the fleetest fighter sent in pursuit, powerful enough to climb at a quicker rate and reach a higher ceiling than the fighter; and at the same time it is desired to give it the maximum range and the heaviest armament for defence, while keeping it big enough to carry the maximum possible payload in the way of bombs.

Obviously all these attributes cannot be built into the same aircraft. So speed has to be sacrified to range and weight-carrying. Generally, modern bombers of the heavy twin- or four-engined type, which would fly long distances at night—when there is greater possibility of concealment from ground defences or from the attentions of fighters—are able to cruise comfortably on two-thirds of their engine power at a good 250 m.p.h. In this respect the performance of British bombers is superior to that of German aircraft.



Two-thousand-pound torpedo slung under starboard wing of a four-engined Consolidated U.S. Navy flying-boat. Another torpedo is carried beneath the port wing; they can be released simultaneously or one at a time.

Then comes the middle-weight bombers, also twin-engined types, but capable of flying at 300 m.p.h. with a lighter bomb load. These aircraft have a range of nearly 2,000 miles, which provides an effective radius of action of 800 miles in any direction. Our bombers in this category have proved able to outdistance even the German single-seater fighters which have sought them on the famous leaflet raids. Then there is the class of single-engined light bomber, not so well protected for defence, but with long range and high speed.

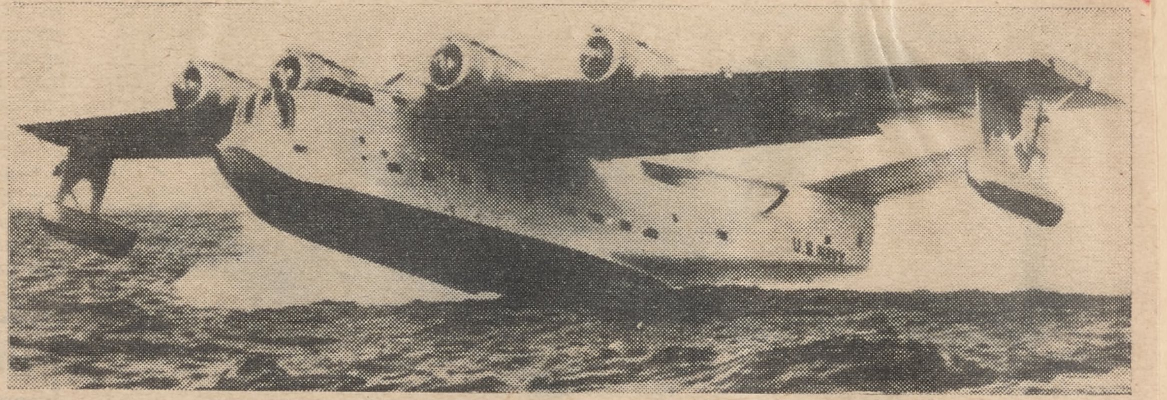
The bomber does not seek battle. Its task is to deliver the goods at the target. Its pilots must be well trained, not only in airmanship, but in cross-country navigation. It must be able to fly for hundreds of miles purely by map and compass and by dead reckoning. Bereft of the use of wireless and relying on imperfect weather reports, it is thrown back to the flying of 20 years ago, when our pioneer fighters of the R.A.F. had no elaborate ground organisation to aid them—such as modern aircraft and pilots are given in peace time.

Although engines are more reliable and instrumentation is better, liability to error in navigation through drift from the course is greater. Speeds are three and four times greater than those of 1914-18. Errors are to this extent magnified. Yet our bombers flying over a darkened Germany have found their objectives, which is magnificent tribute to their flying skill.

Defensive armament for bombers consists largely of machine guns, though both France and Germany have looked with early favour on the cannon gun which fires a small shell. We have concentrated on machine-gun fire. Gunners must be well trained, as upon their ability to shoot straight and protect the vitals of their aircraft depends the safety of a crew which might number six or more.

Training, therefore, is concentrated both on developing accurate aim for bombing and on good marksmanship with the machine-gun. The multi-engined bomber in the big class category has a gunner sitting in a glass-covered nose in front of the pilot. He can swivel his turret—at least in British bombers—and as the engines are in the wing on either side he has a wide field of fire forward in a large arc. Thus he can fire at any aircraft approaching head on or flying at right angles across his course.

NOV 6 1939 OUA



Four-engined U.S. Navy Consolidated patrol-bomber taking off in rough weather outside San Diego Harbour, California. This class of flying-boat has an exceptionally long range.

Amidships there are generally gunners in turrets above and below the fuselage. This gives protection for the fuselage and behind the pilot and navigator at a point which was often a "blind spot" in bombers used 20 years ago. Ingenious devices have been invented for building "dust-bin" pattern turrets which retract into the fuselage when not in use. This lessens obstacles in the air flow and helps the bomber to increase speed.

In the tail, seated far down the aircraft behind the fin and rudder, is another cockpit, glass-covered. Here sits a solitary gunner protecting the tail. Like the gunner in the nose, he has a wide sweep of fire and his cockpit is probably the most important.

Tactics of fighters are, in 80 per cent. of cases, concerned with diving on bombers from a superior height, gathering additional speed for a quick get-away after firing, and by diving on the tail the gunner in this spot will feel the weight of the fighter's armament first. If he is cool and a good marksman, he will hold his fire until the fighter is within about fifty yards, when a good burst from his machine gun should inflict damage and possibly put the fighter out of action.

The fighter may adopt other tactics, such as avoiding the tail to tackle the bomber amidships from above or below with a view to getting at the vitals of the machine and at the pilot. Gunners amidships have a slightly better chance, because there is risk of collision and the fighter must judge the distance well to avoid missing his mark and to avoid collision.

The old practice of getting into position beneath the bomber and of zooming up to fire into its belly has not as much to commend it when there is a gunner firing downwards and when it is not so easy to manœuvre a 350 m.p.h. fighter into this position against a bomber moving at up to 300 m.p.h.

This new Lockheed twin-engined single-seat fighter ordered by the U.S. War Department for the Army Air Corps shows the enormous power now needed by the fighter to give it marked superiority in performance over the bomber. The engines are liquid cooled, of high-output.

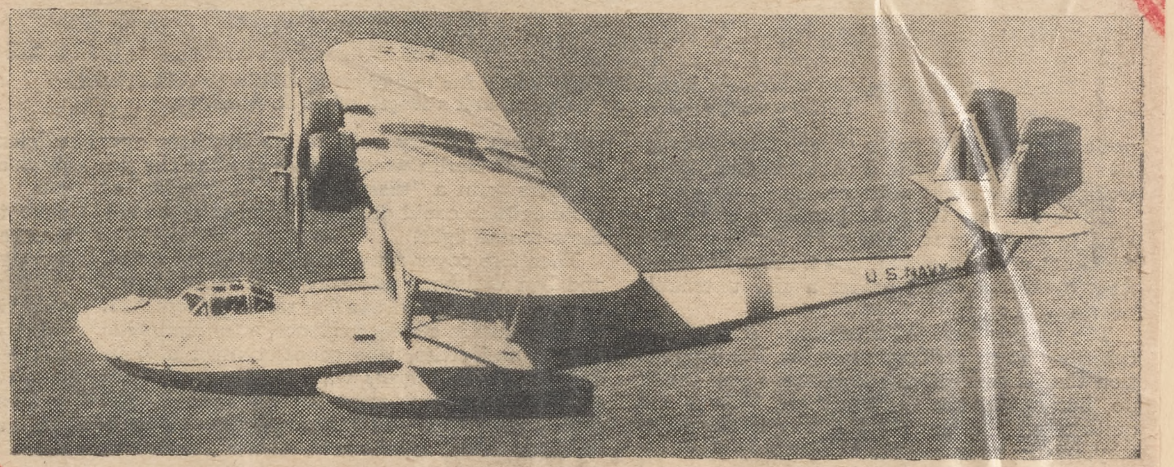
So much for the bomber's defence. Now for its main job of bombing. Bomber crews are taught to bomb to within 50 ft. of accuracy from quite good heights. A circle is laid out on the ground in white paint as the target. Bombing inside this clock face is one method of training. The bomber has many calculations to make—of height, course, speed, wind strength, and wind direction, and distance from the target before he releases his cargo. Generally speaking, the bomb falls following a curve before diving straight down, and it follows the track of the bomber, hitting the ground just beneath it.

Thus a bomb load may be dropped 2 to 20 miles from a target with the object of hitting the target at the moment the bomber arrives over it. The bomb can be seen in its fall as it keeps up with the aircraft. If calculations of wind strength and direction are correct, then accurate aim results. Of course, the lower the height from which bombs are dropped, the less any error tends to grow and the better will be the aim. In the lighter class of bomber, the small bombs will be fitted to wing racks or racks beneath the fuselage. In the medium and larger class, bombs are stowed inside the fuselage and doors open to allow of their dispersal. By this plan there are no excrescencies fitted outside the aircraft to impede speed.

There are two main kinds of bombing tactics: precision bombing and dive bombing. In the former, a formation will fly to its target keeping course as far as possible. They will drop their bombs on the target while flying level and after making all the necessary calculations previously mentioned. This class of bombing is generally indulged in where the target is very big, such as a munitions plant or a railway centre, where 50 ft. of error does not impair the value of the attack, and where ground defences may be too strong to admit of a close approach at low level.

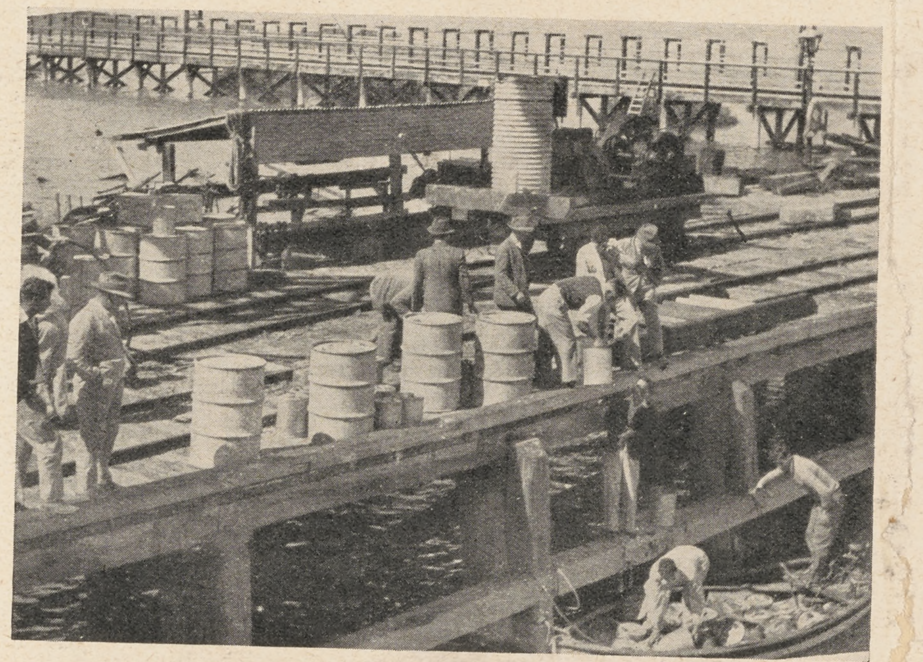
The dive-bombing plan is used when targets are smaller and where greater accuracy must be attained for the bombs to have effect. It is used for attacks on ships, for instance. Dive bombing enables the bomber to increase speed and thus elude pursuers or to outpace fighters. It gives the machine additional power to enable it to zoom away quickly to high altitude after releasing bombs. The bomber may carry only one 500-lb. or 1,000-lb. bomb. One attack on the target by each machine is all that is needed. If there has been accuracy, then every "bullet will find a billet" and the work of destruction should be complete.

Bombers dive singly to this attack, approaching the target from many different angles. This confuses ground defences and prevents A.A. guns from being brought to bear on more than one aircraft in one direction at a time. Low bombing around vital targets or around cities



Twin-engined bomber patrol flying-boat of the United States Navy.

The Completion of the Survey of the Imperial Reserve Air Route to Australia.



AT THE START.—Loading petrol drums at Port Hedland for the "Guba."

CAPTAIN P. G. TAYLOR and his crew in the flying-boat *Guba* alighted at Mombasa, in Kenya Colony, on June 21, and thus completed the air survey of the Imperial Reserve Route to Australia. They had reached the Seychelles Islands on June 18 from Diego Garcia in the Chagos Archipelago, where they had arrived on June 14.—They left Port Hedland in West Australia, which is about half way between Onslow and Broome, on June 4.

The Times correspondent at Sydney stated on June 20 that Captain Taylor had reported to the Commonwealth Government that he had completed his investigation of possible landing grounds and flying-boat bases in the Seychelles and proposed to leave for Mombasa early on June 21.

As there is already a regular Imperial flying-boat base at Mombasa the actual survey of the possibilities of the three island bases on the Reserve Route had then been finished.

Reports hitherto available in this country have been meagre, because evidently none of our great Imperialist English daily newspapers has understood the importance of the Reserve Route. Consequently none of them bought the story from Captain Taylor, and his reports have gone to the Australian newspapers,—and we should not be surprised to learn that they have been bought also by some enterprising American papers.

We shall have to wait for condensations of the reports which have appeared in the Australian papers before we can say much about what Captain Taylor and his crew did or did not see. And we shall have to wait for Captain Taylor's book on the subject before we learn of all the fun and all the adventures of what has been in fact one of the most important flights in the history of aviation.

In the meantime we have had the good fortune to receive by air-mail from Perth a peculiarly vivid description, and some quite amusing photographs, of the start of the flight from Port Hedland. Also we are able to give some interesting information about those sportsmen in Perth, West Australia, who first conceived the idea of an air route across the Indian Ocean, as a reserve airway in case of war.

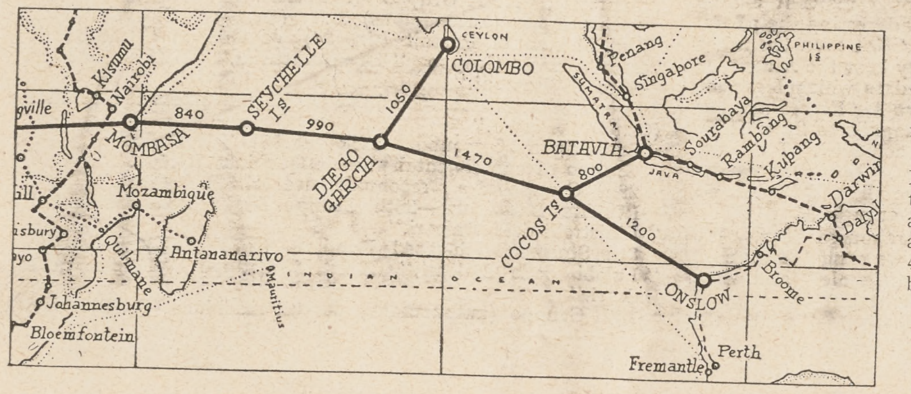
About the Stage-Stops

Little is known of the three outposts of Empire which are the stage-stops, or the facultative arrests, as the French call them, on the Reserve Route,—Cocos Island, Diego Garcia, the Seychelles Islands. Some information about them is likely to be valuable when the route comes to be developed.

THE COCOS-KEELING Islands, 800 miles S.W. of Batavia, and 1,200 miles from the Australian Coast (Port Hedland and Onslow are roughly the same distance away) were adopted by England in 1857 and were placed under the Governor of the Straits Settlements in 1886. They were incorporated with Singapore in 1903. The largest of the 20 islands is 5 miles long by ¼ mile wide. In 1902 a Cape—Australia cable station was set up on Direction Island. There are about 1,200 inhabitants, who grow coconuts and export copra and oil.

DIEGO GARCIA Island, which has a population of about 450, is one of the Chagos Archipelago, which is on the sea route from the Red Sea to Australia. It has a good harbour. The group of islands,—population 1,450,—is administered by the Governor of Mauritius, who sends two magistrates to the islands at intervals to settle disputes. Coconut oil provides about the only industry.

THE SEYCHELLES ISLANDS, the chief of which is Mahé, where the expedition stopped, were captured by an English ship from the French in 1794. They became a British Colony by letters patent in 1903. The population of the 92 islands is about 30,000. Mahé has an area of 56 square miles, and Victoria, the capital, has a good harbour. Copra, oil and guano provide the chief industries. (Our thanks to *Whitaker's Almanack*.)



Seeing the Start

An Australian correspondent who was at Port Hedland for the start writes:—

I have just returned to Perth again after pushing the *Guba* off from Port Hedland (1,028 miles N. of Perth) on what I thought was to be a non-stop flight to Cocos Island, but which has proved to be non-stop to Batavia *via* Cocos. My observations may be of interest to you.

The *Guba* left Sydney to follow a direct course to Port Hedland at 15.45 EST June 3, and expected to arrive 18 hours later. However, they met head winds almost at once and changed course Northward so frequently in their efforts to find the S.E. Trades that their air-line distance was 2,570 miles and their time nearly 20 hours.

Throughout the flight the *Guba's* radio was occupied mainly through dishing out volumes of press messages from the official reporter aboard. The aeradio stations at Cloncurry, Charleville, Alice Springs, Oodnadatta and Port Hedland, which kept constant watches at the request of the Civil Aviation Dept., occasionally attempted to call for positions but were ignored.

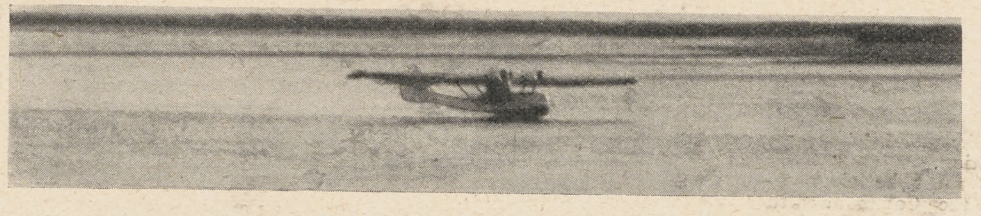
Captain P. G. Taylor said on reaching Port Hedland that this was not intentional ignorance but that they had arranged to work Sydney. The result was that Port Hedland was not acquainted of an E.T.A. (estimated time of arrival) until the *Guba's* engines were booming overhead and the residents came scurrying out of their houses to watch the alighting.

At that time of day,—about 09.30,—the tide was flowing nearly to its maximum and there was miles of sea-room in the sheltered water. The *Guba* wasted no time in getting in and moored some 500 yds. S.E. of the jetty at the buoys laid down for 204 Sqdn. R.A.F. just a year ago, and recently renovated for the *Guba*.

Jaws must have dropped a good deal when the fuel agent went aboard and told the personnel that there was about 1,500 gallons of 87 octane fuel on the jetty waiting to be carried out in 4-gallon drums in dinghies by elderly outboard motors. If they liked, of course, they could tie the *Guba* up to the wharf and take it aboard from the aerodrome's mobile fuelling unit.

The strong rip-tide and the prevailing Easterly across it prevented the alternative suggestion being put into practice and Messrs. Archbold, Taylor, Yancey and Booth came ashore to look into the 4-gallon business and do their shore business, which seemed mainly directed

OVER.



THE EMOTIONING TAKE-OFF.—The "Guba" getting off from Port Hedland. Note that the wing floats, which form the wing-tips when retracted, are already up, although the boat is not properly on its step.

towards getting breakfast and as much sleep as possible.

Chief Pilot R. Rogers and the two flight engineers stayed aboard until something was decided. Apparently the intention was to fill up and push off again that afternoon. Fuelling with 4-gallon drums seemed likely to upset departure time.

After 20 hours in the air, and no sleep for most of the crew, quite a few were anxious to spend a night at Port Hedland, and the consequent clashes of thought with those who had either got some sleep or didn't need it and didn't care for the look of shore accommodation probably led to confusion over the time of setting off.

Yancey and Booth went to bed at once, stopping only for food and liquid with which to restore some warmth. Taylor and Percival, the reporter, went into a huddle to write more reports. Rogers and the engineers stayed aboard to fuel. And the owner went from pub to jetty or from jetty to boat, carrying sandwiches or heaving 4-gallon drums, full or empty, from dinghy to boat or from dinghy to jetty respectively.

As the tide soon turned and dropped ten or twelve feet the work of handling drums from jetty to dinghy or *vice versa* became more and more arduous. From dinghy to boat the work was arduous all the time, and was done on the chain system.

Russell Rogers stood in the hatch opening, took the full drum from the dinghy hand who bobbed about in the tide-rip, heaved it above his head to an engineer who passed it in turn to two others standing at intervals on the wing. The other flight engineer stacked the drums along the metal leading-edge of the wing, which gradually took on the appearance of a window ledge with window boxes but no flowers. Can you imagine yourself touching your toes with hands filled with a 30-lb. 4-gallon drum, and then heaving the drum up over your head—not once but over 300 times with brief halts every 20 drums or so?—Try it before breakfast. That is what Rogers did and he had been awake all night and had had no breakfast.

At each respite between dinghies—and sometimes both were in together making a 40-drum lift—Rogers would hurl himself on a bunk muttering and cursing. But 1,245 gallons were stowed in the tanks within six hours, and then Rogers went ashore for a break and to see what was doing.

While fuelling was going on nobody seemed to care, or were too tired to bother, about visitors. Like a few others I braved the 500-yd. journey in a dinghy which, with gunwales almost under, putt-putted spasmodically out from the jetty.

Inside the "Guba"

I crawled inside. After chatting with an engineer about two Pratt and Whitney engine experts who regularly visit all Australian States on service work and whom we found to be mutual friends, I was invited to "step around" for myself.

What a glorious playground of gadgetry! The Vickers Wellesleys which were specially fitted with instruments for the long-distance record—about 75 all told—were comparatively unfurnished. It must be remembered that the boat was built for long-distance work and not as a passenger airliner. There were, therefore, few home comforts and being unlined I have no doubt that the interior in high flight was as cold as an ice-chest.

I liked very much the divorcing of engine instruments from pilotage instruments. The pilot besides his dual control throttles had only duplicate Sperry panels, a compass and one or two other instruments. That baffling array of dials and knobs to be found in most modern aircraft was set out for the eye of the flight engineer only.

In the *Guba* he sat perched on a chair suspended above the navigator's room half way up the centre-section turret. A small porthole on either side gives him visual observation of his engines. The navigator of the *Guba* has also many gadgets with which to play and these include a librascope.

Having "stepped around" and seen all I wished, and then some, I duly returned to the jetty where people were getting together for the take-off. In a town where there is no newspaper, rumour very speedily arrives at the correct supposition and it was not long before the Hedlandites knew that the *Guba* was to leave about 5 p.m. (Perth Time). Sure enough the owner, the organiser and the others walked out from the town and presently went aboard the boat.

The take-off was an alarming business to the dozen or so Air Force and Air Transport pilots who gathered to watch. No doubt Rogers knew almost to a yard the distance he needed. But those on the jetty didn't. The tide was slack and well out. The shipping channel was at its narrowest,—about 300 yds. and slightly out of wind.

Take-off for PBY-2s is said to be about 38 secs. When 30 of them had run, and over half the runway gone, the *Guba* was still heavy in the water. What appeared to be a "stalled" take-off at the very instant when the hull seemed in danger of running into the coral shallows may not have been so alarming as it actually looked. A dozen watching pilots heaved a synchronised sigh of relief as the *Guba* cleared the flat island at the limit of the run and got away.

All the crew were bound to secrecy about the flight and no interviews were to be given. The result was that most of those concerned had to think twice about admitting it was nice weather or good morning. Why such secrecy was necessary, considering that every newspaper in the Commonwealth was taking the official story from Canberra was not very obvious. Local press representatives were informed of this ban on personnel and Capt. Taylor and Mr. Percival retired to the privacy of their hotel bedroom to dictate their story.

There is a story about this particular hotel which cannot be told here,—but blissfully ignorant of the acoustic properties of the place Captain Taylor dictated his story, and the pub loafers and staff listened with interest to every word of it!

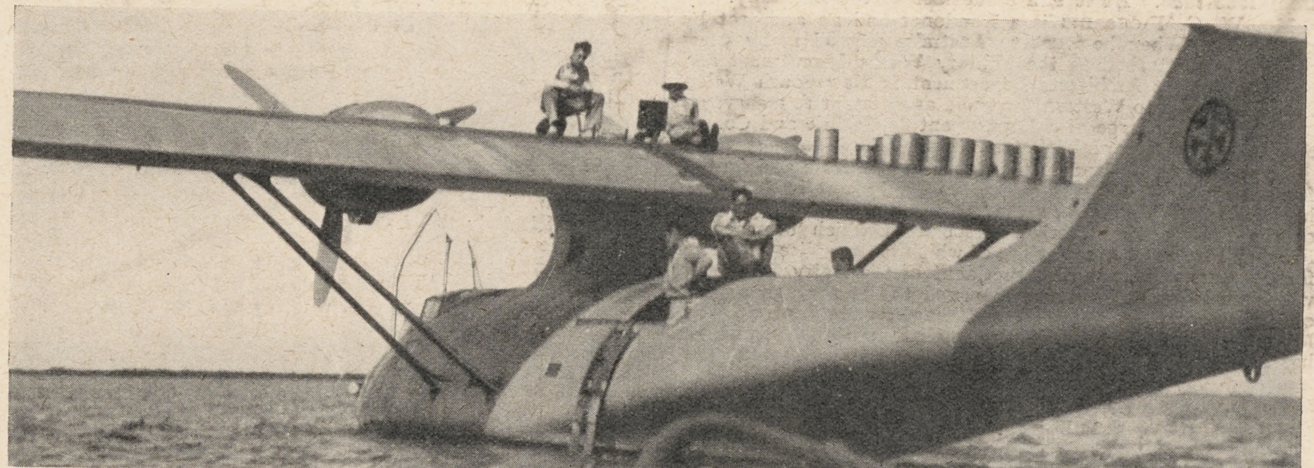
The Pioneers of the Reserve Route

SOME DAY when our Imperial Reserve Air Route to Australia has either proved its value in War or has become a regular express air line somebody will want to know how the idea started. Captain P. G. Taylor, otherwise known as Bill Taylor, will naturally go down to history as the originator of the route and as the man whose drive and energy eventually squeezed a meagre grant out of the Australian Government and got hold of a sporting American millionaire and his flying-boat with which to make this survey which ought to have been done not less than two years ago by Imperial Airways Ltd., with the help of the British and Australian Governments. Failing that it ought to have been done a very little later by the Royal Air Force itself with the help of the British Navy.

That is all true, but historians must not forget the work which was done by a little Committee of Aeronautical enthusiasts and good sportsmen in the City of Perth, Western

PTO

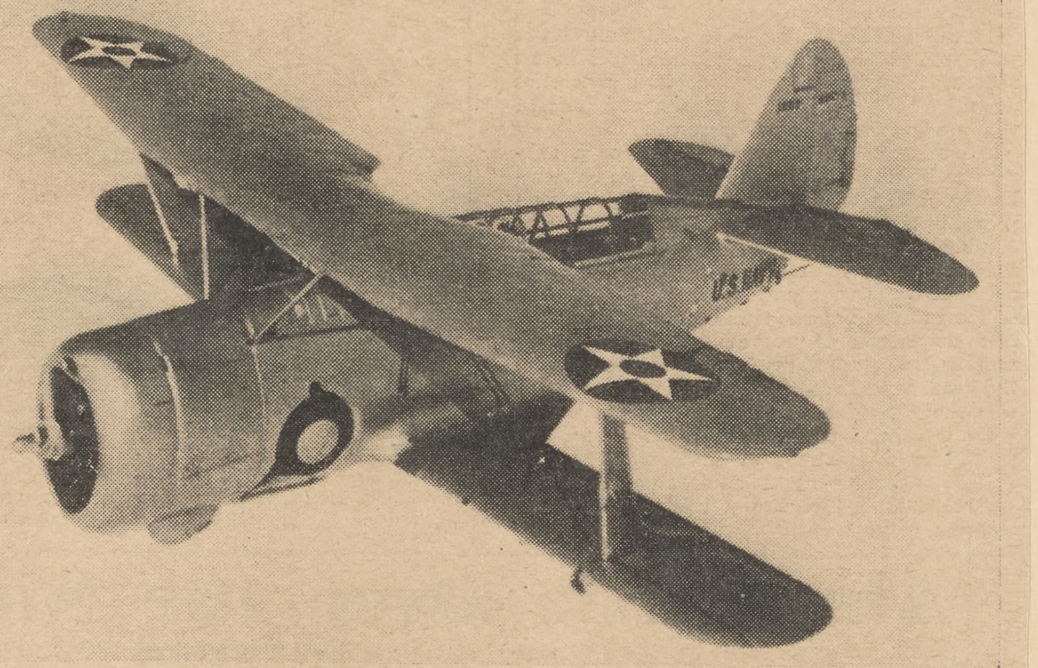
OVER



A LABOUR FOR HERCULES.—Some idea of the physique of Mr. Russell Rogers may be got by imagining the horse-power expended in heaving 311 of those 4-gallon drums seen above from a dinghy alongside to the man on the top of the wing while standing in the door just above water level.

Cargo of Bombs

Highly-important—and deeply dreaded—the aerial bomb plays a tremendous part in the formulating of military schemes



This Curtiss SBC-4 dive-bomber biplane has been ordered in large numbers by the U.S. Navy Department as equipment for its aircraft carrier fleet.

THE most important weapon in the air forces of the combatants in the present war is the bomber. If the bomber is not used, then the fighter has no duty to perform, and these two between them account for 80 per cent. of the aircraft in the air forces of any country.

The bomber must form the striking force. It must take the initiative. It can help to secure a decision. Its very existence has struck fear into the hearts of millions of people. It has been responsible for a complete change-over in our lives, for the A.R.P. organisation, for the darkening of streets.

In Poland the bomber has been used to prevent the concentration of troops, supplies, guns and tanks, so that nowhere were the Poles able to deploy a large army and make a stand, which is why the campaign against 33,000,000 people ended in three weeks.

The strategy of the employment of the bomber has been closely studied by the air staffs of many countries, and by none so much as ours. The Air Staff would like the bomber to be fast enough to outpace the fleetest fighter sent in pursuit, powerful enough to climb at a quicker rate and reach a higher ceiling than the fighter; and at the same time it is desired to give it the maximum range and the heaviest armament for defence, while keeping it big enough to carry the maximum possible payload in the way of bombs.

Obviously all these attributes cannot be built into the same aircraft. So speed has to be sacrified to range and weight-carrying. Generally, modern bombers of the heavy twin- or four-engined type, which would fly long distances at night—when there is greater possibility of concealment from ground defences or from the attentions of fighters—are able to cruise comfortably on two-thirds of their engine power at a good 250 m.p.h. In this respect the performance of British bombers is superior to that of German aircraft.

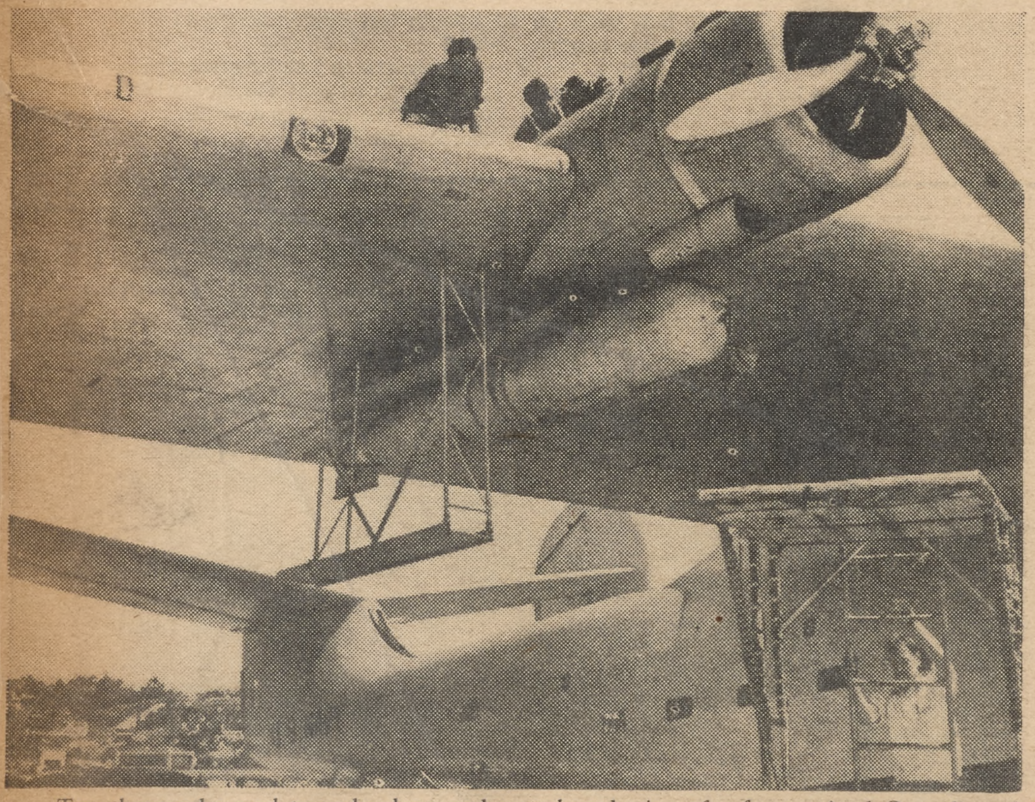
Then comes the middle-weight bombers, also twin-engined types, but capable of flying at 300 m.p.h. with a lighter bomb load. These aircraft have a range of nearly 2,000 miles, which provides an effective radius of action of 800 miles in any direction. Our bombers in this category have proved able to outdistance even the German single-seater fighters which have sought them on the famous leaflet raids. Then there is the class of single-engined light bomber, not so well protected for defence, but with long range and high speed.

The bomber does not seek battle. Its task is to deliver the goods at the target. Its pilots must be well trained, not only in airmanship, but in cross-country navigation. It must be able to fly for hundreds of miles purely by map and compass and by dead reckoning. Bereft of the use of wireless and relying on imperfect weather reports, it is thrown back to the flying of 20 years ago, when our pioneer fighters of the R.A.F. had no elaborate ground organisation to aid them—such as modern aircraft and pilots are given in peace time.

Although engines are more reliable and instrumentation is better, liability to error in navigation through drift from the course is greater. Speeds are three and four times greater than those of 1914-18. Errors are to this extent magnified. Yet our bombers flying over a darkened Germany have found their objectives, which is magnificent tribute to their flying skill.

Defensive armament for bombers consists largely of machine guns, though both France and Germany have looked with early favour on the cannon gun which fires a small shell. We have concentrated on machine-gun fire. Gunners must be well trained, as upon their ability to shoot straight and protect the vitals of their aircraft depends the safety of a crew which might number six or more.

Training, therefore, is concentrated both on developing accurate aim for bombing and on good marksmanship with the machine-gun. The multi-engined bomber in the big class category has a gunner sitting in a glass-covered

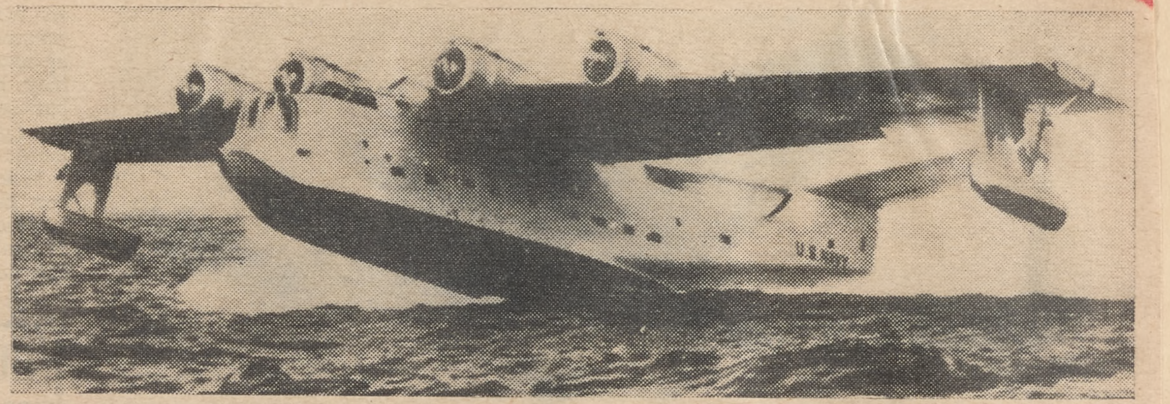


Two-thousand-pound torpedo slung under starboard wing of a four-engined Consolidated U.S. Navy flying-boat. Another torpedo is carried beneath the port wing; they can be released simultaneously or one at a time.

NOV 6 1939

nose in front of the pilot. He can swivel his turret—at least in British bombers—and as the engines are in the wing on either side he has a wide field of fire forward in a large arc. Thus he can fire at any aircraft approaching head on or flying at right angles across his course.

Amidships there are generally gunners in turrets above and below the fuselage. This gives protection for the fuselage and behind the pilot and navigator at a point which was often a "blind spot" in bombers used 20 years ago. Ingenious devices have been invented for building "dust-bin" pattern turrets which retract into the fuselage when not in use. This lessens obstacles in the air flow and helps the bomber to increase speed.



Four-engined U.S. Navy Consolidated patrol-bomber taking off in rough weather outside San Diego Harbour, California. This class of flying-boat has an exceptionally long range.

In the tail, seated far down the aircraft behind the fin and rudder, is another cockpit, glass-covered. Here sits a solitary gunner protecting the tail. Like the gunner in the nose, he has a wide sweep of fire and his cockpit is probably the most important.

Tactics of fighters are, in 80 per cent. of cases, concerned with diving on bombers from a superior height, gathering additional speed for a quick get-away after firing, and by diving on the tail the gunner in this spot will feel the weight of the fighter's armament first. If he is cool and a good marksman, he will hold his fire until the fighter is within about fifty yards, when a good burst from his machine gun should inflict damage and possibly put the fighter out of action.

The fighter may adopt other tactics, such as avoiding the tail to tackle the bomber amidships from above or below with a view to getting at the vitals of the machine and at the pilot. Gunners amidships have a slightly better chance, because there is risk of collision and the fighter must judge the distance well to avoid missing his mark and to avoid collision.

The old practice of getting into position beneath the bomber and of zooming up to fire into its belly has not as much to commend it when there is a gunner firing downwards and when it is not so easy to manœuvre a 350 m.p.h. fighter into this position against a bomber moving at up to 300 m.p.h.

So much for the bomber's defence. Now for its main job of bombing. Bomber crews are taught to bomb to within 50 ft. of accuracy from quite good heights. A circle is laid out on the ground in white paint as the target. Bombing inside this clock face is one method of training. The bomber has many calculations to make—of height, course, speed, wind strength, and wind direction, and distance from the target before he releases his cargo. Generally speaking, the bomb falls following a curve before diving straight down, and it follows the track of the bomber, hitting the ground just beneath it.

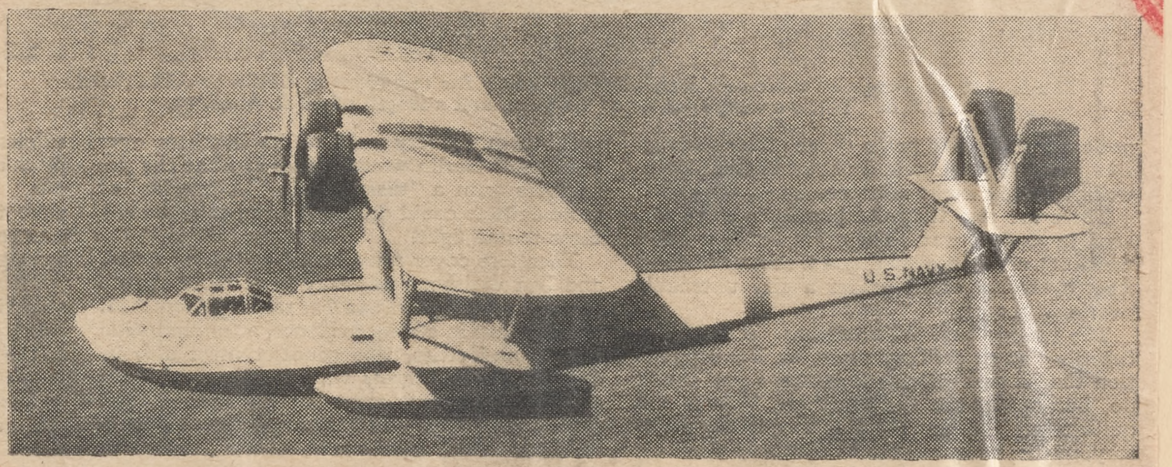
Thus a bomb load may be dropped 2 to 20 miles from a target with the object of hitting the target at the moment the bomber arrives over it. The bomb can be seen in its fall as it keeps up with the aircraft. If calculations of wind strength and direction are correct, then accurate aim results. Of course, the lower the height from which bombs are dropped, the less any error tends to grow and the better will be the aim. In the lighter class of bomber, the small bombs will be fitted to wing racks or racks beneath the fuselage. In the medium and larger class, bombs are stowed inside the fuselage and doors open to allow of their dispersal. By this plan there are no excrescencies fitted outside the aircraft to impede speed.

There are two main kinds of bombing tactics: precision bombing and dive bombing. In the former, a formation will fly to its target keeping course as far as possible. They will drop their bombs on the target while flying level and after making all the necessary calculations previously mentioned. This class of bombing is generally indulged in where the target is very big, such as a munitions plant or a railway centre, where 50 ft. of error does not impair the value of the attack, and where ground defences may be too strong to admit of a close approach at low level.

The dive-bombing plan is used when targets are smaller and where greater accuracy must be attained for the bombs to have effect. It is used for attacks on ships, for instance. Dive bombing enables the bomber to increase speed and thus elude pursuers or to outpace fighters. It gives the machine additional power to enable it to zoom away quickly to high altitude after releasing bombs. The bomber may carry only one 500-lb. or 1,000-lb. bomb. One attack on the target by each machine is all that is needed. If there has been accuracy, then every "bullet will find a billet" and the work of destruction should be complete.

Bombers dive singly to this attack, approaching the target from many different angles. This confuses ground defences and prevents A.A. guns from being brought to bear on more than one aircraft in one direction at a time. Low bombing around vital targets or around cities

This new Lockheed twin-engined single-seat fighter ordered by the U.S. War Department for the Army Air Corps shows the enormous power now needed by the fighter to give it marked superiority in performance over the bomber. The engines are liquid cooled, of high-output.



Twin-engined bomber patrol flying-boat of the United States Navy.

Australia, whose strenuous efforts to interest the Australian Federal Parliament in the proceedings did a great deal towards preparing the ground for the grant and the moral encouragement which has been given to the expedition.

For that support undoubtedly credit must be given to Major R. G. Casey, D.S.O., who was the Commonwealth Treasurer and is now the Minister for Supply and Development in the Australian Government. There is no doubt that the grant was fixed before Mr. Menzies, K.C., assumed office as Prime Minister and changed Major Casey's job for him.

The Committee at Perth was composed of Mr. C. L. K. Foot, Mr. James Woods, Mr. E. C. Gare, The Hon. Norbert Keenan, K.C., and Mr. W. G. Pickering. The careers of each of these foresighted men will be interesting because it shows the various occupations which help a man to make history.

MR. C. L. K. FOOT is a grazier who owns a small sheep run in West Australia. Before the War he was at a sheep station at Hawkes Bay, New Zealand. Then he had a cattle estancia in Argentina. During the War 1914-18 he served with the 4th Machine Gun Company in the Australian Imperial Forces until the middle of 1916 when he was wounded. After that he was attached to the Chemical Warfare Experimental Ground at Salisbury Plain, where he held the rank of Captain. After the Armistice he was a member of the Royal Commission investigating War damage and rehabilitation in Central Europe.

He has travelled in Patagonia, Uruguay, India, Canada, U.S.A. and Northern Australia. Consequently he has a fairly useful knowledge of geography and of people. And that is probably what prompted him to think of an air route across the Seychelles Islands, Cocos Islands, and Diego Garcia. They are all on minor shipping routes and consequently ordinary sea-faring people ignore their existence. A man such as Mr. Foot would naturally appreciate the importance of those islands all the more because of his varied travels. And to him must go the credit for having originated the idea.

MR. JAMES WOODS is a Scot who flew in New Zealand after the War. He joined Western Australian Airways about 1926 and flew their various Bristol Tourer and D.H.50s and 60s and later a Dragon, and he was one of the first of the West Australian pilots to fly the old D.H. Hercules between Perth and Adelaide.

In 1932 he flew alone in a Gipsy Moth from Perth to London, and later toured England in his machine with his wife. In 1934 he went to England by boat and took delivery of a Lockheed Vega for Capt. H. C. Miller and started in this machine in the MacRobertson Race to Melbourne. Unluckily the machine turned over, and he was out of the race. He returned to Perth in 1935 and was appointed Route Manager under Capt. H. C. Miller, Managing Director of the MacRobertson Miller Aviation Co. During his service Mr. Woods has taken part in many famous searches for lost airmen and explorers in the West Australian desert.

MR. E. C. GARE is an accountant and local Secretary of the MacRobertson Miller Aviation Co. He was accountant for West Australian Airways from 1929 to 1934. He was a member of the Australian Rifle Team which visited Bisley in 1928 and shot for several inter-State matches in Australia. He won the Australian King's Prize for Rifle Shooting in 1926-27 and 1933.

THE HON. NORBERT KEENAN, K.C., was elected to the Federal Parliament as Member for Kalgoorlie in 1925. He was Attorney General in the Moore Government in May, 1906, and resigned in May, 1909. He was Mayor of Kalgoorlie from 1901 to 1905 and he was elected to the Fourteenth Federal Parliament as Member for Nedlands in April, 1930, and was appointed Chief Secretary and Minister for Education in the Mitchell Government twelve days later. He resigned his office in September, 1931, and became Leader of the National Party from 1933-1938. He is still a member of the Assembly.

MR. W. G. PICKERING is a Londoner and an architect by profession. When he went to Australia a good many years ago he was attached to the Military Works Department and the Government Architects Department in New South Wales. He then moved to Western Australia as assistant to a surveyor and later took charge of a Department of Guthrie and Co., of Singapore, London and Western Australia.

Then he took up land in the South of the State and farmed for some years. He was elected to Parliament in 1917 and held his seat for some six years. He was one of the Founders of the Farmers and Settlers Association which became the Primary Producers Association, of which he was Vice-President for 8½ years. He was also President of the Dairy Section in which he led a strike which managed to get through an Act of Parliament which established a Board for the control of the Milk Industry. The Board claims that up to the present it has made an improvement to the Dairy Farmers of approximately £100,000 per annum.

While in Parliament Mr. Pickering became Chairman of the Royal Commission on Forestry which has put forestry on a footing in Western Australia which is unsurpassed by any other State in the Commonwealth. He was a member of the Royal Commission on Licensing, which procured a control o the Liquor Traffic which has been generally approved. He was also a member of the Empire Plan of Works. And with all this he had time to get n Act through the Australian Parliament which has helped largely to raise the Status of the Architectural Profession.

From this one may judge that the Imperial Reserve Route has had all along the support of a body of thoroughly representative intelligent men in Western Australia. Only one c them is an aviator and consequently they have had no pro fessional prejudice or enthusiasm for the proposition but hav viewed it simply as business men and Imperialists. Every credit is due to them for having helped to get the thing going and now they deserve every congratulation on the success o the survey. Of one thing one may be certain and that is tha none of them will get any reward for laying the foundation for what will in time prove to be one of the most importan links of the Empire.

When the announcement was made that Capt. Taylor had secured the *Guba* for the job, naturally the good people of Perth wished to have a look at the boat before it started on the expedition which they had done so much to bring about. The Committee proposed that the boat should fly round Australia from Sydney, and then fly along the old West Australian route to Perth. Also the people of Perth wanted to meet Capt. Taylor, the active head of the expedition.

Unfortunately for Perth, but very rightly, Capt. Taylor decided to fly North from Sydney to Townsville and across the Continent by way of the Gulf of Carpentaria, so that he would only have to cross a comparatively short stretch of land between Townsville and the Gulf and then across Arnhem Land to the sea and so down to Port Hedland. Consequently Capt. Taylor wrote to Mr. Dimmitt of Perth as follows:—

"It was decided between Captain Yancey of the *Guba* and myself that the aircraft would fly from Sydney *via* Townsville and North Australia to Port Hedland. This route was selected for considerations of safety and the best flying conditions of the aircraft. The Southern route, via Adelaide and Perth, introduces possibilities, in the remote event of engine failure, of overstressing the remaining engine (the *Guba* is a twin-engined flying-boat) by the necessity for some hundreds of miles of flight to suitable water for an emergency landing.

"I personally appreciate very much indeed the kind invitation which has been extended to us to fly *via* Perth. But having in mind the main objective, the flight across the Indian Ocean, I thought it best to eliminate, as far as possible, any circumstances which might adversely affect the engines or aircraft before departure. The winds and weather conditions are very much more favourable over the North Australian route in Winter, but this, of course, is not of the same importance as the other consideration. I do hope that my views in this matter will be understood."

After all that has been written in this paper and the West Australian papers about the simplicity of this flight, if only the British Navy could be prevailed upon to send ships to the three Island stopping places to act as radio communications, there is a certain quiet humour in reading in *The Western Australian* of May 19 that,—"The Federal Government has asked the British Admiralty to arrange for a warship to maintain communication with the flying-boat on the most difficult hop of the survey—that from Cocos Islands to Chagos Islands—(Diego Garcia)—but it is uncertain whether a vessel will be available."

The reports of the flight day by day show that vessels were made available when the representations became strong enough.

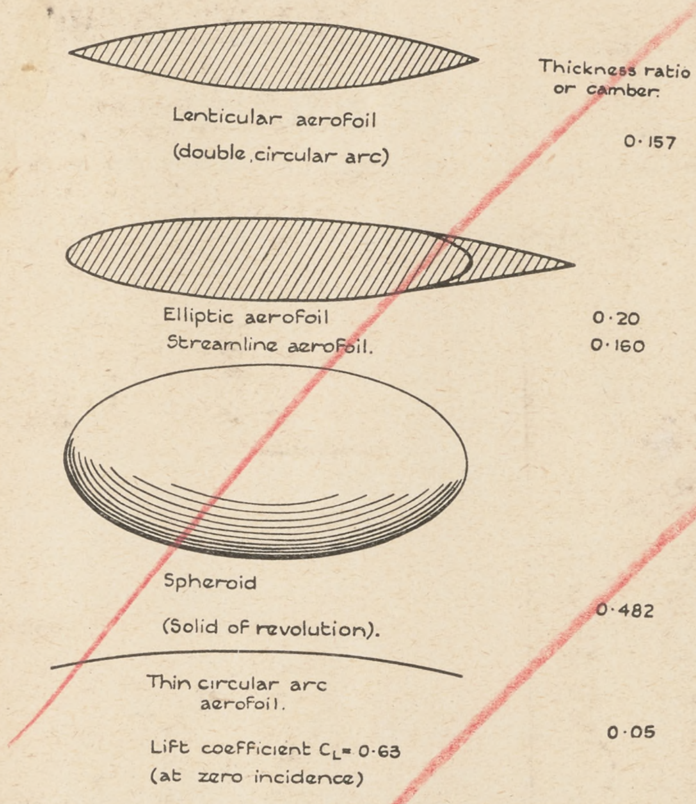
Why?

ONE OF THE LATEST propaganda from the United States says that the new Consolidated Aircraft flying-boat, which was illustrated in this paper on May 17. can carry fifty passengers to Europe and back, a round trip without landing, as it is believed to have a flying range of nearly 10,000 miles. But why should anybody want to fly to Europe and back without landing? Now, if it had been the other way. . . .

By the way, that Consolidated boat is not in fact an amphibian. It merely carries its own beaching gear with it, so that if it is in the water and wants to get out, or if it is out of the water and wants to get in, at a strange port there need be no trouble about finding trolleys and wheels big enough to carry such a colossal weight. But the payload must suffer terribly by having to carry such a non-paying load along with it.

When one hears of air transport firms taking out the baffle-plates from between the cylinders of radial air-cooled motors, because collectively they weigh a few pounds per motor, and thus burning up perfectly good motors for the sake of saving that bit of extra weight, one begins to realise what pence-per-ton-mile mean to some people, does not one?

Presume above was written
by C.G. Gray (Editor of "The Aer
who has a bad habit of wri
anti-USA aviation propagan



IN COMMON.—Sections and one solid body given by Mr. Lock which all cause shock-waves at 525 m.p.h.

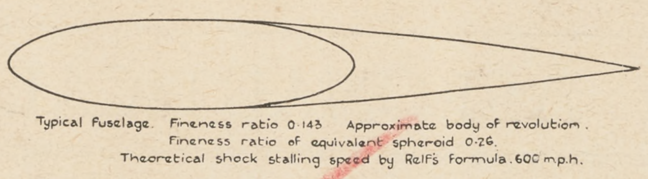
carriage. There must be no air leaks through any part of the machine.

Dr. Hilton believes that an aeroplane could be designed to do 550 m.p.h. to-day and based his suggested design on that speed. But he made the layout so that speed could be increased to more than 600 m.p.h. when more powerful motors become available.

A speed of 550 m.p.h. is .714 that of sound at sea-level. When discussing compressibility effects, high speeds are expressed as a function of the speed of sound because it falls with increase in height so that an expression in terms of speed of sound is necessary to give a true picture.

Dr. Hilton estimated the loaded weight of a 550 m.p.h. single-seat aeroplane with no payload to be 4,000 lb. On this point, in the subsequent discussion, he was accused of being unduly optimistic. He certainly was. But, as he pointed out, although an increase in weight to 6,000 lb. would put up the landing speed it would hardly reduce the maximum speed at all. The maximum speed would fall off if the wing area had to be increased to keep the landing speed down.

Low aspect-ratio is the great need for a really high-speed aeroplane. Dr. Hilton suggested an aspect ratio of 2 for his design. He decided that 95 m.p.h. was the fastest at which he could reasonably ask a pilot to land. He estimated that a maximum lift coefficient (C_L) of 1.95 for landing was the best he could reasonably expect for such a wing.


Typical Fuselage. Fineness ratio 0·143 Approximate body of revolution.
Fineness ratio of equivalent spheroid 0·26.
Theoretical shock stalling speed by Relf's formula. 600 m.p.h.

AN IDEAL.—A design given by Mr. Lock for a streamline shape which would not cause a shock-wave until the speed was 600 m.p.h. A section through this solid would seem to be much like that of the wing-section of the Consolidated Boat.

This puts the wing loading at 45.33 lb. per sq. ft. The area then has to be 88.3 sq. ft. Dr. Hilton suggested a span of 15 ft. and a root chord of 7.5 ft. for an elliptic plan form with the aspect ratio of 2.

Dr. Hilton proposes the N.A.C.A. 0012 as the wing section. It has a thickness-chord ratio of 12%. It would have a drag coefficient (C_D) of .013 at 550 m.p.h. at sea-level, and a lift coefficient (C_L) of .0588 at an incidence of 2 deg. These figures, given by Dr. Hilton, are interesting as Dr. Lewis chose this very same section for comparison with the new laminar-flow section which had about one-third of the drag at the low Reynolds Number at which the tests were made.

The induced drag coefficient for Dr. Hilton's design works out at .000108, which is negligible It is about 1% of the total wing drag.

Dr. Hilton estimated the total drag coefficient for the whole aeroplane to be .026. This means that at an airscrew efficiency of 100% the power required would be 2,590 h.p. for a speed of 550 m.p.h. For an airscrew efficiency of 75% 3,450 h.p. would be needed. The Schneider Rolls-Royce R. motors gave 2,600 h.p., guaranteed for one hour.

Dr. Hilton had very definite ideas on the installation of the motor. It must be a pusher. The slipstream behind a tractor airscrew causes the compressibility stall to occur at much slower air speeds. This is the combined effect of the turbulence in the slipstream and increased speed of the slipstream over the normal air speed.

Tractor motors in the wings will be impossible at speed of much more than 500 m.p.h.

For a single-seat aeroplane Dr. Hilton proposed a single pusher motor with oppositely rotating airscrews. He thought a tip speed of .95 times the speed of sound would be the maximum allowable and thus designed for airscrews of 6 ft. diameter to be run at 2,200 r.p.m. In the discussion he admitted that a two-motor aeroplane with motors of the maximum obtainable power might be made to go still faster.

He held out considerably more hope of really high speeds for specially built racing cars than for aeroplanes. A car can be made practically to the shape of a streamlined body of revolution and needs no wings with their inherent drag.

Wind-tunnel tests have shown that a car travelling over the ground may be regarded as casting an image through the ground identical to itself. Thus a car with a shape of a half-spheroid, half as high as wide and 7.15 times as long as wide, would have the same effect as a nearly perfect body with a compressibility stall somewhere in the region of 700 m.p.h.

The rise in temperature at sea-level by travelling at 700 m.p.h. would be about 50 deg.

Looking still further into the future Dr. Hilton foresaw aeroplanes which would have normal airscrews for take-off and alighting but at high speeds would feather their airscrews and fly with some sort of reaction-jet or by rocket-propulsion.

A New Boat with a New Wing

CHIEF FEATURE of interest in the new twin-motor Consolidated Model 31 flying-boat, which flew first early in May, is its Davis Wing. Its designer, David Richard Davis, was formerly with the Douglas Aircraft Company. His claims for his new section were confirmed by wind-tunnel tests at the California Institute of Technology (Calteck), but the authorities there were doubtful of the practical applications.

We know nothing of the section ourselves except that its designer claims for it a 20% reduction in drag compared with current designs. We assume that he has achieved this by moving the greatest depth back towards the middle from the more usual position somewhere about one-third of the chord back from the leading edge.

We also assume, in view of the doubts expressed at Calteck, that the section is very thin, or, in technical jargonese, has a low thickness-chord (t/c) ratio. This is borne out by the photographs of the new boat. Information from the United States confirms that the surface of the wing is flush-riveted.

So far there is no information about the relative efficiencies of the Davis Wing and the laminar-flow aerofoil developed by the National Advisory Committee for Aeronautics. So far there is no report that the new N.A.C.A. aerofoil has been flown.

The Model 31 has been built as a Private Venture by the Consolidated Aircraft Corporation of San Diego, California, U.S.A., and, according to report, Reuben Fleet, President and General Manager of the Corporation, has contracted to pay a handsome royalty for every Davis Wing his corporation builds.

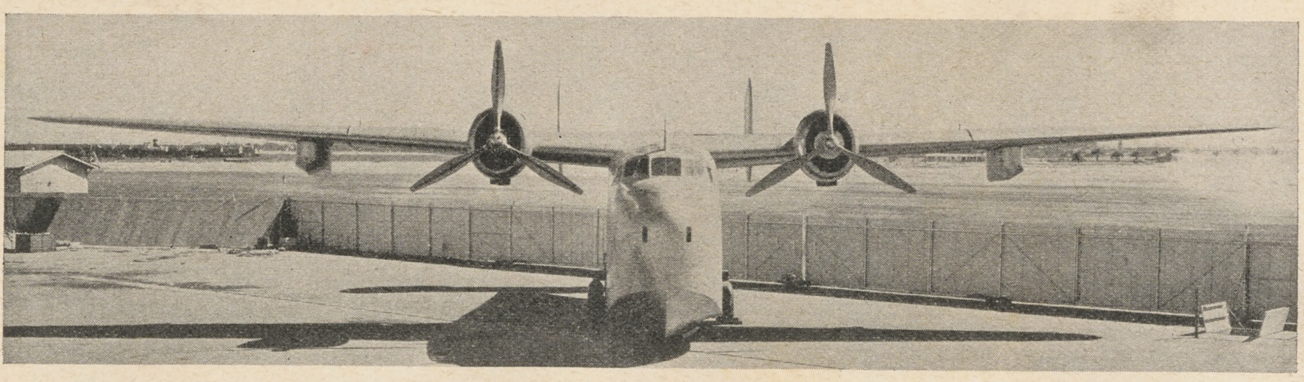
Aircraft construction in the United States seems to follow the same laws as here. We have been told that because the boat was built as a Private Venture, the design and construction, unhampered by Naval requirements, took only ten months, compared with the two or three years normally needed for an aeroplane of this size.

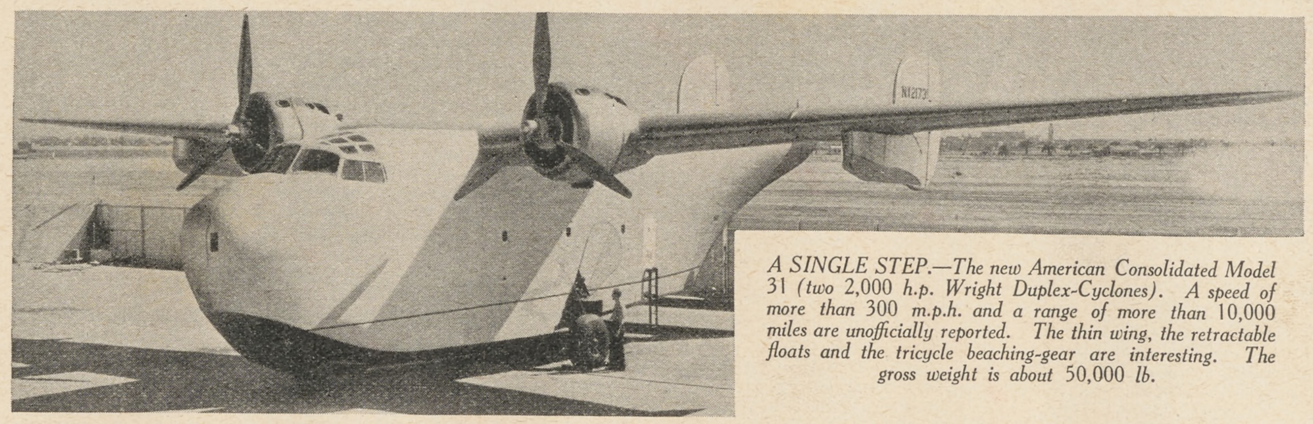
Although the Model 31 does not conform to any specification of the U.S. Navy, its makers believe that its extraordinary performance will probably cause its adoption for military work.

The Consolidated Model 31 high-wing cantilever monoplane has two 2,000 h.p. 18-cylinder Wright Duplex-Cyclone two-row radials. The gross weight is 50,000 lb. (22,660 kg.). The disposable load is supposed to be 1½ times the empty weight.

The maximum speed is quoted unofficially as more than 300 m.p.h. *Time* (New York) reports the "high speed" as 275 m.p.h.; this may mean the maximum cruising speed, which is the only speed of interest to commercial operators. If these figures are correct, the combination of load-carrying ability and speed is considerably better than that of any contemporary aeroplane.

OVER





A SINGLE STEP.—The new American Consolidated Model 31 (two 2,000 h.p. Wright Duplex-Cyclones). A speed of more than 300 m.p.h. and a range of more than 10,000 miles are unofficially reported. The thin wing, the retractable floats and the tricycle beaching-gear are interesting. The gross weight is about 50,000 lb.

In civil form the Model 31 can carry up to 52 passengers by day or 28 passengers in bunks at night. Twenty-eight passengers could be carried in comfort across the Atlantic.

Hydraulically operated Fowler flaps extend from the ailerons to the hull. The whole of the wing has stressed metal covering except for the ailerons and flaps which are fabric-covered.

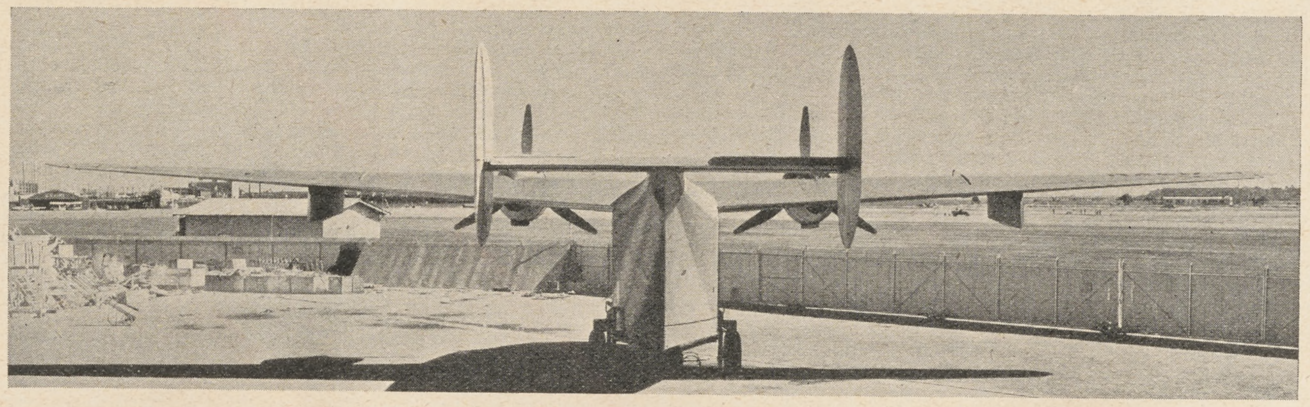
The outboard floats retract into the underside of each wing. The wing-tips of the Model 31 are too small for the sideways retraction of the floats as on the earlier Consolidated PBY.

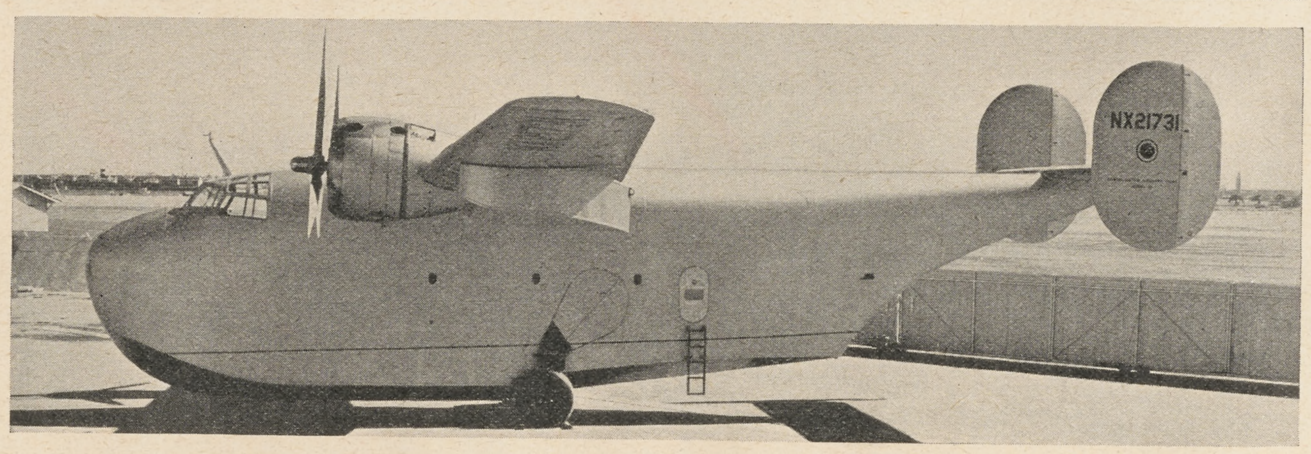
The fuel-tanks are built into the centre section in standard Consolidated fashion. The surfaces of the wing form the top and bottom of the tanks.

The motors are mounted on very small nacelles in front of the wing. They drive three-blade Hamilton Hydromatic constant-speed fully-feathering airscrews of 16 ft. (4.877 m.) diameter. The long-chord cowlings of the motors are oval in cross-section, perhaps because the carburetter intakes and oil coolers are encowled above and below the motors.

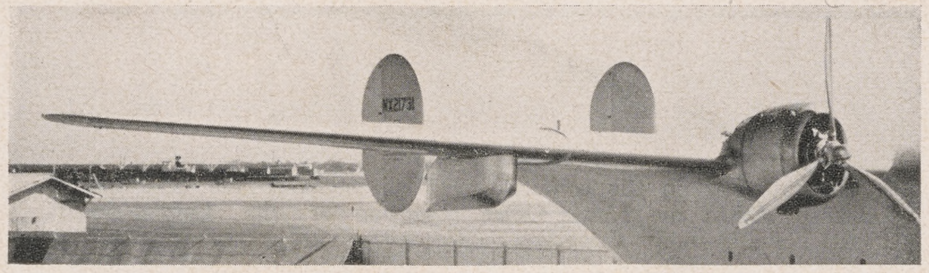
The existence of the new 18-cylinder Wright motors, rated at 2,000 h.p. each for take-off, had not been mentioned before.

The very deep hull of the Model 31 has two decks. The control cabin is above. Normally a crew of five is carried, two pilots, a flight engineer, a radio operator and a navigator. On the lower deck there are eight large compartments.





from "AERONAUTICS" (FIRST ISSUE)
AUGUST 1939. (Published Monthly)



LOW DRAG WINGS

Some inferences from the reports of recent work in the United States of America

FOR years the development of wings has progressed very slowly. We have learned how to make thick wings which have not too much drag and we have gradually learned how important it is to make our wings smooth.

From the U.S.A. there has come some information about the new Consolidated flying boat with a new wing which is claimed to have much less drag than other wings. From photographs it looks little different from other wings except that it is remarkably thin. In addition it is said to be very smooth.

Effects of Turbulence

Most of the wing testing has been done in wind tunnels, notably the N.A.C.A. Variable Density Tunnel at Langley Field, Virginia. But in such wind tunnels the air is rather turbulent, and as a result certain effects are not shown. For instance, the effects of smoothness are not quite truthfully given, partly due to model size and partly to turbulence. It was only discovered a few years ago that the free atmosphere is not turbulent, that is, not turbulent in a degree which affects wings. Long before that some German free flight tests showed that wings if really smooth could have very low drags indeed, but people did not believe the results for a long time.

Some years later we did similar tests in this country and got just as low drags. Then large models were tested in a non-turbulent tunnel in Germany and drags were found that were 15 per cent. less than those measured in the U.S.A. at the same Reynold's Number in the Variable Density Tunnel. But the results of such work are not quite clear, for in the non-turbulent tunnel the model was larger and relatively smoother than in the turbulent tunnel, so there are effects both of smoothness and turbulence combined. Even if the flow were fully turbulent the smoothness should reduce the drag, but the lack of turbulence will reduce it still further.

Dr. Lewis of the N.A.C.A. in his lecture before the Royal Aeronautical Society described the new low turbulence wind tunnel at Langley Field and stated that they had discovered new aerofoil shapes which have drags very much lower than present types. A description of a demonstration at Langley Field states that there exists "a low drag boundary layer over almost its entire surface, and the demonstration showed that its drag is only a fraction of that of the conventional wing."

It may be that the Consolidated boat uses the wing as developed at Langley Field, although it has been stated that it was invented by a member of the Consolidated staff. At any rate it is likely that it uses the same principle to reduce the drag as does the N.A.C.A. wing, and that is obviously some means of delaying the transition of the laminar boundary layer.

Structural Problems

Although we do not yet know just exactly how the wing is shaped in section, we can say that it combines smoothness and careful attention to the curvature over the front portion. This question of smoothness raises a very important matter. It is difficult to attain real trueness of section unless the wing is covered over the front portion with thick plywood or metal or plastic. If weight is not to be wasted, some type of structure should be adopted which tends to concentrate structure over that part, such as the single spar "D" nose type.

A really smooth wing will have no rivet heads and in detail and general fairness of surface will be as mirror-like as any modern car coachwork. But there is an associated problem with these low-drag wings. No matter what trouble is taken, a rubber de-icer along the leading edge will break up the laminar flow and spoil any attempt to lower the drag below present values. De-icing paste would do likewise, for it also increases roughness.

Another problem in multi-engined types is the slipstream behind propellers. Such slipstreams are turbulent, so that behind tractor propellers the laminar flow ceases at the stagnation point on the wing which is just at the leading edge. There is thus little use trying to produce a refined wing and place airscrews in front of it.

So it is seen that if we are to be able to use a low-drag wing, we may have to alter our wing structure, most certainly our present de-icing methods and use pusher airscrews. The last item alone means a revolution in design.

Perhaps this possibility of reducing the drag of our wings may result in great changes in our aeroplanes, and if it does the changes will start soon.

THE CONSOLIDATED 31

Monoplane with semi-monocoque hull.

Outer covering of aluminium-coated aluminium alloy.

Planing surface of the bottom flush riveted.

Fixed tail surfaces flush riveted.

Moveable surfaces fabric covered.

Wing span approximately 110 ft. Maximum chord 14 ft.

Wings are full cantilever flush riveted, made in three sections the centre section with integral fuel tanks.

Fowler trailing edge flaps hydraulically operated.

Retractable outboard floats.

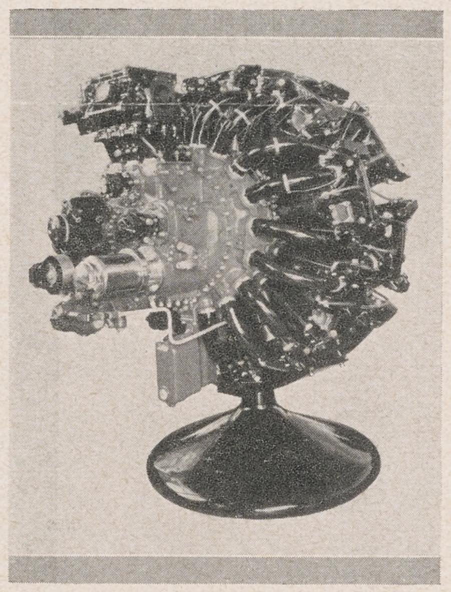
Airscrews are 16 ft. diameter Hamilton Standard hydromatic full-feathering.

As commercial air liner 52 passengers and crew of five can be carried.

A hydraulically operated, retractable tricycle beaching gear is fitted.

First flight at San Diego was made ten months after the flying-boat was conceived. It was built as a private venture.

Engines are 18 cylinder double row Wright Duplex-Cyclones each of 2,000 h.p., as shown below.



NOV 6 1939

Page 18 Sun 11-15-39

CONSOLIDATED PLANT OKEHED

Council Will Permit Three-Story Structure

While Consolidated Aircraft Corp. officials await word almost momentarily from the Navy Department regarding its low bid for approximately $20,000,000 in new construction, first step in the plant's expansion program has been made possible by the City Council.

An amendment to the city's building code has been adopted to allow construction of three-story all-steel buildings, primarily at Consolidated's request. Previous regulations permitted only frame buildings higher than two stories.

3-STORY PLANT

The aircraft plant, however, planned to build a three-story steel 60 by 180-foot structure for temporary use as an office building, to be converted later for manufacturing purposes. Plant Engineer William A. Maloney requested the ordinance change of the Board of Examiners and Appeals, whose favorable recommendation was approved by the Council.

DECISION ANY DAY

Maj. Reuben H. Fleet, president, declared yesterday that he was expecting to hear "any day" of the Navy's decision on award of the contract for building a large number of advanced PBY-type bombers.

Total plant enlargement contemplated by the firm will provide 92 per cent extra floor space in a 400 by 900 foot addition, to be located just north of the present factory, on 17 acres of land recently leased from the city.

Union 11-16-39

16 Congressmen To View Local Plane Plants

Sixteen congressmen from the senate and house military affairs committee and the senate appropriations committee are to arrive at 2:25 p.m. Nov. 28 by air for a one-day visit of airplane manufacturing plants and civil schools engaged in training air cadets.

The solons are coming in three transport planes. They are headed by Sen. Elmer Thomas, chairman of the senate subcommittee on appropriations for the war department, and Rep. Andrew J. May, chairman of the house military affairs committee.

Other congressmen in the party will be Sens. Harry S. Truman, appropriations subcommittee; Sherman Minton, Chan Guerney and H. H. Schwartz, senate military affairs committee; Reps. R. Ewing Thomason, Andrew Edmiston, Edwin M. Schaefer, John M. Costello, Overton Brooks, John J. Sparkman, Charles R. Clason, Paul W. Shafer, William D. Byron and Thomas E. Martin, house military affairs committee.

After an overnight stay here they are to leave at 1 p.m. Nov. 29 for March field, Riverside, and Los Angeles. After inspections in the Los Angeles area they are to go northward, visiting Sacramento, San Francisco, Ft. Lewis, Wash., Salt Lake City, Ogden and Cheyenne.

Accompanying the congressmen will be Maj. Arthur R. Wilson, war department general staff, and Maj. John E. Upston, air corps.

Sun 11-16-39

MILLION DOLLAR NAVY BASE FOR PACIFIC

HONOLULU, Nov. 16. — First steps toward construction of a $1,100,000 base for a squad of Navy patrol bombers at Palmyra Island was taken today when a survey party left the Pearl Harbor Navy base on the mine layer Preble for Palmyra, 1000 miles south.

Other bases are planned at Midway Island, Wake Island and Johnston Island, in the mid-Pacific. They are provided for in Navy appropriations bill passed last spring.

ENGINES FOR S. D. PLANES ORDERED

Sun 11-20-39

Cotracts totalling $13,000,000 have been awarded by the War Department to United Aircraft Corp., East Hartford, Conn., to supply aircraft manufacturers, including the Consolidated and Ryan plants in San Diego.

Included in the orders were an undisclosed amount of 1380 horsepower engines for the new four-motored Army bombers under construction at Consolidated, and for 420 horsepower engines to be installed in Ryan observation planes.

Sun 11-17-39

Congressmen To Inspect Air Industry, Schools

To inspect San Diego's aircraft industry and civilian schools training military fliers, 16 Congressmen of the Senate and House Military Affairs Committees will arrive here by plane Nov. 28 for a 24-hour stay.

In the group, headed by Sen. Elmer Thomas, chairman of the Senate subcommittee War Department on appropriations, and Rep. Andrew J. May, chairman of the House Military Affairs Committee, will be:

Sens. Harry S. Truman, Sherman Minton, C. Guerney, and H. H. Schwartz, and Reps. R. Ewing Thomason, Andrew Edminston, Edwin M. Schaefer, John M. Costello, Overton Brooks, John J. Sparkman, Charles R. Clason, Paul W. Shafer, William D. Byron, and Thomas E. Martin.

The solons will continue north in three Army transport planes, and are due to visit March Field, Los Angeles, Sacramento, San Francisco, Ft. Lewis, Wash., Salt Lake City, Ogden and Cheyenne.

Union 11-17-39

Air Deliveries Barred Under Federal Ruling

WASHINGTON, Nov. 16 (A.P.)—American warplanes can be pushed or pulled across the border for delivery in Canada, government officials held informally today, but they cannot be flown across under their own power.

This is their conclusion after days of discussion of one of the most intricate problems raised by the neutrality act.

ON

Features,
ns

The San Diego Sun

SAN DIEGO, CALIFORNIA, TUESDAY, NOVEMBER 21, 1939 Page 11

SECOND SECTION

Classified Advertising, Sports, and Financial News

TAX EASE PLAN AIDS CONSOLIDATED EXPANSION

COMPANY READY TO ACCEPT NAVY BOMBER ORDER

Delay In Award Due To Previous Uncertainty Of Financing Plant

By HAROLD KEEN
Aviation Editor

Consolidated Aircraft Corp. officials were jubilant today over apparent establishment by the Administration of a policy that will facilitate a plant expansion program designed to double floor space of the San Diego concern.

President Roosevelt, according to Washington reports, has assured the Army and Navy of preferential tax treatment for manufacturers who intend to expand facilities which could be used to provide national defense needs.

S. D. FIRM BIDS LOW

The San Diego firm was low bidder on a large number of Navy patrol bombers, with the contract expected to run as high as $20,000,000.

Delay in the anticipated award has been caused by uncertainty of methods of financing and amortizing the investment for an enlarged plant needed to turn out the bombers—probably as many as 200—in rapid order.

Cost of the huge factory addition, it was learned authoritatively, may be as great as $2,000,000.

COSTS COMPUTED

Under the Administration's plan the Treasury Department would set forth in advance of completion of contracts the manner in which the Internal Revenue Bureau would treat the cost of any special facilities in computation of the maximum profits allowed under the Vinson-Trammel Act—10 per cent on Naval vessels, and 12 per cent on Military and Naval aircraft.

Normally, the cost of new facilities may be amortized by depreciation or obsolescence allowances determinable only on completion of the contract.

When the Army and Navy certifies to the treasury that installation of new equipment is necessary for the national defense program and that after completion of the contract such facilities will be useless, the treasury and contractor then will agree on the fixed percentage of reasonable cost to be charged when the profits are computed within limitations of the Vinson Trammell Act.

EXPANSION ABSORBS PROFIT

The difficulty in Consolidated's case was that a large percentage of its profits on the pending Navy contract would be absorbed by the plant expansion cost, and that this increase in facilities might not be practical for a normal volume of future work—following the war emergency—once the Navy deliveries have been completed.

News of the government's attitude was received by Maj. Fleet today with a note of optimism. He saw in it a possible paving of the way for award of the $20,000,000 contract, and construction of the plant addition, to the satisfaction of both the contractor and the Navy.

"Companies are loathe to expand for a war emergency where their profit is limited by law and where they would end up with excess facilities that would probably be idle after the emergency is past," Maj. Fleet said today.

"Apparently the Administration, in order to get its requirements accelerated, is authorizing its contractors who are willing to increase production for them, to charge off part of the cost of the excess facilities to the contract work to be performed."

U. S. Plans Aid To Encourage Plane Building

Tribune 11-20-39

WASHINGTON, Nov. 20 (A.P.)—Treasury officials today said they were considering an extension of their policy to encourage construction of new airplane and other types of factories connected with national defense by granting more liberal depreciation allowances.

In applying the 10 percent limitation on profits made on naval contracts, the present policy enables an armament manufacturer to charge off as expenses in relatively few years the cost of building a factory. Officials said this was done on the theory that in a few years the plant may have outlived its usefulness.

In the years in which larger depreciation allowances are permitted, profits as measured for tax purposes, are decreased by offsetting large amounts of depreciation against income. However, after all of the value of a new factory has been charged off, taxes might be higher for lack of such offsetting bookkeeping expenses.

The question of extending the practice has been brought to the attention of the treasury primarily by plane manufacturers and the army and navy. The question has particular importance now because of the plans of some airplane manufacturers to build new factories to meet allied orders.

S. D. To Be Host To Solon Group Tomorrow

Trib-Sun 11-27-39

Four senators and eight representatives, members of the senate and house military affairs committees and the senate appropriations subcommittee, are scheduled to arrive here by plane at 1:35 p.m. tomorrow for an overnight stay to inspect local aircraft factories and Ft. Rosecrans. Telegraphic advices received by the chamber of commerce state the group is en route here from San Antonio, Tex., following a tour of Central American countries and Mexico.

A stag dinner honoring the party will be given by the city-county-chamber of commerce at 7:30 p.m. tomorrow at Hotel del Coronado. During their stay here, they will visit Consolidated, Ryan and Solar aircraft plants, inspect Ft. Rosecrans and view activities of air cadets now in training at the Ryan school.

Sen. Elmer Thomas, of Ohio, chairman of the senate sub-committee on appropriations for the war department, heads the group. With him are Sens. Harry S. Truman, of Missouri, member of the same subcommittee, Sherman Minton, of Indiana, and Chan Guerney, of South Dakota, members of the senate military affairs committee, and the following, all members of the house military affairs committee: Reps. R. Ewing Thomason, of Texas; John M. Costello, of California;

City To Be Host To Visiting Solons

CONTINUED FROM PAGE ONE

Overton Brooks, of Louisiana; John J. Sparkman, of Alabama; Charles R. Clason, of Massachusetts; Paul W. Shafer, of Michigan; William D. Byron, of Maryland, and Thomas E. Martin, of Iowa.

The party will arrive in three army transport planes. With them are Maj. Arthur R. Wilson, of the war department general staff, and Maj. John E. Upston, from the office of the chief of the air corps.

Welcoming Group Named

From San Diego, the congressmen will go to the Los Angeles area and San Francisco. The Associated Press reported they are to inspect the new army air repair depot at Sacramento, which took the place of San Diego's Rockwell field, Dec. 4. The remainder of their tour takes them to the Pacific northwest and thence to Washington, D. C., via Cheyenne, Denver, Ft. Leavenworth, St. Louis and Wright field, O.

The last stop the congressmen are scheduled to make before arriving at San Diego is Ft. Huachuca, Ariz.

Army officers welcoming them upon their arrival at Lindbergh field will include Gen. Jacob E. Fickel, commanding March field, Riverside, and Col. Robert E Guthrie, commanding Ft. Rosecrans.

All San Diego inspections will be made tomorrow afternoon, according to present plans. The group is to leave at 9 a.m. Wednesday for March field and Long Beach.

The visit to San Diego is important because of the army aircraft manufacturing program now in effect here. Consolidated is building 4-engined motors for the army air corps, in addition to navy patrol bombers. Ryan is building army training planes and giving instruction to army air cadets. The Solar Aircraft Co. is manufacturing parts for planes.

THIRTEEN CONGRESSMEN TO INSPECT S. D. AIR PLANTS, DEFENSES TODAY

Union 11-28-39

Thirteen congressmen—five senators and eight representatives—of the powerful senate and house military affairs committees and the senate appropriations committee, are to arrive this afternoon at 1:35 by plane for a 19-hour visit to study aircraft production and defense facilities of this area. Inadequacy of local defense facilities to protect the port in the event of withdrawal of the navy and marine forces will be stressed to the visiting solons, who are to be taken on a trip to Ft. Rosecrans to see the antiquated equipment at that coast-defense station.

DEFENSE SAID INADEQUATE

A study of the local defense picture, completed recently by chamber of commerce committees, is to be laid before the congressmen. Action to remedy the defenses by modernizing Ft. Rosecrans long has been sought and recently Sen. Hiram Johnson promised "careful consideration" of the problem here. He is not, however, on the list of visiting congressmen.

With the departure of the fleet and the fleet marine force in event of war the base establishments valued at $40,000,000 would be left virtually unprotected, chamber leaders declared. Ft. Rosecrans guns are outranged by any battleship a major power might send against them and the personnel is so small it was doubted if there would be enough men to man even the guns now there.

Anti-aircraft guns also are badly needed here, it was said. While the national guard regiment is an anti-aircraft unit, it might be withdrawn for use elsewhere along the coast and if it remained it would suffer from lack of sufficient modern guns.

TO INSPECT AIR PLANTS

On arrival here this afternoon the visiting congressmen will be met by city and county officials, aircraft and training executives and Col. Robert E. Guthrie, commanding Ft.

(Continued on Page A, Col. 1)

Solons to View S. D. Defenses

(Continued from Page 1)

Rosecrans. Gen. Jacob Fickel, commanding March field, Riverside, also may fly down to greet the visitors.

The afternoon will be spent in inspections at Consolidated, Ryan and Solar aircraft factories, Ryan and Speer aviation-training centers, and Ft. Rosecrans.

A stag dinner honoring the congressmen will be given by the city, county and chamber of commerce at Hotel del Coronado tonight, 7:30. The visitors are expected to leave in their army transport planes for March field tomorrow, 9 a.m.

Heading the delegation will be Senators Elmer Thomas, Oklahoma, chairman of the senate subcommittee on war department appropriations; Sherman Minton, Indiana; Harry S. Truman, Missouri,; Chan Guerney, South Dakota, all of the senate military affairs committee, and Sen. Dennis Chavez, New Mexico; Reps. R. Ewing Thomason, Texas; John M. Costello, California; Overton Brooks, Louisiana; Charles R. Clason, Massachusetts; Paul W. Shafer, Michigan; William D. Byron, Maryland; Thomas E. Martin, Iowa, and John J. Sparkman, Alabama, all members of the house military affairs committee.

Accompanying the party will be Majors Arthur R. Wilson, war department general staff, and John E. Upston, air corps.

SOME JOBS FOR BIG BOMBERS

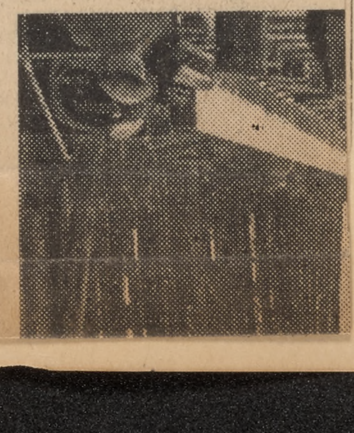
Evening Gazette 12/16/40

By
EDWARD

NOW that the first of the much-heralded four-engined bombers are due from America, the taxpayer who foots the bill is entitled to ask what are we going to do with them?

First of all a little de-bunking will do no harm. The skie over Britain are not black wit

should not be left in a seaworthy condition to cancel out, so to speak, certain powerful units of the British Navy. Yet that Navy cannot get at them with its own guns while they skulk in harbour. The only



Union 11-29-39

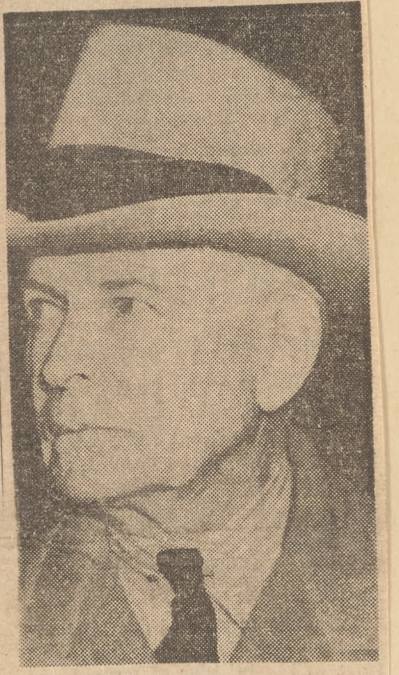
SENATORS, REPRESENTATIVES VIEW ARMY, NAVY DEFENSES ON TOUR HERE

Members of the congressional military affairs inspection party on arrival at Lindbergh field yesterday afternoon. Left to right: Sen. Elmer Thomas, Sen. Harry S. Truman, Rep. Paul W. Shafer, Sen. Sherman Minton, Sen. Dennis Chavez, Rep. Overton Brooks, Rep. Thomas E. Martin, Rep. John J. Sparkman, Rep. John M. Costello and Rep. Charles R. Clason. Rep. William D. Byron arrived by another plane later.

* * *

BRIG. GEN. J. E. FICKEL
. . . west coast air chief.

* * *



SEN. ELMER THOMAS
. . . "I haven't seen an anti-aircraft gun."

11 SOLONS ARRIVE IN S. D. FOR ARMAMENT INSPECTION

See New Bomber at Consair Plant; Will Leave Today for March Field

On the mast comprehensive aerial tour of the nation's defenses ever attempted by any congressional party, four senators and seven representatives arrived late yesterday for an inspection of lacol defense needs and a study of the part San Diego is playing in the aerial rearmament of America. The congressmen roared down to Lindbergh field at 4:30 in three army transports and immediately went to the Consolidated aircratf plant to inspect the work being done there. Under guidance of Maj. Reuben Fleet, Consolidated head, they were shown the new army bomber, a four-motored craft whose capabilities are clothed in military secrecy, but which is said to have a speed greater than any large bombing craft in the world today.

FIRST PLANT VISITED

It was the first aircraft factory the congressmen had seen on their 8000-mile tour which began Nov. 9 at Washington and included a visit to every Central American country en route to Panama, where the vital canal link was studied, and thence back through Mexico and the southwest to San Diego.

They showed great interest in the fabrication of the army ship—all the congressmen are connected either with the house and senate military affairs committee or the house or senate subcommittees on appropriations for the army—and also in the construction of the famous navy PBY type craft, pioneered by the San Diego firm.

Afterward they were shown a motion picture of Consolidated operations which took in departments the visitors were unable to inspect because of time limitations.

In the evening they were guests of the city, county and chamber of commerce at Hotel del Coronado.

DREDGE WORK URGED

Advisability of immediate action to dredge an area adjacent to Ft. Rosecrans, to add 15 acres to the land available for coast defense works at an approximate cost of $80,000, was stresesd at the dinner by Maj. Gen. H. B. Fiske, U.S.A. ret. and members of the chamber of commerce military committee. Advisability of adequate anti-aircraft protection for the San Diego naval base, and for more modern artillery at Ft. Rosecrans also was impressed on the visitors.

Aboard the army transports when

(Continued on Page 2, Col. 8)

Canal Lacks Air Defenses

The Panama canal—vital link in the national defense picture is virtually defenseless from air attack, Sen Elmer Thomas (D-Okla), chairman of the senate subcommittee on war department appropriations, declared yesterday on his arrival with a congressional party which has been inspecting army outposts to the east and south.

"It seems to be adequately protected against sea or land attack," said the senator, as he paused on his arrival at Lindbergh field aboard an army transport plane. "But it has no adequate air defense. There are big guns there and army stations. Also there are a lot of planes. But I didn't see an anti-aircraft gun while I was there. The vital need, I would say, is for better anti-aircraft protection of the canal."

Sen. Thomas said the lack of anti-aircraft guns was apparent not only at the canal but everywhere the party has visited. Asked whether he would recommend additions of equipment along this line he said the purpose of the congressional party was to get a picture of the needs of the military establishment and it was the war department's business to make recommendations on necessary defense weapons.

Never before in history, the senator said, has a congressional com-

(Continued on Page A, Col. 8)

Canal Lacks Air Defenses

(Continued from Page 1)

mittee undertaken a more comprehensive check-up of national defense. Leaving Washington Nov. 9 in three army transports, the party, comprising members of four major committees—house and senate military affairs bodies, and house and senate subcommittees on war department appropriations—has traveled 8000 miles and still has 4000 to go before completing its journey at Washington about Dec. 15.

"Only in this manner can we familiarize ourselves with the points and conditions which the war department will outline in its requests for appropriations," he said. He emphasized that this was no congressional junket, as the solons often had to rise at 5 a.m. to make their schedule and spent long hours in the air.

---

11 Solons Arrive For Inspection Of S. D. Defenses

(Continued from Page 1)

they dropped to Lindbergh field were Sens. Elmer Thomas, Oklahoma; Sherman Minton, Indiana; Dennis Chavez, New Mexico and Harry S. Truman, Missouri; Reps. John Martin Costello, California; Overton Brooks, Louisiana; Charles Russell Clason, Massachusetts; Paul W. Shafer, Michigan; John J. Sparkman, Alabama, and Thomas Ellsworth Martin, Iowa.

TRIP UNPRECEDENTED

"Never before so far as I have heard have members of the four committees concerned with war department appropriations made a trip like this," said Sen. Elmer Thomas, who headed the party.

The committee's tour will include defense points up to the Canadian border, thence across the country to take in munitions, armament and aircraft factories, along with various military posts en route.

This morning the congressmen will inspect the Ryan and Solar aircraft plants and the army primary training school at the Ryan aeronautics division. The visitors are to leave at 9 a. m. for March field, Riverside, going thence to Los Angeles for a two-day inspection of air schools and aircraft factories before proceeding northward.

AIDS ACCOMPANY SOLONS

Accompanying the congressmen as military aids are Majs. Arthur R. Wilson of the war department general staff, who was largely instrumental in arranging the itinerary of the party, and John E. Upston, from the office of the chief of air corps.

Brig. Gen. Jacob E. Fickel, commanding the First Wing, army air corps G. H. Q., whose headquarters are at March field, flew here yesterday and greeted the vistiors. He will fly with them to March field this morning.

Gen. Fickel commands army air activities on the west coast, where there are three fields—March, Moffett and Hamilton—with another under construction at Tacoma.

Gen. Fickel reported that March field is in process of expansion which will add 600 men and 25 officers to the personnel. There are 110 planes there, while a modernizing program will call for 60 new pursuit craft and 30 bombers of the flying fortress type to replace some of the older equipment on hand.

New Military Orders

"Aviation" Nov. 39

Army

- The Pioneer Instrument Co., $573,990 for drift meter assemblies.
- Aviation Manufacturing Corp., Stinson Div., $1,853,451 for type O-49 observation planes. ✓
- Bellanca Aircraft Corp., $181,698, for type YO-50 observation planes. ✓
- Ryan Aeronautical Co., $132-020 for type YO-51 observation planes. ✓
- Glenn L. Martin, $16,125,586, for type B-26 bombardment planes.* (See p. 63.) ✓
- North American Aviation Co., Inc., $13,049,601 for bombardment planes, type B-25; advanced training planes, type AT-1; basic training planes, type BT-14.* ✓
- Boeing Airplane Co. (Stearman Div.), $2,843,405, primary planes. ✓
- Aviation Manufacturing Corp., $3,029,036, for basic training, BT-13 planes. ✓
- Consolidated Aircraft Corp., $8,613,674 for bombardment planes, type B-17C. ✓
- Lockheed Aircraft Corp., $4,653,703, for pursuit planes, type P-38.* ✓
- Wright Aeronautical, $6,963,292, for airplane engines: R1820–65 1000 h.p. and R2600–9 1500 h.p.*
- Republic Aviation Corporation, (new name for Seversky Aircraft) $3,478,000 for pursuit planes. ✓
- North American, $558,000, for airplanes and parts. ✓
- Goodyear, $98,235, for wheel and brake assemblies.
- Stearman Division, Boeing, $2,843,405, for primary training planes. ✓

Navy

- Vought Sikorsky, $1,988,420, for airplanes and parts. ✓
- Douglas Aircraft, $716,900 for airplanes. ✓
- North American Aviation, Inc., awarded $676,400 for air planes and spare parts. ✓
- Kollsman Instrument Co., Inc., and Pioneer Instrument Div. of Bendix Aviation Corp., awarded $34,862 for aircraft compasses. ✓
- Vought Sikorsky Aircraft Div., United Aircraft Corp., $1,998,420 for airplanes and spares. ✓
- Kollsman Instrument Co., Inc., $45,937* for aircraft indicators and spares. ✓
- Sperry Gyroscope Co., Inc., $201,600 for gyros, horizon and directional. ✓
- Breeze Corp., Inc.,* $17,050 for aircraft starters. ✓
- The Pioneer Instrument Co., $111,290 for oxygen regulator assemblies. ✓
- Pump Engineering Corp., $205,067.92 for vacuum pump assemblies. ✓
- The General Electric Co., $836,007 for supercharger assemblies. ✓

* Approximated, Aviation, Oct. 1939, page 62.

Union 12-4-39

Plane Contract Expected Soon By Consolidated

Possibility that the Consolidated Aircraft Corp. may receive a $20,000,000 contract this week for construction of an undisclosed number of new long-range offshore patrol bombers, was expressed yesterday by Consolidated officials.

Maj. R. H. Fleet, president of the municipal airport plant, flew to Washington last week for final conference with naval authorities.

The navy department recently announced that Consilidated submitted the lowest bid for the construction of twin-motored bombers. Two hundred twenty-five of this type plane have been built at Consolidated for the navy since the factory was established here.

EXPANSION COSTLY

It is reported one of the chief obstacles in award of the contract is the insistence of Consolidated officials that the government stand the expense of constructing the new building in which the bombers would be built. The estimated cost is said to exceed $1,000,000. The factory is working to capacity on army and navy contracts.

The proposeod plant expansion would increase the present floor space by 92 percent. The building would be 400 by 900 feet.

NAVY ASKED TO PAY

Maj. Fleet contends the navy department should bear the greater part of the expense of the new factory as the building would not be used under normal manufacturing conditions in the aircraft industry.

More than $100,000,000 in contracts are being completed by southern California aircraft companies for the American and foreign governments. All these factories, except Consolidated, have expanded their facilities to meet the increasing demand for airplanes.

The proposed new factory at Lindbergh field would employ from 2000 to 3000 men but Consolidated officials point out at least six months would be required to construct the factory after the navy department has awarded the $20,000,000 contract.

ON

Features,
ns

The San Diego Sun

SAN DIEGO, CALIFORNIA, TUESDAY, NOVEMBER 21, 1939 Page 11

SECOND SECTION

Classified Advertising, Sports, and Financial News

TAX EASE PLAN AIDS CONSOLIDATED EXPANSION

COMPANY READY TO ACCEPT NAVY BOMBER ORDER

Delay In Award Due To Previous Uncertainty Of Financing Plant

By HAROLD KEEN
Aviation Editor

Consolidated Aircraft Corp. officials were jubilant today over apparent establishment by the Administration of a policy that will facilitate a plant expansion program designed to double floor space of the San Diego concern.

President Roosevelt, according to Washington reports, has assured the Army and Navy of preferential tax treatment for manufacturers who intend to expand facilities which could be used to provide national defense needs.

S. D. FIRM BIDS LOW

The San Diego firm was low bidder on a large number of Navy patrol bombers, with the contract expected to run as high as $20,000,000.

Delay in the anticipated award has been caused by uncertainty of methods of financing and amortizing the investment for an enlarged plant needed to turn out the bombers—probably as many as 200—in rapid order.

Cost of the huge factory addition, it was learned authoritatively, may be as great as $2,000,000.

COSTS COMPUTED

Under the Administration's plan the Treasury Department would set forth in advance of completion of contracts the manner in which the Internal Revenue Bureau would treat the cost of any special facilities in computation of the maximum profits allowed under the Vinson-Trammel Act—10 per cent on Naval vessels, and 12 per cent on Military and Naval aircraft.

Normally, the cost of new facilities may be amortized by depreciation or obsolescence allowances determinable only on completion of the contract.

When the Army and Navy certifies to the treasury that installation of new equipment is necessary for the national defense program and that after completion of the contract such facilities will be useless, the treasury and contractor then will agree on the fixed percentage of reasonable cost to be charged when the profits are computed within limitations of the Vinson Trammell Act.

EXPANSION ABSORBS PROFIT

The difficulty in Consolidated's case was that a large percentage of its profits on the pending Navy contract would be absorbed by the plant expansion cost, and that this increase in facilities might not be practical for a normal volume of future work—following the war emergency—once the Navy deliveries have been completed.

News of the government's attitude was received by Maj. Fleet today with a note of optimism. He saw in it a possible paving of the way for award of the $20,000,000 contract, and construction of the plant addition, to the satisfaction of both the contractor and the Navy.

"Companies are loathe to expand for a war emergency where their profit is limited by law and where they would end up with excess facilities that would probably be idle after the emergency is past," Maj. Fleet said today.

"Apparently the Administration, in order to get its requirements accelerated, is authorizing its contractors who are willing to increase production for them, to charge off part of the cost of the excess facilities to the contract work to be performed."

U. S. Plans Aid To Encourage Plane Building

Tribune 11-20-39

WASHINGTON, Nov. 20 (A.P.)—Treasury officials today said they were considering an extension of their policy to encourage construction of new airplane and other types of factories connected with national defense by granting more liberal depreciation allowances.

In applying the 10 percent limitation on profits made on naval contracts, the present policy enables an armament manufacturer to charge off as expenses in relatively few years the cost of building a factory. Officials said this was done on the theory that in a few years the plant may have outlived its usefulness.

In the years in which larger depreciation allowances are permitted, profits as measured for tax purposes, are decreased by offsetting large amounts of depreciation against income. However, after all of the value of a new factory has been charged off, taxes might be higher for lack of such offsetting bookkeeping expenses.

The question of extending the practice has been brought to the attention of the treasury primarily by plane manufacturers and the army and navy. The question has particular importance now because of the plans of some airplane manufacturers to build new factories to meet allied orders.

S. D. To Be Host To Solon Group Tomorrow

Trib-Sun 11-27-39

Four senators and eight representatives, members of the senate and house military affairs committees and the senate appropriations subcommittee, are scheduled to arrive here by plane at 1:35 p.m. tomorrow for an overnight stay to inspect local aircraft factories and Ft. Rosecrans. Telegraphic advices received by the chamber of commerce state the group is en rout here from San Antonio, Tex., following a tour of Central American countries and Mexico.

A stag dinner honoring the party will be given by the city-county-chamber of commerce at 7:30 p.m. tomorrow at Hotel del Coronado. During their stay here, they will visit Consolidated, Ryan and Solar aircraft plants, inspect Ft. Rosecrans and view activities of air cadets now in training at the Ryan school.

Sen. Elmer Thomas, of Ohi chairman of the senate sub-committee on appropriations for the w department, heads the group. Wi him are Sens. Harry S. Truman, Missouri, member of the same subcommittee, Sherman Minton, of Indiana, and Chan Guerney, of South Dakota, members of the senate military affairs committee, and the following, all members of the house military affairs committee: Reps. R. Ewing Thomason, of Texas; John M. Costello, of California;

City To Be Host To Visiting Solons

CONTINUED FROM PAGE ONE

Overton Brooks, of Louisiana; John J. Sparkman, of Alabama; Charles R. Clason, of Massachusetts; Paul W. Shafer, of Michigan; William D. Byron, of Maryland, and Thomas E. Martin, of Iowa.

The party will arrive in three army transport planes. With them are Maj. Arthur R. Wilson, of the war department general staff, and Maj. John E. Upston, from the office of the chief of the air corps.

Welcoming Group Named

From San Diego, the congressmen will go to the Los Angeles area and San Francisco. The Associated Press reported they are to inspect the new army air repair depot at Sacramento, which took the place of San Diego's Rockwell field, Dec. 4. The remainder of their tour takes them to the Pacific northwest and thence to Washington, D. C., via Cheyenne, Denver, Ft. Leavenworth, St. Louis and Wright field, O.

The last stop the congressmen are scheduled to make before arriving at San Diego is Ft. Huachuca. Ariz.

Army officers welcoming them upon their arrival at Lindbergh field will include Gen. Jacob E. Fickel, commanding March field, Riverside, and Col. Robert E Guthrie, commanding Ft. Rosecrans.

All San Diego inspections will be made tomorrow afternoon, according to present plans. The group is to leave at 9 a.m. Wednesday for March field and Long Beach.

The visit to San Diego is important because of the army aircraft manufacturing program now in effect here. Consolidated is building 4-engined motors for the army air corps, in addition to navy patrol bombers. Ryan is building army training planes and giving instruction to army air cadets. The Solar Aircraft Co. is manufacturing parts for planes.

THIRTEEN CONGRESSMEN TO INSPECT S. D. AIR PLANTS, DEFENSES TODAY

Union 11-28-39

Thirteen congressmen—five senators and eight representatives—of the powerful senate and house military affairs committees and the senate appropriations committee, are to arrive this afternoon at 1:35 by plane for a 19-hour visit to study aircraft production and defense facilities of this area. Inadequacy of local defense facilities to protect the port in the event of withdrawal of the navy and marine forces will be stressed to the visiting solons, who are to be taken on a trip to Ft. Rosecrans to see the antiquated equipment at that coast-defense station.

DEFENSE SAID INADEQUATE

A study of the local defense picture, completed recently by chamber of commerce committees, is to be laid before the congressmen. Action to remedy the defenses by modernizing Ft. Rosecrans long has been sought and recently Sen. Hiram Johnson promised "careful consideration" of the problem here. He is not, however, on the list of visiting congressmen.

With the departure of the fleet and the fleet marine force in event of war the base establishments valued at $40,000,000 would be left virtually unprotected, chamber leaders declared. Ft. Rosecrans guns are outranged by any battleship a major power might send against them and the personnel is so small it was doubted if there would be enough men to man even the guns now there.

Anti-aircraft guns also are badly needed here, it was said. While the national guard regiment is an anti-aircraft unit, it might be withdrawn for use elsewhere along the coast and if it remained it would suffer from lack of sufficient modern guns.

TO INSPECT AIR PLANTS

On arrival here this afternoon the visiting congressmen will be met by city and county officials, aircraft and training executives and Col. Robert E. Guthrie, commanding Ft.

(Continued on Page A, Col. 1)

Solons to View S. D. Defenses

(Continued from Page 1)

Rosecrans. Gen. Jacob Fickel, commanding March field, Riverside, also may fly down to greet the visitors.

The afternoon will be spent in inspections at Consolidated, Ryan and Solar aircraft factories, Ryan and Speer aviation-training centers, and Ft. Rosecrans.

A stag dinner honoring the congressmen will be given by the city, county and chamber of commerce at Hotel del Coronado tonight, 7:30. The visitors are expected to leave in their army transport planes for March field tomorrow, 9 a.m.

Heading the delegation will be Senators Elmer Thomas, Oklahoma, chairman of the senate subcommittee on war department appropriations; Sherman Minton, Indiana; Harry S. Truman, Missouri,; Chan Guerney, South Dakota, all of the senate military affairs committee, and Sen. Dennis Chavez, New Mexico; Reps. R. Ewing Thomason, Texas; John M. Costello, California; Overton Brooks, Louisiana; Charles R. Clason, Massachusetts; Paul W. Shafer, Michigan; William D. Byron, Maryland; Thomas E. Martin, Iowa, and John J. Sparkman, Alabama, all members of the house military affairs committee.

Accompanying the party will be Majors Arthur R. Wilson, war department general staff, and John E. Upston, air corps.

SOME JOBS FOR BIG BOMBERS

Evening Gazette 12/16/40

By EDWARD RUGG

NOW that the first of the much-heralded four-engined bombers are due from America, the taxpayer who foots the bill is entitled to ask what are we going to do with them?

First of all a little de-bunking will do no harm. The skies over Britain are not black with giant 'planes from the States bigger than anything we have ever seen.

Nor are they the world's biggest military aircraft. Actually, they are rather smaller and considerably lighter than our own Sunderland flying-boats.

They are of two types. Some are very modern, very efficient machines built by the Consolidated concern and measuring 110 feet from wing-tip to wing-tip. They are said to weigh 40,000lbs. fully loaded, to have a maximum speed of 300 m.p.h., and to carry a maximum bomb load of four tons.

It need hardly be said that all these conditions do not occur at one and the same time, and it is no criticism of the Consolidated to point out that our own Wellingtons can be given a longer range while our Beauforts have a higher speed.

The others are Boeing B 17 B "flying fortresses," much older, somewhat smaller, and with a top speed no greater than the Hampden or Wellington. The suggestion that they have a range of 4,200 miles is in a way correct, but at that range their bomb load would hardly be worth the journey.

◆

ALL this notwithstanding, they remain a most worthwhile contribution to our striking force. They should have at least two valuable qualities inherent in their very size.

It is a thousand pities the American Army Air Corps would not release the latest Nordern bomb-sight for our use, but the Sperry sight, with which these machines are equipped, is said to be excellent, and bombers of this size should be very steady in the air. It needs little imagination to see that slight unsteadiness at the moment of release means that the bomb falls far from its intended target.

Secondly, while we already have bombers capable of penetrating to the furthest corner of Germany, these four-engined machines can go there with a useful bomb load.

The whole of Germany and most of the German-occupied territory is within a thousand miles of London. In practice it is unlikely that the newcomers will be sent quite so far afield. They will probably be used against targets nearer home, carrying more and/or bigger bombs than our twin-engined machines can accommodate.

For example, even before British bombers began to devastate the Ruhr industrial area, German industry, and especially the arms industry, had started to move towards the East and South-East. To-day there are numerous factories in South-Eastern Germany, to say nothing of occupied Poland and Czecho-Slovakia which are overdue for an unfriendly visit from the R.A.F.

If one half of the 26 American machines could be used every 24 hours, a most impressive amount of damage might be done and the moral effect would be enormous on workers who have hitherto believed themselves immune from British bombs.

◆

IT would obviously be hardly worth while going to some giant factory to drop one or two bombs of medium size per 'plane. Allowing for the proportion which might be expected to miss their mark, the effect might even be opposite from that we desired, since local Nazis would point derisively at the small striking power as they would say of the much-vaunted R.A.F.

But let even a small number of 'planes drop four tons of bombs per machine and acres of havoc might be caused by a single well-conducted raid.

Again, there are certain targets, and some of them the furthest afield from Britain, where a large number of bombs must be used to give best results.

When you bomb a railway, for instance, you are a super-optimist if you hope to hit first time.

Now among other things it is vital that we should do all we can to interrupt the supply of oil from Rumania to Germany.

Normally the vast water-way based on the Danube and the Rhine is used for this purpose by long strings of barges. During the next few months, however, much of this will be frozen solid and the already overworked railways between the two countries will be still further taxed. If our bombers can cause a long series of interruptions on the limited number of these lines we shall have scored a major success.

On the other hand, those responsible for our air strategy may prefer to concentrate on a few bridges at specially selected points.

Here we have the reverse set of circumstances. A bridge is a most difficult object to hit from the air, and it is surprising how much bombing a modern steel bridge will stand up to.

Direct hits from bombs of moderate size may interrupt traffic for a few days, but that is all. But if we can send over a squadron of super-bombers, each carrying two or three missiles of the largest size, we can hope to destroy vital bridges and so hold up the traffic for months on end—an objective which, once attained, would justify many successful raids.

◆

THERE is another target which may also call urgently for attention.

We know that the new German battleships Bismarck and Tirpitz are practically completed, even if not actually in service. These two ships, with their 15-inch guns, will much more than double the gun-power of the High Seas Fleet, and at least two sister ships are under construction.

It is of the utmost importance that the two first-named should not be left in a seaworthy condition to cancel out, so to speak, certain powerful units of the British Navy. Yet that Navy cannot get at them with its own guns while they skulk in harbour. **The only solution is to bomb them out of existence.**

This is easier said than done. The modern battleship is specially defended against air attack. Only the heaviest bombs in use would do more than superficial damage, and to render the Bismarck hors de combat for an indefinite period would require several direct hits with these.

It may be taken for granted that the pride of the Nazi Navy is simply surrounded with defences of all kinds. Only under the most favourable circumstances, one imagines, would our bomber command try to press home an attack on the Taranto scale. Yet occasionally weather conditions come along which are just right

When there exist one or two squadrons of machines capable of doing the 800 mile round trip to the German naval bases and of dropping three or four ton bombs per machine when they get there, we shall be in a position to make the most of the chance as soon as it comes our way.

In this way a single successful raid may well dispose of a real menace for good.

So much for some of the practical uses to which the new bombers may be put. As a footnote one may forecast a gathering of English designers around the first Consolidated 'plane to arrive. For these bombers make use of the Davis aerofoil wing hailed in America as the greatest structural advance since the Wellington designer, Mr. B. N. Wallis, adapted geodetic construction methods for use in manufacturing British bombers.

Union 11-29-39

SENATORS, REPRESENTATIVES VIEW ARMY, NAVY DEFENSES ON TOUR HERE

Members of the congressional military affairs inspection party on arrival at Lindbergh field yesterday afternoon. Left to right: Sen. Elmer Thomas, Sen. Harry S. Truman, Rep. Paul W. Shafer, Sen. Sherman Minton, Sen. Dennis Chavez, Rep. Overton Brooks, Rep. Thomas E. Martin, Rep. John J. Sparkman, Rep. John M. Costello and Rep. Charles R. Clason. Rep. William D. Byron arrived by another plane later.

* * *

11 SOLONS ARRIVE IN S. D. FOR ARMAMENT INSPECTION

See New Bomber at Consair Plant; Will Leave Today for March Field

On the mast comprehensive aerial tour of the nation's defenses ever attempted by any congressional party, four senators and seven representatives arrived late yesterday for an inspection of lacol defense needs and a study of the part San Diego is playing in the aerial rearmament of America. The congressmen roared down to Lindbergh field at 4:30 in three army transports and immediately went to the Consolidated aircratf plant to inspect the work being done there. Under guidance of Maj. Reuben Fleet, Consolidated head, they were shown the new army bomber, a four-motored craft whose capabilities are clothed in military secrecy, but which is said to have a speed greater than any large bombing craft in the world today.

FIRST PLANT VISITED

It was the first aircraft factory the congressmen had seen on their 8000-mile tour which began Nov. 9 at Washington and included a visit to every Central American country en route to Panama, where the vital canal link was studied, and thence back through Mexico and the southwest to San Diego.

They showed great interest in the fabrication of the army ship—all the congressmen are connected either with the house and senate military affairs committee or the house or senate subcommittees on appropriations for the army—and also in the construction of the famous navy PBY type craft, pioneered by the San Diego firm.

Afterward they were shown a motion picture of Consolidated operations which took in departments the visitors were unable to inspect because of time limitations.

In the evening they were guests of the city, county and chamber of commerce at Hotel del Coronado.

DREDGE WORK URGED

Advisability of immediate action to dredge an area adjacent to Ft. Rosecrans, to add 15 acres to the land available for coast defense works at an approximate cost of $80,000, was stresesd at the dinner by Maj. Gen. H. B. Fiske, U.S.A. ret. and members of the chamber of commerce military committee. Advisability of adequate anti-aircraft protection for the San Diego naval base, and for more modern artillery at Ft. Rosecrans also was impressed on the visitors.

Aboard the army transports when

(Continued on Page 2, Col. 8)

BRIG. GEN. J. E. FICKEL
. . . west coast air chief.

* * *

Canal Lacks Air Defenses

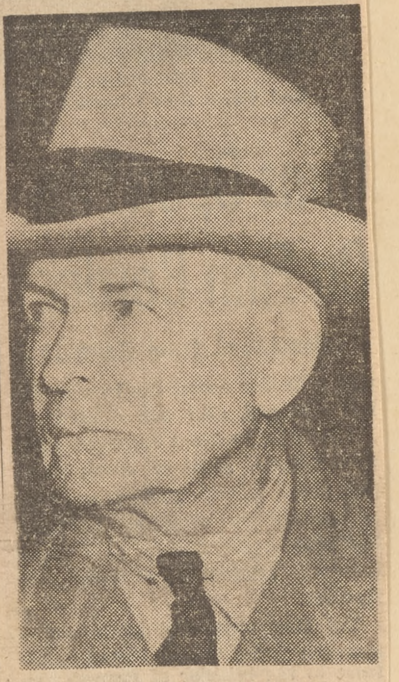
The Panama canal—vital link in the national defense picture is virtually defenseless from air attack, Sen Elmer Thomas (D-Okla), chairman of the senate subcommittee on war department appropriations, declared yesterday on his arrival with a congressional party which has been inspecting army outposts to the east and south.

"It seems to be adequately protected against sea or land attack," said the senator, as he paused on his arrival at Lindbergh field aboard an army transport plane. "But it has no adequate air defense. There are big guns there and army stations. Also there are a lot of planes. But I didn't see an anti-aircraft gun while I was there. The vital need, I would say, is for better anti-aircraft protection of the canal."

Sen. Thomas said the lack of anti-aircraft guns was apparent not only at the canal but everywhere the party has visited. Asked whether he would recommend additions of equipment along this line he said the purpose of the congressional party was to get a picture of the needs of the military establishment and it was the war department's business to make recommendations on necessary defense weapons.

Never before in history, the senator said, has a congressional com-

(Continued on Page A, Col. 8)



SEN. ELMER THOMAS
. . . "I haven't seen an anti-aircraft gun."

Canal Lacks Air Defenses

(Continued from Page 1)

mittee undertaken a more comprehensive check-up of national defense. Leaving Washington Nov. 9 in three army transports, the party, comprising members of four major committees—house and senate military affairs bodies, and house and senate subcommittees on war department appropriations—has traveled 8000 miles and still has 4000 to go before completing its journey at Washington about Dec. 15.

"Only in this manner can we familiarize ourselves with the points and conditions which the war department will outline in its requests for appropriations," he said. He emphasized that this was no congressional junket, as the solons often had to rise at 5 a.m. to make their schedule and spent long hours in the air.

11 Solons Arrive For Inspection Of S. D. Defenses

(Continued from Page 1)

they dropped to Lindbergh field were Sens. Elmer Thomas, Oklahoma; Sherman Minton, Indiana; Dennis Chavez, New Mexico and Harry S. Truman, Missouri; Reps. John Martin Costello, California; Overton Brooks, Louisiana; Charles Russell Clason, Massachusetts; Paul W. Shafer, Michigan; John J. Sparkman, Alabama, and Thomas Ellsworth Martin, Iowa.

TRIP UNPRECEDENTED

"Never before so far as I have heard have members of the four committees concerned with war department appropriations made a trip like this," said Sen. Elmer Thomas, who headed the party.

The committee's tour will include defense points up to the Canadian border, thence across the country to take in munitions, armament and aircraft factories, along with various military posts en route.

This morning the congressmen will inspect the Ryan and Solar aircraft plants and the army primary training school at the Ryan aeronautics division. The visitors are to leave at 9 a. m. for March field, Riverside, going thence to Los Angeles for a two-day inspection of air schools and aircraft factories before proceeding northward.

AIDS ACCOMPANY SOLONS

Accompanying the congressmen as military aids are Majs. Arthur R. Wilson of the war department general staff, who was largely instrumental in arranging the itinerary of the party, and John E. Upston, from the office of the chief of air corps.

Brig. Gen. Jacob E. Fickel, commanding the First Wing, army air corps G. H. Q., whose headquarters are at March field, flew here yesterday and greeted the vistiors. He will fly with them to March field this morning.

Gen. Fickel commands army air activities on the west coast, where there are three fields—March, Moffett and Hamilton—with another under construction at Tacoma.

Gen. Fickel reported that March field is in process of expansion which will add 600 men and 25 officers to the personnel. There are 110 planes there, while a modernizing program will call for 60 new pursuit craft and 30 bombers of the flying fortress type to replace some of the older equipment on hand.

New Military Orders

"AVIATION" Nov. 39

Army

- The Pioneer Instrument Co., $573,990 for drift meter assemblies.
- Aviation Manufacturing Corp., Stinson Div., $1,853,451 for type O-49 observation planes. ✓
- Bellanca Aircraft Corp., $181,698, for type YO-50 observation planes. ✓
- Ryan Aeronautical Co., $132-020 for type YO-51 observation planes. ✓
- Glenn L. Martin, $16,125,586, for type B-26 bombardment planes.* (See p. 63.) ✓
- North American Aviation Co., Inc., $13,049,601 for bombardment planes, type B-25; advanced training planes, type AT-1; basic training planes, type BT-14.* ✓
- Boeing Airplane Co. (Stearman Div.), $2,843,405, primary planes. ✓
- Aviation Manufacturing Corp., $3,029,036, for basic training, BT-13 planes. ✓
- Consolidated Aircraft Corp., $8,613,674 for bombardment planes, type B-17C. ✓
- Lockheed Aircraft Corp., $4,653,703, for pursuit planes, type P-38.* ✓
- Wright Aeronautical, $6,963,292, for airplane engines: R1820–65 1000 h.p. and R2600–9 1500 h.p.*
- Republic Aviation Corporation, (new name for Seversky Aircraft) $3,478,000 for pursuit planes. ✓
- North American, $558,000, for airplanes and parts. ✓
- Goodyear, $98,235, for wheel and brake assemblies.
- Stearman Division, Boeing, $2,843,405, for primary training planes. ✓

Navy

- Vought Sikorsky, $1,988,420, for airplanes and parts. ✓
- Douglas Aircraft, $716,900 for airplanes. ✓
- North American Aviation, Inc., awarded $676,400 for airplanes and spare parts. ✓
- Kollsman Instrument Co., Inc., and Pioneer Instrument, Div. of Bendix Aviation Corp., awarded $34,862 for aircraft compasses. ✓
- Vought Sikorsky Aircraft Div., United Aircraft Corp., $1,998,420 for airplanes and spares. ✓
- Kollsman Instrument Co., Inc., $45,937* for aircraft indicators and spares. ✓
- Sperry Gyroscope Co., Inc., $201,600 for gyros, horizon and directional. ✓
- Breeze Corp., Inc.,* $17,050 for aircraft starters. ✓
- The Pioneer Instrument Co., $111,290 for oxygen regulator assemblies. ✓
- Pump Engineering Corp., $205,067.92 for vacuum pump assemblies. ✓
- The General Electric Co., $836,007 for supercharger assemblies. ✓

* *Approximated. Aviation. Oct. 19'9, page 62.*

Union 12-4-39

Plane Contract Expected Soon By Consolidated

Possibility that the Consolidated Aircraft Corp. may receive a $20,000,000 contract this week for construction of an undisclosed number of new long-range offshore patrol bombers, was expressed yesterday by Consolidated officials.

Maj. R. H. Fleet, president of the municipal airport plant, flew to Washington last week for final conference with naval authorities.

The navy department recently announced that Consilidated submitted the lowest bid for the construction of twin-motored bombers. Two hundred twenty-five of this type plane have been built at Consolidated for the navy since the factory was established here.

EXPANSION COSTLY

It is reported one of the chief obstacles in award of the contract is the insistence of Consolidated officials that the government stand the expense of constructing the new building in which the bombers would be built. The estimated cost is said to exceed $1,000,000. The factory is working to capacity on army and navy contracts.

The proposeod plant expansion would increase the present floor space by 92 percent. The building would be 400 by 900 feet.

NAVY ASKED TO PAY

Maj. Fleet contends the navy department should bear the greater part of the expense of the new factory as the building would not be used under normal manufacturing conditions in the aircraft industry.

More than $100,000,000 in contracts are being completed by southern California aircraft companies for the American and foreign governments. All these factories, except Consolidated, have expanded their facilities to meet the increasing demand for airplanes.

The proposed new factory at Lindbergh field would employ from 2000 to 3000 men but Consolidated officials point out at least six months would be required to construct the factory after the navy department has awarded the $20,000,000 contract.

THE TRIBUNE-SUN, San Diego, Ca

Members of Congress Military Inspection Party

11-29-39

Five members of a congressional military inspection party, with Brig. Gen. J. E. Fickel, west coast air chief, are shown as they arrived here yesterday to inspect local navy and military establishments. They are, left to right, Sen. Harry S. Truman, Rep. Paul W. Shafer, Sen. Sherman Minton, Sen. Dennis Chavez, Sen. Elmer Thomas. The party left today for March field and Los Angeles.

Further S. D. Defenses Held Vital By Eleven Visiting Congressmen

Trib-Sun 11-29-39

First-hand information on the vital need for expansion of local naval and military defense facilities was gleaned by 11 members of

(Picture on Page 13-A)

a congressional military affairs party, who arrived here yesterday to inspect sea, shore and air establishments and airplane factories.

The party concluded its inspection this morning with a visit to Ryan Aircraft Co. and Solar Aircraft Co. plants, and left for March field, Riverside, and the Los Angeles district.

The group, traveling in three giant army transport planes, is on one of the most comprehensive tours of the nation's defenses by any congressional party in history. In the party here were Sens. Elmer Thomas (D-Okla), chairman, senate subcommittee on army appropriations; Harry S. Truman (D-Mo), army appropriations subcommittee member; Sherman Minton (D-Ind), senate military affairs committee member, and Dennis Chavez (D-NM), and Reps. John M. Costello (D-Calif), Overton Brooks (D-La), Charles R. Glason (R-Mass), Paul W. Shafer (R-Mich), John J. Sparkman (D-Ala), and Thomas E. Martin (R-Ia), all of the house military affairs committee.

Accompanying the solons as military aids were Majs. Arthur R. Wilson, of the war department general staff, and John E. Upston, from the

(Continued on Next Page, Col. 1)

Urge Increase In San Diego Defenses

Trib-Sun 11-29-39

CONTINUED FROM PAGE ONE

office of the chief of the air corps.

Speaking last night at a city-county-chamber of commerce dinner at Hotel del Coronado, Thomas stressed military preparations "along reasonable lines" as the best assurance against the danger of war.

Responding to addresses which emphasized San Diego's need for more adequate defense facilities, Thomas declared:

"The United States must follow a program of reasonable preparedness. We have less than 1,000,000 men who could be called at once in event of emergency. Already, on this trip, I have been impressed with the lack of equipment available for the troops we do have and, from what I've been told, San Diego is no exception."

The visiting solons were impressed with the need for added military facilities here by Maj. Gen. H. B. Fiske, U.S.A., ret., vice chairman, chamber military affairs committee, and Rear Adm. Joseph R. Defrees, 11th naval district commandant.

"To provide our fleet with freedom at sea, it is of utmost importance that our shore bases be strongly fortified and adequately garrisoned at all times," said Fiske. "We must remember that important elements of the fleet are permanently based on shore and local defense should be enforced whether the fleet is here or elsewhere. It is the business of the army to provide this protection."

Seeks Added Dredging

Fiske urged creation of permanent military units here, in addition to installation of new long-range guns at Ft. Rosecrans. It was pointed out that the present guns at the fort are of 1890 vintage. Fiske advised immediate action to dredge an area adjacent to the fort, to add 15 acres to land available for coast defense works. This would cost about $80,000. The speaker also stressed necessity of adequate anti-aircraft protection for local naval bases.

Importance of the bay dredging project now under way was stressed by DeFrees, who pointed out that expansion of naval facilities, basing of additional vessels here and relief of the already crowded anchorage accommodations depend upon its completion.

"There are 24 ship bases here at present, although adequate anchorage facilities are not available," he stated. "There are seven 10,000-ton cruisers at Long Beach, which belong here but are not in this harbor because the dredging project is not completed."

DeFrees also mentioned the local navy shore establishments, which represent an investment of nearly $50,000,000.

Base for 60 More Ships

"Through the aid of the chamber of commerce, an assurance by the navy that other facilities are needed and cooperation by congress, some $18,000,000 has been obtained for improvements. Just last year, $6,800,000 was expended. But more improvements are needed. It is the plan of the navy to base 60 more ships here, a step which cannot be taken until harbor dredging is completed."

Maj. Gen. R. H. Van Deman, chamber military affairs committee chairman, who presided at the dinner, asserted that "in the past 22 years, the army has received virtually no increase in its material."

"Modern wars are fought with modern weapons," he said. "Without equipment and men, our army is not modern."

Responding to Van Deman's request that the visiting solons "use your influence to get congress to give the army what it needs," Costello, Hollywood representative, replied:

"We already have seen examples of how military bases have been left to ruin due to inadequate appropriations of funds. But we are witnessing a change today. The army as an important part of our national defense is being given serious consideration. The war department will be given added funds for needed expansion. I'm sure that the coats will get a badly-needed share of these funds."

Frank Forward, chamber president, introduced city and county representatives, including Herbert E. Fish, vice mayor, and T. LeRoy Richards, board of supervisors chairman. Col. Robert E. Guthrie, Ft. Rosecrans commander, introduced Brig. Gen. Jacob Fickel, commanding first air force, Marsh field.

The congressional party landed at Lindbergh field at 4:30 p.m., after inclement weather earlier in the day had threatened to delay their departure from Ft. Huachuca, Ariz., until today.

Consair Plant Visited

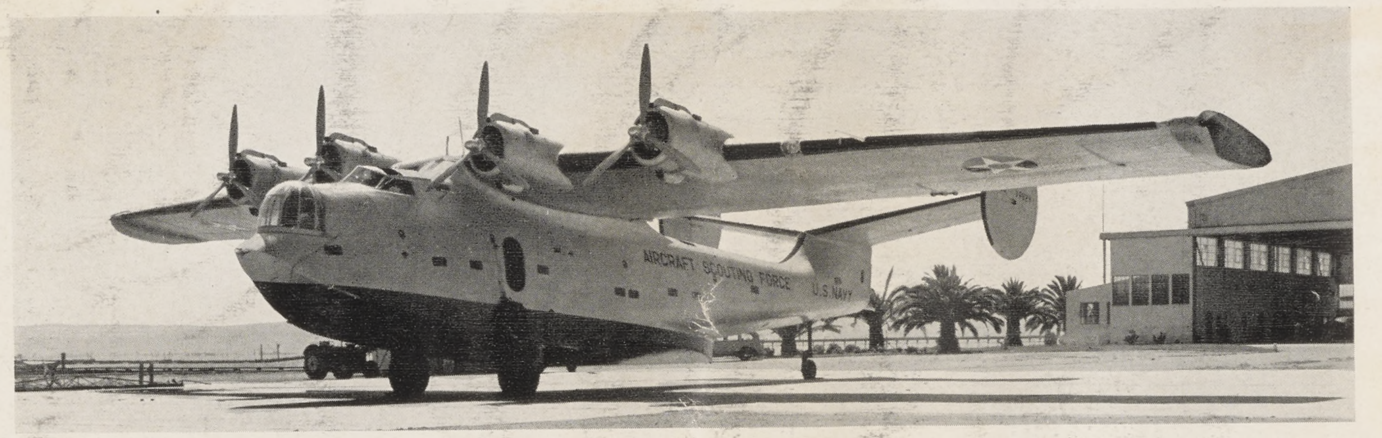
They went immediately to the Consolidated Aircraft Corp. plant, where, under guidance of Maj. Reuben Fleet, Consair head, they were shown the new four-motored army bomber under construction, which, it is said, will have a speed greater than that of any large bombing plane in the world.

It was the first airplane factory the solons had seen on their 8000-mile tour, which bagan Nov. 9 at Washington and included visits to Central American countries, the Canal Zone and Mexico.

The party planned to visit coast defense and aircraft manufacturing facilities as far north as the Canadian border. They were to be accompanied to March field by Fickel, who commands army air activities on the west coast. Fickel reported that March field is in process of adding 600 enlisted men and 25 officers to personnel. He said there are 110 planes there, while a modernizing program will add 60 new pursuit planes and 30 bombers of the "flying fortress" type to replace older equipment.

On arirving at Lindbergh field, Sen. Thomas pictured the Panama Canal as virtually defenseless from air attack. He said the vital inter-ocean link seemed to be adequately protected from sea and land attack by big guns and army stations, as well as numerous planes.

"But I didn't see an anti-aircraft gun while I was there," he said. "The vital need, I would say, is for vital anti-aircraft protection of the canal."



FIRST AIRPLANE TO BE OFFICIALLY RECOGNIZED AS A FLAGPLANE OF THE UNITED STATES NAVY

Consolidated XPB2Y Flying Boat Which on August 24 Carried the Flag of Admiral A. B. Cook, Commanding Aircraft Squadron of the Scouting Forces, thereby Establishing a Precedent in Naval History. Never Before has Such a Flag been Hoisted Officially on an Airplane. This Plane had been Flown to Seattle, Washington, by Navy Personnel Commanded by Comdr. Andrew Crinkley

Senate Votes Repeal of Arms Embargo

AFTER FIVE WEEKS OF DEBATE the Senate has finally voted, by 63 to 30, for repeal of the arms embargo, paving the way for similar action by the House which now has the proposal under consideration. Administration strategists in charge of the bill have set a course in the House designed to assure early favorable action, after which possible conferences between House and Senate, in event of any House changes, will coordinate the wishes of the two legislative bodies and an adjournment of the current special session will be in prospect.

Meanwhile embattled allied nations, facing constant threat of air devastation, were openly jubilant at the Senate's action, foreseeing that the almost unlimited industrial resources of the United States would soon be available to replace anticipated wastage of airplanes and perhaps to bolster their own lag in production compared with the German output of combat aviation.

The effect of the enforcement of embargo provisions, beginning on the outbreak of hostilities in Europe in September, has been apparent in suspension of further despatch of American-built combat planes for England and France, with accessory equipment, and the revocation of British licenses for such export of aviation primarily, totaling $14,877,086, and of French licenses aggregating $58,418,113, likewise principally for American aircraft and accessories. Altogether there were cancelled after September 5, the date of the neutrality ban, export licenses for shipment of American munitions abroad totaling $78,908,525.

As American factories, industries, and stores felt a sharp upswing in recent months, which may or may not be attributed to the effect of war activities abroad, there came again to the United States reports from abroad of impending airplane and aviation purchases of staggering dimensions, once the ban on such procurement is lifted by Congressional sanction. In the meantime, these premonitory reports continued in the face of the internationalization of a famous American commercial term—CASH AND CARRY.

Congress, while opening the way to the American storehouses, has attempted to safeguard American sellers, and American interests from compromise in war situations by making mandatory this homely provision of the cutrate grocery and the florist which enables the college youth to supply his sorority date on weekends with an orchid and still retain some cash for the movies.

✣ ✣

Wright Awarded Large Order

A CONTRACT for the purchase of airplane engines amounting to $6,963,292 was awarded to Wright Aeronautical Corporation by the War Department on October 10th.

Two types of engines are included in the contract, as follows: A type designed as the R 1820-65 and rated at 1,000 h-p., designed for powering the Boeing flying fortresses B-17C; and the R 2600-9, rated at 1,500 h-p., designed for the new B-25 airplane, a two-engined mid-wing, all metal medium bomber, now being manufactured by the North American Aviation Corporation.

✣ ✣

TWA Thanksgiving Menu

IN STRIKING CONTRAST to the rationing of foodstuffs now prevalent in European countries it is our happy privilege to print the following menu which has been evolved by TWA dieticians to be served on its airliners on November 23rd—Thanksgiving Day by presidential proclamation—and also on November 30th—the traditional date.

Strained Gumbo
Stuffed Celery — Crackers
Spiced Watermelon Rind
Roast Vermont Turkey — Oyster Sauce
(Chestnut Stuffing)
Hawaiian Sweet Potatoes
(Sweet Potato — Apple and
Pineapple Slices)
Corn and Tomatoes
Brown Nut Bread Parker House Roll
Butter
Apple—Celery—Raisin and Date Salad
(Mayonnaise)
Mince Pie — Swiss Cheese
Coffee Milk
Old-Fashioned After Dinner Mints

SAE Talks Production

With rapidly rising backlogs, the aircraft manufacturers are more interested than ever in production problems

By Charles F. McReynolds

WITH American aircraft production swinging into new high ground, the 1939 S.A.E. National Aircraft Production Meeting found a ready response among the aircraft people of the Pacific Coast. In line with recent record production rates of various aircraft plants, the papers presented at the various sessions established an enviable mark for exposition of detailed procedures such as are often considered "trade secrets" even within the ranks. As one interested listener remarked; "This has been a 'million-dollar' series of lectures." The attendance matched the merit of the papers, with 875 persons enrolling at the S.A.E. desk and that many more believed to have been in attendance but not registered.

Almost every session found the hall packed to the gills and a conservative estimate of total attendance for the three days would be in the neighborhood of three thousand persons.

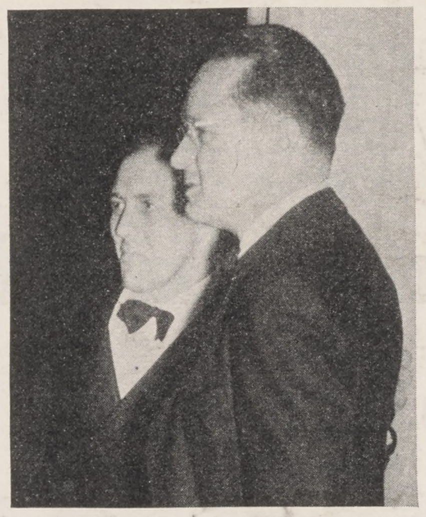
Keynote of the current condition in our aviation industry was sounded by Brigadier General Jacob E. Fickel, March Field commander, who reported on the progress of the President's air expansion program, with the assurance that the industry has met every demand for increased production and is currently much farther along with the program than was at first thought possible. General Fickel concluded with the statement, "We . . . know that with the increased facilities and larger appropriations for research and experimentation now available, that this country will remain in the lead in advanced design, and will meet any challege for supremacy in the air." Gen. Fickel spoke in place of Louis Johnson, Assistant Secretary of War, who had originally been scheduled to come to Los Angeles to address the session. General Fickel was introduced by Robert E. Gross, president of the Lockheed Aircraft Corporation, who referred to present world conditions as "The one immortal hour of our lifetime . . . when the history of the world is being written not in the chancellories of nations, but on the drawing boards of aviation engineers." Gross reminded his hearers of the fact that commercial and military aviation have equally affected our lives, saying, "The airplane has made of nations a neighborhood; but it has made the world a battlefield."

Robert E. Gross, president Lockheed Aircraft Corp.

The meeting closed with a banquet and grand ball on Saturday evening at the Biltmore Hotel, home of the sessions. Some five hundred of aviation's leading personalities turned out for this social function, which was devoted entirely to banqueting and dancing, except for a brief speech of welcome by E. W. Templin, chairman of the Southern California Section of the S.A.E., hosts of the session.

This year an aircraft engineering exhibit was held in connection with the production meeting. Taking over a large hall adjoining the ballroom in which the sessions were held, a representative group of manufacturers displayed their products and found a responsive audience. Those exhibiting at the engineering show were: Aircraft Accessories Corp., samples of the hydraulic equipment manufactured, also equipment built by the Thos. L. Siebenthaler Division; Aircraft Precision Products, Inc., a very complete line of sample parts representing work done on a contract basis for the various aircraft plants; Aluminum Company of America, a large number of sample parts representing the latest work in aluminum casting, forging, welding, extrusions, etc.; Aluminum Industries, Inc., sample of Aluminum alloy castings; Bantam Bearings Corp., a complete line of aircraft bearings; Baldwin-Southwark Corp., a laboratory testing machine for determining strength of materials in either compression or tension; Bendix Products, a display of typical Bendix accessories as used throughout

(*Turn to page 84*)

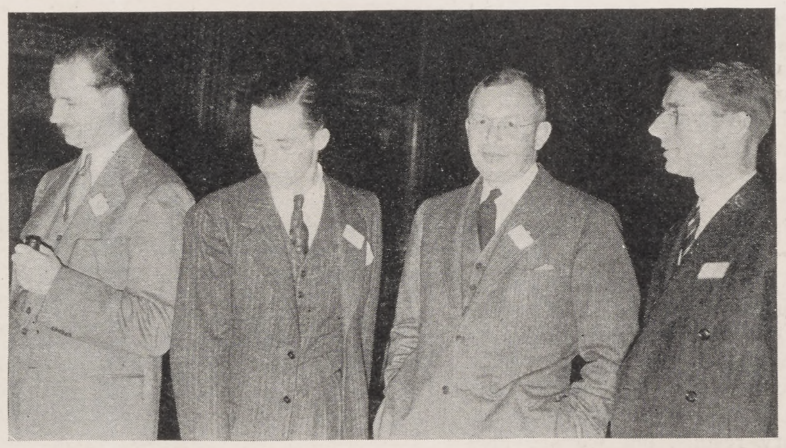


L. to R.—Palmer Nichols, Bendix of Calif.; Mac Short, Vega Airplane Company

L. to R.—L. B. Grant, Dow Chemical Co.; Brint Edwards, session chairman; G. D. Welty, Aluminum Co. of America

L. to R.—Mac Short, Vega Airplane Company; John A. C. Warner, S.A.E.

L. to R.—H. K. Cummings, Bureau of Standards; Ashley C. Hewitt, Ind. engineer



L. to R.—O. C. Bridgeman, C. F. R. Project, H. C. Hill, Wright Aeronautical Co.; Robert Insley, Pratt & Whitney Co.; A. T. Gregory, Ranger Engineering Corp.

L. to R.—Left rear, C. E. Stryker, Bendix Aviation; Left front, Dr. A. L. Klein, California Institute of Technology; T. P. Wright, Curtiss-Wright Corp.; Harold W. Adams, Douglas Aircraft Co.; Henry H. Kerr, Bendix Prod. Div., Bendix Aviation; Mac Short, Vega Airplane Corp., General Chairman SAE meetings.

THE TRIBUNE-SUN, San Diego, C

Members of Congress Military Inspection Party

11-29-39

Five members of a congressional military inspection party, with Brig. Gen. J. E. Fickel, west coast air chief, are shown as they arrived here yesterday to inspect local navy and military establishments. They are, left to right, Sen. Harry S. Truman, Rep. Paul W. Shafer, Sen. Sherman Minton, Sen. Dennis Chavez, Sen. Elmer Thomas. The party left today for March field and Los Angeles.

Further S. D. Defenses Held Vital By Eleven Visiting Congressmen

Trib-Sun 11-29-39

First-hand information on the vital need for expansion of local naval and military defense facilities was gleaned by 11 members of

(Picture on Page 13-A)

a congressional military affairs party, who arrived here yesterday to inspect sea, shore and air establishments and airplane factories.

The party concluded its inspection this morning with a visit to Ryan Aircraft Co. and Solar Aircraft Co. plants, and left for March field, Riverside, and the Los Angeles district.

The group, traveling in three giant army transport planes, is on one of the most comprehensive tours of the nation's defenses by any congressional party in history. In the party here were Sens. Elmer Thomas (D-Okla), chairman, senate subcommittee on army appropriations; Harry S. Truman (D-Mo), army appropriations subcommittee member; Sherman Minton (D-Ind), senate military affairs committee member, and Dennis Chavez (D-NM), and Reps. John M. Costello (D-Calif), Overton Brooks (D-La), Charles R. Glason (R-Mass), Paul W. Shafer (R-Mich), John J. Sparkman (D-Ala), and Thomas E. Martin (R-Ia), all of the house military affairs committee.

Accompanying the solons as military aids were Majs. Arthur R. Wilson, of the war department general staff, and John E. Upston, from the

(Continued on Next Page, Col. 1)

Urge Increase In San Diego Defenses

Trib-Sun 11-29-39

CONTINUED FROM PAGE ONE

office of the chief of the air corps.

Speaking last night at a city-county-chamber of commerce dinner at Hotel del Coronado, Thomas stressed military preparations "along reasonable lines" as the best assurance against the danger of war.

Responding to addresses which emphasized San Diego's need for more adequate defense facilities, Thomas declared:

"The United States must follow a program of reasonable preparedness. We have less than 1,000,000 men who could be called at once in event of emergency. Already, on this trip, I have been impressed with the lack of equipment available for the troops we do have and, from what I've been told, San Diego is no exception."

The visiting solons were impressed with the need for added military facilities here by Maj. Gen. H. B. Fiske, U.S.A., ret., vice chairman, chamber military affairs committee, and Rear Adm. Joseph R. Defrees, 11th naval district commandant.

"To provide our fleet with freedom at sea, it is of utmost importance that our shore bases be strongly fortified and adequately garrisoned at all times," said Fiske. "We must remember that important elements of the fleet are permanently based on shore and local defense should be enforced whether the fleet is here or elsewhere. It is the business of the army to provide this protection."

Seeks Added Dredging

Fiske urged creation of permanent military units here, in addition to installation of new long-range guns at Ft. Rosecrans. It was pointed out that the present guns at the fort are of 1890 vintage. Fiske advised immediate action to dredge an area adjacent to the fort, to add 15 acres to land available for coast defense works. This would cost about $80,000. The speaker also stressed necessity of adequate anti-aircraft protection for local naval bases.

Importance of the bay dredging project now under way was stressed by DeFrees, who pointed out that expansion of naval facilities, basing of additional vessels here and relief of the already crowded anchorage accommodations depend upon its completion.

"There are 24 ship bases here at present, although adequate anchorage facilities are not available," he stated. "There are seven 10,000-ton cruisers at Long Beach, which belong here but are not in this harbor because the dredging project is not completed."

DeFrees also mentioned the local navy shore establishments, which represent an investment of nearly $50,000,000.

Base for 60 More Ships

"Through the aid of the chamber of commerce, an assurance by the navy that other facilities are needed and cooperation by congress, some $18,000,000 has been obtained for improvements. Just last year, $6,800,000 was expended. But more improvements are needed. It is the plan of the navy to base 60 more ships here, a step which cannot be taken until harbor dredging is completed."

Maj. Gen. R. H. Van Deman, chamber military affairs committee chairman, who presided at the dinner, asserted that "in the past 22 years, the army has received virtually no increase in its material."

"Modern wars are fought with modern weapons," he said. "Without equipment and men, our army is not modern."

Responding to Van Deman's request that the visiting solons "use your influence to get congress to give the army what it needs," Costello, Hollywood representative, replied:

"We already have seen examples of how military bases have been left to ruin due to inadequate appropriations of funds. But we are witnessing a change today. The army as an important part of our national defense is being given serious consideration. The war department will be given added funds for needed expansion. I'm sure that the coats will get a badly-needed share of these funds."

Frank Forward, chamber president, introduced city and county representatives, including Herbert E. Fish, vice mayor, and T. LeRoy Richards, board of supervisors chairman. Col. Robert E. Guthrie, Ft. Rosecrans commander, introduced Brig. Gen. Jacob Fickel, commanding first air force, Marsh field.

The congressional party landed at Lindbergh field at 4:30 p.m., after inclement weather earlier in the day had threatened to delay their departure from Ft. Huachuca, Ariz., until today.

Consair Plant Visited

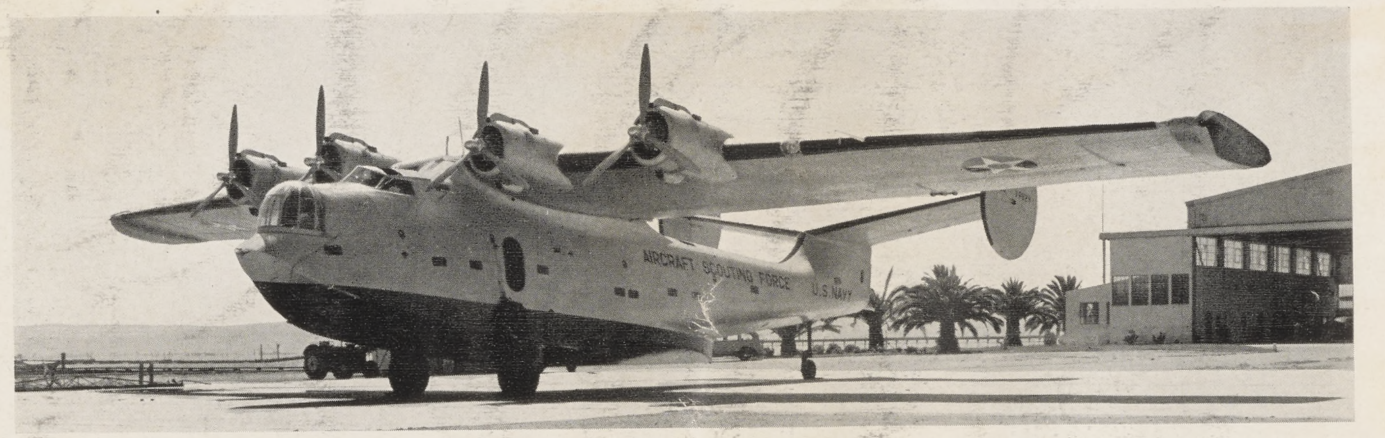
They went immediately to the Consolidated Aircraft Corp. plant, where, under guidance of Maj. Reuben Fleet, Consair head, they were shown the new four-motored army bomber under construction, which, it is said, will have a speed greater than that of any large bombing plane in the world.

It was the first airplane factory the solons had seen on their 8000-mile tour, which bagan Nov. 9 at Washington and included visits to Central American countries, the Canal Zone and Mexico.

The party planned to visit coast defense and aircraft manufacturing facilities as far north as the Canadian border. They were to be accompanied to March field by Fickel, who commands army air activities on the west coast. Fickel reported that March field is in process of adding 600 enlisted men and 25 officers to personnel. He said there are 110 planes there, while a modernizing program will add 60 new pursuit planes and 30 bombers of the "flying fortress" type to replace older equipment.

On arirving at Lindbergh field, Sen. Thomas pictured the Panama Canal as virtually defenseless from air attack. He said the vital inter-ocean link seemed to be adequately protected from sea and land attack by big guns and army stations, as well as numerous planes.

"But I didn't see an anti-aircraft gun while I was there," he said. "The vital need, I would say, is for vital anti-aircraft protection of the canal."



FIRST AIRPLANE TO BE OFFICIALLY RECOGNIZED AS A FLAGPLANE OF THE UNITED STATES NAVY

Consolidated XPB2Y Flying Boat Which on August 24 Carried the Flag of Admiral A. B. Cook, Commanding Aircraft Squadron of the Scouting Forces, thereby Establishing a Precedent in Naval History. Never Before has Such a Flag been Hoisted Officially on an Airplane. This Plane had been Flown to Seattle, Washington, by Navy Personnel Commanded by Comdr. Andrew Crinkley

Senate Votes Repeal of Arms Embargo

AFTER FIVE WEEKS OF DEBATE the Senate has finally voted, by 63 to 30, for repeal of the arms embargo, paving the way for similar action by the House which now has the proposal under consideration. Administration strategists in charge of the bill have set a course in the House designed to assure early favorable action, after which possible conferences between House and Senate, in event of any House changes, will coordinate the wishes of the two legislative bodies and an adjournment of the current special session will be in prospect.

Meanwhile embattled allied nations, facing constant threat of air devastation, were openly jubilant at the Senate's action, foreseeing that the almost unlimited industrial resources of the United States would soon be available to replace anticipated wastage of airplanes and perhaps to bolster their own lag in production compared with the German output of combat aviation.

The effect of the enforcement of embargo provisions, beginning on the outbreak of hostilities in Europe in September, has been apparent in suspension of further despatch of American-built combat planes for England and France, with accessory equipment, and the revocation of British licenses for such export of aviation primarily, totaling $14,877,086, and of French licenses aggregating $58,418,113, likewise principally for American aircraft and accessories. Altogether there were cancelled after September 5, the date of the neutrality ban, export licenses for shipment of American munitions abroad totaling $78,908,525.

As American factories, industries, and stores felt a sharp upswing in recent months, which may or may not be attributed to the effect of war activities abroad, there came again to the United States reports from abroad of impending airplane and aviation purchases of staggering dimensions, once the ban on such procurement is lifted by Congressional sanction. In the meantime, these premonitory reports continued in the face of the internationalization of a famous American commercial term—CASH AND CARRY.

Congress, while opening the way to the American storehouses, has attempted to safeguard American sellers, and American interests from compromise in war situations by making mandatory this homely provision of the cutrate grocery and the florist which enables the college youth to supply his sorority date on weekends with an orchid and still retain some cash for the movies.

✣ ✣

Wright Awarded Large Order

A CONTRACT for the purchase of airplane engines amounting to $6,963,292 was awarded to Wright Aeronautical Corporation by the War Department on October 10th.

Two types of engines are included in the contract, as follows: A type designed as the R 1820-65 and rated at 1,000 h-p., designed for powering the Boeing flying fortresses B-17C; and the R 2600-9, rated at 1,500 h-p., designed for the new B-25 airplane, a two-engined mid-wing, all metal medium bomber, now being manufactured by the North American Aviation Corporation.

✣ ✣

TWA Thanksgiving Menu

IN STRIKING CONTRAST to the rationing of foodstuffs now prevalent in European countries it is our happy privilege to print the following menu which has been evolved by TWA dieticians to be served on its airliners on November 23rd—Thanksgiving Day by presidential proclamation—and also on November 30th—the traditional date.

Strained Gumbo
Stuffed Celery — Crackers
Spiced Watermelon Rind
Roast Vermont Turkey — Oyster Sauce
(Chestnut Stuffing)
Hawaiian Sweet Potatoes
(Sweet Potato — Apple and
Pineapple Slices)
Corn and Tomatoes
Brown Nut Bread Parker House Roll
Butter
Apple—Celery—Raisin and Date Salad
(Mayonnaise)
Mince Pie — Swiss Cheese
Coffee Milk
Old-Fashioned After Dinner Mints

A Production Expert Expresses His Views On

Planning for PRODUCTION

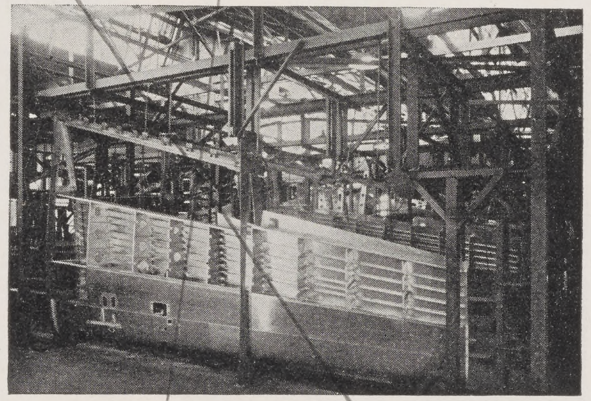
Being an excerpt from a paper entitled "Accelerated Aircraft Production for National Defense"* by

P. N. Jansen

Factory Manager, Curtiss Airplane Division, Buffalo, N. Y.

WITH the transition from stick and wire design to present day construction comes the need for a different approach to the manufacturing and organization lineup. Practically all parts normally manufactured by airplane companies receive their primary operation in three manufacturing groups, namely shearing, press and machine shop. Nearly all parts require tools, even in small quantities. This reflects back in many ways and I believe that recognition of fundamentals in these changes will tend to work an easier solution.

Geographic location of activities is more important and should be recognized in plant layout. Organization and the human element are of extreme importance. Before, the line and staff organization prevailed and gave us satisfactory results, but we are now blending into the truly functional type of organization. This provides for the specialist and when properly carried out will present a great aid to rapid expansion. Whereas in the past the average first-class man used to make his own templates and layouts, this is now concentrated in a loft or layout department. Where we used to mix fabricating with assembly, there is now a strict separation with all groups carefully departmentalized. Shop orders are augmented by operation sheets with the ultimate aim of supplying operators with accurate information, tools and materials. All this has deep significance. It shortens the training period at least for the vast majority of workmen because the application of knowledge and skill is confined. The advantages for national defense are far reaching. However there are dangers and possible drawbacks. Weakness in any group can do great harm and the existence of incapable management which does not fully grasp the fundamentals or fails to recognize the need for close coordination, will cause confusion. We still need skilled tradesmen in the aircraft industry but the training problem is easier because of specialization. With some trained men in all positions, as outlined before, many young men with high school education can become fairly proficient in repetitive operations, drilling, riveting, in short time.



The main assembly fixture on which the wing is completed and then removed. There are numerous additional assembly tools not shown here. All assembly jigs are designed so that they do not require dismantling for removal of units. They are made with removable parts and are hinged and chained to avoid losses.

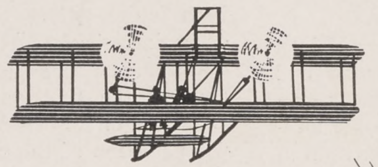
The Human Element

The human element offers its problem and it is essentially a moral obligation to recognize the effect on personnel that arises with the introduction of a new order. An operator, especially one on minor operations, does not feel as secure because he can readily be replaced. The more specialization, the more demand for seniority rules and the rate question has been similarly affected. Men with years of experience and service may do the same repetition job, sometimes not as well, as a youngster with six months' experience. The older man may at

---

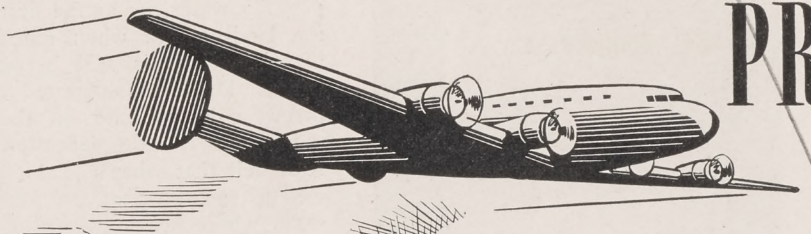
* Complete paper as presented at the Aircraft Production Meeting of the Society of Automotive Engineers, Los Angeles, California, October 5–7, 1939.

PESCO draws upon experiences of the



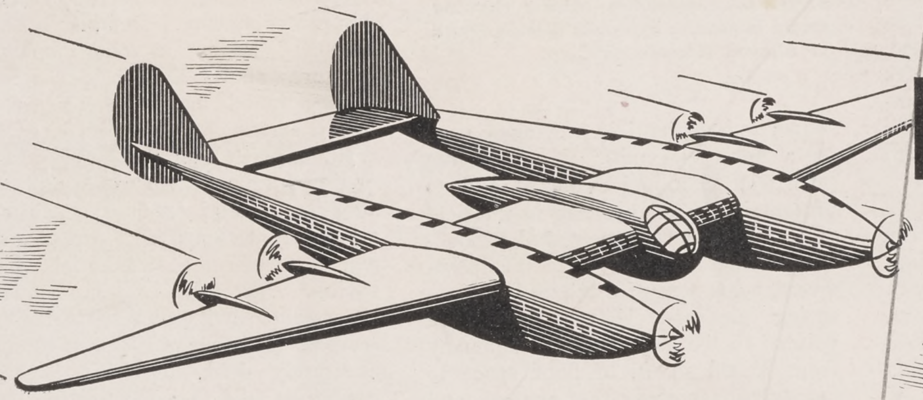
PAST...

to build the best possible products for the



PRESENT...

and to anticipate aviation's needs for the



FUTURE

Pesco Products include: Fuel- Vacuum- and Hydraulic- Engine Driven and Electric Motor Driven Pumps
Suction Relief Valves • Safety Valves • Check Valves • Oil Separators • Accessory Drive Gear Boxes
Pressure Relief Valves • Hydraulic Motors • Hydraulic Cylinders • Hydraulic Pressure Accumulators
Hydraulic Control Valves • Hydraulic Locks • Propeller Anti-Icing Pumps • Propeller Feathering Pumps
Combination Vacuum and Hydraulic Pumps • Special Aircraft Products Built to Customers' Specifications

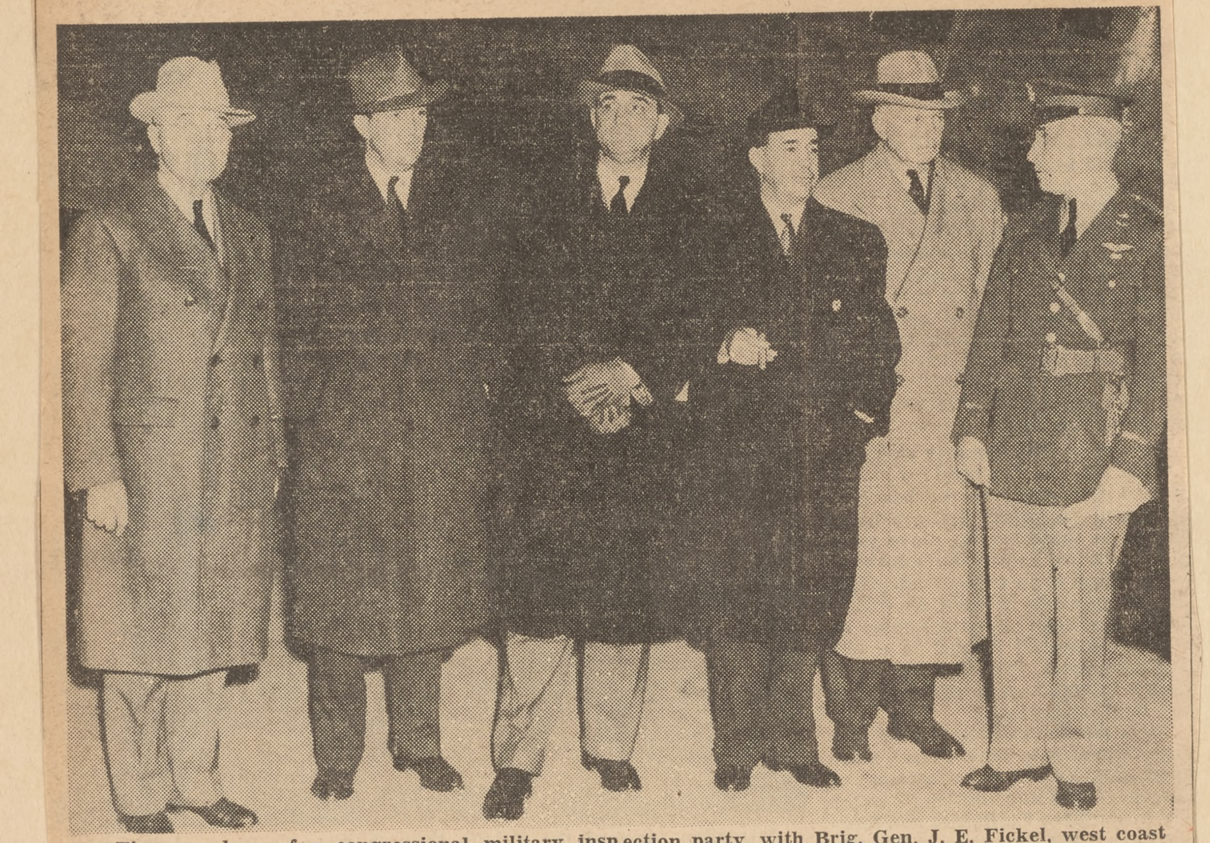
CONTRACTORS TO THE U. S. GOVERNMENT
PESCO
FOR APPROVED AIRCRAFT ACCESSORIES

PUMP ENGINEERING SERVICE CORPORATION
DIVISION BORG-WARNER CORPORATION
12910 TAFT AVENUE
CLEVELAND, OHIO, U. S. A.

THE TRIBUNE-SUN, San Diego, Ca

Members of Congress Military Inspection Party

11-29-39



Five members of a congressional military inspection party, with Brig. Gen. J. E. Fickel, west coast air chief, are shown as they arrived here yesterday to inspect local navy and military establishments. They are, left to right, Sen. Harry S. Truman, Rep. Paul W. Shafer, Sen. Sherman Minton, Sen. Dennis Chavez, Sen. Elmer Thomas. The party left today for March field and Los Angeles.

Further S. D. Defenses Held Vital By Eleven Visiting Congressmen

Trib-Sun 11-29-39

First-hand information on the vital need for expansion of local naval and military defense facilities was gleaned by 11 members of

(Picture on Page 13-A)

a congressional military affairs party, who arrived here yesterday to inspect sea, shore and air establishments and airplane factories.

The party concluded its inspection this morning with a visit to Ryan Aircraft Co. and Solar Aircraft Co. plants, and left for March field, Riverside, and the Los Angeles district.

The group, traveling in three giant army transport planes, is on one of the most comprehensive tours of the nation's defenses by any congressional party in history. In the party here were Sens. Elmer Thomas (D-Okla), chairman, senate subcommittee on army appropriations; Harry S. Truman (D-Mo), army appropriations subcommittee member; Sherman Minton (D-Ind), senate military affairs committee member, and Dennis Chavez (D-NM), and Reps. John M. Costello (D-Calif), Overton Brooks (D-La), Charles R. Glason (R-Mass), Paul W. Shafer (R-Mich), John J. Sparkman (D-Ala), and Thomas E. Martin (R-Ia), all of the house military affairs committee.

Accompanying the solons as military aids were Majs. Arthur R. Wilson, of the war department general staff, and John E. Upston, from the

(Continued on Next Page, Col. 1)

Urge Increase In San Diego Defenses

Trib-Sun 11-29-39

CONTINUED FROM PAGE ONE

office of the chief of the air corps.

Speaking last night at a city-county-chamber of commerce dinner at Hotel del Coronado, Thomas stressed military preparations "along reasonable lines" as the best assurance against the danger of war.

Responding to addresses which emphasized San Diego's need for more adequate defense facilities, Thomas declared:

"The United States must follow a program of reasonable preparedness. We have less than 1,000,000 men who could be called at once in event of emergency. Already, on this trip, I have been impressed with the lack of equipment available for the troops we do have and, from what I've been told, San Diego is no exception."

The visiting solons were impressed with the need for added military facilities here by Maj. Gen. H. B. Fiske, U.S.A., ret., vice chairman, chamber military affairs committee, and Rear Adm. Joseph R. Defrees, 11th naval district commandant.

"To provide our fleet with freedom at sea, it is of utmost importance that our shore bases be strongly fortified and adequately garrisoned at all times," said Fiske. "We must remember that important elements of the fleet are permanently based on shore and local defense should be enforced whether the fleet is here or elsewhere. It is the business of the army to provide this protection."

Seeks Added Dredging

Fiske urged creation of permanent military units here, in addition to installation of new long-range guns at Ft. Rosecrans. It was pointed out that the present guns at the fort are of 1890 vintage. Fiske advised immediate action to dredge an area adjacent to the fort, to add 15 acres to land available for coast defense works. This would cost about $80,000. The speaker also stressed necessity of adequate anti-aircraft protection for local naval bases.

Importance of the bay dredging project now under way was stressed by DeFrees, who pointed out that expansion of naval facilities, basing of additional vessels here and relief of the already crowded anchorage accommodations depend upon its completion.

"There are 24 ship bases here at present, although adequate anchorage facilities are not available," he stated. "There are seven 10,000-ton cruisers at Long Beach, which belong here but are not in this harbor because the dredging project is not completed."

DeFrees also mentioned the local navy shore establishments, which represent an investment of nearly $50,000,000.

Base for 60 More Ships

"Through the aid of the chamber of commerce, an assurance by the navy that other facilities are needed and cooperation by congress, some $18,000,000 has been obtained for improvements. Just last year, $6,800,000 was expended. But more improvements are needed. It is the plan of the navy to base 60 more ships here, a step which cannot be taken until harbor dredging is completed."

Maj. Gen. R. H. Van Deman, chamber military affairs committee chairman, who presided at the dinner, asserted that "in the past 22 years, the army has received virtually no increase in its material."

"Modern wars are fought with modern weapons," he said. "Without equipment and men, our army is not modern."

Responding to Van Deman's request that the visiting solons "use your influence to get congress to give the army what it needs," Costello, Hollywood representative, replied:

"We already have seen examples of how military bases have been left to ruin due to inadequate appropriations of funds. But we are witnessing a change today. The army as an important part of our national defense is being given serious consideration. The war department will be given added funds for needed expansion. I'm sure that the coats will get a badly-needed share of these funds."

Frank Forward, chamber president, introduced city and county representatives, including Herbert E. Fish, vice mayor, and T. LeRoy Richards, board of supervisors chairman. Col. Robert E. Guthrie, Ft. Rosecrans commander, introduced Brig. Gen. Jacob Fickel, commanding first air force, Marsh field.

The congressional party landed at Lindbergh field at 4:30 p.m., after inclement weather earlier in the day had threatened to delay their departure from Ft. Huachuca, Ariz., until today.

Consair Plant Visited

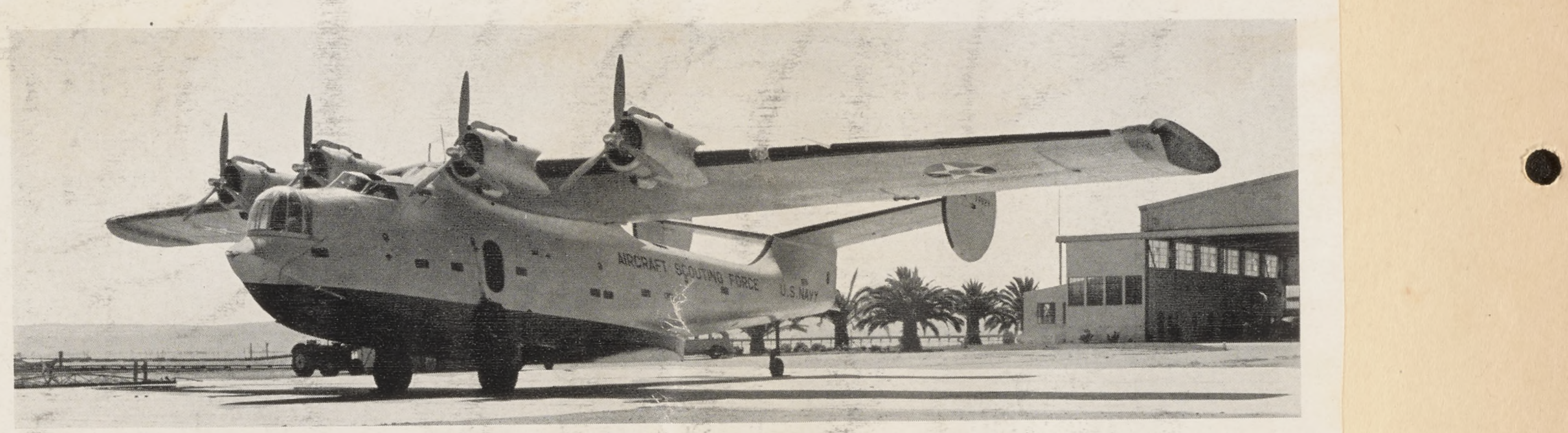
They went immediately to the Consolidated Aircraft Corp. plant, where, under guidance of Maj. Reuben Fleet, Consair head, they were shown the new four-motored army bomber under construction, which, it is said, will have a speed greater than that of any large bombing plane in the world.

It was the first airplane factory the solons had seen on their 8000-mile tour, which bagan Nov. 9 at Washington and included visits to Central American countries, the Canal Zone and Mexico.

The party planned to visit coast defense and aircraft manufacturing facilities as far north as the Canadian border. They were to be accompanied to March field by Fickel, who commands army air activities on the west coast. Fickel reported that March field is in process of adding 600 enlisted men and 25 officers to personnel. He said there are 110 planes there, while a modernizing program will add 60 new pursuit planes and 30 bombers of the "flying fortress" type to replace older equipment.

On arirving at Lindbergh field, Sen. Thomas pictured the Panama Canal as virtually defenseless from air attack. He said the vital inter-ocean link seemed to be adequately protected from sea and land attack by big guns and army stations, as well as numerous planes.

"But I didn't see an anti-aircraft gun while I was there," he said. "The vital need, I would say, is for vital anti-aircraft protection of the canal."



FIRST AIRPLANE TO BE OFFICIALLY RECOGNIZED AS A FLAGPLANE OF THE UNITED STATES NAVY

Consolidated XPB2Y Flying Boat Which on August 24 Carried the Flag of Admiral A. B. Cook, Commanding Aircraft Squadron of the Scouting Forces, thereby Establishing a Precedent in Naval History. Never Before has Such a Flag been Hoisted Officially on an Airplane. This Plane had been Flown to Seattle, Washington, by Navy Personnel Commanded by Comdr. Andrew Crinkley

Senate Votes Repeal of Arms Embargo

AFTER FIVE WEEKS OF DEBATE the Senate has finally voted, by 63 to 30, for repeal of the arms embargo, paving the way for similar action by the House which now has the proposal under consideration. Administration strategists in charge of the bill have set a course in the House designed to assure early favorable action, after which possible conferences between House and Senate, in event of any House changes, will coordinate the wishes of the two legislative bodies and an adjournment of the current special session will be in prospect.

Meanwhile embattled allied nations, facing constant threat of air devastation, were openly jubilant at the Senate's action, foreseeing that the almost unlimited industrial resources of the United States would soon be available to replace anticipated wastage of airplanes and perhaps to bolster their own lag in production compared with the German output of combat aviation.

The effect of the enforcement of embargo provisions, beginning on the outbreak of hostilities in Europe in September, has been apparent in suspension of further despatch of American-built combat planes for England and France, with accessory equipment, and the revocation of British licenses for such export of aviation primarily, totaling $14,877,086, and of French licenses aggregating $58,418,113, likewise principally for American aircraft and accessories. Altogether there were cancelled after September 5, the date of the neutrality ban, export licenses for shipment of American munitions abroad totaling $78,908,525.

As American factories, industries, and stores felt a sharp upswing in recent months, which may or may not be attributed to the effect of war activities abroad, there came again to the United States reports from abroad of impending airplane and aviation purchases of staggering dimensions, once the ban on such procurement is lifted by Congressional sanction. In the meantime, these premonitory reports continued in the face of the internationalization of a famous American commercial term—CASH AND CARRY.

Congress, while opening the way to the American storehouses, has attempted to safeguard American sellers, and American interests from compromise in war situations by making mandatory this homely provision of the cutrate grocery and the florist which enables the college youth to supply his sorority date on weekends with an orchid and still retain some cash for the movies.

⁂

Wright Awarded Large Order

A CONTRACT for the purchase of airplane engines amounting to $6,963,292 was awarded to Wright Aeronautical Corporation by the War Department on October 10th.

Two types of engines are included in the contract, as follows: A type designed as the R 1820-65 and rated at 1,000 h-p., designed for powering the Boeing flying fortresses B-17C; and the R 2600-9, rated at 1,500 h-p., designed for the new B-25 airplane, a two-engined mid-wing, all metal medium bomber, now being manufactured by the North American Aviation Corporation.

⁂

TWA Thanksgiving Menu

IN STRIKING CONTRAST to the rationing of foodstuffs now prevalent in European countries it is our happy privilege to print the following menu which has been evolved by TWA dieticians to be served on its airliners on November 23rd—Thanksgiving Day by presidential proclamation—and also on November 30th—the traditional date.

Strained Gumbo
Stuffed Celery — Crackers
Spiced Watermelon Rind
Roast Vermont Turkey — Oyster Sauce
(Chestnut Stuffing)
Hawaiian Sweet Potatoes
(Sweet Potato — Apple and
Pineapple Slices)
Corn and Tomatoes
Brown Nut Bread Parker House Roll
Butter
Apple—Celery—Raisin and Date Salad
(Mayonnaise)
Mince Pie — Swiss Cheese
Coffee Milk
Old-Fashioned After Dinner Mints

S.A.E. Talks Production

(*Continued from page 33*)

the aircraft industry; Ed. G. Budd Mfg. Co., stainless steel parts and accessories; Cannon Electric Development Co., quick-detachable multi-circuit connector plugs; Ducommun Metals and Supply Co., aircraft hardware; Fafnir Bearing Co., a complete line of aircraft bearings; International Nickel Co., stainless steel; Librascope, Inc., balance and power computers; Edw. D. Maltby Co., Federal aircraft bearings; Norma-Hoffman Bearings Corp., aircraft bearings; Pyrene Mfg. Co., fire extinguishers; Rohm & Haas Co., Inc., Plexiglas in various forms; S.A.E., membership display; Solar Aircraft Co., exhaust manifolds, steam heating system; SKF Industries Inc., aircraft bearings; United Aircraft Products, Inc., parts; Wright Aeronautical Corp., engine display. J. H. Kindelberger, president of North American Aviation, Inc., acted as chairman of the aircraft engineering display committee.

General chairman for this year's production meeting was Mac Short, president of Vega Airplane Company. Short was long on attention to details and the sessions went through without a hitch. In addition to the general excellence of the papers, and their extreme timeliness from a production standpoint, was the unusual extent to which the sessions were illustrated. In addition to the customary slides the audiences were treated to a number of fine industrial moving pictures, some of which were presented with sound.

Dr. A. L. Klein, California Institute of Technology, was chairman of the first session, on Thursday morning, which got away to a flying start with the paper on Propeller Production, given by Arvid Nelson, Hamilton Standard Propellers. Nelson took his hearers through the development of propeller manufacture from the hand methods originally used to the present extensive machine methods which have resulted in a vastly improved product at reduced cost. He discussed in detail the latest methods of shaping, broaching, milling, etc., as developed by Hamilton Standard. This talk was illustrated both with slides and with motion pictures. While Nelson's paper dealt with propeller manufacture, most of the machine processes he outlined could find application in many other phases of aircraft and aircraft engine production. For example Nelson showed how turret lathe work had been speeded up by using a color system to identify each tool with the toolholder. An example of reduction in machine time was given with a slotting operation performed on a vertical shaper in half the time previously used on a horizontal mill. Much of the growth of Hamilton Standard, and its present important position in the field of propeller development and production, should be credited to the intensive development of machine manufacturing methods, Nelson said. He pointed to the growth of the company from 25,000 sq. ft. of floor space to more than ten times that amount, and from 65 employees to the present total of more than 1200, as evidence that efficient machine methods create jobs. So comprehensively was this subject treated that no discussion was evoked.

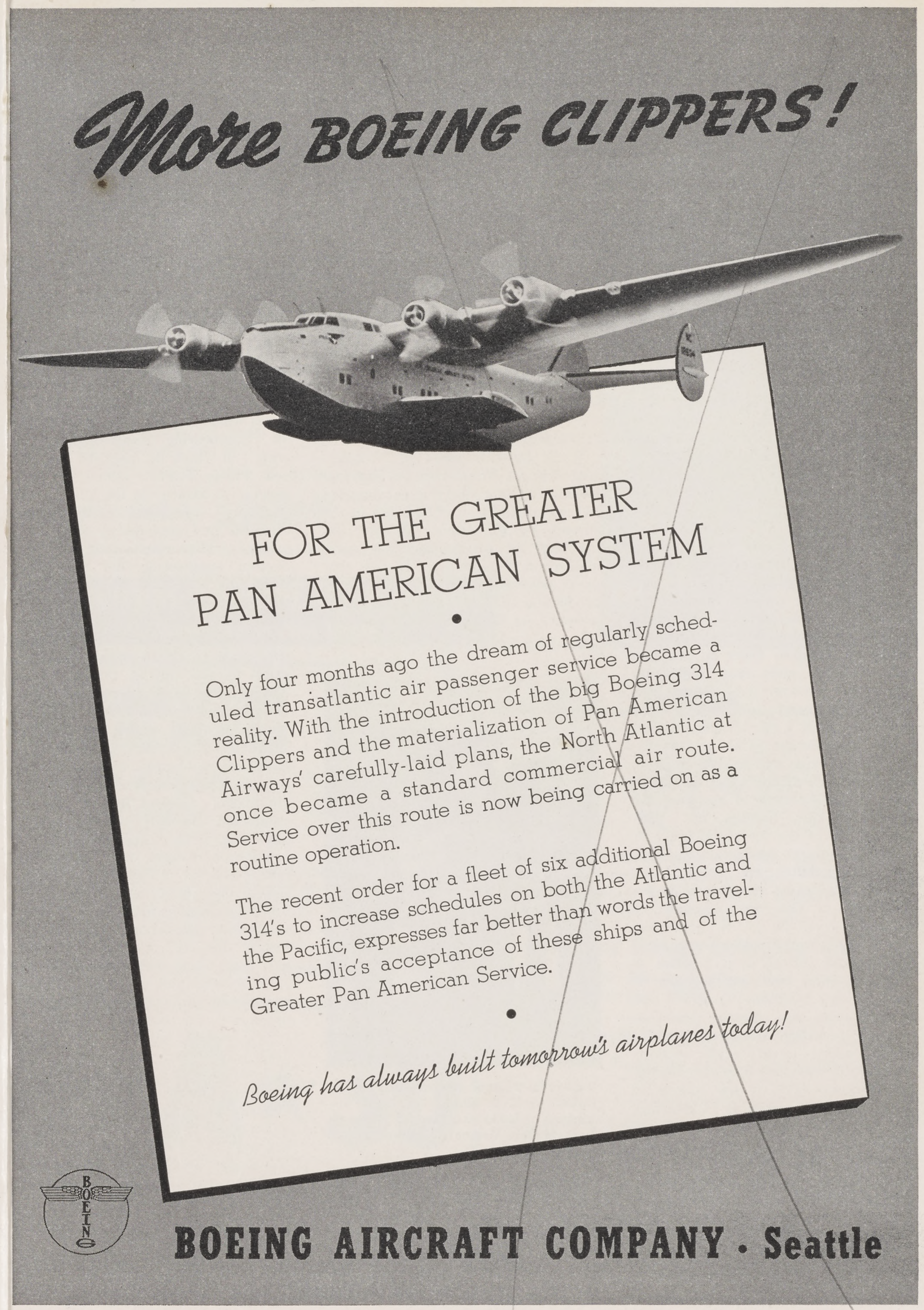
AIRCRAFT ACCESSORIES CORP.
Glendale Calif.

S. A. E. engineering exhibit showing crowd interest in hydraulic display board of Aircraft Accessories Corp.

Not so, however, with the paper on Airplane Brake Installation and Control Considerations, by Henry H. Kerr and F. C. Frank, of the Bendix Products Div., Bendix Aviation Corp., read by Kerr. This paper dealt with the phases of brake design most closely concerned with proper control, and with service difficulties. Factors such as axle stiffness, play between the brake and landing gear, the two types of hydraulic fluid, proper sealing members, hose sizes, etc. were all discussed in detail, with reference to mathematical formulas that had been found satisfactory as a guide in designing brake systems. Several questioners popped up from the audience at the first opportunity to ask about the effect of drum irregularities, what portion of the coefficient of friction of the tires could be used, etc. Kerr replied that it was desirable to cool the drums as much as possible to avoid the results of overheating caused by irregularities, and other factors. He thought danger of nosing over through full application of brakes depended entirely upon the particular conditions and the individual airplane, pointing out that wheels may be slid with brakes fully locked under various conditions, as on a surface made slippery by water, or at the first part of the landing run when much of the plane's weight is still borne by the wings. Dr. Klein suggested that axles threw a heavy load on the wheels themselves if axle deflection occurs. Kerr felt that wheels lend themselves well to such stresses and knew of no cases where bearing failures had occured as a result. C. E. Stryker reported that total deflection of the DC5 axle was 1½ deg., including such deflection as takes place in the strut.

A prophetic discussion of "high pressure" hydraulic systems was presented by Harold W. Adams, Douglas Aircraft Company. Defining a "high pressure" system as one employing pressures above 2000 lb. per sq. in., Adams found many advantages for such a system, especially on large aircraft, and felt that the high pressure type hydraulic system would find wide adoption. Chief result of the use of a properly designed high pressure system is to effect a substantial weight saving. Also, the lines and fittings are smaller and easier to install and service. Machine work must be more accurately done, but this is made easier by the heavier sections employed, with the result that costs of machining about balance for both systems. Danger of high pressure systems was felt to be little greater in the event of failure, as parts are smaller and would have less inertia if thrown through the structure. The author felt that the problems of high pressure systems are primarily design problems, which stay solved, rather than shop problems, which are always with us. In a prepared discussion by J. W. White, chief engineer, brake

(*Turn to page 86*)



More BOEING CLIPPERS!

FOR THE GREATER
PAN AMERICAN SYSTEM

•

Only four months ago the dream of regularly scheduled transatlantic air passenger service became a reality. With the introduction of the big Boeing 314 Clippers and the materialization of Pan American Airways' carefully-laid plans, the North Atlantic at once became a standard commercial air route. Service over this route is now being carried on as a routine operation.

The recent order for a fleet of six additional Boeing 314's to increase schedules on both the Atlantic and the Pacific, expresses far better than words the traveling public's acceptance of these ships and of the Greater Pan American Service.

•

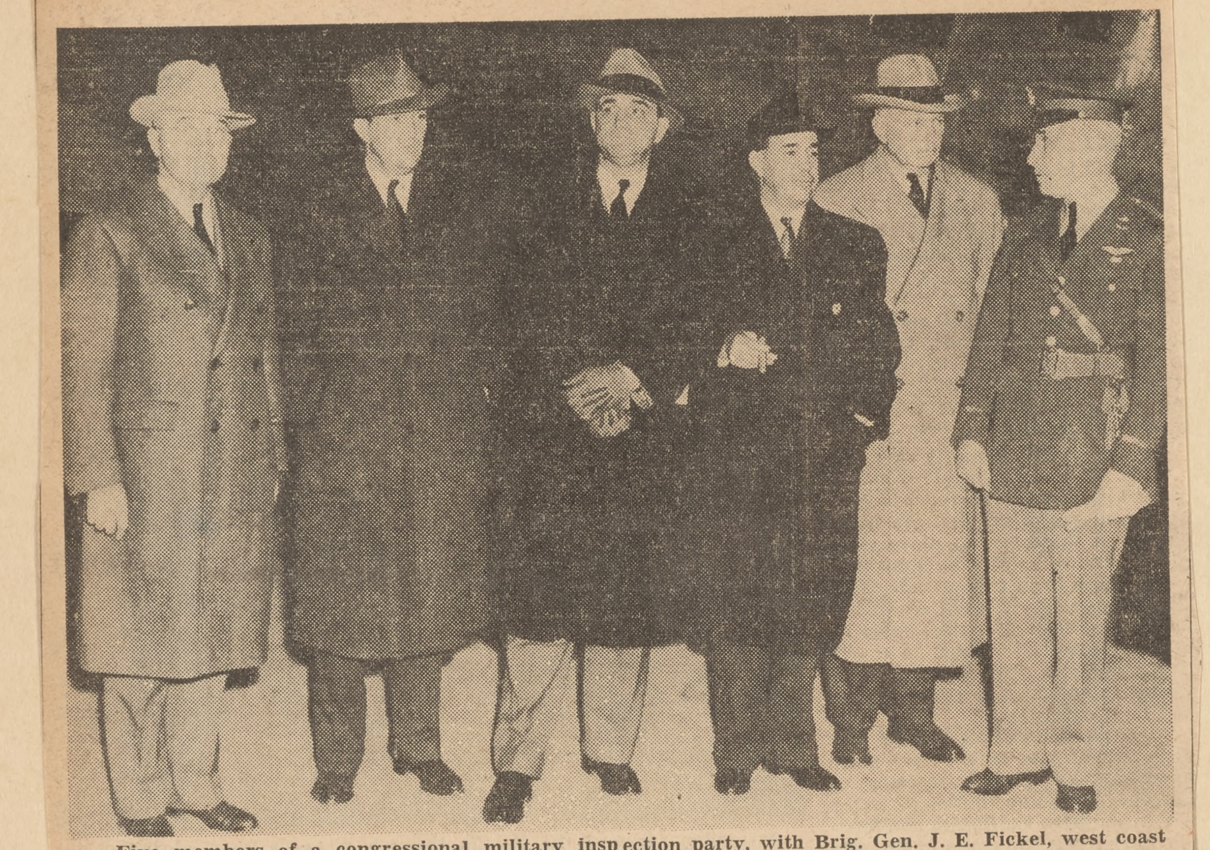
Boeing has always built tomorrow's airplanes today!

BOEING AIRCRAFT COMPANY • Seattle

THE TRIBUNE-SUN, San Diego, Ca

Members of Congress Military Inspection Party

11-29-39



Five members of a congressional military inspection party, with Brig. Gen. J. E. Fickel, west coast air chief, are shown as they arrived here yesterday to inspect local navy and military establishments. They are, left to right, Sen. Harry S. Truman, Rep. Paul W. Shafer, Sen. Sherman Minton, Sen. Dennis Chavez, Sen. Elmer Thomas. The party left today for March field and Los Angeles.

Further S. D. Defenses Held Vital By Eleven Visiting Congressmen

Trib-Sun 11-29-39

First-hand information on the vital need for expansion of local naval and military defense facilities was gleaned by 11 members of

(Picture on Page 13-A)

a congressional military affairs party, who arrived here yesterday to inspect sea, shore and air establishments and airplane factories.

The party concluded its inspection this morning with a visit to Ryan Aircraft Co. and Solar Aircraft Co. plants, and left for March field, Riverside, and the Los Angeles district.

The group, traveling in three giant army transport planes, is on one of the most comprehensive tours of the nation's defenses by any congressional party in history. In the party here were Sens. Elmer Thomas (D-Okla), chairman, senate subcommittee on army appropriations; Harry S. Truman (D-Mo), army appropriations subcommittee member; Sherman Minton (D-Ind), senate military affairs committee member, and Dennis Chavez (D-NM), and Reps. John M. Costello (D-Calif), Overton Brooks (D-La), Charles R. Glason (R-Mass), Paul W. Shafer (R-Mich), John J. Sparkman (D-Ala), and Thomas E. Martin (R-Ia), all of the house military affairs committee.

Accompanying the solons as military aids were Majs. Arthur R. Wilson, of the war department general staff, and John E. Upston, from the

(Continued on Next Page, Col. 1)

Urge Increase In San Diego Defenses

Trib-Sun 11-29-39

CONTINUED FROM PAGE ONE

office of the chief of the air corps.

Speaking last night at a city-county-chamber of commerce dinner at Hotel del Coronado, Thomas stressed military preparations "along reasonable lines" as the best assurance against the danger of war.

Responding to addresses which emphasized San Diego's need for more adequate defense facilities, Thomas declared:

"The United States must follow a program of reasonable preparedness. We have less than 1,000,000 men who could be called at once in event of emergency. Already, on this trip, I have been impressed with the lack of equipment available for the troops we do have and, from what I've been told, San Diego is no exception."

The visiting solons were impressed with the need for added military facilities here by Maj. Gen. H. B. Fiske, U.S.A., ret., vice chairman, chamber military affairs committee, and Rear Adm. Joseph R. Defrees, 11th naval district commandant.

"To provide our fleet with freedom at sea, it is of utmost importance that our shore bases be strongly fortified and adequately garrisoned at all times," said Fiske. "We must remember that important elements of the fleet are permanently based on shore and local defense should be enforced whether the fleet is here or elsewhere. It is the business of the army to provide this protection."

Seeks Added Dredging

Fiske urged creation of permanent military units here, in addition to installation of new long-range guns at Ft. Rosecrans. It was pointed out that the present guns at the fort are of 1890 vintage. Fiske advised immediate action to dredge an area adjacent to the fort, to add 15 acres to land available for coast defense works. This would cost about $80,000. The speaker also stressed necessity of adequate anti-aircraft protection for local naval bases.

Importance of the bay dredging project now under way was stressed by DeFrees, who pointed out that expansion of naval facilities, basing of additional vessels here and relief of the already crowded anchorage accommodations depend upon its completion.

"There are 24 ship bases here at present, although adequate anchorage facilities are not available," he stated. "There are seven 10,000-ton cruisers at Long Beach, which belong here but are not in this harbor because the dredging project is not completed."

DeFrees also mentioned the local navy shore establishments, which represent an investment of nearly $50,000,000.

Base for 60 More Ships

"Through the aid of the chamber of commerce, an assurance by the navy that other facilities are needed and cooperation by congress, some $18,000,000 has been obtained for improvements. Just last year, $6,800,000 was expended. But more improvements are needed. It is the plan of the navy to base 60 more ships here, a step which cannot be taken until harbor dredging is completed."

Maj. Gen. R. H. Van Deman, chamber military affairs committee chairman, who presided at the dinner, asserted that "in the past 22 years, the army has received virtually no increase in its material."

"Modern wars are fought with modern weapons," he said. "Without equipment and men, our army is not modern."

Responding to Van Deman's request that the visiting solons "use your influence to get congress to give the army what it needs," Costello, Hollywood representative, replied:

"We already have seen examples of how military bases have been left to ruin due to inadequate appropriations of funds. But we are witnessing a change today. The army as an important part of our national defense is being given serious consideration. The war department will be given added funds for needed expansion. I'm sure that the coats will get a badly-needed share of these funds."

Frank Forward, chamber president, introduced city and county representatives, including Herbert E. Fish, vice mayor, and T. LeRoy Richards, board of supervisors chairman. Col. Robert E. Guthrie, Ft. Rosecrans commander, introduced Brig. Gen. Jacob Fickel, commanding first air force, Marsh field.

The congressional party landed at Lindbergh field at 4:30 p.m., after inclement weather earlier in the day had threatened to delay their departure from Ft. Huachuca, Ariz., until today.

Consair Plant Visited

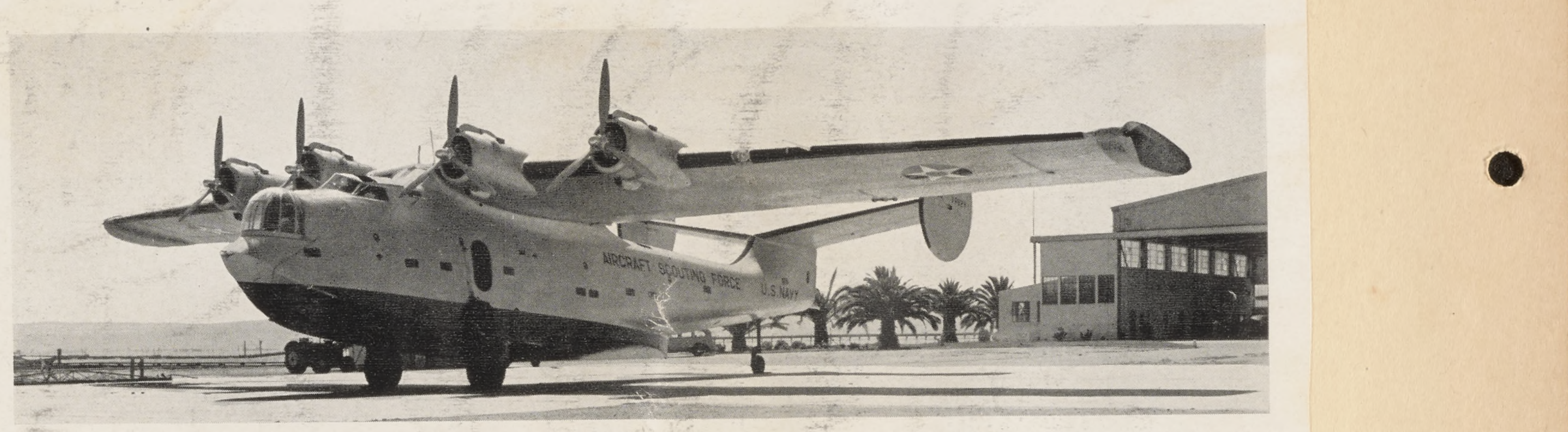
They went immediately to the Consolidated Aircraft Corp. plant, where, under guidance of Maj. Reuben Fleet, Consair head, they were shown the new four-motored army bomber under construction, which, it is said, will have a speed greater than that of any large bombing plane in the world.

It was the first airplane factory the solons had seen on their 8000-mile tour, which bagan Nov. 9 at Washington and included visits to Central American countries, the Canal Zone and Mexico.

The party planned to visit coast defense and aircraft manufacturing facilities as far north as the Canadian border. They were to be accompanied to March field by Fickel, who commands army air activities on the west coast. Fickel reported that March field is in process of adding 600 enlisted men and 25 officers to personnel. He said there are 110 planes there, while a modernizing program will add 60 new pursuit planes and 30 bombers of the "flying fortress" type to replace older equipment.

On arirving at Lindbergh field, Sen. Thomas pictured the Panama Canal as virtually defenseless from air attack. He said the vital inter-ocean link seemed to be adequately protected from sea and land attack by big guns and army stations, as well as numerous planes.

"But I didn't see an anti-aircraft gun while I was there," he said. "The vital need, I would say, is for vital anti-aircraft protection of the canal."



FIRST AIRPLANE TO BE OFFICIALLY RECOGNIZED AS A FLAGPLANE OF THE UNITED STATES NAVY

Consolidated XPB2Y Flying Boat Which on August 24 Carried the Flag of Admiral A. B. Cook, Commanding Aircraft Squadron of the Scouting Forces, thereby Establishing a Precedent in Naval History. Never Before has Such a Flag been Hoisted Officially on an Airplane. This Plane had been Flown to Seattle, Washington, by Navy Personnel Commanded by Comdr. Andrew Crinkley

Senate Votes Repeal of Arms Embargo

AFTER FIVE WEEKS OF DEBATE the Senate has finally voted, by 63 to 30, for repeal of the arms embargo, paving the way for similar action by the House which now has the proposal under consideration. Administration strategists in charge of the bill have set a course in the House designed to assure early favorable action, after which possible conferences between House and Senate, in event of any House changes, will coordinate the wishes of the two legislative bodies and an adjournment of the current special session will be in prospect.

Meanwhile embattled allied nations, facing constant threat of air devastation, were openly jubilant at the Senate's action, foreseeing that the almost unlimited industrial resources of the United States would soon be available to replace anticipated wastage of airplanes and perhaps to bolster their own lag in production compared with the German output of combat aviation.

The effect of the enforcement of embargo provisions, beginning on the outbreak of hostilities in Europe in September, has been apparent in suspension of further despatch of American-built combat planes for England and France, with accessory equipment, and the revocation of British licenses for such export of aviation primarily, totaling $14,877,086, and of French licenses aggregating $58,418,113, likewise principally for American aircraft and accessories. Altogether there were cancelled after September 5, the date of the neutrality ban, export licenses for shipment of American munitions abroad totaling $78,908,525.

As American factories, industries, and stores felt a sharp upswing in recent months, which may or may not be attributed to the effect of war activities abroad, there came again to the United States reports from abroad of impending airplane and aviation purchases of staggering dimensions, once the ban on such procurement is lifted by Congressional sanction. In the meantime, these premonitory reports continued in the face of the internationalization of a famous American commercial term—CASH AND CARRY.

Congress, while opening the way to the American storehouses, has attempted to safeguard American sellers, and American interests from compromise in war situations by making mandatory this homely provision of the cutrate grocery and the florist which enables the college youth to supply his sorority date on weekends with an orchid and still retain some cash for the movies.

* *

Wright Awarded Large Order

A CONTRACT for the purchase of airplane engines amounting to $6,963,292 was awarded to Wright Aeronautical Corporation by the War Department on October 10th.

Two types of engines are included in the contract, as follows: A type designed as the R 1820-65 and rated at 1,000 h-p., designed for powering the Boeing flying fortresses B-17C; and the R 2600-9, rated at 1,500 h-p., designed for the new B-25 airplane, a two-engined mid-wing, all metal medium bomber, now being manufactured by the North American Aviation Corporation.

* *

TWA Thanksgiving Menu

IN STRIKING CONTRAST to the rationing of foodstuffs now prevalent in European countries it is our happy privilege to print the following menu which has been evolved by TWA dieticians to be served on its airliners on November 23rd—Thanksgiving Day by presidential proclamation—and also on November 30th—the traditional date.

Strained Gumbo
Stuffed Celery — Crackers
Spiced Watermelon Rind
Roast Vermont Turkey — Oyster Sauce
(Chestnut Stuffing)
Hawaiian Sweet Potatoes
(Sweet Potato — Apple and
Pineapple Slices)
Corn and Tomatoes
Brown Nut Bread Parker House Roll
Butter
Apple—Celery—Raisin and Date Salad
(Mayonnaise)
Mince Pie — Swiss Cheese
Coffee Milk
Old-Fashioned After Dinner Mints

(*Continued from page 84*)

and hydraulics division, Bendix Products Division, problems of a suitable pump for high pressure systems were discussed in detail. Adams agreed that the pump is a real problem and thought it would be solved by a pump of positive displacement somewhat similar to Diesel fuel pumps. Considerable discussion came from the floor with respect to possible advantages of the high pressure system. Adams pointed to a saving of approximately 600 lb. through use of a high pressure hydraulic system on the Douglas DC4 as compared with best design practise on a suitable system using standard pressures.

C. E. Stryker, chief engineer, Bendix Company of Calif., acted as chairman for the Thursday afternoon session. Opening paper by Courtney Hertel, Douglas Aircraft Company, dealt with "Interchangeability in Modern Aircraft Production". This subject was treated primarily from the standpoint of large structural parts, such as portions of the wings and fuselage, and the problem of transferring dimensions from the loft boards to the production line in such a way that accessories and other units may be fitted to the parts of the plane where they mount, without additional fitting on the spot. Since no two men will scale the same exact dimension from a loft drawing it is necessary to use the loft layouts just once, for the development of a set of mathematical tables representing points at percentage lines of wing and fuselage. These tables of coordinates are thereafter used by all branches of the shop for developing jigs, fixtures, etc. Extensive use of the hydraulic press in securing uniform production and full inter-changeability was outlined.

Production came into its own in the discussion of The Final Assembly of Aircraft, given by H. F. Schwedes, North American Aviation, Inc. Schwedes spoke entirely from a series of slides showing pertinent portions of the North American factory. He pointed out that North American holds a peacetime production record for any major aircraft builder by turning out 103 complete airplanes during 23 working days of the month of August, and by averaging 74 airplanes per month for the first six months of 1939. Schwedes also disclosed that North American had assembled ten airplanes during one 24 hr. period recently. Primary factor in securing efficient production, Schwedes said, was for the engineering department to be production minded. This has been accomplished at North American through a remarkable degree of cooperation between the design section and the shop supervisors. Major factor in accomplishing large scale aircraft production, the author felt, was to break the production unit up into the maximum possible number of parts or subassemblies. This permits all primary work to be done without crowding, and, if proper jigs are used, the final assembly line then becomes a simple procedure of attaching completed units to the plane as it progresses along the floor. Much credit for North American's smooth production must go to the detailed production control system. This is based on a lot system by which contracts are broken up into units releasing 20 airplanes at a time, except for the first trial lot, which is usually for five to ten airplanes to permit the shop to check all tools, jigs, etc., prior to heavy production.

P. N. Jansen's paper on "Accelerated Aircraft Production for National Defense", (Reproduced in part on page 34) was read by T. P. Wright in the absence of the author. Wright did not read the entire paper, but commented on it generally. He felt that great emphasis should be placed on production of the prototype under pressure, as suggested by Jansen. He also thought that the mock-up idea could be further extended into preliminary design and production phases. Written discussion submitted by Ralph Damon, American Airlines, emphasized need of further attention to inventory control. Damon thought that aircraft factories keep too much of their financial reserves tied up in inventory; that inventory turn-over should be not less than twelve times a year, instead of two to four as at present. Discussion from the floor elicited the comment from Dr. A. L. Klein that installation of equipment in a plane is a much greater production problem than constructing the basic structure. For this reason Klein thought that emphasis on simplified structures, such as molded planes, may prove to be misguided due to the resulting problems of accessory installation.

FEDERAL
AIRCRAFT BEARINGS

Display of Federal Aircraft Bearings installed by E. D. Maltby Co., Calif. distributors. L. to R.—Fred C. Warren, E. D. Maltby, George A. Banton.

The development phase of production received attention at the Thursday evening session, with T. P. Wright acting as chairman. W. A. Hite, Vultee Aircraft, gave his paper on "Engineering Experimental Aircraft", in which he disclosed that the new Vultee Trainer, which has been ordered in quantity by the U. S. Army Air Corps, was flown exactly 88 days after the first engineering work commenced. Hite emphasized that production engineering did not suffer from this speed of development, as the plane was also laid out for the simplest possible production procedure. In this connection every effort was made to obtain shop suggestions prior to and during the course of design work. Indicative of the astonishing structural simplification in the Vultee Trainer is the fact that all spanwise wing stringers, or stiffeners have been eliminated, and that aileron, flap, and control surface ribs have been eliminated. Control surface ribs are eliminated through use of formed flat sheet with stiffness obtained by beads and flanges, the unit being fabric covered. The chairman questioned simplified engineering of the prototype, feeling that it might result in slower translation of the design into production. Hite said this problem had been solved through the close coordination of shop and engineering department at the time the prototype was being developed. It was also found economical to use the drop hammer extensively during experimental work.

Hearers began to feel happier about America's position in the field of military aircraft development after hearing Hite's explanation of how Vultee developed the trainer model in less than three months, and this feeling was clinched when B. W. Sheahan, of Consolidated Aircraft Corp., told how Consolidated developed the Model 31 in less than ten months, an

(*Turn to page 108*)

FOR LASTING SATISFACTION BUY A LUSCOMBE

Durable ALL METAL construction, using preformed and predrilled parts, makes possible a safe sturdy plane which will outlast conventional types. Because of its light weight and beautiful lines a Luscombe gives highest performance—104 cruising, 350 mile range, 900 feet-a-minute climb. Extra refinements at no additional cost such as ball bearing controls, rich upholstery, low nose for exceptional visibility, and two wide doors, afford greatest comfort and give the owner a feeling of luxury found only in ships priced remotely higher.

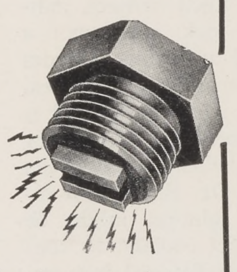
For greatest value, performance, and lasting satisfaction, your best buy is an ALL METAL Luscombe. Priced from $1895, with terms as low as $633 down. See and fly one now, there is a dealer near you.

LUSCOMBE 50—$1895; 65—$1975, SEAPLANE—$3170

ALL METAL Luscombe SAFETY

For folder and further information see your dealer or write Dept. N

LUSCOMBE AIRPLANE CORPORATION
West Trenton, New Jersey


MAGNETIZED DRAIN PLUGS

for Aircraft Engines

Powerful Magnetized Drain Plugs installed in oil lines remove abrasive metal particles from the lubricant—prevent excessive wear to fine bearings—reduce maintenance costs. Regular equipment on many aircraft engines. Magnetized Plugs guaranteed to retain power for 5 years. Every aircraft engine should have this low cost protection. Write for attractive offer.

LISLE CORPORATION, Clarinda, Iowa

B★A★30

B★A★30 airplane wing cloth is lighter, stronger and more closely woven than other airfoil fabrics. Inquiries from dealers and manufacturers will receive prompt attention.

WELLINGTON SEARS COMPANY 65 WORTH ST. NEW YORK CITY

IRVIN Air Chute
The Life Preserver of the Air

STANDARD type equipment for the Air forces of over 45 Governments including those of the United States and Great Britain. "Irvin" has proven its dependability over a period of 20 years.

The World Famous Caterpillar Club

has over 3000 Members whose lives have been saved with standard IRVIN Parachutes.

IRVIN CHAIR CHUTES

for Cabin Planes, for personal and business use.

Everywhere aviators and test pilots depend on it.

Consult our engineers on your chute problems.

IRVING AIR CHUTE CO., INC.
1670 Jefferson Ave., Buffalo, N. Y.

FACTORIES AT: Buffalo, N. Y.; Glendale, Calif.; Fort Erie, Canada; Letchworth, England; Bucharest, Rumania; Stockholm, Sweden and other countries.

THE TRIBUNE-SUN, San Diego, C

Members of Congress Military Inspection Party

11-29-39

Five members of a congressional military inspection party, with Brig. Gen. J. E. Fickel, west coast air chief, are shown as they arrived here yesterday to inspect local navy and military establishments. They are, left to right, Sen. Harry S. Truman, Rep. Paul W. Shafer, Sen. Sherman Minton, Sen. Dennis Chavez, Sen. Elmer Thomas. The party left today for March field and Los Angeles.

Further S. D. Defenses Held Vital By Eleven Visiting Congressmen

Trib. Sun 11-29-39

First-hand information on the vital need for expansion of local naval and military defense facilities was gleaned by 11 members of a congressional military affairs party, who arrived here yesterday to inspect sea, shore and air establishments and airplane factories.

(Picture on Page 13-A)

The party concluded its inspection this morning with a visit to Ryan Aircraft Co. and Solar Aircraft Co. plants, and left for March field, Riverside, and the Los Angeles district.

The group, traveling in three giant army transport planes, is on one of the most comprehensive tours of the nation's defenses by any congressional party in history. In the party here were Sens. Elmer Thomas (D-Okla), chairman, senate subcommittee on army appropriations; Harry S. Truman (D-Mo), army appropriations subcommittee member; Sherman Minton (D-Ind), senate military affairs committee member, and Dennis Chavez (D-NM), and Reps. John M. Costello (D-Calif), Overton Brooks (D-La), Charles R. Glason (R-Mass), Paul W. Shafer (R-Mich), John J. Sparkman (D-Ala), and Thomas E. Martin (R-Ia), all of the house military affairs committee.

Accompanying the solons as military aids were Majs. Arthur R. Wilson, of the war department general staff, and John E. Upston, from the

(Continued on Next Page, Col. 1)

Urge Increase In San Diego Defenses

Trib-Sun 11-29-39

CONTINUED FROM PAGE ONE

office of the chief of the air corps.

Speaking last night at a city-county-chamber of commerce dinner at Hotel del Coronado, Thomas stressed military preparations "along reasonable lines" as the best assurance against the danger of war.

Responding to addresses which emphasized San Diego's need for more adequate defense facilities, Thomas declared:

"The United States must follow a program of reasonable preparedness. We have less than 1,000,000 men who could be called at once in event of emergency. Already, on this trip, I have been impressed with the lack of equipment available for the troops we do have and, from what I've been told, San Diego is no exception."

The visiting solons were impressed with the need for added military facilities here by Maj. Gen. H. B. Fiske, U.S.A., ret., vice chairman, chamber military affairs committee, and Rear Adm. Joseph R. Defrees, 11th naval district commandant.

"To provide our fleet with freedom at sea, it is of utmost importance that our shore bases be strongly fortified and adequately garrisoned at all times," said Fiske. "We must remember that important elements of the fleet are permanently based on shore and local defense should be enforced whether the fleet is here or elsewhere. It is the business of the army to provide this protection."

Seeks Added Dredging

Fiske urged creation of permanent military units here, in addition to installation of new long-range guns at Ft. Rosecrans. It was pointed out that the present guns at the fort are of 1890 vintage. Fiske advised immediate action to dredge an area adjacent to the fort, to add 15 acres to land available for coast defense works. This would cost about $80,000. The speaker also stressed necessity of adequate anti-aircraft protection for local naval bases.

Importance of the bay dredging project now under way was stressed by DeFrees, who pointed out that expansion of naval facilities, basing of additional vessels here and relief of the already crowded anchorage accommodations depend upon its completion.

"There are 24 ship bases here at present, although adequate anchorage facilities are not available," he stated. "There are seven 10,000-ton cruisers at Long Beach, which belong here but are not in this harbor because the dredging project is not completed."

DeFrees also mentioned the local navy shore establishments, which represent an investment of nearly $50,000,000.

Base for 60 More Ships

"Through the aid of the chamber of commerce, an assurance by the navy that other facilities are needed and cooperation by congress, some $18,000,000 has been obtained for improvements. Just last year, $6,800,000 was expended. But more improvements are needed. It is the plan of the navy to base 60 more ships here, a step which cannot be taken until harbor dredging is completed."

Maj. Gen. R. H. Van Deman, chamber military affairs committee chairman, who presided at the dinner, asserted that "in the past 22 years, the army has received virtually no increase in its material."

"Modern wars are fought with modern weapons," he said. "Without equipment and men, our army is not modern."

Responding to Van Deman's request that the visiting solons "use your influence to get congress to give the army what it needs," Costello, Hollywood representative, replied:

"We already have seen examples of how military bases have been left to ruin due to inadequate appropriations of funds. But we are witnessing a change today. The army as an important part of our national defense is being given serious consideration. The war department will be given added funds for needed expansion. I'm sure that the coats will get a badly-needed share of these funds."

Frank Forward, chamber president, introduced city and county representatives, including Herbert E. Fish, vice mayor, and T. LeRoy Richards, board of supervisors chairman. Col. Robert E. Guthrie, Ft. Rosecrans commander, introduced Brig. Gen. Jacob Fickel, commanding first air force, Marsh field.

The congressional party landed at Lindbergh field at 4:30 p.m., after inclement weather earlier in the day had threatened to delay their departure from Ft. Huachuca, Ariz., until today.

Consair Plant Visited

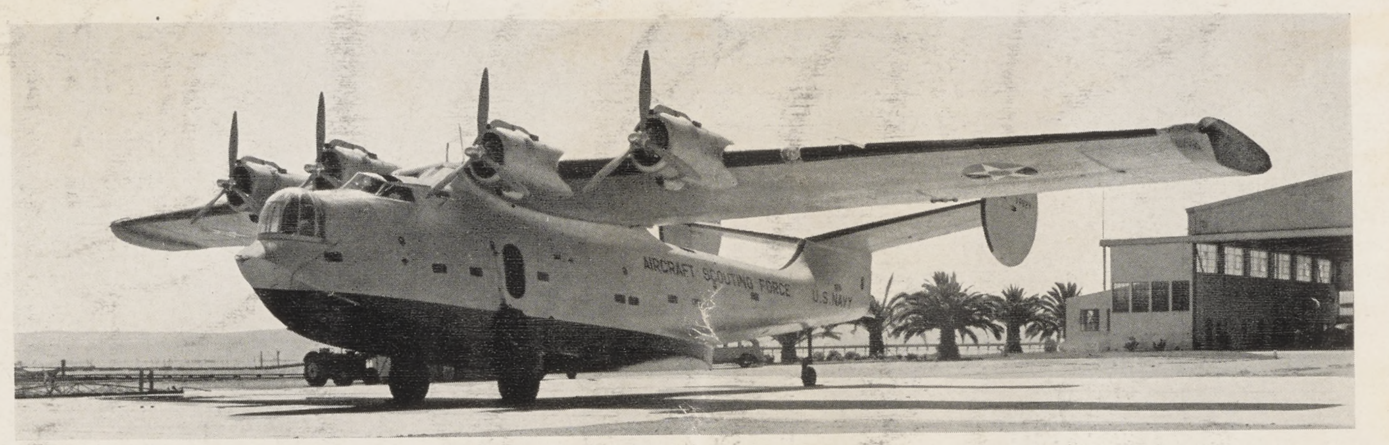
They went immediately to the Consolidated Aircraft Corp. plant, where, under guidance of Maj. Reuben Fleet, Consair head, they were shown the new four-motored army bomber under construction, which, it is said, will have a speed greater than that of any large bombing plane in the world.

It was the first airplane factory the solons had seen on their 8000-mile tour, which bagan Nov. 9 at Washington and included visits to Central American countries, the Canal Zone and Mexico.

The party planned to visit coast defense and aircraft manufacturing facilities as far north as the Canadian border. They were to be accompanied to March field by Fickel, who commands army air activities on the west coast. Fickel reported that March field is in process of adding 600 enlisted men and 25 officers to personnel. He said there are 110 planes there, while a modernizing program will add 60 new pursuit planes and 30 bombers of the "flying fortress" type to replace older equipment.

On arirving at Lindbergh field, Sen. Thomas pictured the Panama Canal as virtually defenseless from air attack. He said the vital inter-ocean link seemed to be adequately protected from sea and land attack by big guns and army stations, as well as numerous planes.

"But I didn't see an anti-aircraft gun while I was there," he said. "The vital need, I would say, is for vital anti-aircraft protection of the canal."



FIRST AIRPLANE TO BE OFFICIALLY RECOGNIZED AS A FLAGPLANE OF THE UNITED STATES NAVY

Consolidated XPB2Y Flying Boat Which on August 24 Carried the Flag of Admiral A. B. Cook, Commanding Aircraft Squadron of the Scouting Forces, thereby Establishing a Precedent in Naval History. Never Before has Such a Flag been Hoisted Officially on an Airplane. This Plane had been Flown to Seattle, Washington, by Navy Personnel Commanded by Comdr. Andrew Crinkley

Senate Votes Repeal of Arms Embargo

AFTER FIVE WEEKS OF DEBATE the Senate has finally voted, by 63 to 30, for repeal of the arms embargo, paving the way for similar action by the House which now has the proposal under consideration. Administration strategists in charge of the bill have set a course in the House designed to assure early favorable action, after which possible conferences between House and Senate, in event of any House changes, will coordinate the wishes of the two legislative bodies and an adjournment of the current special session will be in prospect.

Meanwhile embattled allied nations, facing constant threat of air devastation, were openly jubilant at the Senate's action, foreseeing that the almost unlimited industrial resources of the United States would soon be available to replace anticipated wastage of airplanes and perhaps to bolster their own lag in production compared with the German output of combat aviation.

The effect of the enforcement of embargo provisions, beginning on the outbreak of hostilities in Europe in September, has been apparent in suspension of further despatch of American-built combat planes for England and France, with accessory equipment, and the revocation of British licenses for such export of aviation primarily, totaling $14,877,086, and of French licenses aggregating $58,418,113, likewise principally for American aircraft and accessories. Altogether there were cancelled after September 5, the date of the neutrality ban, export licenses for shipment of American munitions abroad totaling $78,908,525.

As American factories, industries, and stores felt a sharp upswing in recent months, which may or may not be attributed to the effect of war activities abroad, there came again to the United States reports from abroad of impending airplane and aviation purchases of staggering dimensions, once the ban on such procurement is lifted by Congressional sanction. In the meantime, these premonitory reports continued in the face of the internationalization of a famous American commercial term—CASH AND CARRY.

Congress, while opening the way to the American storehouses, has attempted to safeguard American sellers, and American interests from compromise in war situations by making mandatory this homely provision of the cutrate grocery and the florist which enables the college youth to supply his sorority date on weekends with an orchid and still retain some cash for the movies.

* *

Wright Awarded Large Order

A CONTRACT for the purchase of airplane engines amounting to $6,963,292 was awarded to Wright Aeronautical Corporation by the War Department on October 10th.

Two types of engines are included in the contract, as follows: A type designed as the R 1820-65 and rated at 1,000 h-p., designed for powering the Boeing flying fortresses B-17C; and the R 2600-9, rated at 1,500 h-p., designed for the new B-25 airplane, a two-engined mid-wing, all metal medium bomber, now being manufactured by the North American Aviation Corporation.

* *

TWA Thanksgiving Menu

IN STRIKING CONTRAST to the rationing of foodstuffs now prevalent in European countries it is our happy privilege to print the following menu which has been evolved by TWA dieticians to be served on its airliners on November 23rd—Thanksgiving Day by presidential proclamation—and also on November 30th—the traditional date.

Strained Gumbo
Stuffed Celery — Crackers
Spiced Watermelon Rind
Roast Vermont Turkey — Oyster Sauce
(Chestnut Stuffing)
Hawaiian Sweet Potatoes
(Sweet Potato — Apple and
Pineapple Slices)
Corn and Tomatoes
Brown Nut Bread Parker House Roll
Butter
Apple—Celery—Raisin and Date Salad
(Mayonnaise)
Mince Pie — Swiss Cheese
Coffee Milk
Old-Fashioned After Dinner Mints

S.A.E. Talks Production

(*Continued from page 86*)

astonishing record for such a huge plane. The Model 31 is a twin-engined flying boat powered with two of the new Wright Duplex Cyclone engines of 2000 h.p., and is generally credited with an all-out range of about 10,000 miles and a top speed in the neighborhood of 300 m.p.h. The plane was built at the expense of the Consolidated company as a private project which might be converted to either commercial or military specifications. Therefore the problem of accessories and equipment installations was given little consideration in early stages of the design, every effort being made to get the airplane in the air as a flying unit. However, accessory problems were not neglected, but were carried forward concurrently with the airplane design proper. A major speed-up resulted from working directly off drawing boards. Drawings were cut to about one-third the normal number and all working drawings were laid out directly on loft boards which were then, in most cases, transferred directly to the shop for use as jigs and templates. Photographs of the loft layouts serve as permanent records, and for reference purposes of all sorts.

A detailed progress report on the development of in-line, aircooled engines was given by A. T. Gregory, chief engineer, Ranger Engineering Corp., showing that the Ranger six-cylinder engine has been developed to give 50 per cent greater horsepower within the past five years, with equivalent reduction in weight per horsepower. It was shown that manifold design depends on a careful study of the harmonics of pressure waves within the intake manifold, a proper selection of length and diameter resulting in a supercharging affect. A detailed report on valve gear and camshaft development was also made. An indefinite life for all valve gear parts except the spring has now been achieved, practically through application of needle bearings to the rocker arms. Extensive experiment and mathematical analysis has made it possible to locate the critical speed of camshaft vibration outside the operating speed range of the engine, with consequent improvement in service life of valve gear and drive.

Major problem in the quantity production of aircraft engines is the proportionately high number of changes made during production, an average of 10 changes for every 18 engines produced. Origin and nature of such changes was discussed, with the conclusion that more benefit results from speeding up the design change process than from trying to choke it down. Several outstanding recent design changes were described, such as the oil scavenging annulus which has been incorporated in the front and rear walls of the Cyclone G.200 crankcase resulting in a higher rate of oil flow with better scavenging. Progress in the design of a forged steel crankcase was outlined. The present case is as light, and as cheap to manufacture, as the alloy case it has displaced, and has proved much more satisfactory in service. An astonishing development is the reversal of the piston skirt oil scraper ring, making it a "pumper". Result is better lubrication of the cylinder walls. Precautions to prevent oil getting past the upper rings has actually reduced oil consumption. Other design changes were noted, such as the spikes forged on the under side of the piston head for cooling, the coil spring piston pin retainers, the new end sealed master rod bearing which improves oil flow through the rod system, and the new automatic self-cleaning oil filter.

A report by O. C. Bridgeman on the C.F.R. Vapor Lock Project, indicated that vapor lock, while not a problem at normal operating altitudes of 5–10,000 ft., becomes a very real problem at 20,000 ft. or more, and is of vital importance from a military standpoint. No conclusions have been drawn as yet, but Dr. Bridgeman indicated that the solution might be found in use of fuel coolers, in conjunction with a supercharged fuel system to keep the fuel under pressure in the tank, lines, pump, and carburetor

A look into the future was given the Friday afternoon audience with presentation of two papers dealing with submerged engine installations. The paper on problems of submerged engine installations, prepared by Wellwood E. Beall and E. G. Emery, Jr. of Boeing Aircraft Company, was read by N. B. Moore, in charge of Aeronautics Department, University of California. This paper presented a discouraging array of problems requiring solution before submerged engines may be adopted. Benefit of such installations was reported as a speed increase of about 7 or 8 per cent on the basis of calculations that have been made. The four major problems were summarized as: 1. Development of satisfactory propeller extension shaft. 2. Safe disposal of exhaust gases. 3. Overall cooling of the engine compartment, including oil cooling, accessory cooling, exhaust disposal system cooling, etc. 4. Mounting of the engine, especially with respect to possible engine or propeller failure. Discussion raised the question of application of present types of long-nosed radial engines to submerged, or partially submerged mountings in the fore part of the wing. T. P. Wright reported seeing such an installation in England on the Blenheim bomber. Propeller shaft extension was 14 in., and cowl improvement was so great that one would estimate a performance gain of at least 5–10 miles per hour. Yet careful tests showed no gain whatever. However, use of propeller hub cuffs on the Supermarine Spitfire brought a gain of 10–12 mph.

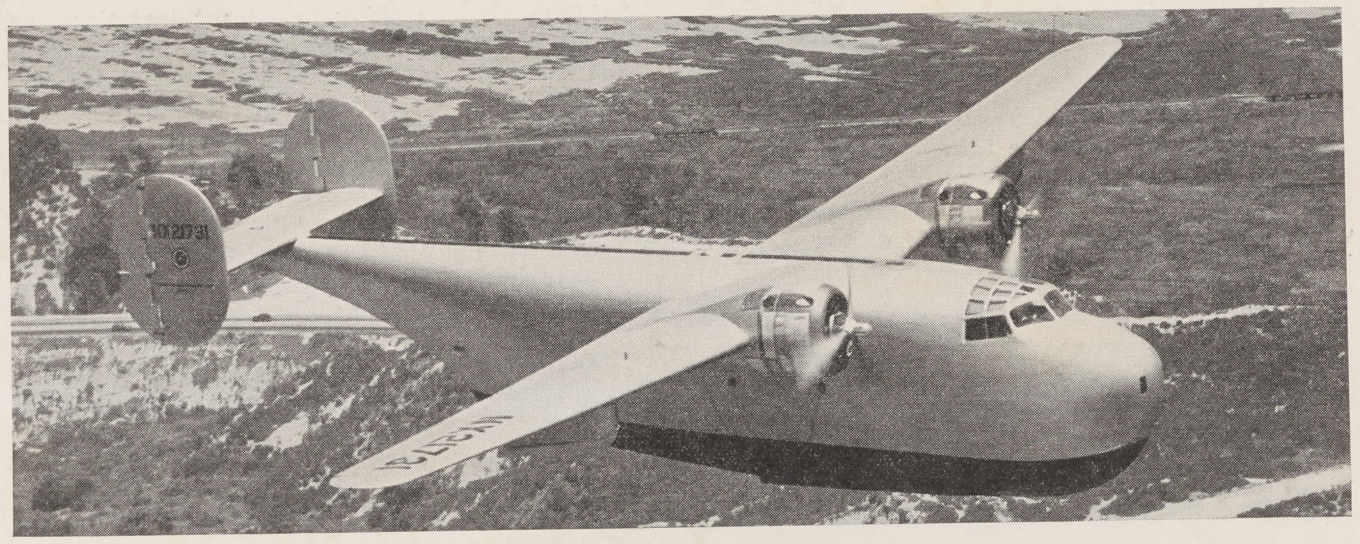
Discussing propeller requirements for submerged engine installations, George W. Brady, Curtiss Propeller Division of the Curtiss-Wright Corp., named two primary problems as improved aerodynamic treatment of the propeller hub shanks, and suitable structural support for the extension shaft. Vibration of the propeller-shaft-engine system is a major problem, but with the propeller mounted independently of the power-plant it may be possible to so greatly reduce propeller vibration as to make a reduction in propeller weight practicable. This weight saving could then be applied to the propeller drive and structural mount, reducing the overall increase in weight otherwise to be expected from use of such a system.

Brint Edwards served as chairman of the final session of the meeting, on Saturday morning, at which two papers were presented dealing with the light alloys of magnesium and aluminum. L. B. Grant, of the Dow Chemical Co. said (see also p. 36) that advantages of magnesium alloys to aircraft production were so great that only shop inertia could be responsible for failure to make wider use of the material to date. Europe is much ahead of us in this respect, customarily making much wider use of the material than in this country.

In discussing aluminum, G. D. Welty, Aluminum Company of America, presented a detailed history of the development of aluminum. He conceded that magnesium alloys, stainless steel, and plastics had all made inroads on the field of application of aluminum alloys, but felt aluminum is not yet at the zenith of its usefulness and will continue to be a major factor in aviation, and in industry generally for many years to come.

The LOG of the U.S. Naval Academy
Oct 27-'39

MODEL 31



CONSOLIDATED'S WONDER PLANE

by
F. M. HERTEL

WITH the boom of the heavy artillery resounding on both European fronts, there comes a noise quite as resounding in its nature here in our own country. This loud clamor is in the form of words, the bombshells of the alarmists. Every newspaper, some magazines, and various public meetings usually include within their sheets, pages, or programs one of these fear instilling bombshells in some form or another.

On every side we are peppered in machine-gun-like rapidity with stories of how the present aviation industrial setup in the United States is not, could never be, able to put this country on an equal wartime basis with the totalitarian states. However, the Consolidated Aircraft Corporation has launched what appears to be a successful counter attack using as its ammunition its new Model 31.

Each one of us here who has gone through Second Class summer or who has been here during the fall and spring has become acquainted with the PBY-2's. These ships and their younger brothers have been very useful to the U. S. Navy particularly on the long Pacific mass formation flights from San Diego to Hawaii and the various other bases located in those waters. The officers and men involved in these flights seem to have a habit of breaking records of times and performance as a matter of routine.

Lacking two days of ten months after its authorization by the Corporation, Model 31 was taking its first tests in its stride. Probably no other craft capable of carrying 52 passengers and having the same range and speed had been produced in such a short time. The overall length is 73′, height 22′, wingspan 110′, weight approximately 50,000 lbs.

It's normal crew will consist of five: pilot, co-pilot, navigator, engineer, radio operator. Since the ship was a private undertaking in every respect, it has no armament, but the Navy Department was cognizant of its construction. Such load carrying properties can easily be converted into military uses if the occasion arises.

To say that any one of its features is unique is to say that they all are. To begin with the beaching gear is included as part of the plane with provision for the complete hydraulic retracting of the tricycle arrangement into enclosed compartments for maximum efficiency in flight. The wing is full cantilever and has the fuel tanks built integrally. Contrary to former PBY construction the outboard floats retract to the underside of outer wing panels. The hull, streamlined to utter perfection and divided into two full decks has a large flight compartment and eight additional compartments.

And now, here is some dope about the twin engines which together with the three bladed 16 ft. Hamilton Standard Hydromatic propellors drive this ship through the air. They are Wright, 18 cylinder, twin-row radial engines each rated at 2000 H.P. at take-off. According to statistics compiled by the company's engineers these engines put out 2,200,000 ft.lbs. of energy in one second.

If a horse is given a standing area of 3′ x 8′, the standing space required would be 2.2 acres. Or if the average man works at rate of one quarter horsepower, the two engines are the equal of 16,000 men. Better yet for those steam savoirs who are interested, these engines require 125 cu. ft. of air per second to burn .778 lbs. of fuel to produce 15,000 B.T.U. The electric equivalent of heat liberated in this same time interval would operate for four and one-half hours a 1000 watt electric stove.

Taking both the speed of construction and the tremendous capabilities of the Model 31 into consideration, this counter attack launched by Consolidated should silence the guns of the alarmists.

Trib-Sun 12-5-39

Edison Praises Efficiency of Navy; Mentions Epic Flights of S. D. Airmen

(Editor's note: This is the second in a series of four articles covering the major portion of the annual report of the secretary of the navy. Prepared by Acting Secy. of the Navy Charles Edison, it was released through The Associated Press. The next article will appear next Tuesday.)

Employment of Forces

Operations of our naval forces during the past year have been conducted in accordance with the United States naval policy to maintain the navy in sufficient strength to support the national policies and commerce and to guard the continental and overseas possessions of the United States. They have been disposed to operate with a minimum expenditure of funds.

In adhering to the naval policy the employment of forces has been effected with the following in view:

(a) To exercise and train the units of the fleet to the highest state of efficiency:

(b) To organize the navy for operations in either or both oceans so that expansion only will be necessary in case of national emergency;

(c) To protect American lives in disturbed areas;

(d) To assist in evacuating American nationals from areas of especial danger;

(e) To maintain uninterrupted communications with and for American nationals and for our diplomatic and consular establishments in the areas involved;

(f) To cooperate fully with other departments of the government and with the states; and

(g) To cultivate friendly international relations.

The number of ships in commission and operated at sea included 15 battleships (3 in reduced commission), 18 heavy cruisers, 18 light cruisers, 181 destroyers and light mine layers (23 in reduced commission), 58 submarines, 5 aircraft carriers, 1 mine layer, 12 patrol vessels, and 100 auxiliaries of all types.

Included in the foregoing, the following new ships were placed in commission during the year: 1 heavy cruiser, 3 light cruisers, 8 destroyers, 4 submarines, 2 aircraft carriers and 1 oil tanker. Other ships placed in full commission were 2 mine sweepers, 1 cargo ship and 1 harbor tug.

The following ships were placed out of commission during the year: 11 destroyers, 1 river gunboat and 2 harbor tugs. In addition, 12 vessels of various types were stricken from the navy register.

The ships of the navy were maintained in the same general organization as in the recent past, namely, the United States fleet, the Asiatic fleet, the special service squadron, and the naval transportation service. The squadron designated as Squadron 40-T has continued to operate in the western Mediterranean.

United States Fleet

The United States fleet remained concentrated during the fiscal year and was under the command of Adm. Claude C. Bloch, U.S.N.

On Jan. 4, 1939, in accordance with approved employment schedules, the fleet sailed from west coast bases for the Canal Zone. The fleet made a mass transit of the canal on Jan. 13, 1939, and proceeded to base in the Guantanamo-Culebra area. Fleet problem XX was conducted in February and March in the Caribbean area and off the northeast coast of South America. The latter phase of the problem was witnessed by the president of the United States and the chief of naval operations in Houston. On completion of the problem the fleet dispersed for visits to Caribbean ports.

In April the fleet proceeded to the Hampton Roads area; cruisers and destroyers visiting gulf and South Atlantic United States ports. A scheduled visit of the fleet to New York to attend the opening of the World's Fair was canceled, and the fleet departed for west coast bases on April 20.

Vessels of the fleet were detailed to train naval reserves and naval reserve officers training corps units on the west coast as in previous years.

The Atlantic squadron, United States fleet, was organized in January, 1939, and includes the former training detachment, United States fleet, in addition to certain other vessels. This squadron has been actively engaged on the east coast in training naval reserves, naval reserve officers training corps units, and midshipmen. The Atlantic squadron took part in fleet problem XX and conducted fleet landing exercise 5 in the Culebra area. The midshipmen's practice cruise for 1938 was made by New York, Texas and Wyoming to foreign ports. The cruise for 1939 is now being made by New York, Arkansas and Texas to Canadian and United States ports with the first and third classes of the midshipmen. The midshipmen of the second class are being cruised in east coast waters in six destroyers of the Atlantic squadron.

Aviation

Throughout the year, the aircraft carriers Saratoga, Lexington and Ranger, with their attached squadrons, have been assigned to the battle force. In January, Enterprise and Yorktown, with their squadrons, reported to the commander-in-chief and were assigned to aircraft battle force.

On April 15, Ranger and attached squadrons were assigned temporarily to duty with the Atlantic squadron.

There were a number of changes among the squadrons and tenders of aircraft scouting force throughout the year.

VP squadrons 20 and 21 were commissioned Sept. 1, and were assigned to patrol wing 4 at Seattle. In January, Childs and Williamson, destroyers converted to seaplane tenders (small), were assigned to aircraft scouting force.

In accordance with the current naval aeronautic organization, ship units for new cruisers were formed in the year as their parent vessels were completed, viz., Phoenix, Boise, St. Louis and Wichita.

The patrol squadrons of aircraft scouting force operated extensively in the following areas: east coast, Caribbean, Canal Zone, west coast, southeastern Alaska and Hawiian Islands. The tactical squadrons of the First Marine aircraft group, normally based at Quantico, Va., and Marine scouting squadron 3, based at St. Thomas, V. I., participated in the fleet problem and fleet landing exercise 5 in the San Juan-Culebra area. The tactical squadrons of the Second Marine aircraft group, based at Naval Air station, San Diego, participated in several landing exercises in conjunction with the operation of the Fleet Marine force; in tactical exercises in connection with fleet operations; and in indoctrinal operations aboard aircraft carriers.

Special operations, additional to those regularly scheduled for naval aircraft, were conducted as follows:

On Sept. 7, 1938, 17 patrol planes comprising patrol squadron 4 and five spare planes, were ferried nonstop from San Diego to Pearl Harbor.

On June 28, 1939, 15 patrol planes of patrol squadron 1 were ferried nonstop from San Diego to Pearl Harbor.

Presidential mail was delivered by patrol airplanes from Miami to various points in the Caribbean in the cruise of the president in Houston in connection with fleet problem XX.

VMF squadron 1 of the First Marine aircraft group, Quantico, participated in the national air races at Cleveland, O., Sept. 3 to 5, 1938.

Although part of regularly scheduled exercises, the operations of patrol wing 1 in connection with fleet problem XX are worthy of note. That wing, comprising 48 patrol airplanes, departed San Diego for Coco Solo, nonstop, Jan. 10, 1939, and arrived at their destination Jan. 11. From Coco Solo the wing flew to San Juan, P. R., Jan. 23, and while based in that vicinity participated in fleet landing exercise 5 and fleet problem XX. After completion of fleet problem, patrol wing 1 proceeded nonstop from San Juan to Norfolk, Va., March 9, and while on the east coast participated in a joint air exercise off the New England coast, basing at Newport for that purpose. Two squadrons of this wing were retained on the east coast, the remaining two returning to San Diego by way of Guantanamo, Coco Solo and the Gulf of Fonseca, leaving Norfolk May 1 and arriving San Diego May 10. Exclusive of distance flown in connection with the fleet problem, patrol wing 1 covered a distance of over 10,000 miles on its cruise.

Fleet Training

Tactical exercises were held periodically during the year by all units of the fleet. Advances were made and experience gained in the employment of the various types. The year's training culminated in fleet problem XX, comprising operations in the Atlantic ocean, east of the West Indies. Annual fleet problems should be continued, as they are of the utmost value in training the personnel of the fleet.

The major units of the United States fleet should continue to be based in the same general operating areas as this policy affords the maximum opportunity for tactical training and indoctrination between types.

Naval Communications

Thirty-six naval radio traffic stations have been in commission in the past fiscal year. Five such stations have been maintained in inactive status. Thirteen United States missions abroad have maintained radio receiving sets for the purpose of copying the state department bullets broadcast daily from the naval radio stations at Washington and Cavite.

The expansion and communication training of the naval communication reserve has made satisfactory progress during the past year. There are now 30 reserve radio control stations equipped with government-owned transmitting and receiving equipment The communication reserve has rendered valuable service in local emergencies during storms and floods, especially in the disruption of communications in New England following the hurricane of September, 1938.

Calif., Monday, December 4, 19

New Building, Plan as Big Air Order Due

Trib. Sun 12-4-39

Award of a $20,000,000 contract to Consolidated Aircraft Corp. for building new navy patrol bombers, which may be made this week, will necessitate the construction of a new factory building at the Lindbergh field plant of the firm, which probably would be completed in six months' time, officials of Consolidated report. Maj. R. H. Fleet, president of the firm, flew to Washington, D. C., last week to confer with navy authorities, and is reported holding the view the navy department should bear the greater part of the expense of the addition, as the building would not be used under normal manufacturing conditions in the aircraft industry.

The estimated cost of the building is said to exceed $1,000,000. The building, which would be located north of the present factory, would be 400 by 900 feet. If the contract for the planes is awarded and the building erected, it is estimated employment to between 2000 to 3000 men would be given.

Union Dec. 8-39

Club to Hear Talks On Aircraft History

Pt. Loma Community Men's club will hold its December dinner meeting Wednesday at 6:30 p.m.

Capt. Roscoe Arnett, president, has invited two speakers. Comdr. Roland G. Mayer, U.S.N. ret., in charge of the U. S. Navy inspection of aircraft at the Consolidated Aircraft Corp., will give "A Short History of Flying Boats in the U. S. Navy." Comdr. Mayer was second in command of the ill-fated dirigible Shenandoah and he has the distinction of having spent more time in the air in lighter-than-aircraft than any other naval man.

The second speaker will be Maj. Edgar M. Gott, vice president in charge of public relations at Consolidated. He will give a brief resume of "Highlights of the Consolidated Aircraft Corp. Since its Inception 16 Years Ago."

Following the speakers, a sound film, "Construction of Aircraft in the Plant of the Consolidated Aircraft Corp." will be shown. Mrs. George Rye will sing, accompanied by Mrs. Burling M. Stump.

Union Trib 12-11-39

Thursday Set For Flight of Consair Plane

Naval authorities tentatively have set Thursday at dawn as the take-off time for a huge long-range Consolidated-built patrol bomber, which is to flown nonstop to Washington for final acceptance tests at the naval air station at Anacostia, D. C. Bearing the designation XPBY-5A, the plane is somewhat similar to the PBY-type patrol planes used on several long-distance overwater mass flights.

Two pilots, Lts. Carl E. Geise and Roy Jackson, and a crew of seven mechanics and radio operators will make the trip in the twin-motored craft. The plane can operate on land or sea and in remote bases where floating aircraft tenders are unavailable. The amphibian also can climb a ramp or beach under its own power, thus eliminating the necessity for a beaching crew.

A tricycle type landing gear has a single wheel forward and two aft, all retractable. The nose wheel is completely enclosed in the retracted position, and contributes to the streamlined appearance of the bomber when in flight. The extended gear serves as a sea anchor in rough water landings and greatly assists the pilot in retaining control.

According to aircraft officials the plane is especially adaptable for service out of the new naval bases being established in Alaska and the West Indies, where rough water landings and take-offs are common.

Giant Amphibian To Leave S. D.

Union 12-11-39

Test Hop Planned To Washington

Piloted by Lts. Carl E. Geise and Roy Jackson and carrying a crew of seven mechanics and radio operators, the world's largest amphibian long-range navy patrol bomber will leave here this week on a non-stop flight to Washington. Weather conditions permitting, the take-off probably will be soon after dawn Thursday.

Built by Consolidated Aircraft Corp. for the bureau of aeronautics, the huge flying boat is to be flown to the naval air station at Anacostia, D. C., for final acceptance tests.

(Picture on Page B.)

Designated the XPBY-5A, the twin-motored plane embodies many of the characteristics of the famed PBY-type patrol bombers which have achieved many long-distance overwater mass flights from San Diego to Panama, Hawaii, the Philippines and the West Indies.

Because the new plane can operate on land or sea and in remote bases where floating aircraft tenders are unavailable, the amphibian patrol bomber opens up a new era of long-distance flight operations for the navy's air patrol wings, officials assert.

RETRACTABLE GEAR

The landing gear is of the tricycle type, a single wheel forward and two aft, all of which are fully retractable. All three wheels are

Giant Amphibian To Leave S. D.

(Continued from Page 1)

operated by a central hydraulic power drive and the operations are carried out in sequence automatically. The nose wheel in the bow is completely enclosed in the retracted position, thus contributing to th streamlined appearance of the bomber when in flight.

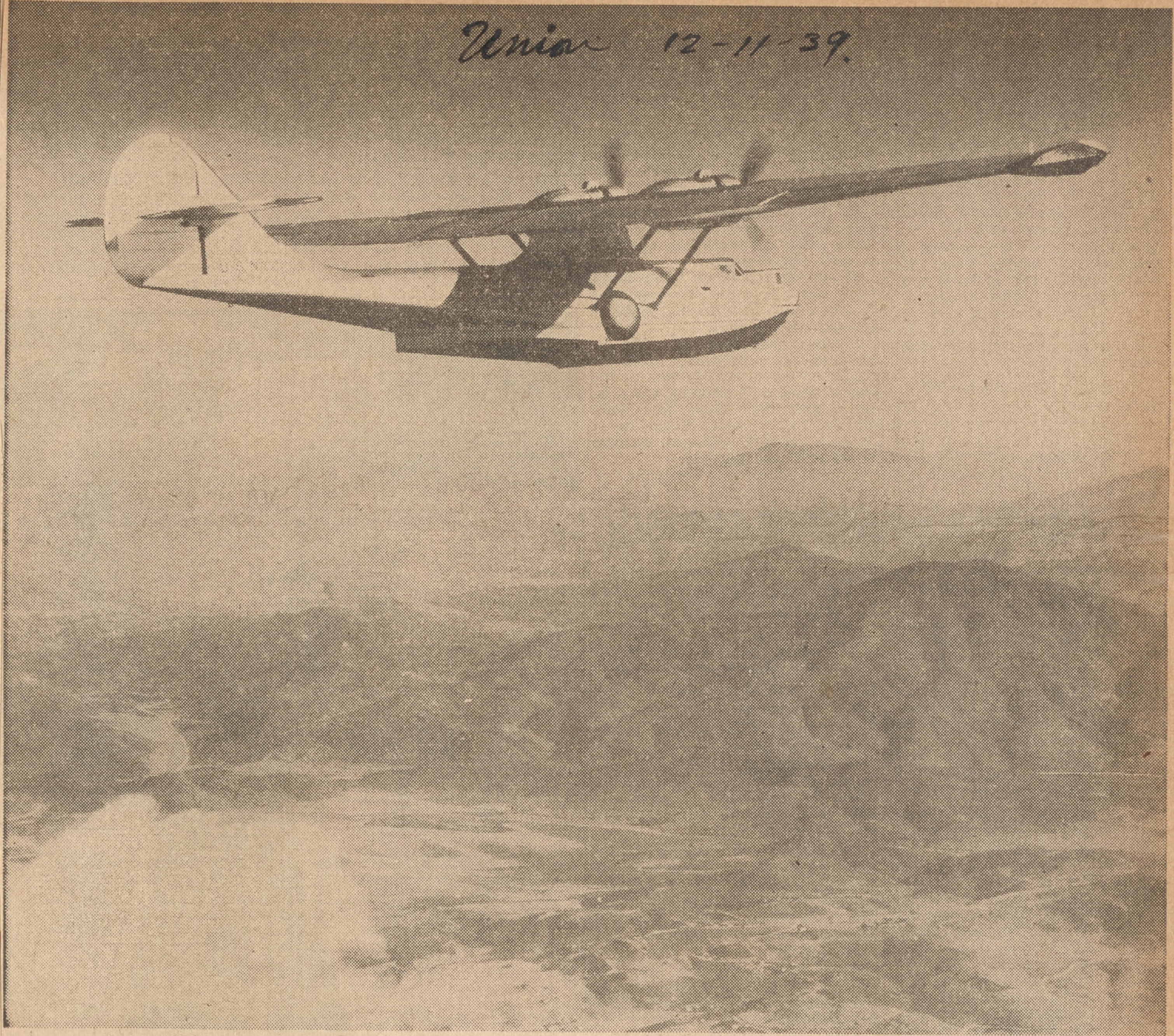
For rough water flight operations the extended gear serves as a sea anchor and greotly assists the pilot in retaining control. Turns on the water are achieved with far less skidding.

NO LANDING CREW NEEDED

One of the important factors is the elimination of a beaching crew as the amphibian can climb a ramp or beach under its own power or be launched in the same manner.

Aircraft officials stress the new Consolidated plane especially is adaptable for service out of the new naval aviation bases being established in Alaska and the West Indies where rough water landings and take-offs are the rule rather than the exception.

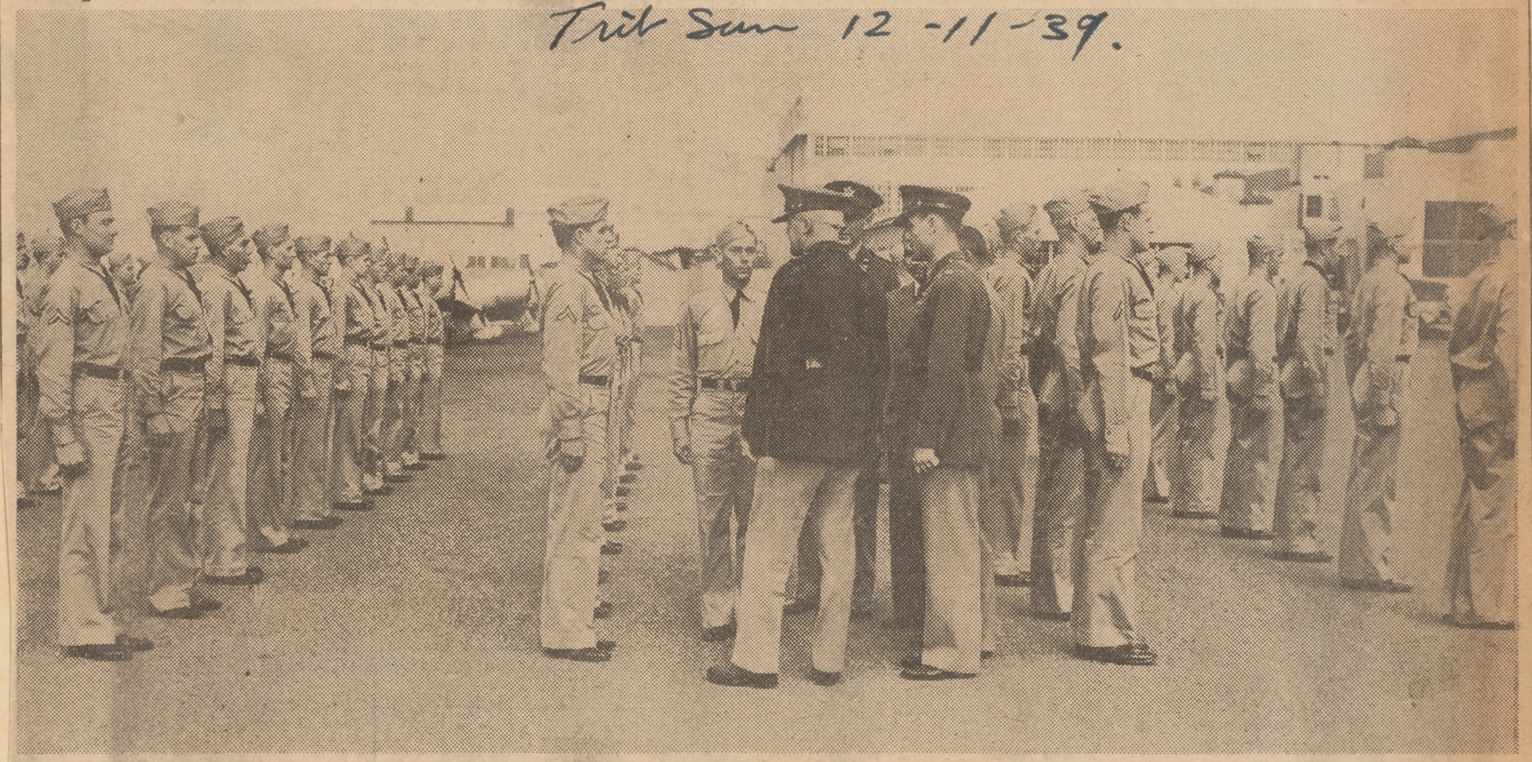
Union 12-11-39.



World's largest amphibian bomber, this Consolidated-built twin-motored plane will leave San Diego this week on a non-stop flight to Washington, where final tests are to be made before acceptance. Story on Page 1.

Army Air Chief and Officer Group Review Cadets in Training at San Diego School

Trib Sun 12-11-39.



Maj. Gen. Henry H. Arnold, chief of the army air corps, is shown here with a group of officers at Lindbergh field reviewing air corps cadets in training at the Ryan school. Arnold is in the immediate foreground, at the left of the knot of officers.—(William Wagner photo.)

ARNOLD PLEASED AT PROGRESS IN PLANE BUILDING

Visibly pleased by San Diego's progress in aircraft manufacture and as a training center for flying cadets, Maj. Gen. Henry H. Arnold, chief of the army air corps, made a hurried, but thorough, inspection of the Ryan and Consolidated plants here today.

"I have nothing to say now," Arnold declared. "This is a routine inspection by the chief of the air corps."

Arnold's expression as he viewed the trim corps of cadets lined up in front of the Ryan plant as he arrived there was sign enough that the air corps chief is pleased with the caliber of the men in training and type of instruction they are receiving. He not only reviewed the gray-clad cadets on the field, but interviewed a few who were in the new barracks in the 3300 block on India st.

Thoroughness of Arnold's "inspection technique," employed when he has only a brief three hours to cover the air corps points of interest, was shown by the fact that he assigned individual officers in his party to go through the various shops, schools and hangars while he conferred with aircraft plant executives, inspected the barracks and viewed army planes being manufactured by Ryan and Consolidated. With Arnold were Col. J. H. Burns, executive in the office of the assistant secretary of war; Col. D. N. W. Grant, army medical corps; Lt. Col. Fabrian L. Pratt, army medical corps; Maj. R. M. Webster, air corps, and Capt. E. H. Beebe, aide to Arnold.

Arnold, former Rockwell field commanding officer, arrived here from March field in an army Douglas staff plane at 8:30 a.m. He left at 11 a.m. for Glendale, from where he will fly to San Francisco.

1939

Arnold Pleased With Air Cadets, Plane Factories

It was a flying trip in more ways than one for Maj. Gen. Henry H. Arnold, chief of the army air corps, who landed at Lindbergh field at 8:35 a. m. yesterday, and three hours later was in the air again.

Although he had nothing to say for publication, Gen. Arnold, former commanding officer at Rockwell field here, was visibly pleased with the result of his inspections of local aircraft plants — Ryan and Consolidated — and of the army cadets who are getting their preliminary flight training at the Ryan school, and are quartered at the new cadet barracks on India st. While he conferred with plant executives and covered the high spots of the shops, he sent the officers of his staff on hurried inspection trips which resulted in contacting everything.

STARTED WEEK AGO

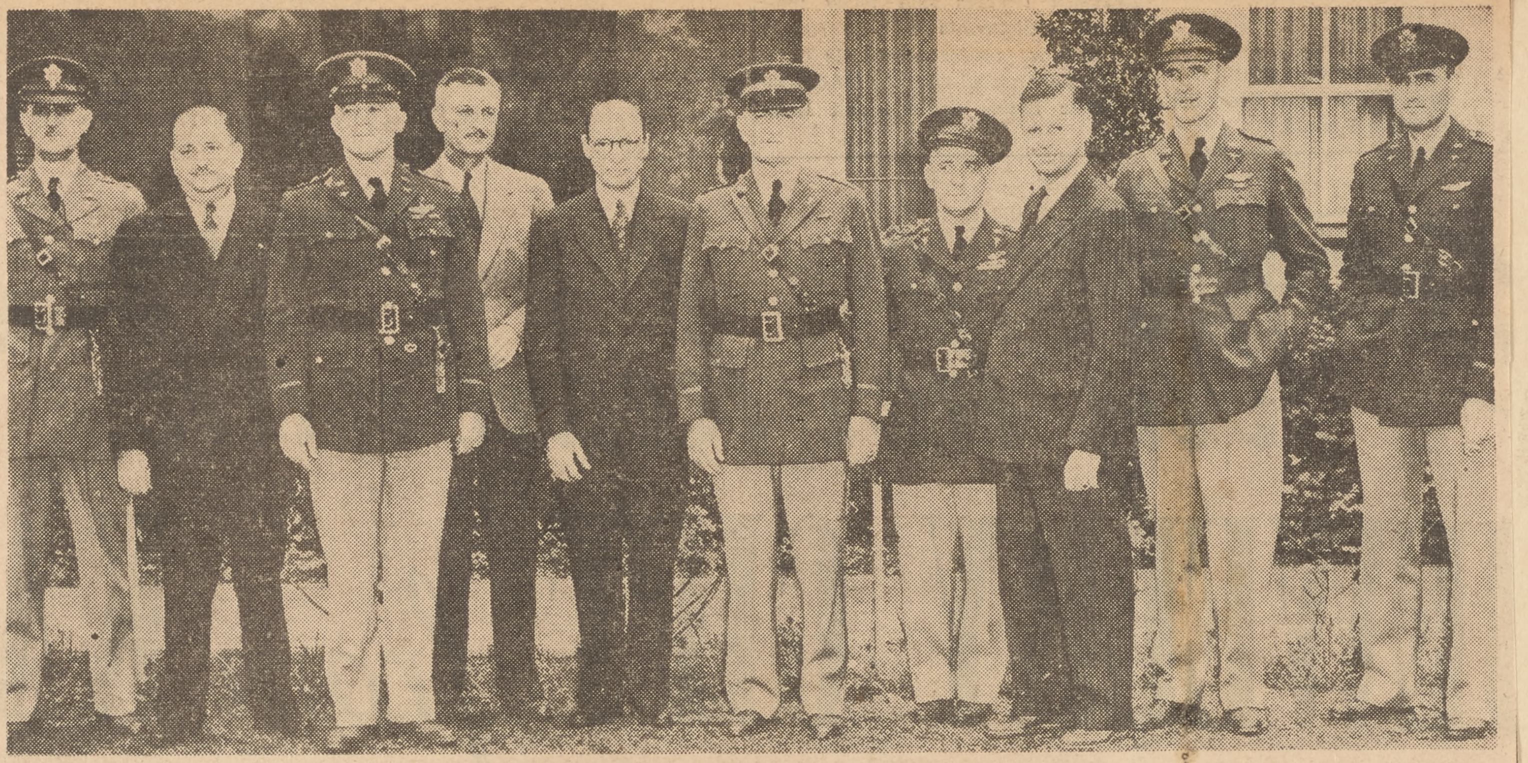
It was just a week ago yesterday that Gen. Arnold and his party left Washington. Before reaching here they attended the officers' graduation exercises at Maxwell field, and inspected the southeast air bases under construction at Tampa and Mobile; Bakersfield field; the training center at Randolph field, and also March field.

The big Douglas staff plane took off from here for Glendale, where aircraft factories and training activities in the Los Angeles area were due for inspection yesterday and today. The plane then will take the corps chief on to the air depot at Sacramento, and then will visit Portland, Seattle and Tacoma air corps activities before heading back to Washington, D. C.

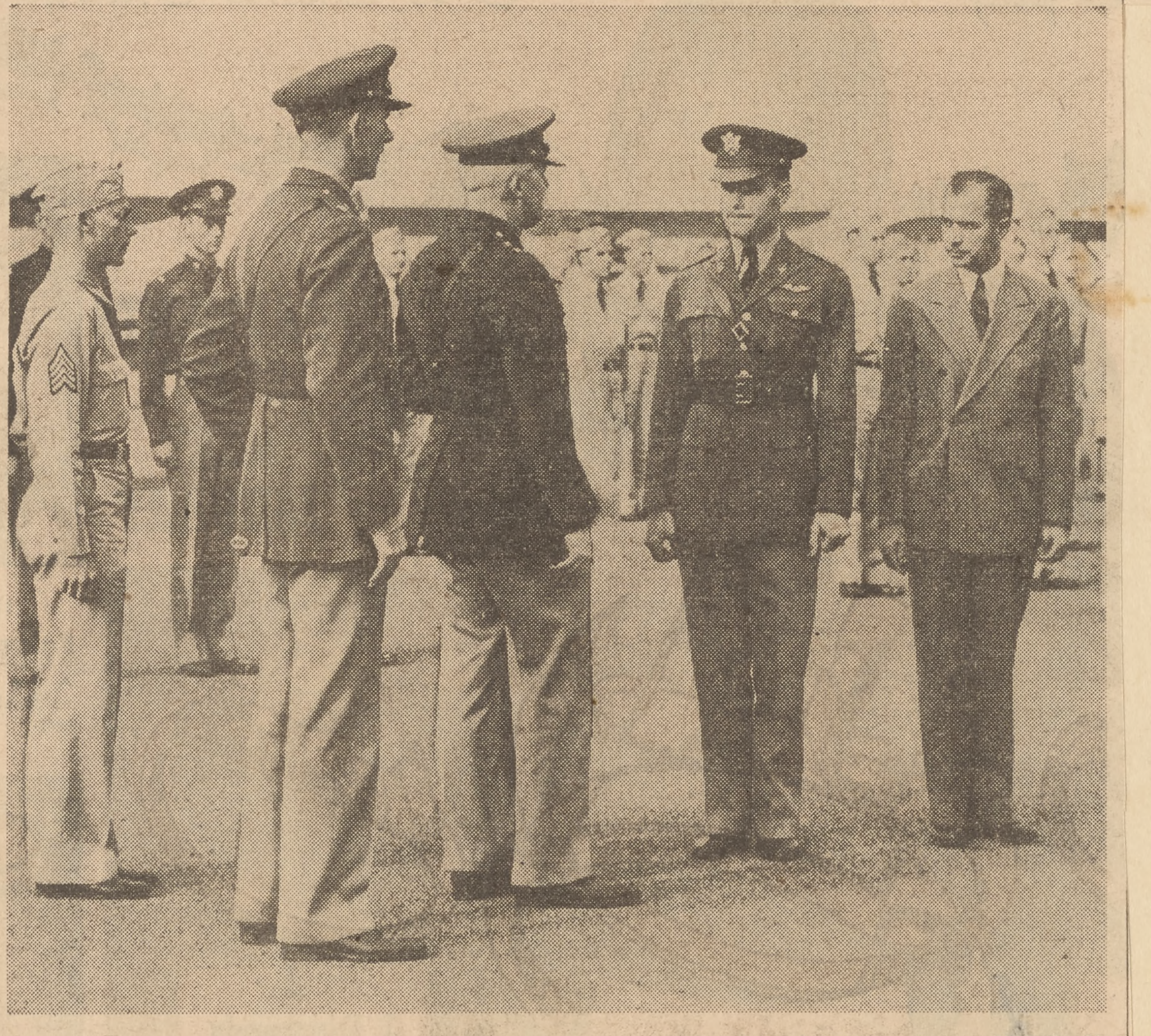
PARTY NAMED

Accompanying Gen. Arnold were Col. J. H. Burns of the ordnance department, who is attached to the office of assistant secretary of war; Col. D. N. W. Grant, medical corps, from Bardsdale field; Col. F. L. Pratt, medical corps, in charge of flight surgeons' training at Randolph field, and the following air corps officers: Maj. R. M. Webster, from the flight training section office at Washington, D. C.; Capt. E. H. Beebe, pilot and aid to Gen. Arnold, and Lt. L. R. Parker, from Bolling field, Washington, D. C.

ARMY'S AVIATION HEAD PAYS 'FLYING' VISIT TO SAN DIEGO



Maj. Gen. H. H. Arnold, air corps chief, paid an official visit here yesterday. Left to right: Col. D. N. W. Grant; I. M. Laddon, Consolidated vice president; Gen. Arnold, Maj. E. R. McReynolds, local air corps representative; C. A. Van Dusen, Consolidated vice president; Col. J. H. Burns; Col F. L. Pratt; E. N. Gott, Consolidated vice president; Maj. R. M. Webster and Capt. E. H. Beebe.



With the cadets lined up in the background are (left to right) Cadet Capt. William Large, Maj. R. M. Webster, Gen. Arnold, Capt. J. C. Horton, commanding the training detachment, and T. Claude Ryan.

GEN. ARNOLD
. . . spent a busy three hours here.

Trib Sun Dec. 14 '39

S. D. Plane Leaves; Largest Amphibian

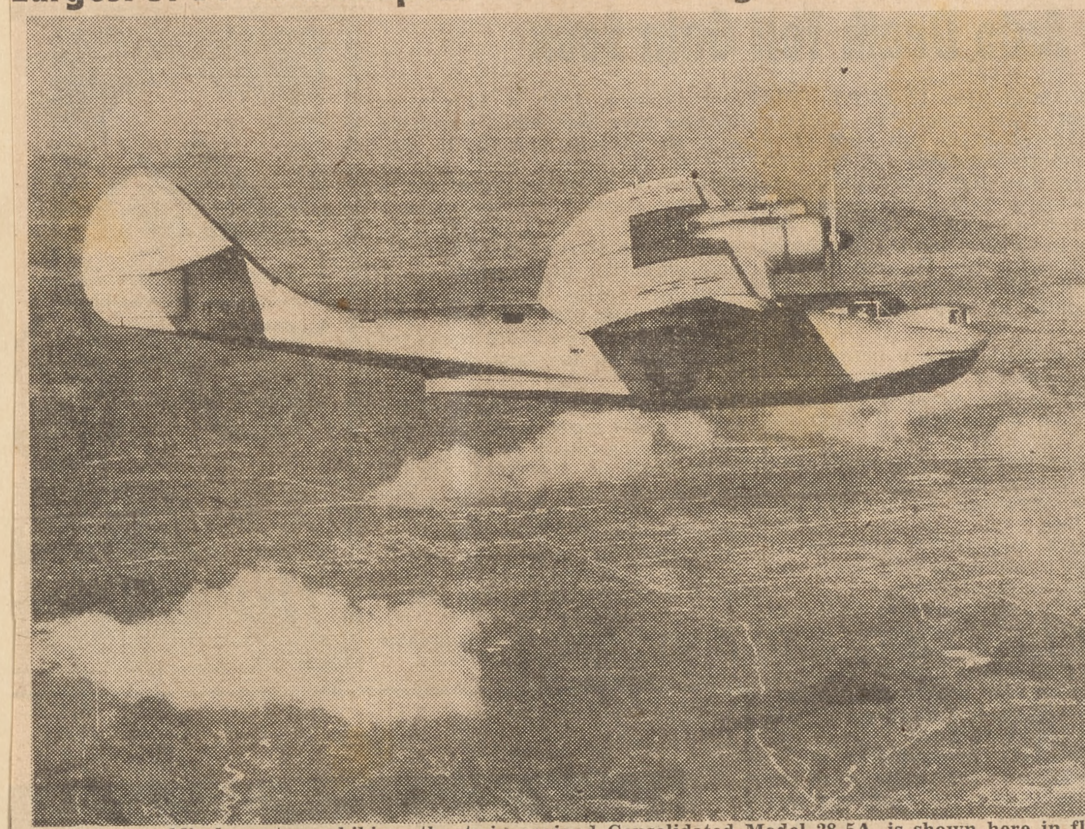
The world's largest amphibian plane, Consolidated's twin-engined Model 28-5A built for the United States navy, today was en route east from here for Anacostia, D. C., for a series of acceptance flights. The plane left the naval air station at 7:20 a.m., and is scheduled to arrive at Anacostia tomorrow.

Capable of taking off or landing either on land or water, the plane will spend tonight at San Antonio, Tex., where it is expected to land between 4 and 5 p.m. Aboard are six men, as follows: Lt. Carl E. Giese, pilot; Lt. Roy Jackson, copilot; Chf. Radioman Wilson, Aviation Mach. Mate (1c) Frye, Aviation Mach. Mate (2c) Dills, and G. R. Tibbs, a mechanic from the Consolidated plant.

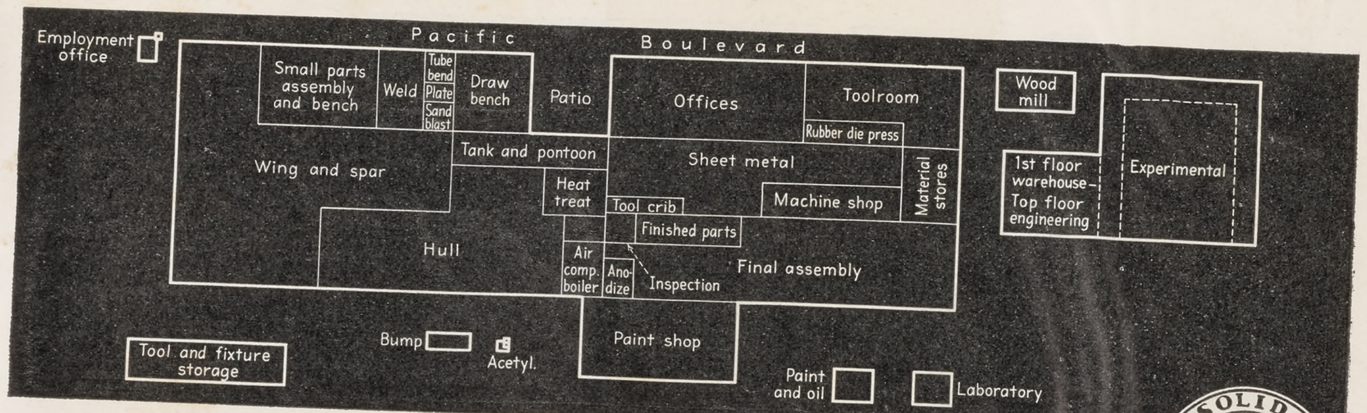
Consolidated's newest contribution to aeronautical progress is basically the firm's Model 28 twin-engined flying boat which the navy knows as the PBY. The inherent advantages of the PBY planes have been retained, and the greater advantage of land-plane operation added. The craft's landing gear is of the tricycle type, with a single wheel forward and two aft, all of which are fully retractable.

Trib Sun 12-12-39

Largest S. D.-Built Amphibian Plane Going East for Tests



The world's largest amphibian, the twin-engined Consolidated Model 28-5A, is shown here in flight. Built for the United States navy, it carries the markings XPBY-5A. The nose wheel retracts into the bow, while the side wheels retract into wells. Basically the familiar model 28, or navy PBY, the new amphibian retains its famous flying boat characteristics and adds in the advantages of land plane operation, with several advantages for seaplane operation. The plane is to be flown east Thursday for tests at Anacostia, D. C.—(Official United States navy photograph.)



CONSOLIDATED of San Diego

Has a daylight factory built for line production of large aircraft.

By C. F. McReynolds

West Coast Editor, Aviation

LOCATED on Lindbergh Field, San Diego, California, the Consolidated factory has been built from the ground up to handle large aircraft. We might say that the plant has been built "from the water up" as most of the ground on which it stands was reclaimed from San Diego Bay and this filled land has presented certain special problems which had to be solved in building the factory and installing certain heavy machinery. The Consolidated factory is located in the Southern California aircraft industry area which provides unusual facilities for supply of all needed materials and supplies, as well as a favorable reservoir of trained men. The plant is located on Lindbergh Field, with unobstructed access to runways, and to quiet waters for launching and flight testing of flying boats. Supplies may be and are brought in by water, rail, highway, and air, with delivery right at the factory door. Equable weather conditions in the San Diego area have made it practical to build a factory that is "all windows and doors", of relatively light, long span roof construction, and with no major heating problem. In addition, a high percentage of operations are performed in the factory yard, which serves as an integral part of the plant without requiring the expenditure of capital for roofing, heating, etc. Enclosed by a high fence, the yard area is well supplied with electric power outlets, air, water, and other facilities, and is used for a major portion of all final assembly operations. The area under roof at the Consolidated plant is approximately 450,000 sq. ft., with an additional 212,462 sq. ft. in usable yard area. The main factory building extends for 1025 ft. along the east side of Lindbergh Field, and has a width of 300 ft. Construction is of steel frame with saw tooth roof, galvanized iron siding, generous window area, and with almost continuous doors along the field side to permit shifting planes off the production line at any desired point. The east 200 ft. of the factory building has a ceiling clearance of 14 ft., as this area is largely devoted to miscellaneous manufacturing operations, machine shops, and offices. The remaining 100 ft. of factory width serves as the final assembly bay, extends the full length of the building, and has a height of 30 ft. Adjoining the main building at the center of the assembly side is the paint shop, measuring 200 by 100 ft., and also having a ceiling clearance of 30 ft. This permits shifting hulls and other bulky parts out of the assembly line, into the paint shop, and back to assembly without difficulty. An experimental building is located south of the main plant and separated from it by a 50 ft. alleyway. This building, of construction similar to the main building, houses an experimental section measuring 225 by 250 ft. with a 40 ft. ceiling clearance, and a receiving stores section 125 ft. square, with a second floor which carries the engineering department. There are two mezzanine floors extending around three sides of the experimental shop, the fourth being reserved for doors opening on the flying field. The lofting department of engineering occupies a major part of these mezzanine areas. Other Consolidated factory buildings located adjacent to the main plant include the wood mill, tool storage shed, laboratory, and paint storage building.

The modernization program recently completed entailed an expenditure of more than $500,000 for new equipment alone. Although presses and drop hammers represented the major items of expenditure, numerous pieces of equipment were added to the machine shop, including three Brown & Sharpe automatic screw machines, two Cleveland screw machines, a Cincinnati centerless grinder, and a LeBlond gap lathe to swing 50 in. For the drop hammer die foundry two James H. Knapp gas fired tilting type melting furnaces were installed, each with a capacity of 8,300 lbs. of zinc alloy or 12,000 lbs. of lead. To supply power for the new air operated drop hammers a Worthington 20 in. x 12 in. x 14 in. horizontal two stage compressor was installed. Driven by a 200 h.p. electric motor, this compressor has a capacity of 1150 cu. ft. of air compressed to 100 sq. in. per minute. This brings the total air compressor plant to a capacity of 2275 cu. ft. per minute. A stand-by

1. Riveting is largely the means of fabrication for today's large aircraft. Squeezers, guns and hydraulic yokes are employed.

2. Pneumatic tube bending machines are now coming into use. In the Model 28 Consolidated twin engined flying boat, approximately 900 feet of tubing is employed.

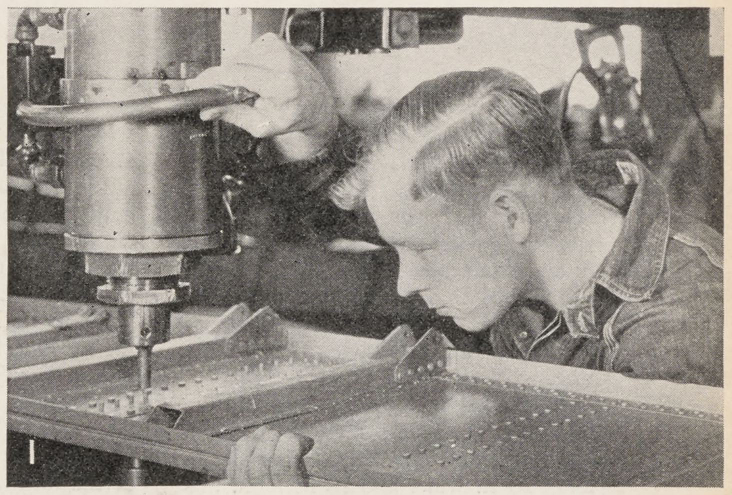
3. Power end of the cable stretching machine with a capacity up to 20,000 lb. Designed and built by Consolidated Aircraft for pre-stretching all control cables.

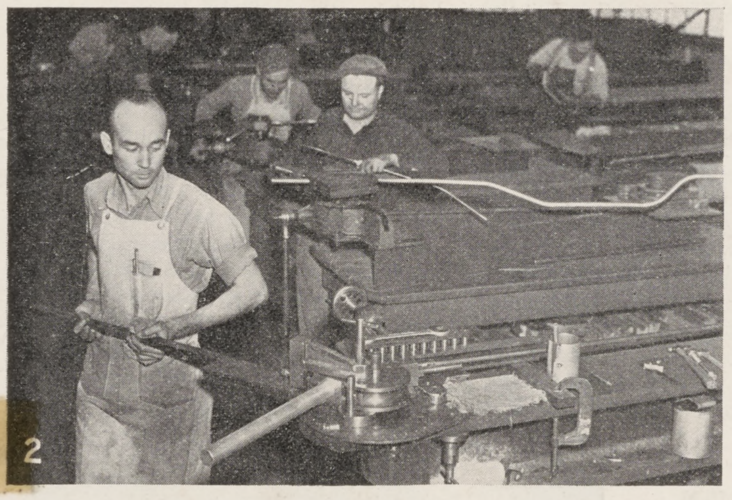
4. Back spotfacing a fitting through use of a drilling fixture.

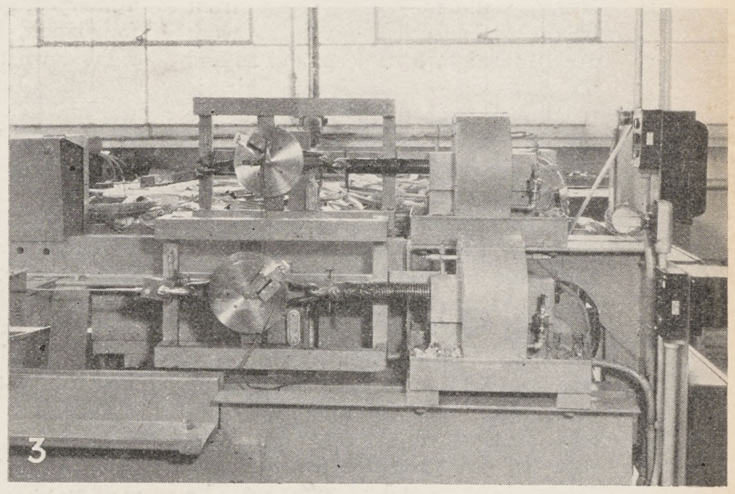
5. A multitude of small machined parts are made for use in the airplane. Here cable terminals are being milled in a special fixture.

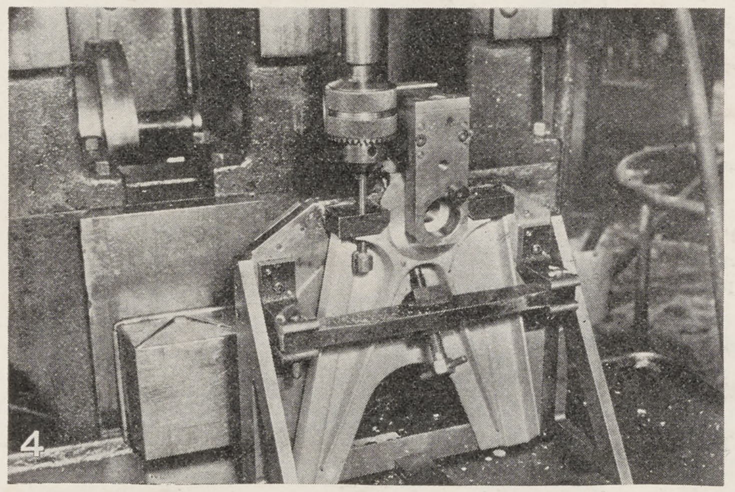
6. Cold working of dural parts increases their strength. Thin sections, extreme curvatures, bring problems not encountered elsewhere.

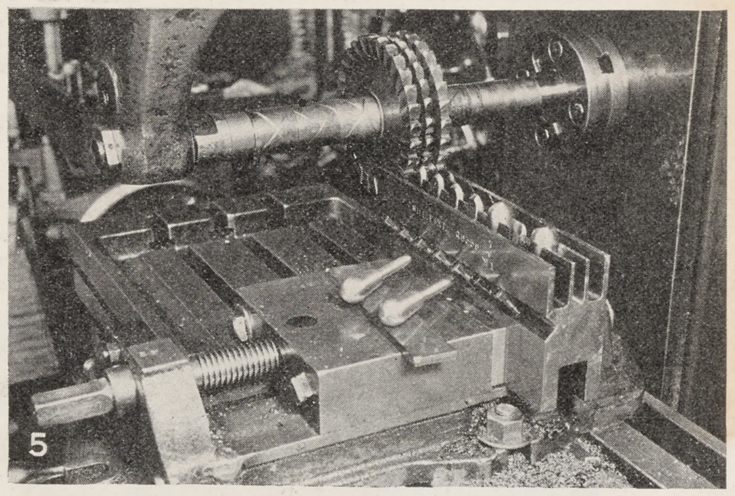
7. Rivets of many sizes and shapes to the tune of a million per week can be turned out by these two rivet making machines.

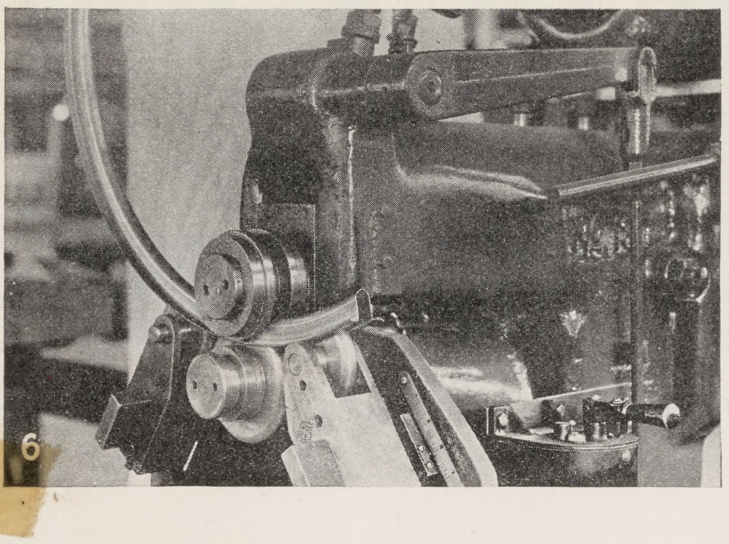

1

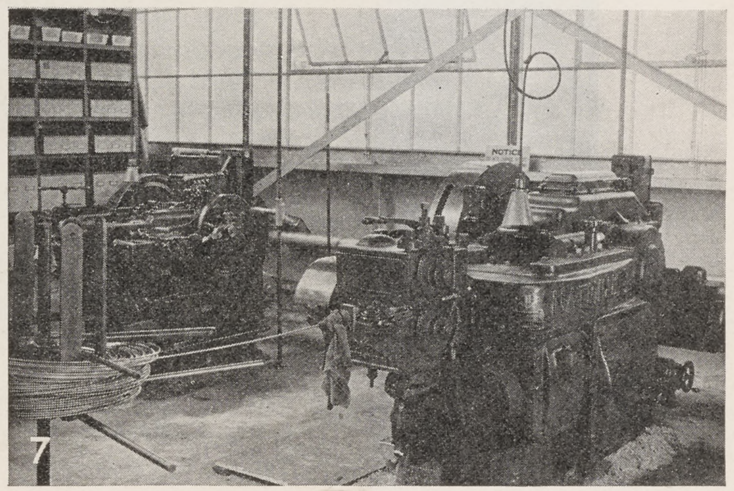

2


3


4


5


6


7

Arnold Pleased With Air Cadets, Plane Factories

It was a flying trip in more ways than one for Maj. Gen. Henry H. Arnold, chief of the army air corps, who landed at Lindbergh field at 8:35 a. m. yesterday, and three hours later was in the air again.

Although he had nothing to say for publication, Gen. Arnold, former commanding officer at Rockwell field here, was visibly pleased with the result of his inspections of local aircraft plants — Ryan and Consolidated — and of the army cadets who are getting their preliminary flight training at the Ryan school, and are quartered at the new cadet barracks on India st. While he conferred with plant executives and covered the high spots of the shops, he sent the officers of his staff on hurried inspection trips which resulted in contacting everything.

STARTED WEEK AGO

It was just a week ago yesterday that Gen. Arnold and his party left Washington. Before reaching here they attended the officers' graduation exercises at Maxwell field, and inspected the southeast air bases under construction at Tampa and Mobile; Bakersfield field; the training center at Randolph field, and also March field.

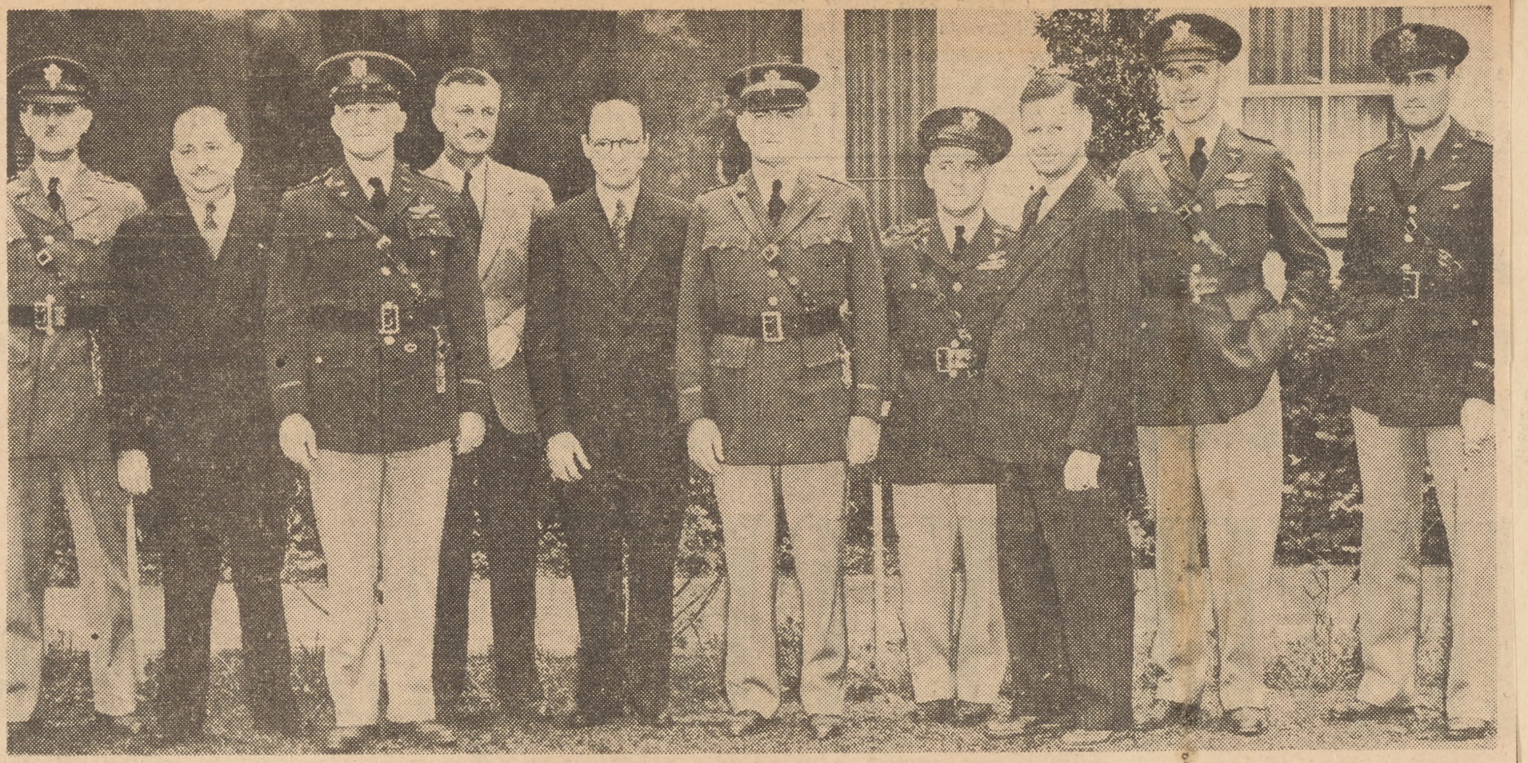
The big Douglas staff plane took off from here for Glendale, where aircraft factories and training activities in the Los Angeles area were due for inspection yesterday and today. The plane then will take the corps chief on to the air depot at Sacramento, and then will visit Portland, Seattle and Tacoma air corps activities before heading back to Washington, D. C.

PARTY NAMED

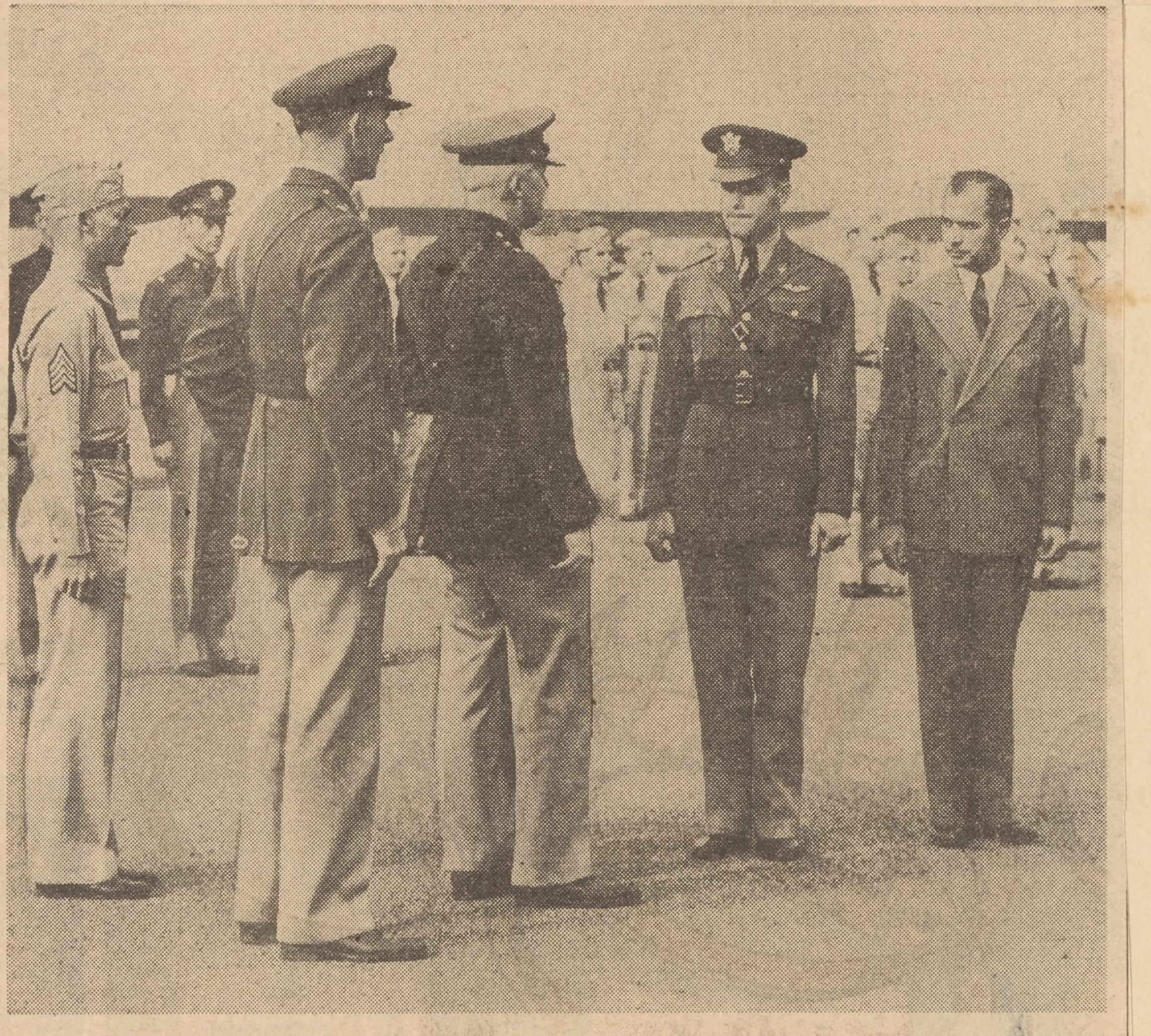
Accompanying Gen. Arnold were Col. J. H. Burns of the ordnance department, who is attached to the office of assistant secretary of war; Col. D. N. W. Grant, medical corps, from Bardsdale field; Col. F. L. Pratt, medical corps, in charge of flight surgeons' training at Randolph field, and the following air corps officers: Maj. R. M. Webster, from the flight training section office at Washington, D. C.; Capt. E. H. Beebe, pilot and aid to Gen. Arnold, and Lt. L. R. Parker, from Bolling field, Washington, D. C.

ARMY'S AVIATION HEAD PAYS 'FLYING' VISIT TO SAN DIEGO

1939



Maj. Gen. H. H. Arnold, air corps chief, paid an official visit here yesterday. Left to right: Col. D. N. W. Grant; I. M. Laddon, Consolidated vice president; Gen. Arnold, Maj. E. R. McReynolds, local air corps representative; C. A. Van Dusen, Consolidated vice president; Col. J. H. Burns; Col F. L. Pratt; E. N. Gott, Consolidated vice president; Maj. R. M. Webster and Capt. E. H. Beebe.



With the cadets lined up in the background are (left to right) Cadet Capt. William Large, Maj. R. M. Webster, Gen. Arnold, Capt. J. C. Horton, commanding the training detachment, and T. Claude Ryan.

GEN. ARNOLD
. . . spent a busy three hours here.

Trib Sun Dec. 14 '39

S. D. Plane Leaves; Largest Amphibian

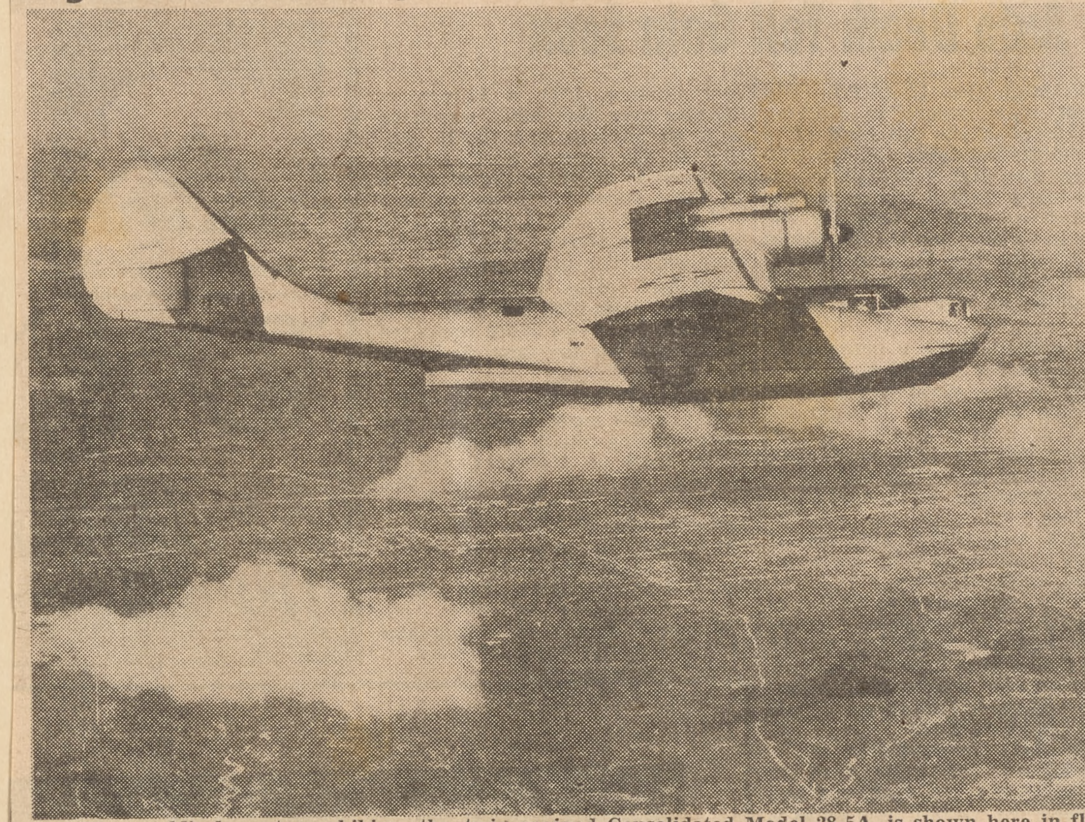
The world's largest amphibian plane, Consolidated's twin-engined Model 28-5A built for the United States navy, today was en route east from here for Anacostia, D. C., for a series of acceptance flights. The plane left the naval air station at 7:20 a.m., and is scheduled to arrive at Anacostia tomorrow.

Capable of taking off or landing either on land or water, the plane will spend tonight at San Antonio, Tex., where it is expected to land between 4 and 5 p.m. Aboard are six men, as follows: Lt. Carl E. Giese, pilot; Lt. Roy Jackson, copilot; Chf. Radioman Wilson, Aviation Mach. Mate (1c) Frye, Aviation Mach. Mate (2c) Dills, and G. R. Tibbs, a mechanic from the Consolidated plant.

Consolidated's newest contribution to aeronautical progress is basically the firm's Model 28 twin-engined flying boat which the navy knows as the PBY. The inherent advantages of the PBY planes have been retained, and the greater advantage of land-plane operation added. The craft's landing gear is of the tricycle type, with a single wheel forward and two aft, all of which are fully retractable.

Trib Sun 12-12-39

Largest S. D.-Built Amphibian Plane Going East for Tests



The world's largest amphibian, the twin-engined Consolidated Model 28-5A, is shown here in flight. Built for the United States navy, it carries the markings XPBY-5A. The nose wheel retracts into the bow, while the side wheels retract into wells. Basically the familiar model 28, or navy PBY, the new amphibian retains its famous flying boat characteristics and adds in the advantages of land plane operation, with several advantages for seaplane operation. The plane is to be flown east Thursday for tests at Anacostia, D. C.—(Official United States navy photograph.)

system is provided to supply Butane gas to the boilers, heat treat equipment, and furnaces in emergency.

A new salt bath furnace was installed in the heat treat department, with a capacity to heat treat 2000 lbs. of aluminum alloy parts per hour in a salt pot 21 ft. long and requiring approximately 18,000 lbs. of potassium nitrate and the same amount of sodium nitrate for its initial charge.

Additional facilities provided in the paint shop include a huge paint booth for hull finishing. Measuring 30 ft. long, 20 ft. wide, and 18 ft. high, this booth has complete lighting and ventilating facilities. Two open front booths for miscellaneous spray work are 10 ft. high, 8 ft. deep, and 30 and 65 feet long respectively. Air is pumped through the paint shop at the rate of 203,000 cu. ft. per minute by means of nine exhaust fans requiring 62½ motor horsepower.

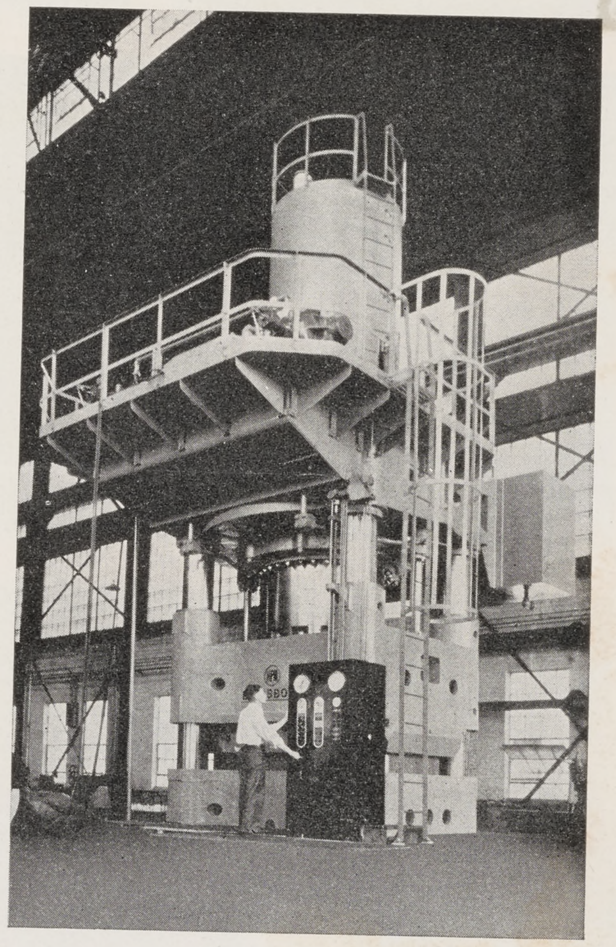
Major new equipment item, and the center of greatest interest in connection with the modernization program, is the battery of presses and drop hammers installed. This includes a 4500 ton Birdsboro hydraulic press, a 1000 ton Hamilton double crank punch press, four Chambersburg air operated drop hammers, and four new rope lift type drop hammers of Consolidated design and manufacture. The Birdsboro-HPM press has a 48 in. working stroke, a platen area 140 by 118 in., a total weight of 610,000 lbs. and a foundation weight of 225,000 lbs. The air operated drop hammers vary in size from 101,000 pounds gross weight down to 33,000 lbs. The big hammer has a stroke of 72 in. and platen area 48 by 96 in. It can accommodate punches, or dies, up to 50,000 lbs. in weight. The foundation weight, for the inertia block alone, amounts to 415,000 lbs.

Installation of these drop hammers occasioned unusual engineering difficulties due to the filled ground on which the plant is built, which we referred to earlier. Since the hammers were to be installed in the center of the main factory and quite close to the offices, it was considered desirable to minimize if not eliminate the pounding action usually associated with operation of drop hammers. Also, due to the unsatisfactory bearing qualities of the sub-soil, it was feared that such a heavy drop hammer would pound its foundation, no matter how massive, right down through the floor and out of sight. Load bearing and vibration transmission problems were solved simultaneously by provision of an ingenious "earthquake proof" mounting. Steel piles of "H" section were first driven 60 ft. into the sub-soil. As the roof clearance was only 30 ft. it was necessary to drive these piles in increments, welding on short sections as the work proceeded. A heavy concrete foundation "box" was constructed on top of these pilings, with the top of the box open and flush with the factory floor. Inside the box an inertia block was constructed and suspended from steel beams floating on Korfund coil steel springs supported on the foundation box. The drop hammer, mounted on this inertia block, transmits its shock to the block, resulting in a maximum deflection of the steel springs of about ½ in., and eliminating all shock to the main foundation box or the building proper.

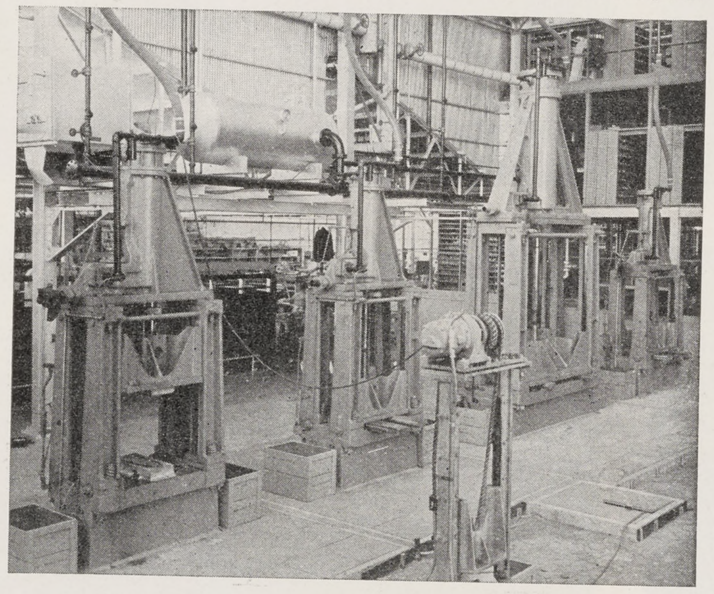
Aircraft jigs and fixtures have always represented a special problem. Quantities have rarely justified development of permanent jigs, with durable steel fixtures and locating blocks. But wood jig parts, however satisfactory for assembly of a few planes, have not been satisfactory for production in quantities of fifty or more, due to cracking, chipping, swelling, wear, etc. Consolidated has solved this problem by melting up all aluminum alloy scrap and casting it into standard shapes and sizes suitable for use in jig and fixture work. Where very large jig parts are needed, for location of wing to fuselage, etc., a single member can be conveniently cast in the alloy metal. This metal is relatively easy to machine and work

(*Turn to page 102*)

This Birdsboro — HPM press has a 48 in. working stroke, a platen area 140 x 118 in. and a total weight of 610,000 lb.



These new penumatic drop hammers are mounted on inertia blocks supported on coil springs and specially driven steel piles.



Consolidated

(*Continued from page 46*)

with the net result that at little more than the cost of wood parts the production line is fitted with metal fixtures and jig parts that are every bit as satisfactory as steel for the limited runs produced on them.

As metal has supplanted other materials in airplane construction the machine shop has become the heart of aircraft production. At Consolidated 85 per cent of all machine work is performed in the company's own machine shops. Tool room and production machine shop work more or less interchangeably, the tool room shifting over to production machine work as tooling is completed for a major manufacturing run on a single model. So important is the elimination of lost time between design and delivery that production of a new type is usually started through the machine shop simultaneously with tool and fixture orders that go to the tool shop. As special fixtures and jigs become available they are placed in the production line, but production does not wait on them.

Tool room equipment ranges in size and character from the huge Cleveland planer with 30-ft. bed to the Societe Genevoise (Swiss) jig borer used on precision jig work. Most blanking dies are made on the DoAll Metalmaster from ⅛ in. crucible steel sheet, with a hardened punch ⅛th in. thick, at a cost one-third that of the conventional blanking die. It is economical to make such dies for production runs as small as thirty parts. Other special tool room equipment includes a Pratt & Whitney surface grinder, a Fosdick Radial for large jig and fixture work, and the usual battery of lathes, mills, shapers, etc.

Sheet metal shop equipment includes a Cincinnati brake with a 10 ft. throat, which may be extended to 15 ft. by end brackets used in connection with light alloy work; and a Cincinnati shear with a 14 ft. throat, used for trimming and external profiling of large sheet metal blanks. A battery of Niagara punch presses handles a multitude of blanking, forming, drawing, joggling, notching, perforating, nipping, dimpling, crimping, slotting, and burnishing operations, and even some small shear work. In order to get maximum use of the punch presses an ingenious system of dies has been developed, including spring die sets, magnetic die holders, notching and slotting dies held in special die sets, and a fascinating technique in handling joggling dies. Joggling, offsetting, or crimping, is of special importance in joggling or off-setting plate, sheet, or extruded or drawn sections in order properly to assemble certain complex fittings in an aircraft structure. A clever system of joggle dies, using a sliding shoe and return springs, serves to convert the vertical motion of the punch press into a desired transverse and angular motion to achieve the various degrees of joggle required.

Union 12-15-39

Big Amphibian Flying East

A 14-ton amphibian navy patrol bomber left naval air station at 7:20 a.m. yesterday for Washington. The craft, said to be the world's largest amphibian, was in command of Lt. Carl E. Giese of the Anacostia naval air station, with Lt. Roy Jackson of La Mesa co-pilot.

Built by Consolidated Aircraft Corp. for the bureau of aeronautics, the huge flying boat is being flown to Washington for final acceptance tests.

Lt. Geise planned to remain over night at San Antonio and will continue to Washington today via Pensacola.

Union 12-15-39

Air Squadron to Get Schiff Trophy Here

In a colorful ceremony at the Naval Air station at 9:30 a.m. tomorrow, Capt. Charles P. Mason, commander Patrol Wing 1, will present a replica of the famed Schiff trophy to Lt. Comdr. S. B. Moore, commander squadron VP-11.

The squadron was awarded the Schiff trophy for flying the greatest number of hours without an accident during the last fiscal year. Because of Comdr. Moore's illness President Roosevelt presented the original trophy to Lt. Comdr. Frank T. Ward, squadron executive officer, at a White House ceremony last month.

Doctors at the Naval hospital have granted permission to Comdr. Moore to attend tomorrow's ceremonies.

KILLS

RNATIONAL NEWS ☆

E-SU

39

y Bliz

$20,016,699 AWARD LET TO CONSAIR BY U. S. NAVY

Trib-Sun Dec. 20.

Signals 'Go' On Doubling Size of Plant

The navy department has awarded a new $20,016,699 contract for airplanes to the Consolidated Aircraft Corp., Consair authorities announced today. No official details were released as to the number or type of aircraft involved, but it was believed that the contract specified latest developments of the local plant's famed PBY patrol bomber series.

A complete resume of the year's activities at the Consolidated Aircraft Corp. plant may be found on Page 8-A.

The huge order brings the Con-

(Continued on Next Page, Col. 3)

The Truth About England

Pasadena Star News 12/23/40

'American Fighting Planes Can't Fight In Big League'

'Statement Requires Many Qualifications,' Says Ingersoll, Who Waited to Write This Until He Checked Facts Here

tions to make. (From Page One)

THESE IMPORTANT QUALIFICATIONS

First—As far as our own national defense goes, it is probably not necessary that we ever produce the best interceptor fighter in the world. Because the best interceptor fighter is a highly specialized plane necessary for defense only when the attacking bombers are themselves accompanied by fighter planes—a situation highly unlikely in the U. S. A., which would first have to be attacked by bombers flying such long distances that their protection by enemy fighters would be impractical. Our planes can shoot down unaccompanied bombers.

Second—Just as shock troops are at most a small percentage of any army, so the fastest and most lethal fighter planes are a small percentage of any air force. And if we have no aerial shock troops which can fight alongside the R. A. F. against the Luftwaffe, the planes the British are getting from us are anything but useless—serve in doz-

GIVEN ADEQUATE FIGHTERS, THIS CANNOT HAPPEN

As long as the R. A. F. fighter continues to lick the Luftwaffe fighting plane this cannot happe But unless and until Americans ca produce a fighting airplane th specifications of which I will pres ently describe, the R. A. F. must g on relying on British-built plane And in such a war as is bein fought over England, it is not th British that need American help but the Americans that need British help—in manufacturing a fighting machine that can fight in the big league.

So much for American fighter Now about American bombers. Any plane that can carry a large load a long way is useful as a bomber. For bombing at night it is not even necessary that the plane fly fast. But a first class bomber is a bomber that not only can carry a large load of bombs to its objective, but one which can defend itself from attack by enemy planes. In this respect, the best American bombers now produced still ars as woefully deficient as the best American pursuit ships now in England.

AMERICAN BOMBERS WEAK ON DEFENSE

This will not long be so, because we are now incorporating in our bomber designs defensive devices developed by the British. But it is true at present, and the generalization goes not only for the flying fortresses, but for every other American bombing plane, light and medium as well as heavy, now going to Britain.

The defensive device referred to

greater numbers, despite what bombing the Germans can do by night, they do not feel an acute need for help from us in this de-

cations to the flat statement that our best planes cannot compete with the best English and German planes, this sole fact is not the whole story. First-hand descriptions of what I saw and heard in England follow this article. I think they will make both the indictment and its qualifications clearer to you.

Let's begin by visiting the front line trenches of the air—the airport from which the interceptor squadrons take off, the fighter station. We go tomorrow.

Guarantee a P
family by savin
Bank of Ameri
Money in a sav
morrow's opp
have been pla
college...to st

CLIPPING FROM DEC 17 1939
NEW YORK TIMES

Navy Experimental Plane Lands

WASHINGTON, Dec. 16 (UP)—The navy's experimental amphibian plane, the XPBY-5A, landed today at Anacostia naval air station after a flight of five hours and fifteen minutes from Pensacola. The ship, which will undergo a series of tests at Anacostia, left San Diego, Calif., on its transcontinental flight Thursday. It flew to Randolph Field, Texas, Thursday, and to Pensacola yesterday. The plane, built by Consolidated Aircraft Corporation, is powered by twin Wasp engines in the wings. It has a 104-foot wingspread, and is 65 feet long. It is commanded by Lieut. Comdr. C. E. Giese.

NEW YORK N Y HERALD TRIBUNE

DEC 13 1939

Huge Amphibian Plane To Be Flown Across U.S.

Navy Will Test Mysterious XPBY-5A This Week

SAN DIEGO, Calif., Dec. 12 (UP).—The Navy will test the mysterious XPBY-5A, the largest amphibian airplane in the world, in a cross-country flight this week.

At 8 a. m. Thursday the plane will swoop up from the water of San Diego Bay, or else fly off the flat ground of the North Island Naval Base—it can do either equally well—and fly to Anacostia Naval Air Station at Washington.

Details and size of the huge plane were not made public. The builders, Consolidated Aircraft Corporation, declare, however, that it will operate efficiently both over land and sea and will be especially useful in remote areas where floating aircraft tenders and good airdromes are not available. Such areas are the new naval bases in Alaska and the West Indies, where rough water landings and take-offs are routine. The plane can take off from the ocean, fly across land and water and land on an airdrome.

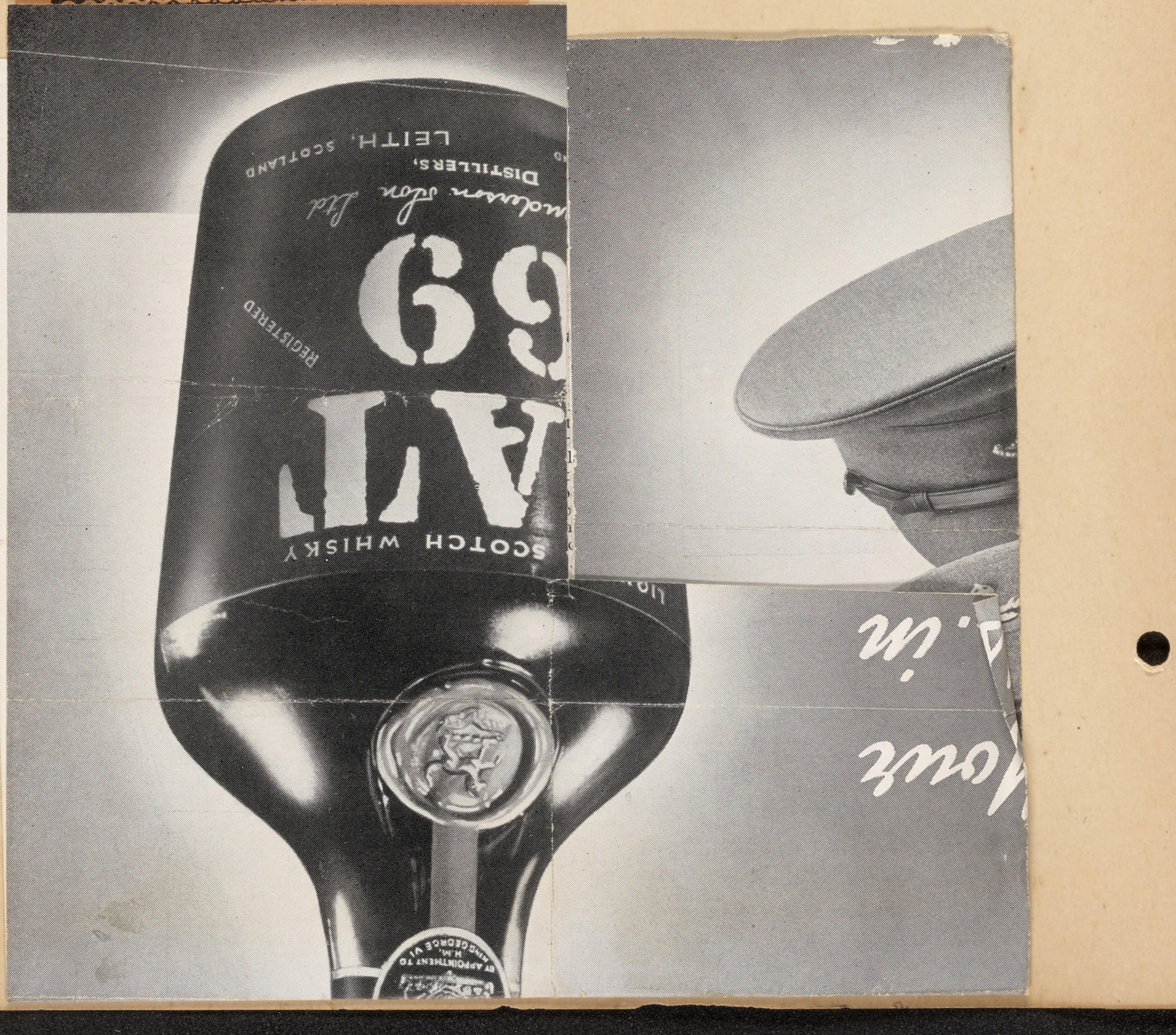
Consolidated Air

Romeike & Curtice Ltd

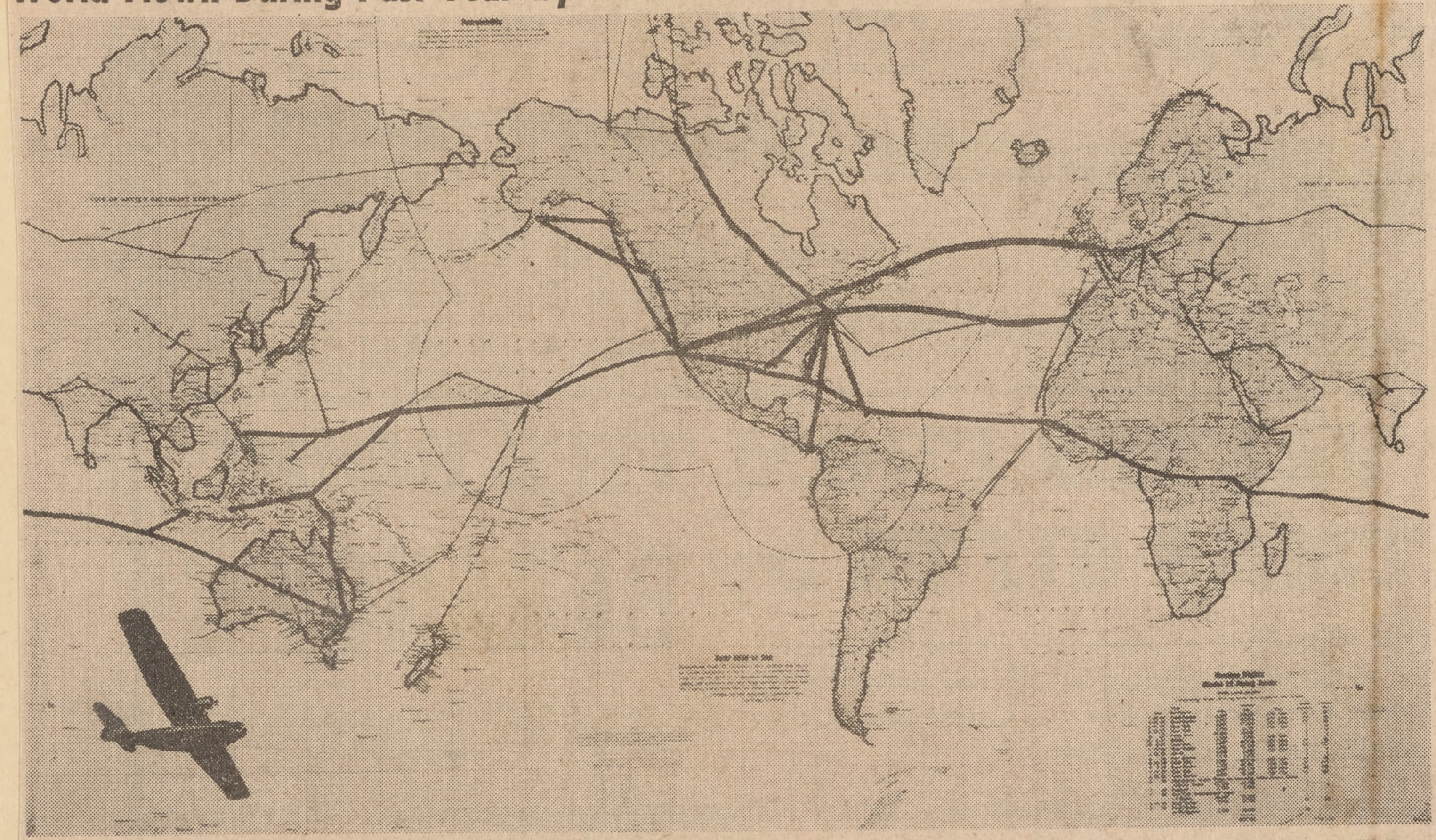
Telephone
CENTRAL 2781
(2 Lines.)

R&C

35, Shoe Lane,
LONDON,
E.C.4.



World Flown During Past Year by Consolidated-Built Aircraft



Consolidated-built planes have flown the world, as indicated by the accompanying map showing their routes. Richard Archbold's flying boat, the "Guba" ("Sudden Storm") made a round-the-world flight, while navy planes built by the firm have flown from here to Panama, Hawaii, the Philippines and Alaska. Other Consolidated-built planes have made many crossings of the Atlantic. One flew the polar wastes to look for missing Russian transpolar fliers.

PLANT HITS PEAK IN EMPLOYMENT OF SKILLED HELP

By HAROLD OSBORNE

"Wings over America" in 1939, a year marked by unprecedented aviation expansion in this country, brought Consolidated Aircraft Corp. an increase in orders for army and navy planes which has resulted in an increase in employment at the local factory of approximately 200 percent from April until December, officials at the plant report. Consolidated's 1939 "employment curve" shows a steady growth from slightly more than 1100 the latter part of March to approximately 3200 by Dec. 1.

Aviation History Made

In addition to the new army and navy plane orders received this year and climaxed today by the navy's award of a $20,016,699 contract for an unspecified number of aircraft, 1939 was highlighted at Consolidated by the launcing of new, larger model planes and by a 5750-mile flight from here to Felistowe, Eng., of a 15-ton plane. There also were several score flights by navy patrol planes ranging from PBY flights during the fleet maneuvers in the Caribbean last winter to flights from here to Honolulu and Coco Solo and from Honolulu to the Philippine islands. In June, Richard Archbold's Consolidated-built flying boat, the Guba, landed on San Diego bay, completing a voyage around the world.

Naval aviation history was made in January at the start of the annual fleet maneuvers when a mass flight of 48 Consolidated-built patrol bombers was made from San Diego to Coco Solo, C. Z., a distance of 3087 miles, which was covered in 25 hours, 43 minutes. Number of officers and men making this flight was 336. The planes later flew from the Canal Zone to successfully carry on extensive flight operations with the fleet in the Caribbean.

In June, 15 Consolidated-built patrol bombers flew from San Diego to Pearl Harbor, covering 2553 miles in 16 hours, 17 minutes. A second mass flight of patrol planes was made from here to Honolulu in September, in which 14 planes participated. Later, 14 Consolidated bombers were flown 5586 miles from Honolulu to the Philippines.

The flight from San Diego to England was made with only two stops en route. A delivery flight to the British government, it took the 15-ton Model 28-5 flying boat from San Diego bay to Buffalo, N. Y., thence to Botwood, Newfoundland, and then across the north Atlantic to England.

New Flight Planned

A Consolidated plane sold to American Export Lines flew 24,935 miles in transatlantic and European survey flights between June 30 and Aug. 4. Taking off from New York on three transatlantic flights during that period, it visited points ranging from the Azores islands and Marseilles, France, to Foynes, Ireland, in preparation for commercial transatlantic service.

Archbold's Gaba, which flew from San Diego to New Guinea in June, 1938, was used for 10 months in New Guinea by the scientist-explorer and then continued on around the world to San Diego by way of Australia, the Indian Ocean, Africa and the Atlantic. It landed here July 6 this year, and now is being made ready for another scientific flight to New Guinea. Its round-the-world flight covered 24,130 miles, and was featured by its use by the Australian government in a survey flight across the Indian ocean.

With interest in expected further expansion of the Consolidated plant heightened as a result of today's huge order by the navy, Consolidated being lowest bidder on an order for navy bombers and parts which may run to $20,000,000, a summary of new army and navy planes previously placed with the firm in 1939 follows:

On March 22 the navy department awarded a $4,699,000 contract to the firm. The order came on the eve of Consolidated's last delivery of 209 twin-motored bombers of PBY-type to the navy. Under the national defense policy inaugurated this year the exact type of planes and the number were not revealed.

During April the war department awarded Consolidated an order for four-engined bombers totaling $2,880,000, with details as to number and type kept secret.

Army Orders Bombers

Consolidated's third order of the year was received Aug. 10, when the war department awarded a contract for $8,485,000 for construction of an unannounced number of four-engine army bombers. The planes in this order, it was stated by The Associated Press, are expected to approach a speed of 300 miles an hour.

The big four-motored plane which San Diegans have seen taking off and landing on the bay the last few days was turned over by Consolidated Aug. 24 to the navy. Built as the XPB2Y-1, it became the first plane to be officially recognized as a flagplane in the navy. On that date Rear Adm. Arthur B. Cook, commander of aircraft scouting force, by dispatch, removed his flag from the light cruiser Memphis and hoisted it aboard the XPB2Y-1 thereby establishing a precedent in naval history. Never before had such a flag been officially hoisted on an airplane.

Last week Consolidated's newest contribution to aeronautical progress made its appearance, when Model 28-5A, an amphibian with tricycle-type landing gear, was flown by the navy from North Island to Anacostia, D. C., for a series of test flights there. Basically a twin-engined flying boat, which the navy knows as the PBY, the new plane has the double advantage of being able to land and take off either on water or land. Incorporation of the amphibian gear as an integral part of the plane makes the field of operations of the world's largest amphibian virtually "from anywhere to anywhere on the face of the globe," officials of Consolidated declare.

Backlog of $17,000,000

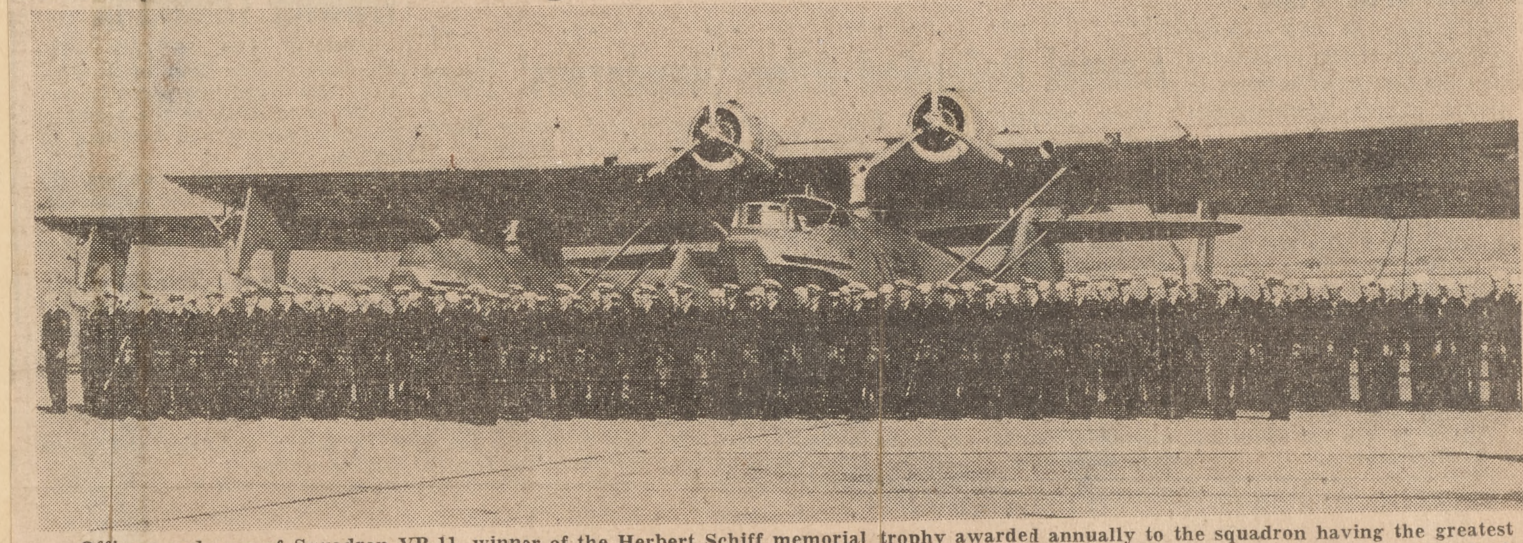
Model 31, the firm's 25-ton flying boat which is capable of carrying 28 passengers across the Atlantic, was launched May 5 as a "private venture." Unlike previous experimental flying boats which were constructed by the firm under government contract, this plane was built as Consolidated's own project and was completed in the brief period of 10 months.

Consolidated now has a backlog of slightly more than $37,000,000, all in orders for the United States army and navy. So far no orders have been received for planes for foreign governments, other than the one of Model 28-5, which was delivered to the British government in July.

A spokesman for Consolidated said the firm's policy on employment is to re-employ former workers and San Diego residents whenever possible, and to employ experienced workmen as far as possible. With present orders in hand, it was said, the peak of employment has been practically reached at the plant.

Trib. Sun Dec. 20. 39.

Officers, Crew of Prize-Winning Naval Air Squadron at North Island



Officers and men of Squadron VP-11, winner of the Herbert Schiff memorial trophy awarded annually to the squadron having the greatest number of hours in the air during the fiscal year without accident, are shown here lined up in front of squadron planes at North Island. A replica of the trophy recently was presented Lt. Comdr. S. B. Moore, the squadron commander, by Capt. Charles P. Mason, commander of Patrol Wing 1. The 12 winning planes had a total flight time of 4903 hours in the last fiscal year.

Union 12-15-39

Big Amphibian Flying East

A 14-ton amphibian navy patrol bomber left naval air station at 7:20 a.m. yesterday for Washington. The craft, said to be the world's largest amphibian, was in command of Lt. Carl E. Giese of the Anacostia naval air station, with Lt. Roy Jackson of La Mesa co-pilot.

Built by Consolidated Aircraft Corp. for the bureau of aeronautics, the huge flying boat is being flown to Washington for final acceptance tests.

Lt. Geise planned to remain over night at San Antonio and will continue to Washington today via Pensacola.

Union 12-15-39

Air Squadron to Get Schiff Trophy Here

In a colorful ceremony at the Naval Air station at 9:30 a.m. tomorrow, Capt. Charles P. Mason, commander Patrol Wing 1, will present a replica of the famed Schiff trophy to Lt. Comdr. S. B. Moore, commander squadron VP-11.

The squadron was awarded the Schiff trophy for flying the greatest number of hours without an accident during the last fiscal year. Because of Comdr. Moore's illness President Roosevelt presented the original trophy to Lt. Comdr. Frank T. Ward, squadron executive officer, at a White House ceremony last month.

Doctors at the Naval hospital have granted permission to Comdr. Moore to attend tomorrow's ceremonies.

KILLS

RNATIONAL NEWS ☆

E-SU

39

y Blíz

CLIPPING FROM DEC 17 1939
NEW YORK TIMES

Navy Experimental Plane Lands

WASHINGTON, Dec. 16 (UP)—The navy's experimental amphibian plane, the XPBY-5A, landed today at Anacostia naval air station after a flight of five hours and fifteen minutes from Pensacola. The ship, which will undergo a series of tests at Anacostia, left San Diego, Calif., on its transcontinental flight Thursday. It flew to Randolph Field, Texas, Thursday, and to Pensacola yesterday. The plane, built by Consolidated Aircraft Corporation, is powered by twin Wasp engines in the wings. It has a 104-foot wingspread, and is 65 feet long. It is commanded by Lieut. Comdr. C. E. Giese.

NEW YORK N Y HERALD TRIBUNE

DEC 13 1939

Huge Amphibian Plane To Be Flown Across U.S.

Navy Will Test Mysterious XPBY-5A This Week

SAN DIEGO, Calif., Dec. 12 (UP).—The Navy will test the mysterious XPBY-5A, the largest amphibian airplane in the world, in a cross-country flight this week.

At 8 a. m. Thursday the plane will swoop up from the water of San Diego Bay, or else fly off the flat ground of the North Island Naval Base—it can do either equally well—and fly to Anacostia Naval Air Station at Washington.

Details and size of the huge plane were not made public. The builders, Consolidated Aircraft Corporation, declare, however, that it will operate efficiently both over land and sea and will be especially useful in remote areas where floating aircraft tenders and good airdromes are not available. Such areas are the new naval bases in Alaska and the West Indies, where rough water landings and take-offs are routine. The plane can take off from the ocean, fly across land and water and land on an airdrome.

$20,016,699 AWARD LET TO CONSAIR BY U. S. NAVY

Trib-Sun Dec. 20.

Signals 'Go' On Doubling Size of Plant

The navy department has awarded a new $20,016,699 contract for airplanes to the Consolidated Aircraft Corp., Consair authorities announced today. No official details were released as to the number or type of aircraft involved, but it was believed that the contract specified latest developments of the local plant's famed PBY patrol bomber series.

A complete resume of the year's activities at the Consolidated Aircraft Corp. plant may be found on Page 8-A.

The huge order brings the Con-

(Continued on Next Page, Col. 3)

The Truth About England

Pasadena Star News 12/23/40

'American Fighting Planes Can't Fight In Big League'

'Statement Requires Many Qualifications,' Says Ingersoll, Who Waited to Write This Until He Checked Facts Here

(Continued From Page One)

and the models which are about to succeed the Spitfires and the Hurricanes will mount 12—or eight machine guns plus four cannon. There are other respects in which the best American fighters compare unfavorably with the fighters of the R. A. F. and the Luftwaffe, but this is the principal one. The fighting power of a plane cannot easily be increased simply by sticking additional machine guns or cannon into it. The design of a fighting plane—which is after all nothing but a flying gun platform—must begin with its guns and the plane must be designed around them, the whole worked out to achieve the puropose of carrying the guns and their ammunition in the most effective manner.

USED AS TRAINERS OR AGAINST ITALY

The best American fighter planes already delivered to the British are used by them either as advanced trainers—or for fighting equally obsolete Italian planes in the Middle East. That is all they are good for.

Even the American R. A. F. squadron—the Eagles—then training in England, which had planned to use American Brewster Buffalo fighters, had abandoned the idea and were being outfitted with Hurricanes.

I was going to lead off with this news—because I was very shocked by what I found out from the test pilots and engineers in England and what I saw at the station where the R. A. F. tests its new models.

WAITED TO CHECK FACTS IN U. S.

I did not break the story as soon as I came back because I wanted first to check what I had seen with American experts, to find out whether the situation was really as bad as it appeared, or whether we really did have models which could compete with the best British and German fighters but which we were simply keeping to ourselves. And the situation seemed too serious to me to want to risk going off half-cocked.

After the best check I have been able to make of models either in production or planned in this country—and after conferences with authorities on military strategy—the above statement still stands, but I have several important qualifications to make.

THESE IMPORTANT QUALIFICATIONS

First—As far as our own national defense goes, it is probably not necessary that we ever produce the best interceptor fighter in the world. Because the best interceptor fighter is a highly specialized plane necessary for defense only when the attacking bombers are themselves accompanied by fighter planes—a situation highly unlikely in the U. S. A., which would first have to be attacked by bombers flying such long distances that their protection by enemy fighters would be impractical. Our planes can shoot down unaccompanied bombers.

Second—Just as shock troops are at most a small percentage of any army, so the fastest and most lethal fighter planes are a small percentage of any air force. And if we have no aerial shock troops which can fight alongside the R. A. F. against the Luftwaffe, the planes the British are getting from us are anything but useless—serve in dozens of other important capacities.

AMERICAN AUTHORITIES HAVE THE FACTS

Third—There were American military observers in Great Britain when I was there. They are at last aware of the situation and they are now bringing back first-hand reports to guide and modify our own program.

And Fourth—We have in manufacture in this country models which probably will be able to compete. I put this fact only fourth in my list of extenuating circumstances, because these newest American models will not be ready until late in the winter. They have not been tested in combat and if the history of the production of new models of airplanes teaches anything, it is that there are unforeseen imperfections and bugs in every new model which take time to be worked out. The German and English planes are not better because the German and English designers are smarter, but because their designs have been worked out and perfected under prsssure and in actual combat.

But with all these qualifications, the fact still remains that the planes that Great Britain is producing for herself in British factories under a rain of German bombs must still stand alone between England and the Luftwaffe. To date we have been wholly unable to be of any assistance to England in the most crucial phase of the crucial fight for supremacy of the air over England.

BRITAIN HOLDS OUT BECAUSE OF SUPERIORITY

In the series of articles which follow this one I will explain that the British are in business today solely by virtue of the superiority of the Hurricanes and Spitfires' over the Messerschmitts. If the Hurricane and Spitfire had not been able to defeat the Messerschmitt in combat over England, German bombers, instead of scattering bombs by night over Coventry in the dark, seeking to blow industrial needles out of residential hay stacks, groping blindly and in general ineffectually for vital targets, would long since have been blackening the air over England by day, their dive bombers would have been picking off whatever they cared to pick off, and England would long since have become another Poland bomb destroyed.

GIVEN ADEQUATE FIGHTERS, THIS CANNOT HAPPEN

As long as the R. A. F. fighter continues to lick the Luftwaffe fighting plane this cannot happen. But unless and until Americans can produce a fighting airplane the specifications of which I will presently describe, the R. A. F. must go on relying on British-built planes. And in such a war as is being fought over England, it is not the British that need American help, but the Americans that need British help—in manufacturing a fighting machine that can fight in the big league.

So much for American fighters. Now about American bombers. Any plane that can carry a large load a long way is useful as a bomber. For bombing at night it is not even necessary that the plane fly fast. But a first class bomber is a bomber that not only can carry a large load of bombs to its objective, but one which can defend itself from attack by enemy planes. In this respect, the best American bombers now produced still ars as woefully deficient as the best American pursuit ships now in England.

AMERICAN BOMBERS WEAK ON DEFENSE

This will not long be so, because we are now incorporating in our bomber designs defensive devices developed by the British. But it is true at present, and the generalization goes not only for the flying fortresses, but for every other American bombing plane, light and medium as well as heavy, now going to Britain.

The defensive device referred to is the automatic revolving machine-gun turret. It's not hard to understand the defensive superiority this turret gives. Every American has seen pictures of them—little glass cubicles housing a machine-gunner and a battery of machine guns. Hydraulically operated, the turret itself swings in a 180-degree arc. And the guns can shoot straight up to almost straight down. In other words, the turret can shoot its battery of guns in almost any direction.

The no-secret of the British bomber design is the wide tail of the fuselage, which permits the attachment of one of these turrets so that the gunner sits literally behind the whole plane and can protect it from any attack from the rear, from any direction and from above and below.' If you accept the desirability of this turret you will see at once the defect in the American design for defensive purposes by noticing how this turret has to be attached in converting the American Lockheed into a military ship—it must be stuck up in the middle of the back, like an air-resisting bump on a log. And obviously it cannot protect the plane from attacks from the rear and below.

TURRET IN NOSE, TAIL USED BY BRITISH

The standard English equipment on medium and light bombers is a turret in the nose and the tail. In the very largest bombers—even in our flying fortresses—there are additional turrets in the fuselage which retract like landing gear.

In bombing an undefended objective by night, defensive turrets are just so much waste load to carry. But already the Germans, as well as the English, have night fighters, and the British bombers over Germany have so far had a remarkable record of success in shooting down attacking night fighters. The revolving turret has been an important reason for this success.

These are the highlights of the news on "how useful are our planes to the British?" No Britisher would make these statements as flatly as I have made them. First, because since they have developed their own fighters which can beat the Luftwaffe's best, and are continuing to produce them in greater numbers, despite what bombing the Germans can do by night, they do not feel an acute need for help from us in this department. Second, because they do need all kinds of other planes—trainers, reconnaissance planes and bombers, bombers, bombers — and they are getting these from us in increasing numbers and, as I have said, our bombers are now incorporating the British revolving turret in their design.

IMPLICATIONS, HOWEVER, ARE DISQUIETING

But to an American it is shocking news that we have at this date no planes that can fight in the front line in the battle for the defense of England—and that we have yet to prove that any of our models now planned or in production ever can compete. And it's impossible not to wonder what our American designers and manufacturers were doing through the years when the Hurricanes and the Spitfires and the Messerschmitts were being developed. If a hostile power with equipment as good as this could ever establish itself a bombing base close enough to this continent to protect its bombers with fighters, there would be nothing we could do about it until we developed such a plane. And, to repeat, you cannot develop a major fighting machine over night. The Hurricanes and the Spitfires, the Messerschmitts and the still newer British and German models have been developed by a long process of trial and error, gradual and constant improvement.

WAR IN AIR HIGHLY TECHNICAL

Since I have gotten back, many, many people have asked me: What about our planes in England? Are they standing up? How do they compare? I have written these conclusions before describing what I have seen at the fighter and bomber stations in England. War in the air is complicated and highly technical. As I have tried to say in setting down my qualifications to the flat statement that our best planes cannot compete with the best English and German planes, this sole fact is not the whole story. First-hand descriptions of what I saw and heard in England follow this article. I think they will make both the indictment and its qualifications clearer to you.

Let's begin by visiting the front line trenches of the air—the airport from which the interceptor squadrons take off, the fighter station. We go tomorrow.

Consolidated Air

Romeike & Curtice Ltd

Telephone
CENTRAL 2781
(2 Lines.)

R&C

35, Shoe Lane,
LONDON,
E.C.4.

EXTRACT FROM

In the Air

From Hopes to Heartening Facts

By Our Flying Correspondent

IT is the great production tug-of-war. That is the unescapable reading of the German air action of the past few weeks. The Germans know we are after them in the air; they realise that our production is mounting and that soon we shall have numerical equality and then numerical superiority. They know what that means when it is coupled with technical superiority.

So they are determined to check our production. At all costs they know they must check it if they are not to be subjected in this coming year to the most devastating aerial offensive ever launched. It is the whole cause of their concentration on concentrated night bombing.

They go for our cities where there are aircraft and aero-engine factories; they go for our ports where they think that American aircraft are coming into this country.

It may be asked why they do not go more directly for our aircraft factories; why they should turn to the cities themselves and attack the workpeople rather than the works. The answer is simple. The Germans know, or at least the German high command knows, that the German airman's bombing aim at night is not too good.

The consequence is that the targets selected must be easy targets. It is no good selecting a works situated out in the country and expecting the German airmen to hit it at night. But when a city is selected it is almost certain that, however bad the aim, some damage will be done. The German high command thinks, rightly or wrongly, that that damage will affect our output through the workpeople more effectively than attempts to hit the factories direct.

> As a group of British pilots left the mess on a particularly hazardous job they found their Polish colleagues drawn up at the door. Their spokesman had in his hand an English dictionary. He stepped forward.
>
> "God pickle you, gentlemen," he said.
>
> The English language is full of pitfalls, and perhaps not the least of them concerns the words "pickle" and "preserve."

It is no use denying that to some extent the German theory holds good. When the workpeople's homes are hit, the workpeople are rendered slightly less efficient. But they are resilient in this country. They come back and work on and work harder after the bombing. That the Germans have not yet realised.

The Answer

Fundamentally it remains true, therefore, that the only way to stop an aircraft factory producing aircraft is to hit that factory and to wreck its machinery. Nevertheless, we must maintain and enhance our production, and we must not allow even the small checks that occur when the workers' homes are attacked to interrupt it.

What is the method; what is our answer to the night bombing of our workpeople in their homes and their cities? It is two-fold; first, rapid repair and full control of the transport and other facilities of those cities; and second, dispersal of productive resources, world dispersal and not just national dispersal.

British factories are well dispersed already. They are spread over the length and breadth of Great Britain and it would require more than the Nazi air force really to stop production over here. But there is more than that to it.

Factories working for our victory are not only dispersed over these small islands, but they are dispersed over a hemisphere. They are dispersed over the United States of America and the Dominions beyond the seas.

From Canada, from Australia, from New Zealand, from the United States aircraft and aero-engines pour in to these islands. Hit our factories at home, and the Dominions will gird themselves to still greater efforts and make up for the production loss here and over-top it.

Sink our ships that bring the aircraft over the water and we will fly them over. For most of the bombers of to-day can do the Atlantic flight as easily as going from Heston to Hendon before the war.

LOADING A TORPEDO into one of the Fleet Air Arm's Bristol Beauforts, one of the fastest twin-engined bombers in the world. The torpedo, which is carried inside the fuselage, has to be released from a height of only a few feet—20 feet was mentioned in connection with the attack on Taranto by Swordfish aircraft.

Inevitably the productive might of the British Commonwealth swells. Its inflow grows visibly and day by day and hour by hour. When the Nazis bomb our workpeople here, workpeople over the seas, out of range of their bombs, regard it as a matter of honour to better their previous best.

Meanwhile, what of the German production? It is very big. Nobody who knows anything about it will deny that. The German works are among the most modern in the world in lay-out and equipment. Their output capacity is formidable.

But our bombers have struck at their works in many parts. They have struck, I say, at the German works and not at the homes of the German workpeople. It is not because it is more humane that that method is better than theirs—though it is inevitably more humane—but because it is more damaging to the German war effort.

Changing Balance

So we look now coldly at the situation in the air. Our cities are being heavily bombarded by night. Those "new devices" which our elevated air officers talked so much and so prematurely about do not materialise or do not have any effect. The bombs fall.

Our workpeoples' homes are wrecked. But the works go on. Their output, however, is slightly reduced as was admitted in the House of Commons. But as their output goes down so the great arsenals of the Dominions and the United States put up their output, the balance is more than redressed; it changes in our favour.

That is the position. We suffer more and more in this country; but as we suffer so the war situation improves. We take blows, but we also begin to give them. Our production suffers; but German production suffers more and our deficiencies are more than made up from other parts of the world outside the range of the German bombers.

Look quickly at some of the aircraft we are getting from over the seas. First the great Consolidated B-24 four-engined bombing aeroplanes, mightiest bombers about which it is as yet not possible to speak freely though others are coming forward in secret.

Three hundred miles an hour, 3,000 miles and four tons of bombs is some measure of the hitting power of these aeroplanes. They can be heavily armed if heavy armament is needed—though it is clear that, until such times as the night interception problem is solved, there is not great need for heavy armament for big bombers. The Consolidated B-24 bombers are among the finest machines in their class in the world.

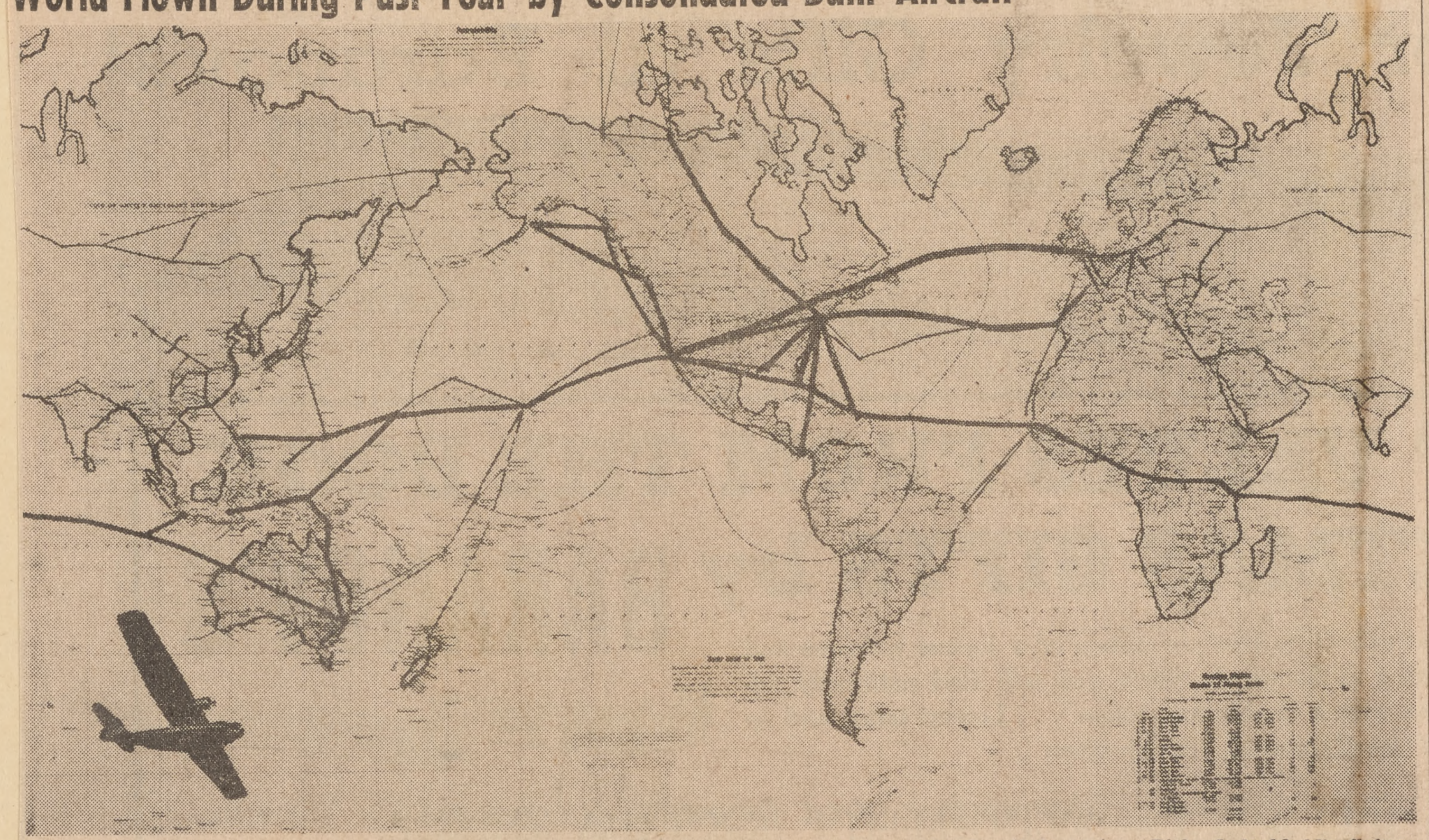
Now the new fighters, the beautiful Lockheed P-38, a twin-engined machine which delights the eye of every test pilot. Its lines are slim and its design unorthodox. It also has the tricycle undercarriage and its top speed is certainly over 400 miles an hour.

Then the Bell Airacobra, another daringly original design. Armed with the full number of guns called for to meet British standards, this is going to be an aircraft of remarkable qualities.

Other machines which will make things hum for the Nazis are the new Lockheeds, the Martin Baltimore bombers, the Curtiss Tomahawk (or P-40) fighters, the Grummans and the Boeings. Altogether a formidable crew. A selection of aircraft including some of the finest designs by the best designers in the world. What is more they are built by the best factories in the world.

PAGE EIGHT—A THE TRIBUNE-SUN, San Diego, Calif., Wednesday, December 20, 1939

World Flown During Past Year by Consolidated-Built Aircraft



Consolidated-built planes have flown the world, as indicated by the accompanying map showing their routes. Richard Archbold's flying boat, the "Guba" ("Sudden Storm") made a round-the-world flight, while navy planes built by the firm have flown from here to Panama, Hawaii, the Philippines and Alaska. Other Consolidated-built planes have made many crossings of the Atlantic. One flew the polar wastes to look for missing Russian transpolar fliers.

PLANT HITS PEAK IN EMPLOYMENT OF SKILLED HELP

By HAROLD OSBORNE

"Wings over America" in 1939, a year marked by unprecedented aviation expansion in this country, brought Consolidated Aircraft Corp. an increase in orders for army and navy planes which has resulted in an increase in employment at the local factory of approximately 200 percent from April until December, officials at the plant report. Consolidated's 1939 "employment curve" shows a steady growth from slightly more than 1100 the latter part of March to approximately 3200 by Dec. 1.

Aviation History Made

In addition to the new army and navy plane orders received this year and climaxed today by the navy's award of a $20,016,699 contract for an unspecified number of aircraft, 1939 was highlighted at Consolidated by the launcing of new, larger model planes and by a 5750-mile flight from here to Felistowe, Eng., of a 15-ton plane. There also were several score flights by navy patrol planes ranging from PBY flights during the fleet maneuvers in the Caribbean last winter to flights from here to Honolulu and Coco Solo and from Honolulu to the Philippine islands. In June, Richard Archbold's Consolidated-built flying boat, the Guba, landed on San Diego bay, completing a voyage around the world.

Naval aviation history was made in January at the start of the annual fleet maneuvers when a mass flight of 48 Consolidated-built patrol bombers was made from San Diego to Coco Solo, C. Z., a distance of 3087 miles, which was covered in 25 hours, 43 minutes. Number of officers and men making this flight was 336. The planes later flew from the Canal Zone to successfully carry on extensive flight operations with the fleet in the Caribbean.

In June, 15 Consolidated-built patrol bombers flew from San Diego to Pearl Harbor, covering 2553 miles in 16 hours, 17 minutes. A second mass flight of patrol planes was made from here to Honolulu in September, in which 14 planes participated. Later, 14 Consolidated bombers were flown 5586 miles from Honolulu to the Philippines.

The flight from San Diego to England was made with only two stops en route. A delivery flight to the British government, it took the 15-ton Model 28-5 flying boat from San Diego bay to Buffalo, N. Y., thence to Botwood, Newfoundland, and then across the north Atlantic to England.

New Flight Planned

A Consolidated plane sold to American Export Lines flew 24,935 miles in transatlantic and European survey flights between June 30 and Aug. 4. Taking off from New York on three transatlantic flights during that period, it visited points ranging from the Azores islands and Marseilles, France, to Foynes, Ireland, in preparation for commercial transatlantic service.

Archbold's Gaba, which flew from San Diego to New Guinea in June, 1938, was used for 10 months in New Guinea by the scientist-explorer and then continued on around the world to San Diego by way of Australia, the Indian Ocean, Africa and the Atlantic. It landed here July 6 this year, and now is being made ready for another scientific flight to New Guinea. Its round-the-world flight covered 24,130 miles, and was featured by its use by the Australian government in a survey flight across the Indian ocean.

With interest in expected further expansion of the Consolidated plant heightened as a result of today's huge order by the navy, Consolidated being lowest bidder on an order for navy bombers and parts which may run to $20,000,000, a summary of new army and navy planes previously placed with the firm in 1939 follows:

On March 22 the navy department awarded a $4,699,000 contract to the firm. The order came on the eve of Consolidated's last delivery of 209 twin-motored bombers of PBY-type to the navy. Under the national defense policy inaugurated this year the exact type of planes and the number were not revealed.

During April the war department awarded Consolidated an order for four-engined bombers totaling $2,880,000, with details as to number and type kept secret.

Army Orders Bombers

Consolidated's third order of the year was received Aug. 10, when the war department awarded a contract for $8,485,000 for construction of an unannounced number of four-engine army bombers. The planes in this order, it was stated by The Associated Press, are expected to approach a speed of 300 miles an hour.

The big four-motored plane which San Diegans have seen taking off and landing on the bay the last few days was turned over by Consolidated Aug. 24 to the navy. Built as the XPB2Y-1, it became the first plane to be officially recognized as a flagplane in the navy. On that date Rear Adm. Arthur B. Cook, commander of aircraft scouting force, by dispatch, removed his flag from the light cruiser Memphis and hoisted it aboard the XPB2Y-1 thereby establishing a precedent in naval history. Never before had such a flag been officially hoisted on an airplane.

Last week Consolidated's newest contribution to aeronautical progress made its appearance, when Model 28-5A, an amphibian with tricycle-type landing gear, was flown by the navy from North Island to Anacostia, D. C., for a series of test flights there. Basically a twin-engined flying boat, which the navy knows as the PBY, the new plane has the double advantage of being able to land and take off either on water or land. Incorporation of the amphibian gear as an integral part of the plane makes the field of operations of the world's largest amphibian virtually "from anywhere to anywhere on the face of the globe," officials of Consolidated declare.

Backlog of $17,000,000

Model 31, the firm's 25-ton flying boat which is capable of carrying 28 passengers across the Atlantic, was launched May 5 as a "private venture." Unlike previous experimental flying boats which were constructed by the firm under government contract, this plane was built as Consolidated's own project and was completed in the brief period of 10 months.

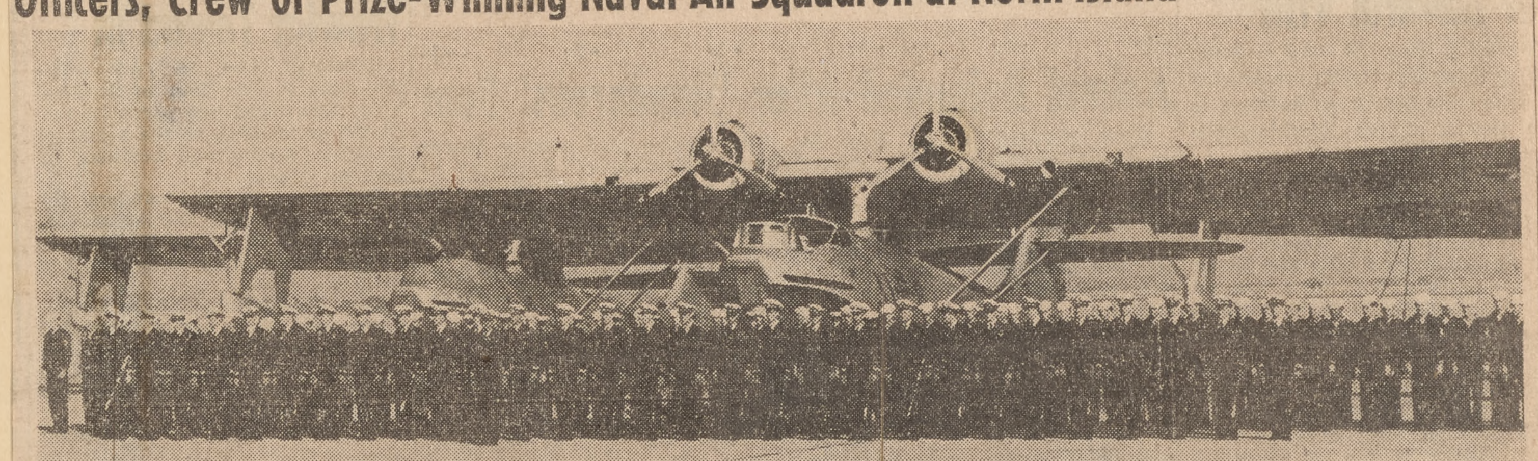
Consolidated now has a backlog of slightly more than $37,000,000, all in orders for the United States army and navy. So far no orders have been received for planes for foreign governments, other than the one of Model 28-5, which was delivered to the British government in July.

A spokesman for Consolidated said the firm's policy on employment is to re-employ former workers and San Diego residents whenever possible, and to employ experienced workmen as far as possible. With present orders in hand, it was said, the peak of employment has been practically reached at the plant.

THE TRIBUNE-SUN, San Diego, Calif., Wednesday, December 20,

Trib. Sun Dec. 20. 39.

Officers, Crew of Prize-Winning Naval Air Squadron at North Island



Officers and men of Squadron VP-11, winner of the Herbert Schiff memorial trophy awarded annually to the squadron having the greatest number of hours in the air during the fiscal year without accident, are shown here lined up in front of squadron planes at North Island. A replica of the trophy recently was presented Lt. Comdr. S. B. Moore, the squadron commander, by Capt. Charles P. Mason, commander of Patrol Wing 1. The 12 winning planes had a total flight time of 4903 hours in the last fiscal year.

Union 2-21-39

Consair Gets $20,016,699 Bomber Order

New Buildings Will Double Size of Plant

Bringing the total backlog of orders to more than $40,000,000, the greatest in the history of the company, Consolidated Aircraft Corp., yesterday received a $20,016,699 contract for the construction of an undisclosed number of PBY-5 type long-range twin-motored patrol bombers from the navy department.

Yesterday's contract was the largest order for a single type of plane ever awarded by the navy. It brought the total amount expended by the government for Consolidated PBY-type bombers, including engines, equipment and armament, to $70,000,000.

WORK STARTS TODAY

The company, it was assumed here, has entered into a satisfactory agreement with the navy department whereby part of the cost of construction of new buildings will be borne by the government.

Consolidated officials announced that work will start today in construction of buildings which virtually will double the size of the existing plant. Orders for $500,000 of new machinery have been placed.

The present personnel of 3000 employes is to be expanded to 7000 when the new additions are working to capacity. New men will be taken on gradually as the various buildings are completed and machinery installed.

TRACT LEASED

A strip of land 1700 feet long, 260 feet wide and embracing a total of 17 acres, recently leased for 50 years by the harbor department to Consolidated, will be the site of the new plant additions.

The assembly shop, said by Consolidated officials to be the largest in the world, will be 720 feet long, 360 feet wide with a 120-foot clearance span, a graphic example of the immense size of the new planes which ultimately will be built here. This huge building will front on Pacific highway immediately north of the present plant.

The auxiliary service building, to be situated immediately westward of the factory, will be 1000 feet long and 30 feet wide. It will have facilities for expediting final

(Continued on Page 2, Col. 1)

Consair Gets $20,016,699 Bomber Order

(Continued from Page 1)

assembly out-of-doors and will make the Consolidated plant unique among the world's aircraft manufacturing plants.

NEW PAINT SHOP

There will be large additions to the existing paint shop and the experimental engineering and warehouse buildings. The paint shop will be 200 by 120 feet.

Consolidated authorities were aware several weeks ago that the new contract would be forthcoming and signed contracts for delivery of the fabricated steel for the various new buildings.

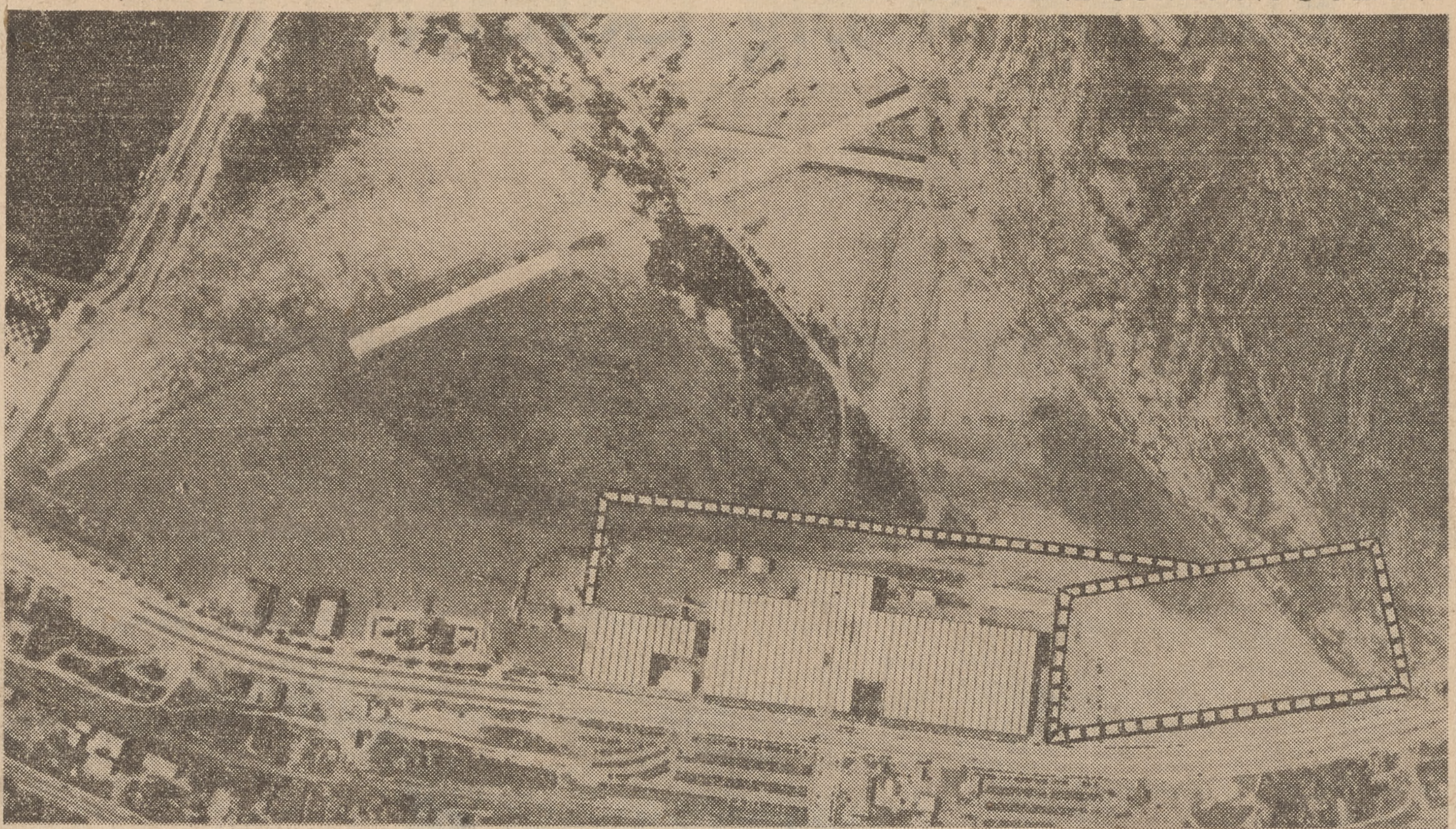
The structures will be completed in various stages, the first unit to be ready for occupancy within 90 days.

BACKLOG GROWS

Indicative of the tremendous expansion of the nation's aircraft industry since the outbreak of the European war, the total backlog of San Diego's three aircraft plants—Consolidated, Solar and Ryan—now exceeds $43,000,000 for planes and aircraft equipment, and $223,000,000 for all the plants situated in southern California.

Many of these planes are being built for the British, French and Chinese governments, but the majority are fighting craft for the U. S. army and navy.

NEW $2,500,000 BUILDINGS WILL DOUBLE SIZE OF AIRPLANE COMPANY'S PLANT



Air view of Consolidated plant at the municipal airport, showing area to be occupied by new $2,500,000 buildings and equipment. In addition to the 17 acres outlined, the harbor department has granted Consolidated an option on 15 additional acres for further plant expansion.

Trib. 12-22-39 ~~Union~~

Order New Steel For Consair Plant

In preparation for the 1940 start in construction work on new buildings for the Consolidated Aircraft Corp., in a plant expansion necessitated by a $20,016,699 contract received this week by the firm for navy patrol bombers, orders for structural steel amounting to $350,000 have been placed, Consair officials reported today. Steel now is being fabricated and erection of framework is expected to be started about Jan. 25.

Contracts for structural steel have been placed with San Diego and

(Continued on Next Page, Col. 4)

Place Steel Orders For Consair Plant

CONTINUED FROM PAGE ONE

Trib ~~Union~~ 12-22-39

Los Angeles contractors, it was reported and by Wednesday the firm will be ready to place a contract for pile driving, necessary because of the large size of the assembly shop, 720 feet in length and 360 feet wide, which is to be erected. The shop, which will be one of the largest in the world, will have a 120-foot clearance span, and will front on Pacific highway, just north of the present plant.

No order has been placed yet for excavating, it was said, although work of moving the plant's west boundary fence has started. It will be moved 260 feet out from its present location.

Doubling Payroll, Plan

With $250,000 already placed, orders for machinery, equipment and small tools up to $500,000 are to be placed soon, it was reported.

A spokesman for Maj. R. H. Fleet, Consair president, returning here tomorrow from Washington, D. C., where he has conferred with government officials, said that, with orders for planes now on hand, it is expected the present personnel of 3000 employes will be expanded gradually to approximately 7000 when the new additions are completed, several months from now, and are working to capacity. Additional employes, he said, will be taken on gradually, as various buildings are completed and machinery installed.

Work on the first new unit, an addition to the experimental building located at the south of the main building, is expected to be finished in about 90 days' time. The addition will replace a temporary shed now adjoining the experimental building.

Turkeys Assured For Consair Workers

Trib ~~Union~~ 12-22-39

Every employe of Consolidated Aircraft Corp. today was assured of the chance for a turkey dinner Christmas day, officials of the firm reported. In keeping with Consolidated's annual custom, a check for $5 was presented each person working at the plant. Latest figures on the Consolidated payroll are that approximately 3200 now are employed there.

ROMEIKE & CURTICE LTD.
The Press Clipping Bureau
35 Shoe Lane
LONDON, E.C.4
Telephone: Central 2781

Consolidated Air

EXTRACT FROM
FLIGHT
The First Aero Weekly in the World
EVERY THURSDAY 6d.
Flight Publishing Co. Ltd.
Dorset House, Stamford Street, London, S.E.1

12 DEC 1940

NEWS from AUSTRALIA

Scientific Work : More Consolidateds : Gipsy Engines

SOME progress is being made in aeronautical research work under the Council for Scientific and Industrial Research (C.S.I.R.), the laboratory now being constituted the Division of Aeronautics and taking its place alongside the other Divisions of Animal Health and Forest Products. Mr. L. P. Coombes, formerly of Farnborough, is in charge.

The aerodynamics section has nearly completed its wind tunnel, but the supply of motor and airscrew from England may be delayed. The engine section has its C.F.R. engine for fuel research, and the structures and materials section has all its testing machines calibrated and working. Problems which are at present being worked upon are the use of an Australian timber for use in aircraft and the manufacture of Australian plywood. This is likely to be a fruitful subject for research as already there are difficulties about the supply of light alloys from U.S.A. and thoughts are turning to timber.

A research officer of the New South Wales Forestry Commission commented on the tests of local timber thought likely to be of use in aircraft production. A wood had been found which was a little heavier than imported spruce but was mechanically better. Large supplies were available, and it could be obtained in logs up to 60ft. long. It was one of the lowest-priced timbers on the market. The Air Board has asked the Aircraft Production Commission if it would be practicable to build a wooden twin-engined training aeroplane in Australia, to supplement supplies of aircraft from overseas.

A re-classification of positions has been made in the Department of Civil Aviation. Unofficial sources state that the position of Chief Aeronautical Engineer (which corresponds closely to the former Superintendent of Aircraft)

AUSTRALIA'S AERONAUTICAL LABORATORY: The newly completed building of the Aeronautical Division of the Council for Scientific and Industrial Research, at Melbourne.

This new development in Australian industry has called for the conversion from an automobile technique to that of aero engine precision, and some idea can be gleaned of the immensity of this task when it is learned that an agricultural implement manufacturer produced the camshaft. This camshaft is hollow and the manufacturing operation is similar to that required for the production of rifle barrels. With the aid of munitions engineers, this firm produced a praiseworthy job.

Every part of the engine is subjected to a critical examination before it is passed for assembly. The crankcase is X-rayed for material segregations, casting faults and internal cracks. All parts are put through an electric crack-detector for surface cracks, while one engine in fifty undergoes a fifty-hour type test on the bench. This engine is then completely dismantled and checked, reassembled, and given one hour's acceptance test before delivery.

An outstanding achievement in the production of this Gipsy engine in Australia was the connecting rods. These were a perfect job, and were the first of their kind ever commercially produced in Australia, being a machined aluminium-alloy forging. All this work has been developed

☆ ASSOCIATED

HE T

ECTIONS Trib-Sun SA
12-20-39.

CAPT

CONSAIR GETS $20,016,699 JOB

Signals 'Go' On Doubling Size of Plant

The navy department has awarded a new $20,016,699 contract for airplanes to the Consolidated Aircraft Corp., Consair authorities announced today. No official details were released as to the number or type of aircraft involved, but it was believed that the contract specified latest developments of the local plant's famed PBY patrol bomber series.

A complete resume of the year's activities at the Consolidated Aircraft Corp. plant may be found on Page 8-A.

The huge order brings the Consolidated backlog of military plane orders to approximately $37,000,000, placing it securely among aviation's "big four," plant spokesmen said. More than 3000 workers now are employed on an earlier navy contract totaling $5,000,000 and an army contract for $12,000,000.

Get Acreage for Expansion

Maj. R. H. Fleet, Consolidated head, was in Washington concluding details of the contract, but local spokesmen said they assumed plant expansion plans, already announced, would be carried out in the immediate future.

Consolidated recently leased 17 acres adjacent to the Lindbergh field plant and obtained an option, containing no termination clause, on an additional 30 acres. Under terms of the lease, which runs concurrently with that covering the acreage upon which the existing plant is located, Consair will pay a "nominal" rental. The leases have 45 years to run, Joe Brennan, port director, stated.

Building Cost $2,500,000

In order to handle the additional navy order, it was expected that Consair would widen the present factory building by some 250 feet

(Continued on Next Page, Col. 6)

Consolidated Gets $20,000,000 Navy Plane Contract

About Dec. 20-39

Closing Agreement Signed With Treasury Stipulates Method of Computing Costs

Wash D.C. paper (?)

Lifts Backlog to $37,000,000

WASHINGTON — Consolidated Aircraft Corp. of San Diego, Calif., was awarded a contract for airplanes totaling $20,016,699 by the Navy Department.

The new contract increases company's backlog of unfilled orders to approximately $37,000,000 consisting almost entirely of U. S. Army and Navy orders. Consolidated has not as yet participated in any of the large foreign business placed in this country during 1939, but reports indicate that Great Britain is considering the purchase of 50 long-range patrol bombers.

Treasury Signs Closing Agreement

Secretary Morgenthau announced that the Treasury has signed a closing agreement with Consolidated Aircraft which stipulates how certain items may be handled in computing the company's costs on a Navy Department contract which is subject to the profit limiting provisions of the Vinson-Trammell act as amended by the national defense act.

The closing agreement provides that for the period of performance of the contract, Consolidated may charge off as an indirect factory expense the cost of tools consumed. It also permits the company to charge off similarly the depreciated cost, less salvage value, of certain buildings which are necessarily required to be demolished in order for the company to carry out the contract. Cost of making the demolition is likewise allowed as a chargeoff.

No Fixing of Depreciation Rates

With respect to any buildings, machinery, or other similar facilities which may be acquired in order to perform the contract, the closing agreement expressly refrains from fixing rates of depreciation and obsolescence, but permits the company to take a deduction for whatever part is permanently discarded upon the contract's completion. The allowance for cost of any facility permanently discarded is subject to adjustments for depreciation and other allowances to the date the facility is discarded and the salvage value at that time.

The deductions allowed are not permitted to be treated as direct charges against the contract, but are to be prorated to all new work which the company may have.

The Consolidated agreement is the second executed by the Treasury under the profit limit law. First agreement was made with Colts Patent Fire Arms Manufacturing Co.

NAVY ORDERS PLANES TO COST $20,000,000

N.Y. Times 12-21-39

Consolidated Signs Agreement Covering Production Charges

+ x

Special to THE NEW YORK TIMES.

WASHINGTON, Dec. 20—A $20,016,669.60 Navy Department airplane contract was awarded today to the Consolidated Aircraft Corporation of San Diego, the second subject to the 12 per cent profit-limiting provisions of the Vinson-Trammell Act as amended by the National Defense Act. At the same time the Treasury Department stated that it had signed an agreement stipulating how some items may be handled in computing costs.

The agreement provides that, for the period of performance of the contract, Consolidated may charge off as an indirect factory expense the cost of tools consumed during the performance of the contract.

It also provides that the company may charge off as an indirect factory expense the depreciated cost, less salvage value, of buildings which must be demolished in order for the company to carry out the contract. The cost of making the demolition is also to be charged as an indirect factory expense.

With respect to any buildings, machinery, or other similar facilities which must be acquired by the company to perform the contract, the agreement expressly refrains from fixing rates of depreciation and obsolescence, but permits the company to take a deduction with respect to the portion permanently discarded upon completion of the contract.

The allowance permitted with respect to the cost of any facility permanently discarded is subject to adjustments for depreciation and other allowances to the date the facility is discarded and for the salvage value at that time.

The deductions allowed with respect to these new facilities and the demolition of old facilities are not permitted to be treated as direct charges against the contract, but are to be prorated to all new work which the company may have.

Trib-Sun 12-27-39

HUNDRED EXCEEDED IN NAVY ORDER FOR CONSAIR PLANES

The navy department, in an official announcement, has revealed that the $20,016,669 contract for warplanes awarded last week to Consolidated Aircraft Corp. calls for construction of more than 100 PBY-5 patrol bombers.

The PBY-5 was described as being an advanced model of earlier PBY's, the big flying boats which have blazed ocean trails for the navy in a series of spectacular mass flights, most of which began here.

The new planes will have a cruising range of from 4000 to 5000 miles. Each will be powered with two 14-cylinder, 100-horsepower Pratt & Whitney engines, turning three-bladed propellers. They will have a wingspan of 104 feet, the hulls will be 65 feet long and 18½ feet high and each will weigh 12 tons. They will be flown by crews of seven officers and men.

Completion of the contract will bring into service more than 300 planes of the PBY class. They are designed to patrol the navy's far-flung sae lanes between mainland and Pacific island bases and to reinforce hemisphere defense policies, The Associated Press reported.

BIG NAVY AIR BOATS TO PATROL PACIFIC

Dec 24-39

Fifty Giant Craft Reported Involved in $20,016,669 Order to California Plant

N.Y. Times

By The Associated Press.

WASHINGTON, Dec. 23—The navy has ordered a fleet of giant, long-range, four-motor flying boats to patrol its far-flung "line of observation" in the Pacific and to reinforce the Administration's hemisphere defense policies.

Authoritative sources reported today that possibly fifty or more craft with a range of more than 5,000 miles were involved in the $20,016,669 order, the largest single aircraft contract in navy history, which went to the Consolidated Aircraft Corporation, San Diego, Calif., on Dec. 20. In accord with the navy's policy details were withheld.

The newest additions will augment fifteen other four-motor ships of the same general type ordered last year, and more than 200 smaller two-motor flying boats already in service.

The two-motor patrol craft have been "ferried" nonstop by the score to Hawaii and Panama and have been termed by foreign aviation experts "incomparably" the most formidable overseas striking force of the kind in existence.

Experimental Model a Monoplane

The navy has been experimenting with four-motor flying boats since 1935. The newest planes ordered are a development of the consolidated concern's experimental model, PB2Y2, a high wing monoplane with four 1,000-horsepower 14-cylinder motors. This plane weights about 30 tons, has a 118-foot wingspread and carries a crew of nine.

The unofficial estimate that fifty or more were involved in the $20,016,669 order was based on the cost of those contracted for last year. President Roosevelt asked Congress for $3,875,000 for nine four-motor navy planes, in addition to six provided for in the 1939 budget, so that their unit cost was $430,000 each. It is understood that the unit cost was reduced in the new, larger order.

Both army and navy are experimenting meanwhile with still more giant craft.

The army, seeking to extend the range and load capacity of its bombers, intends to build five planes nearly twice the size of its present seventeen-ton, four-motored bombers. About $4,000,00 was included in pending budget estimates for craft to weigh about thirty-five tons and capable of non-stop flights of well over 5,000 miles.

A single thirty-four-ton bomber, the B-15, has been making experimental flights for the last two years. It took medicines to Chile after an earthquake early this year.

Fifty-two of the four-motor seventeen-ton "fortress" bombers, such as have made round trip good-will flights to South America, were in service or on order when the $300,000,000 Air Corps expansion program was voted by Congress last year.

In recent months orders for a somewhat larger number were divided between two Pacific Coast plants.

Further, the War Department estimates turned over to President Roosevelt are understood to have included provision for 200 bombers of all types, of which a large proportion presumably would be of four motors.

The newest models turned over to the Air Corps are capable of top speeds of more than 300 miles an hour and they can carry five tons of bombs each, aviation circles understand.

To increase their range and power still further, the Air Corps is helping finance experiments with a forty-two-cylinder motor.

Union 12-21-39

Consair Gets $20,016,699 Bomber Order

New Buildings Will Double Size of Plant

Bringing the total backlog of orders to more than $40,000,000, the greatest in the history of the company, Consolidated Aircraft Corp., yesterday received a $20,016,699 contract for the construction of an undisclosed number of PBY-5 type long-range twin-motored patrol bombers from the navy department.

Yesterday's contract was the largest order for a single type of plane ever awarded by the navy. It brought the total amount expended by the government for Consolidated PBY-type bombers, including engines, equipment and armament, to $70,000,000.

WORK STARTS TODAY

The company, it was assumed here, has entered into a satisfactory agreement with the navy department whereby part of the cost of construction of new buildings will be borne by the government.

Consolidated officials announced that work will start today in construction of buildings which virtually will double the size of the existing plant. Orders for $500,000 of new machinery have been placed.

The present personnel of 3000 employes is to be expanded to 7000 when the new additions are working to capacity. New men will be taken on gradually as the various buildings are completed and machinery installed.

TRACT LEASED

A strip of land 1700 feet long, 260 feet wide and embracing a total of 17 acres, recently leased for 50 years by the harbor department to Consolidated, will be the site of the new plant additions.

The assembly shop, said by Consolidated officials to be the largest in the world, will be 720 feet long, 360 feet wide with a 120-foot clearance span, a graphic example of the immense size of the new planes which ultimately will be built here. This huge building will front on Pacific highway immediately north of the present plant.

The auxiliary service building, to be situated immediately westward of the factory, will be 1000 feet long and 30 feet wide. It will have facilities for expediting final

(Continued on Page 2, Col. 1)

Consair Gets $20,016,699 Bomber Order

(Continued from Page 1)

assembly out-of-doors and will make the Consolidated plant unique among the world's aircraft manufacturing plants.

NEW PAINT SHOP

There will be large additions to the existing paint shop and the experimental engineering and warehouse buildings. The paint shop will be 200 by 120 feet.

Consolidated authorities were aware several weeks ago that the new contract would be forthcoming and signed contracts for delivery of the fabricated steel for the various new buildings.

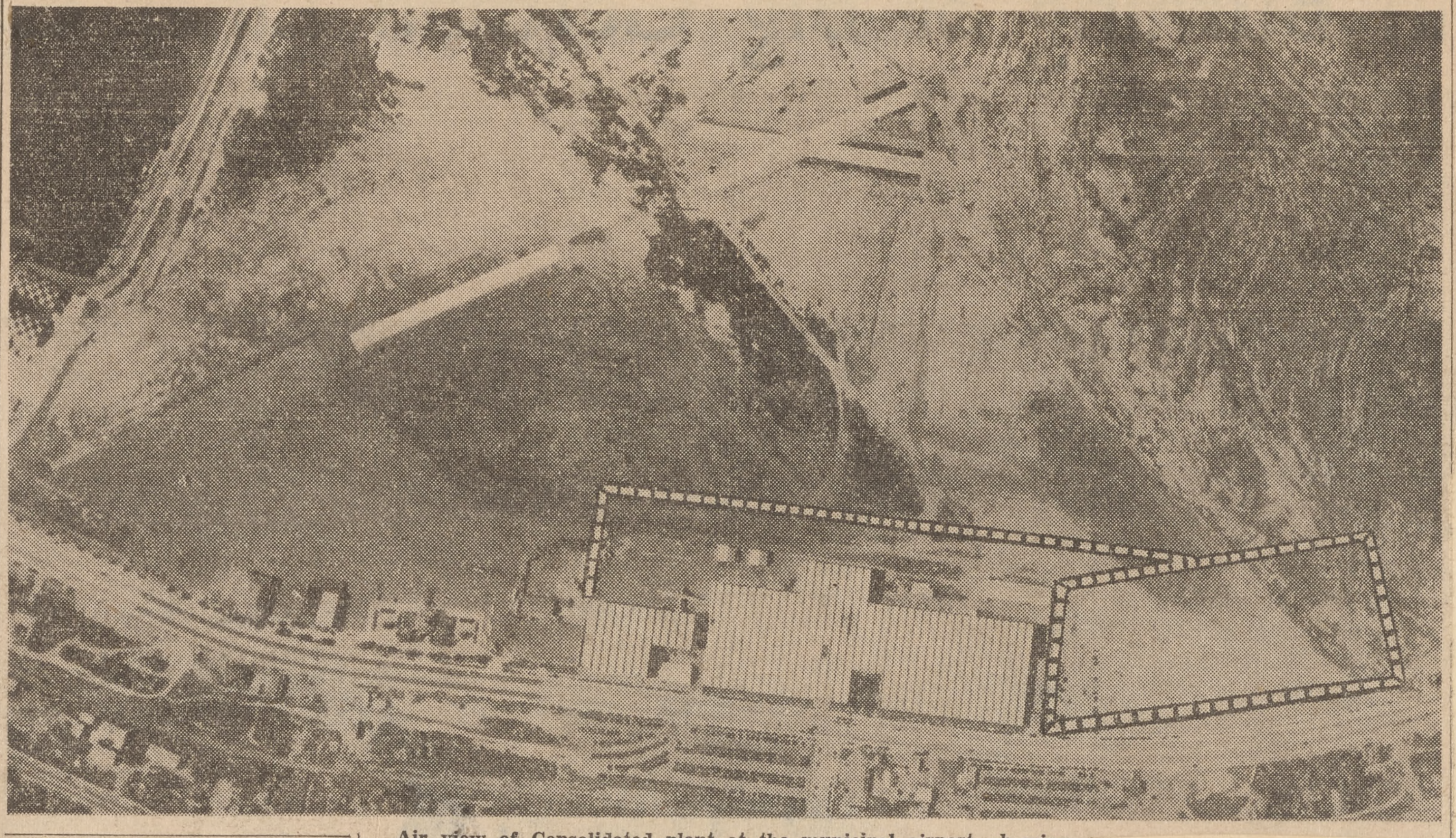
The structures will be completed in various stages, the first unit to be ready for occupancy within 90 days.

BACKLOG GROWS

Indicative of the tremendous expansion of the nation's aircraft industry since the outbreak of the European war, the total backlog of San Diego's three aircraft plants—Consolidated, Solar and Ryan—now exceeds $43,000,000 for planes and aircraft equipment, and $223,000,000 for all the plants situated in southern California.

Many of these planes are being built for the British, French and Chinese governments, but the majority are fighting craft for the U. S. army and navy.

NEW $2,500,000 BUILDINGS WILL DOUBLE SIZE OF AIRPLANE COMPANY'S PLANT



Air view of Consolidated plant at the municipal airport, showing area to be occupied by new $2,500,000 buildings and equipment. In addition to the 17 acres outlined, the harbor department has granted Consolidated an option on 15 additional acres for further plant expansion.

Trib. 12-22-39

Order New Steel For Consair Plant

In preparation for the 1940 start in construction work on new buildings for the Consolidated Aircraft Corp., in a plant expansion necessitated by a $20,016,699 contract received this week by the firm for navy patrol bombers, orders for structural steel amounting to $350,000 have been placed, Consair officials reported today. Steel now is being fabricated and erection of framework is expected to be started about Jan. 25.

Contracts for structural steel have been placed with San Diego and

(Continued on Next Page, Col. 4)

Place Steel Orders For Consair Plant

CONTINUED FROM PAGE ONE

Trib. 12-22-39

Los Angeles contractors, it was reported and by Wednesday the firm will be ready to place a contract for pile driving, necessary because of the large size of the assembly shop, 720 feet in length and 360 feet wide, which is to be erected. The shop, which will be one of the largest in the world, will have a 120-foot clearance span, and will front on Pacific highway, just north of the present plant.

No order has been placed yet for excavating, it was said, although work of moving the plant's west boundary fence has started. It will be moved 260 feet out from its present location.

Doubling Payroll, Plan

With $250,000 already placed, orders for machinery, equipment and small tools up to $500,000 are to be placed soon, it was reported.

A spokesman for Maj. R. H. Fleet, Consair president, returning here tomorrow from Washington, D. C., where he has conferred with government officials, said that, with orders for planes now on hand, it is expected the present personnel of 3000 employes will be expanded gradually to approximately 7000 when the new additions are completed, several months from now, and are working to capacity. Additional employes, he said, will be taken on gradually, as various buildings are completed and machinery installed.

Work on the first new unit, an addition to the experimental building located at the south of the main building, is expected to be finished in about 90 days' time. The addition will replace a temporary shed now adjoining the experimental building.

Turkeys Assured For Consair Workers

Trib 12-22-39

Every employe of Consolidated Aircraft Corp. today was assured of the chance for a turkey dinner Christmas day, officials of the firm reported. In keeping with Consolidated's annual custom, a check for $5 was presented each person working at the plant. Latest figures on the Consolidated payroll are that approximately 3200 now are employed there.

ROMEIKE & CURTICE LTD.
The Press Clipping Bureau
35 Shoe Lane
LONDON, E.C.4
Telephone: Central 2781

Consolidated Air

EXTRACT FROM
FLIGHT
The First Aero Weekly in the World
EVERY THURSDAY 6d.
Flight Publishing Co. Ltd.
Dorset House, Stamford Street, London, S.E.1

12 DEC 1940

NEWS from AUSTRALIA

Scientific Work : More Consolidateds : Gipsy Engines

SOME progress is being made in aeronautical research work under the Council for Scientific and Industrial Research (C.S.I.R.), the laboratory now being constituted the Division of Aeronautics and taking its place alongside the other Divisions of Animal Health and Forest Products. Mr. L. P. Coombes, formerly of Farnborough, is in charge.

The aerodynamics section has nearly completed its wind tunnel, but the supply of motor and airscrew from England may be delayed. The engine section has its C.F.R. engine for fuel research, and the structures and materials section has all its testing machines calibrated and working. Problems which are at present being worked upon are the use of an Australian timber for use in aircraft and the manufacture of Australian plywood. This is likely to be a fruitful subject for research as already there are difficulties about the supply of light alloys from U.S.A. and thoughts are turning to timber.

A research officer of the New South Wales Forestry Commission commented on the tests of local timber thought likely to be of use in aircraft production. A wood had been found which was a little heavier than imported spruce but was mechanically better. Large supplies were available, and it could be obtained in logs up to 60ft. long. It was one of the lowest-priced timbers on the market. The Air Board has asked the Aircraft Production Commission if it would be practicable to build a wooden twin-engined training aeroplane in Australia, to supplement supplies of aircraft from overseas.

A re-classification of positions has been made in the Department of Civil Aviation. Unofficial sources state that the position of Chief Aeronautical Engineer (which corresponds closely to the former Superintendent of Aircraft) carries a salary of £A900 and is charged with the responsibility of directing the inspectors and aeronautical engineers. These latter are graded into two classes, with ranges of £A510-582 and £A420-510. A senior is in charge of them, with a salary of £A636-708.

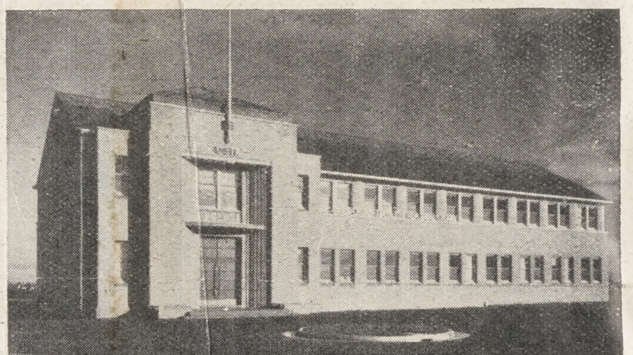
In charge of the inspecting staff is a supervising inspector on £A582-660. Senior inspectors' salaries range between £A474 and £A546. The Chief Electrical Engineer, who deals with all radio equipment and related matters, receives £A1,100, with two assistants, each on £A900.

At June 30 the following licences were in force in Australia: Private pilots, 1,225; commercial pilots, 324; flying instructors, 87; navigators, 85; first-class radio, 20; second-class radio, 20; third-class radio, 52; ground engineers, 651; aircraft registration certificates, 332; aircraft airworthiness certificates, 261; aerodrome licences, 240 (in addition to which the Government provides 268 aerodromes, landing areas, flying boat bases and emergency alighting areas).

An order for another 11 PBY2s has been placed with the Consolidated Aircraft Corporation by the Government for the R.A.A.F. Extremely useful for coastal patrol work, these boats are intended to "replace" the Sunderlands which were about to be flown to Australia at the outbreak of war. The first order was for seven, and the end of this year has been spoken about as a possible date of delivery.

Australian-built Gipsy Engines

With the delivery by General Motors-Holden of the first twenty Gipsy Major engines for the DH Tiger Moth primary trainers, the first stage in the production of 500 of these units has been achieved in Australia. Only production men can realise the tremendous effort behind this achievement by the contractors and sub-contractors in several States, in the manufacture of over 500 different items for the engine in a very short time.



AUSTRALIA'S AERONAUTICAL LABORATORY: The newly completed building of the Aeronautical Division of the Council for Scientific and Industrial Research, at Melbourne.

This new development in Australian industry has called for the conversion from an automobile technique to that of aero engine precision, and some idea can be gleaned of the immensity of this task when it is learned that an agricultural implement manufacturer produced the camshaft. This camshaft is hollow and the manufacturing operation is similar to that required for the production of rifle barrels. With the aid of munitions engineers, this firm produced a praiseworthy job.

Every part of the engine is subjected to a critical examination before it is passed for assembly. The crankcase is X-rayed for material segregations, casting faults and internal cracks. All parts are put through an electric crack-detector for surface cracks, while one engine in fifty undergoes a fifty-hour type test on the bench. This engine is then completely dismantled and checked, reassembled, and given one hour's acceptance test before delivery.

An outstanding achievement in the production of this Gipsy engine in Australia was the connecting rods. These were a perfect job, and were the first of their kind ever commercially produced in Australia, being a machined aluminium-alloy forging. All this work has been developed and produced in about a year, without the full range of manufacturing equipment being initially available in Australia, and this is a commendable achievement.

Around Australia

A Brisbane business man, wishing to fly round Australia, left Sydney by flying boat on the first stage of his trip. He was accompanied by his wife, who acted as his secretary. His schedule was:

Sydney-Darwin by Qantas Empire flying boat (2,384 miles), Darwin-Daly Waters by Guinea Airways (328), Daly Waters-Wyndham by MacRobertson-Miller Airlines (524), Wyndham-Perth by MacRobertson-Miller Airlines (1,903), Perth-Melbourne (1,809) and Melbourne-Sydney (440), both by Australian National Airways.

In circumnavigating Australia by air a distance of 7,388 miles has to be covered. At Darwin, passengers now have much better accommodation as the new hotel, which has some affiliations with one of the airlines, is now open.

C.O.D. in the Outback

A little discussed, but highly important, service to the outback districts of Queensland and Northern Territory is the C.O.D. system which Qantas has successfully carried on since the early days of the company. By this method people living in country centres are able to order from the large city houses of Brisbane and Sydney, and Qantas not only delivers the parcels at destinations, but collects the cash through its many agencies, and finally settles with the despatching firm.

Lady purchasers can buy the very latest models in shoes and frocks and obtain delivery within a few days. Developing with the years, figures for the past 12 months show that over 1,000 items, to the value of about £3,000, were handled in that period.

☆ ASSOCIATED

HE T

ECTIONS Trib-Sun SA
12-20-39.

CAPT

CONSAIR GETS $20,016,699 JOB

Signals 'Go' On Doubling Size of Plant

The navy department has awarded a new $20,016,699 contract for airplanes to the Consolidated Aircraft Corp., Consair authorities announced today. No official details were released as to the number or type of aircraft involved, but it was believed that the contract specified latest developments of the local plant's famed PBY patrol bomber series.

A complete resume of the year's activities at the Consolidated Aircraft Corp. plant may be found on Page 8-A.

The huge order brings the Consolidated backlog of military plane orders to approximately $37,000,000, placing it securely among aviation's "big four," plant spokesmen said. More than 3000 workers now are employed on an earlier navy contract totaling $5,000,000 and an army contract for $12,000,000.

Get Acreage for Expansion

Maj. R. H. Fleet, Consolidated head, was in Washington concluding details of the contract, but local spokesmen said they assumed plant expansion plans, already announced, would be carried out in the immediate future.

Consolidated recently leased 17 acres adjacent to the Lindbergh field plant and obtained an option, containing no termination clause, on an additional 30 acres. Under terms of the lease, which runs concurrently with that covering the acreage upon which the existing plant is located, Consair will pay a "nominal" rental. The leases have 45 years to run, Joe Brennan, port director, stated.

Building Cost $2,500,000

In order to handle the additional navy order, it was expected that Consair would widen the present factory building by some 250 feet

(Continued on Next Page, Col. 6)

Consolidated Gets $20,000,000 Navy Plane Contract

About Dec. 20-'39

Closing Agreement Signed With Treasury Stipulates Method of Computing Costs

Wash D.C. paper(?)

Lifts Backlog to $37,000,000

WASHINGTON — Consolidated Aircraft Corp. of San Diego, Calif., was awarded a contract for airplanes totaling $20,016,699 by the Navy Department.

The new contract increases company's backlog of unfilled orders to approximately $37,000,000 consisting almost entirely of U. S. Army and Navy orders. Consolidated has not as yet participated in any of the large foreign business placed in this country during 1939, but reports indicate that Great Britain is considering the purchase of 50 long-range patrol bombers.

Treasury Signs Closing Agreement

Secretary Morgenthau announced that the Treasury has signed a closing agreement with Consolidated Aircraft which stipulates how certain items may be handled in computing the company's costs on a Navy Department contract which is subject to the profit limiting provisions of the Vinson-Trammell act as amended by the national defense act.

The closing agreement provides that for the period of performance of the contract, Consolidated may charge off as an indirect factory expense the cost of tools consumed. It also permits the company to charge off similarly the depreciated cost, less salvage value, of certain buildings which are necessarily required to be demolished in order for the company to carry out the contract. Cost of making the demolition is likewise allowed as a chargeoff.

No Fixing of Depreciation Rates

With respect to any buildings, machinery, or other similar facilities which may be acquired in order to perform the contract, the closing agreement expressly refrains from fixing rates of depreciation and obsolescence, but permits the company to take a deduction for whatever part is permanently discarded upon the contract's completion. The allowance for cost of any facility permanently discarded is subject to adjustments for depreciation and other allowances to the date the facility is discarded and the salvage value at that time.

The deductions allowed are not permitted to be treated as direct charges against the contract, but are to be prorated to all new work which the company may have.

The Consolidated agreement is the second executed by the Treasury under the profit limit law. First agreement was made with Colts Patent Fire Arms Manufacturing Co.

NAVY ORDERS PLANES TO COST $20,000,000

N.Y. Times 12-21-39

Consolidated Signs Agreement Covering Production Charges

+X

Special to THE NEW YORK TIMES.

WASHINGTON, Dec. 20—A $20,016,669.60 Navy Department airplane contract was awarded today to the Consolidated Aircraft Corporation of San Diego, the second subject to the 12 per cent profit-limiting provisions of the Vinson-Trammell Act as amended by the National Defense Act. At the same time the Treasury Department stated that it had signed an agreement stipulating how some items may be handled in computing costs.

The agreement provides that, for the period of performance of the contract, Consolidated may charge off as an indirect factory expense the cost of tools consumed during the performance of the contract.

It also provides that the company may charge off as an indirect factory expense the depreciated cost, less salvage value, of buildings which must be demolished in order for the company to carry out the contract. The cost of making the demolition is also to be charged as an indirect factory expense.

With respect to any buildings, machinery, or other similar facilities which must be acquired by the company to perform the contract, the agreement expressly refrains from fixing rates of depreciation and obsolescence, but permits the company to take a deduction with respect to the portion permanently discarded upon completion of the contract.

The allowance permitted with respect to the cost of any facility permanently discarded is subject to adjustments for depreciation and other allowances to the date the facility is discarded and for the salvage value at that time.

The deductions allowed with respect to these new facilities and the demolition of old facilities are not permitted to be treated as direct charges against the contract, but are to be prorated to all new work which the company may have.

Trib-Sun 12-27-39

HUNDRED EXCEEDED IN NAVY ORDER FOR CONSAIR PLANES

The navy department, in an official announcement, has revealed that the $20,016,669 contract for warplanes awarded last week to Consolidated Aircraft Corp. calls for construction of more than 100 PBY-5 patrol bombers.

The PBY-5 was described as being an advanced model of earlier PBY's, the big flying boats which have blazed ocean trails for the navy in a series of spectacular mass flights, most of which began here.

The new planes will have a cruising range of from 4000 to 5000 miles. Each will be powered with two 14-cylinder, 100-horsepower Pratt & Whitney engines, turning three-bladed propellers. They will have a wingspan of 104 feet, the hulls will be 65 feet long and 18½ feet high and each will weigh 12 tons. They will be flown by crews of seven officers and men.

Completion of the contract will bring into service more than 300 planes of the PBY class. They are designed to patrol the navy's far-flung sae lanes between mainland and Pacific island bases and to reinforce hemisphere defense policies, The Associated Press reported.

BIG NAVY AIR BOATS TO PATROL PACIFIC

Dec 24-39

Fifty Giant Craft Reported Involved in $20,016,669 Order to California Plant

N.Y. Times

By The Associated Press.

WASHINGTON, Dec. 23—The navy has ordered a fleet of giant, long-range, four-motor flying boats to patrol its far-flung "line of observation" in the Pacific and to reinforce the Administration's hemisphere defense policies.

Authoritative sources reported today that possibly fifty or more craft with a range of more than 5,000 miles were involved in the $20,016,669 order, the largest single aircraft contract in navy history, which went to the Consolidated Aircraft Corporation, San Diego, Calif., on Dec. 20. In accord with the navy's policy details were withheld.

The newest additions will augment fifteen other four-motor ships of the same general type ordered last year, and more than 200 smaller two-motor flying boats already in service.

The two-motor patrol craft have been "ferried" nonstop by the score to Hawaii and Panama and have been termed by foreign aviation experts "incomparably" the most formidable overseas striking force of the kind in existence.

Experimental Model a Monoplane

The navy has been experimenting with four-motor flying boats since 1935. The newest planes ordered are a development of the consolidated concern's experimental model, PB2Y2, a high wing monoplane with four 1,000-horsepower 14-cylinder motors. This plane weights about 30 tons, has a 118-foot wingspread and carries a crew of nine.

The unofficial estimate that fifty or more were involved in the $20,016,669 order was based on the cost of those contracted for last year. President Roosevelt asked Congress for $3,875,000 for nine four-motor navy planes, in addition to six provided for in the 1939 budget, so that their unit cost was $430,000 each. It is understood that the unit cost was reduced in the new, larger order.

Both army and navy are experimenting meanwhile with still more giant craft.

The army, seeking to extend the range and load capacity of its bombers, intends to build five planes nearly twice the size of its present seventeen-ton, four-motored bombers. About $4,000,00 was included in pending budget estimates for craft to weigh about thirty-five tons and capable of non-stop flights of well over 5,000 miles.

A single thirty-four-ton bomber, the B-15, has been making experimental flights for the last two years. It took medicines to Chile after an earthquake early this year.

Fifty-two of the four-motor seventeen-ton "fortress" bombers, such as have made round trip good-will flights to South America, were in service or on order when the $300,000,000 Air Corps expansion program was voted by Congress last year.

In recent months orders for a somewhat larger number were divided between two Pacific Coast plants.

Further, the War Department estimates turned over to President Roosevelt are understood to have included provision for 200 bombers of all types, of which a large proportion presumably would be of four motors.

The newest models turned over to the Air Corps are capable of top speeds of more than 300 miles an hour and they can carry five tons of bombs each, aviation circles understand.

To increase their range and power still further, the Air Corps is helping finance experiments with a forty-two-cylinder motor.

Western Flying.

When Consolidated Aircraft Corp. wanted two powerful new type aircraft engines in a hurry from the Pratt & Whitney Co. plant in East Hartford, the Army loaded them on its C-39 transport. Here's the crew after it landed in San Diego: Lieut. T. J. Schofield, Maj. E. R. McReynolds, Lieut. Glenn Holland, welcomed by E. N. Gott of Consolidated and W. G. Chamberlain of Pratt & Whitney.

So the cadets are flying over the United States, Consolidated PT-3A and Stearman PT-13 trainers are doing their eights, spins and rolls over California, Illinois, Nebraska, and Oklahoma. Western Flying

---

Consolidated Aircraft Corporation at San Diego has leased an additional 17 acres adjoining Lindbergh Field, and its present plant site. It is understood that additional manufacturing facilities are to be built on the new site.

Western Flying.

Consolidated, Boeing, and **Stearman** are other western manufacturers sharing the industry's healthy condition.

Evening—8:00 P. M.

T. P. WRIGHT, Chairman

Engineering Experimental Aircraft—W. A. HITE, Vultee Aircraft Div., Aviation Mfg. Corp.

New Method of Developing Prototype Airplanes as Applied to Consolidated Aircraft Corp.'s Model 31—B. W. SHEAHAN, Consolidated Aircraft Corp. (Motion picture: Building PBY airplanes.)

Western Flying.

Another record aircraft development achievement was presented in the second paper of the evening—the story of Consolidated Aircraft Corp.'s sensational Model 31 flying boat. The discussion was presented by B. W. Sheahan, engineer in charge of drafting and personnel at Consolidated and related the phenomenal 10-month progress from authorization to test flight.

The talk of the industry, Consolidated's Model 31 stood revealed by Mr. Sheahan as the first plane to use the new Davis airfoil in its wing; the first plane to fly the Wright 18-cylinder, double-row, 2000 h.p. engines; and far superior to the Consolidated PBY series in performance. A brief table of dimensions in his talk revealed the ship's weigh empty as 25,000 pounds and "a proximately" 50,000 pounds gross.

Much of Mr. Sheahan's paper discussed the development of the Model 31 in less than a year's span as compared to the two to three year development of big flying boats under the standard prototype procedures of government practice.

Motion pictures were shown of the Model 31's first test flight.

Western Flying.

NORMA-HOFFMANN
PRECISI BEARINGS

A line-up at the production meeting: Henry H. Kerr of Bendix, Harold Adams of Douglas, Carl Lienesch of the CAA, Paul Palmer, Vega Airplane Co.; Ben Livers, Consolidated; Barney Vierling, Pennsylvania Central, and Carlos Wood of Lockheed.

DEC 21 1939

ELVE APPROVED FOR REAR ADMIRALS

Selection of Captains and of 80 Commanders for Captaincies Announced

ACCEPTED BY PRESIDENT

Tower, Navy's No. 1 Flier, Is Among Dozen Promoted to the Higher Rank

Special to THE NEW YORK TIMES.

WASHINGTON, Dec. 13—President Roosevelt approved today a navy board's selection of twelve captains for promotion to rear admirals and eighty-one commanders for advancement to captains, most of them officers of the line.

The new admirals include the Chief of Staff of the Fleet, the Chief of Staff of the Battle Force and the Chief of the Bureau of Aeronautics. Admiral Charles P. Snyder, new commander of the Battle Force of the Fleet, was president of the board of selection.

Rear Admiral Towers, Chief of the Naval Bureau of Aeronautics, has been holding that grade temporarily and today's action of the President makes him a permanent flag officer. He is a noted naval aviator with a flying career of nearly thirty years. He was one of Glenn Curtiss's first pupils and he mommanded the first naval flying unit to see foreign service. This was at Vera Cruz in 1914. He has been an aviation attaché of the embassies in London, Paris, Berlin, Rome and the Hague and is a former Chief of Staff of the Aircraft Battle Force. He is 54 years of age.

Similar boards will meet in the next few weeks to choose several hundred officers for promotion to the grande of commander, lieutenant commander and lieutenant.

The prospective appointees are:

Captains to Become Admirals

John Henry Towers, chief of the Bureau of Aeronautics.
Ferdinand Louis Reichmuth, captain of Navy Yard at Washington.
Isaac Campbell Kidd, commanding officer of the Arizona.
Roland Munroe Brainard, director of Ships Movement's Division, office of the Chief of Naval Operations.
Sherwoode Ayers Taffinder, Chief of Staff and Aide to the Commander of the Battle Force, the flagship California.

Captains to Rear Admirals

Alexander Sharp, office of the Chief of Naval Operations.
Aubrey Wray Fitch, commandant of the Pensacola Naval Air Station.
Robert Alfred Theobald, Chief of Staff and Aide to the Staff Commander in Chief, United States Fleet.
Raymond Ames Spruance, commanding officer of the Mississippi.
Henry Kent Hewitt, Inspector of Ordnance in charge of the Naval Ammunition Depot at Puget Sound.
Felix Xerxes Gygax, Director of the Naval Reserve Division Bureau of Navigation.
Charles Alfred Dunn, manager of the industrial department of the New York Navy Yard.

Comanders to Be Captains

Robert Benthan Simons of Charleston, S. C.
Samuel Jacob Zeigler Jr. of Falmouth, Va.
Alfred Eugene Montgomery of Piedmont, Calif.
Robert Stevenson Haggarty of Salem, N. Y.
Ingram Cecil Sowell of Lawrenceburg, Tenn.
James Cary Jones Jr. of Huntsville, Ala.
Daniel Edward Barbey of Portland, Ore.
Elmer Lee Woodside of St. Joseph, Mo.
Glenn Benson Davis of Norwalk, Ohio.
Palmer Hall Dunbar Jr. of San Diego.
Thomas Macy Shock of Coronado, Calif.
Adolf Von Scheven Pickhard of New York City.
Norman Campbell Gillette of Chicago.
George Dickson Hull of San Diego.
Paul Hendren of Chadbourn, N. C.
Chapman Coleman Todd Jr. of Washington, D. C.
Wilbur John Ruble of Eaton, Calif.
John Lesslie Hall Jr. of Williamsburg, Va.
Laurence Toombs Du Boose of Washington, D. C.
Arthur Granville Robinson of Washington, D. C.
Walter Edward Doyle of Cheyenne, Wyo.
Charles Jefferson Parrish of Coronado, Calif.
Oliver Lee Downes of Dover, Del.
Paulus Prince Powell of White Plains, Va.
Samuel N. Moore of Washington, D. C.
Leo Hewlett Thebaud of Washington, D. C.
Henry Albert Seiller of Syracuse, N. Y.
Robert Dudley Kirkpatrick of Dothan, Ala.
Carleton Fanton Bryant of Searsport, Me.
John Henry Buchanan of Bonham, Texas.
Herman Adolph Spanagel of Allentown, Pa.
Laurence Wild of Wilber, Nebr.
Roy Pfaff of Washington, D. C.
Joseph Reasor Redman of Reno, Nev.
Frank Loper Lowe of Pine Bluff, Ark.
Theodore Davis Ruddock Jr. of Annapolis.
George Barry Wilson of Norfolk, Va.
William Keen Harrill of Knoxville, Tenn.
Greene Williams Dugger Jr. of Greensboro, Ala.
John Marie Creighton of Westport, Conn.
Edmund Weidmann Burrough of Oswego, N. Y.
Albert Harold Rooks of Seattle, Wash.
Charles Emery Rosendahl of Cleburne, Texas.
John Gould Moyer of Delphi, Ind.
Robert Ward Hayler of Newport, R. I.
Richard Lansing Conolly of Waukegan, Ill.
William Anderson Corn of Ogden, Utah.
John B. W. Wallen of Manchester-by-the-Sea, Mass.
Thomas D. J. Doyle Jr. of Lincoln, Nebr.
Alexander Rieman Early of Baltimore.
Kemp Catlett Christian of Bogalousa, La.
William Augustin Heard of Sabinal, Texas.
Thomas Shore McCloy of Monticello, Ark.
Lyell St. Louis Pamperin of Oconto, Wis.
Herbert Ross Hein of Coronado.
George Ramford Ashe of Raleigh, N. C.
Robert Paul Hinrichs of Boston.
Pat Buchanan of Bonham, Texas.
Carlos Augustus Bailey of Washington, D. C.
Wells Eldredge Goodhue of Seattle.
Wallace Benjamin Phillips of New York City.
Harry Dickson McHenry of Adams, N. Y.
Eugene Thompson Oates of Baltimore.
Robert Messinger Hinckley of St. Paul.
Eric Lloyd Barr of San Pedro, Calif.
Rivers Johnson Carstarphen of Houston.
Virgil Childers Griffin Jr. of Mobile.
Benjamin Perlman of Pasadena.
James Chaffin Clark of Columbus, Ga.
Robert Archibald Hall of Hampton, Neb.
Guy Chapman Hitchcock of Honolulu.
Anton Bennett Anderson of Bloomfield, N. J.
Schuyler Mills of Austin, Texas.
Forrest Unna Lake of Florence, S. C.
Clarence Gulbranson of River Forest, Ill.
Carroll Morgan Hall of Philadelphia.
Campbell Dallas Edgar of Cazenovia, N. Y.
Paul Seymour Theiss of Indiana, Pa.
Charles Snow Alden of Troy, N. Y.
Otto Marquard Forster of St. Louis.
Leonard Noel Linsley of Baltimore.

Navy Classifies PBY-5 Bombers

Union Dec 27-39

Clearing up misunderstanding as to the precise type of long-range bomber to be built under Consolidated Aircraft corporation's latest contract of $20,016,669, the navy department officially announced yesterday that the contract calls for delivery of more than 100 two-motored PBY-5 type patrol bombers.

Described as improvements of previous type PBY's, the new bombers will increase to more than 300 the number of such craft in service, The Associated Press reported from Washington.

The big flying boats will have a cruising range of 4000 to 5000 miles. They are designed to patrol the navy's long line of observation between island bases in the Pacific and to reinforce hemisphere defense policies.

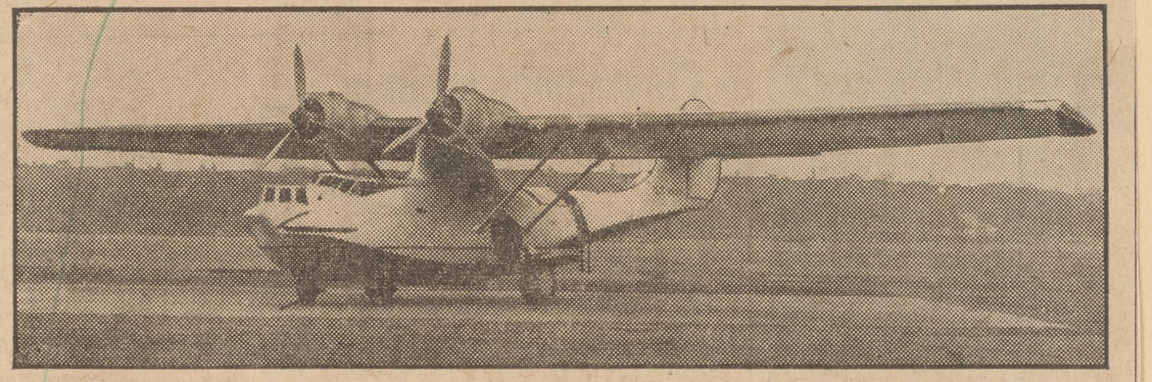
Each air boat will be powered with two 14-cylinder 1000-horsepower Pratt and Whitney engines turning three-blade propellers. They will have a wing span of 104 feet. The hull will be 65 feet long and 18½ feet high. Each will weigh 12 tons and carry a crew of seven officers and men.

We released approx 200 pictures all over world

THE SUNDAY STAR, WASHINGTON, D. C., DECEMBER 17, 1939—PART ONE.

New 'Mystery' Plane Arrives Here for Trials by the Navy

No Technical Questions Get Answers and Cameras Are Kept at a Distance



UNCLE SAM'S NEWEST "MYSTERY" PLANE—The giant patrol bomber, built on the West Coast for the Navy, is shown as it arrived at the Naval Air Station to be flown for performance tests. All technical information is being withheld from the public. —Underwood & Underwood Photo.

The Navy's latest mystery-veiled patrol plane—a squatty, blunt-nosed amphibian—roared into the Naval Air Station at Anacostia yesterday afternoon for a series of performance trials.

The giant ship, built in secret on the West Coast, rolled to a stop on the main runway in view of newsreel cameramen and news photographers, allowed to "shoot" the new craft for the first time.

But even so, the ship still was kept well "under wraps." Cameramen and reporters were required to make their pictures and observations yards away from the plane. Technical information was withheld completely at the station.

Later, Comdr. L. P. Lovette, information officer at the Navy Department, said "absolutely no data" on the plane is to be made public, adding, "we had an extremely difficult time even getting you fellows pictures."

The ship resembled a huge spraddle-legged bug in its position between rows of small scouting planes being tuned up for routine flights.

Lands Without Circling.

The plane landed directly without circling and members of her crew climbed from the ship's interior, partially glass inclosed, to be greeted warmly by Comdr. S. P. Ginder, in charge of the station.

The crew members were Lt. Carl E. Giese, pilot; Lt. Roy Jackson, co-pilot; K. L. Frye, machinist mate, first class; S. C. Dills, machinist mate, second class; J. R. Wilson, chief radioman, and G. R. Tibbs, machinist of the Consolidated Aircraft Corp., builders of the craft.

The final lap of the ship's transcontinental flight—from Pensacola, Fla., to Washington—was completed in 6½ hours and under "excellent flying conditions," according to members of the crew.

A question, "What's her top speed?" brought from the amphibian's pilot the reply:

"I'm sorry. I can't say."

A similar reply was given all queries regarding technical details of the plane's performance. Otherwise, the crew and attaches at the station were smilingly co-operative.

104-Foot Wing Spread.

The crew members shivered for nearly 30 minutes in the cold breeze blowing across the landing field to allow photographers to make pictures of them with the ship in the background. Lt. Comdr. M. E. A. Gouin, who as flight test officer at the station will have charge of the plane's performance trials, answered general questions concerning the transcontinental flight and the pending tests, which he described as "purely routine."

The plane took off from San Diego Thursday and made overnight stops at Randolph Field in Texas and at Pensacola en route to the base here.

The patrol ship is a high-wing type with tricycle landing gear which folds into the body. Its pontoons retract into the ends of the wings which support the two twin Wasp engines. The wing spread is 104 feet and the ship measures 65 feet from its turned-up nose to tail.

Under the amphibian's wings is painted "XPBY-5A," which is no mystery.

In the layman's language that inscription simply means "long-range patrol ship." But that's about as far as the Navy cares to go.

FINANCIAL WORLD. (N.Y.C.
JANUARY 3, 1940

cember 27, 1939

XX

Consolidated Aircraft C

Positions in shares are suitable only for those who can afford to carry a high degree of speculative risk; approx. price, 29. The U. S. Navy—Consolidated's best customer—recently awarded this company a $20 million order and boosted the unfilled order backlog to around $37 million. In the meantime, reports are current that Great Britain may purchase 50 long range patrol bombers from this concern. So far, Consolidated has not received any of the foreign business placed in this country over the past several months. Dividends are likely to be postponed in favor of plant expansion.

Mighty New Bomber Wheeled Out for Flight Test Tune-up

L. A. Times

SAN DIEGO, Dec. 26.—One of America's mightiest Army bombers was wheeled out of the Consolidated Aircraft Corp. factory for the first time today and a corps of technicians prepared it for test flights soon to take place.

The four engines of the sleek, silver-fuselaged craft, said to generate 5000 horsepower, were tuned up in a preliminary phase of testing as plant officials ordered every precaution before the untried plane takes to the air.

Performance far in excess of the Boeing "flying fortresses," most powerful in active army service, is expected of the Consolidated plane, officially designated B-24. The Boeing can fly more than 250 miles an hour over a nonstop range greater than 3000 miles and carries five machine guns.

Exact performance characteristics and armament of the B-24 are closely guarded Army secrets.

One of the Consolidated plane's striking features is its comparatively narrow wingspread for a four-engined ship—only 110 feet. It is known as the "perfect wing," developed by David R. Davis, veteran Los Angeles aeronautical designer and former associate of Donald Douglas. The Consolidated Model 31—largest airboat in the nation—also employs this wing, housing two 2000-horsepower motors.

Consolidated has two contracts, totaling $11,365,000, for an unnamed number of four-engined Army bombers.

---

et in
lane

Aerial War Monster Passes First San Diego Test Flight

L. A. Times

SAN DIEGO, Dec. 29. (Exclusive)—With Brig. Gen. Jacob Fickel, commander of the G.H.Q. First Wing at March Field, and three members of his staff looking on, the Consolidated B-24, America's most advanced Army bomber, was unveiled to public view here today.

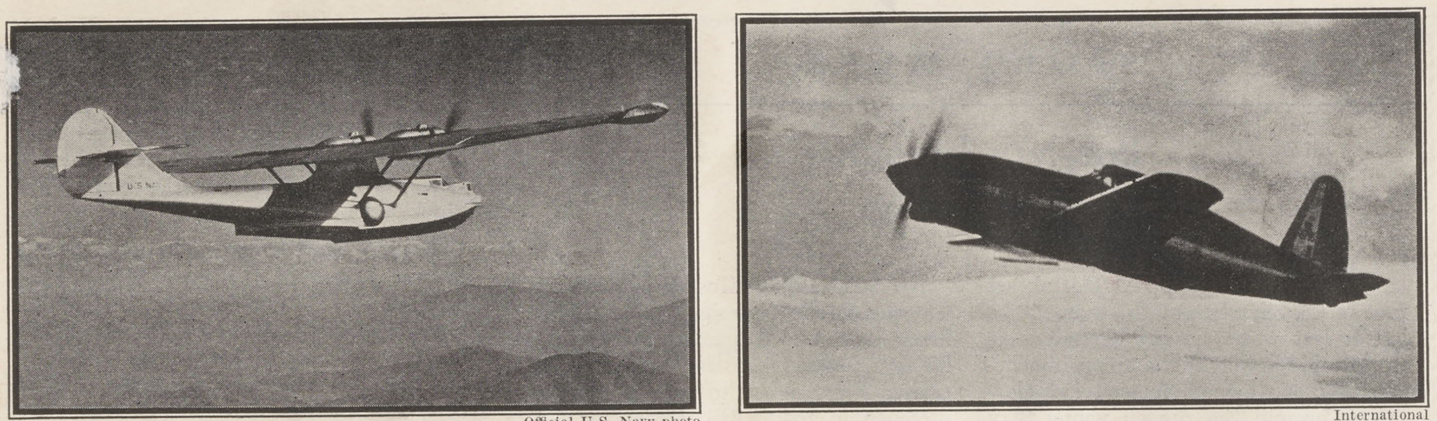
The giant, four-motored craft, a radical advance on the Boeing "flying fortresses," was wheeled out of the plant for the first time Tuesday, but not until today was the plane ready for testing on Lindbergh Field, the municipal airport.

Feeling each of the manifold controls cautiously, the flight crew taxied the ship around the field for a few minutes, and then fully satisfied with every feature of the untried bomber, took the plane up for the first time.

Brig. Gen. Fickel was accompanied here in a Douglas B-18 bomber by Maj. Earl Hoag, executive officer; Maj. Howard Ramey, operations officer, and Lieut. Boyd Hubbard, his aide.

A large crowd of civilians around the rim of the field and on adjacent housetops witnessed the long-heralded debut of the B-24, first of an undisclosed number of similar planes destined to give the United States mastery of the skies.

DECEMBER 25, 1939 37



Official U.S. Navy photo

International

New U.S. speedsters: the Navy's Consolidated XPBY-5A . . . the Army's 420-mile-an-hour Vultee Vanguard

AVIATION

Army Vultee Does 420 M.P.H. and Climbs at Mile a Minute

Aeronautical engineers frequently predict air speeds in excess of 500 miles an hour, but the official world's record of 440 miles an hour, made in 1934 by the Italian Francesco Agello, still stands. And the fastest warplanes known to be in service on the European fronts are the German Messerschmitts and British Supermarine Spitfires, neither of which is much faster than 355 miles an hour.

Into this speed picture last week was projected America's newest fighting plane, a long-snouted Vultee ship called the Vanguard, reported to have tested at almost 420 miles an hour. In addition to turning up enough speed to catch practically anything in the air, the new interceptor-pursuit ship—resembling a bullet—can climb to 40,000 feet at better than a mile a minute and can be maneuvered with the ease of much slower ships, the experts said. Much of this speed results from the use of the new Pratt & Whitney 1,600-horsepower "substratosphere" engine (NEWSWEEK, Sept. 11). When the new Vanguard is delivered to the Army it will mount either a small cannon or an electrically operated machine gun.

Not to be outdone by Army speed, the Navy also boasted a superlative airplane—the largest amphibian ever built. This was the Consolidated XPBY-5A, "12 tons of plane with both landing and flotation gear," which was flown from the factory at San Diego, Calif., to Anacostia, D.C., last week. It is much like the Navy's PBY flying boats which frequently make mass flights to Hawaii.

These two top products enhanced America's already dominant position in the aeronautical world—leadership which has given our aviation industry a backlog of plane orders amounting to $550,000,000. Latest evidences of this boom last week:

¶ Lockheed Aircraft Corp. received a

Mystery Bomber Tested Over City

Union 12-30-39

All information as to its details a carefully guarded military secret, a new army bomber, first of several being built by Consolidated Aircraft Corp., was in flight over San Diego yesterday.

The big multi-motored plane took off at 2:30 p. m., and was in the air for some time. At the Consolidated plant, it was reported that it is not known whether the plane will be in the air again today. The war department has directed that no details as to speed, design, armament or cruising radius be revealed.

Consolidated—known for its amphibian planes — constructed the land bomber to incorporate new features of construction. The test flight was described as successful.

S. D. Plane Firms Boast Backlogs Of 43 Millions

Union Jan 3-40

San Diego's aviation industry starts the New Year with a backlog of more than $43,000,000 in orders, greatest in the history of local plants and during the year employment in this line is expected to reach a new high.

Elsewhere in California plane factories are working on a backlog totaling $180,000,000, much of it war orders from abroad.

However, some of the orders in southern California plants are for commercial craft, it was indicated when Douglas Aircraft at Santa Monica announced it had started work on 40 DC-4 air transports valued at $14,000,000. These are four-engined sky craft, with a top speed of 262 miles an hour, cruising radius of 2000 miles, day capacity of 42 passengers and sleeper capacity of 22. They are equipped with super-charged cabins for high-altitude flying.

San Diego's plane orders, held by Consolidated, Ryan and Solar aircraft companies, are principally for military and naval planes, mostly being built for the U. S. government. Consolidated recently received a $20,016,699 order for flying boats from the navy departbent, bringing its backlog above $40,000,000.

IONS SAN DIEGO, CALIFORNIA, TUESDAY, JANUARY 9, 1940 SECTION A 5 CENTS—75c PER MONTH

NAVY ASKS 200 S.D.-TYPE BOMBERS

Trib Jan 8-40

Air Chief in Texas After S. D. Inspection

Brig. Gen. George H. Brett, chief of the army air corps materiel division, spent last night at El Paso, Tex., after taking off from Lindbergh field yesterday morning. Saturday Brett inspected the Ryan Aeronautical Co. and Consolidated Aircraft Corp. plants, viewing planes under construction at the two plants for the army.

Brett reported that the new four-motored bomber just completed at Consolidated probably will be flown from here to Wright field, Dayton, O., next month for tests. He reported that American aircraft factories have been awarded contracts totaling $120,000,000 for combat, bombing and training planes for the present fiscal year.

Union Jan 11, 40

Plane Factories Employ 28 CCC Graduates

Twenty-eight youths who recently completed a course of instruction in aviation at the Vista civilian conservation corps camp have been employed at the Ryan and Consolidated factories. Eight of the former CCC workers were employed by Ryan and the remainder by Consolidated.

The aviation instructor at the camp is C. Irwin, who is now instructing 16 more students.

Sees Emergency

Union Jan 12-40

H. A. TIEMANN
. . sets cost at $7060.

* * *

Aircraft Work Training Urged

Vocational School Expansion Sought

A proposal to expand the local vocational school to provide training for 3000 men who can be absorbed before July 1 by the local aircraft industry, unanimously was recommended to the San Diego board of education yesterday by chamber of commerce directors.

H. A. Tiemann, vocational school director, told chamber officials that "this emergency involving the training of 3000 local men during the next six months can be met at a cost to the school district of $7060.

200 A WEEK

Donald Frye, personnel director, Consolidated Aircraft Corp., reported that his firm now is employing men at the rate of 200 a week and that the present personnel of 3000 men will be increased by June 1 to 7000 or 7500. Ryan Aeronautical Co., with 600 employes, will add 500 by next June, and the Solar Aircraft Co., with 450 employes, must add 100 by next summer, officials said.

The chamber's education committee, before which Tiemann outlined the plan of meeting the emergency, asked the chamber directors for the recommendation to the board of education.

MAJOR FACTORS

In approving the proposal the board held that three major factors justify the expansion: 1—Hundreds of young San Diegans will be afforded an opportunity to acquire positions in local industry during the next year. 2—Training of local men will prevent the importation of families from other states to establish themselves here. 3—Local aircraft factories prefer to employ San Diego citizens because they believe these men will be more permanent than those who might be attracted here.

Tiemann's recommendation to meet the emergency of training 3000 men for the aircraft industries embodies the addition to the school's

(Continued on Page 2-A, Col. 1)

Aircraft Work Training Urged

(Continued from Page 1)

teaching staff of one supervisor, three instructors, and the allocation of $4000 for equipment.

TOTAL COST

"Fifty percent of the salary expense," Tiemann said, "will be refunded by the federal government on July 1, thereby making the total cost of this expansion to the board of education $7060."

Frye, John Marco of the Ryan firm, and Edmund Price, Solar Aircraft Co. president, attended the directors' session and voiced sympathy with the plan to expand the vocational school.

Will Crawford, superintendent of schools, in a statement yesterday afternoon, declared that "the school administration has done its utmost to meet the vocational training needs in this area."

IMPORTANCE REALIZED

"Your school officials long have realized the importance of voca- tional training and the school [illegible] been devoting its attention to [illegible] paring young people for ente[illegible] the crafts in which job opportunities have been available," Crawford said. "One of the essential needs to a continuation of this successful training work in the vocational school is cooperation from citizens of this community.

"With this cooperation, your schools can continue to meet the vocational training needs."

Consair Silent On Augmented Plane Order

Indicating Consolidated Aircraft Corp. may receive another large order of navy planes, Adm. Harold R. Stark, chief of naval operations, said today the navy planned to obtain 200 more twin-engine long-range bombers of the Consolidated-built type, which flew in a formation of 48 from San Diego to Panama last year, The Associated Press reported today from Washington, D. C.

"Splendid Weapons"

Already 450 of these planes have been procured, or ordered, it was reported.

Stark's statement was made the house naval committee durin discussion of battleships, in whic he said present studies "indicate" that the navy will build 50,000 or 52,000-ton battleships. Larger vessels, he said, are not indicated.

On Dec. 20 Consolidated was awarded a $20,016,699 contract by the navy for an undisclosed number

Continued on Page 4A, Col. 6)

Indicates Gain In S. D.-Type Bombers

CONTINUED FROM PAGE ONE

of planes. Earlier last year, on March 22, the navy department awarded a $4,699,000 contract to the firm. The war department also awarded two contracts to Consolidated during 1939, one for $2,880,000 and the other for $8,485,000.

Stark, in revealing that within 22 months the navy will have 450 long-range bombers towards the goal of 650, was quoted by The United Press as stating that these flying boats will "constitute a perfectly splendid defensive or offensive weapon." The navy now has 250 of these bombers.

Consolidated officials, advised of the press dispatches quoting Stark, said they could make no statement.

Stark's information on the size of battleships contemplated came in response to questions as to what he thought of talk in congressional circles about building super-battleships of 70,000 or 80,000 tons.

Already at Work

Stark also told the house naval committee that the navy planned to obtain 200 more two-engine long-range bombers of the type which flew in a formation of 48 from San Diego to the Panama canal last year. Already 450 of these planes have been procured or ordered.

Stark also revealed that the two battleships for which President Roosevelt last week asked initial funds would be "practically" sister ships of the two 45,000-ton battleships for which congress voted starting funds last year. A house appropriations subcommittee is already at work on the president's latest request.

"Four such ships would be a perfectly splendid, high-speed unit," said Stark. He testified the four vessels were designed to have a speed of 33 knots.

"We are satisfied there is nothing on the ways in any way superior to what we have building or in contemplation," he asserted. Stark's explanation of present construction plans made it plain the navy does not contemplate starting any 50,000 or 52,000-ton ships this year.

Remarking that there had been "much talk" of the advantages of "62,000-ton battleships," Stark said that in his opinion they would be "either too big or not big enough." He did not explain his remark.

"By No Means Asleep"

Most naval officers who have been studying the question closely, he said, "leaned very much toward continuing our own program" and were not in favor of "rushing into something that looks very attractive on paper."

"The navy has not by any means been asleep on this question." The fleet's highest-ranking officer declared.

Comparing the advantages and disadvantages of super-battleships, Stark remarked that while a bigger craft obviously would be superior to an individual smaller ship, it should also be remembered that there is some advantage in numbers.

"A ship can be in only one place at a time," he said, adding that there had been an example of this fact in the south Atlantic recently. He apparently referred to the defeat of the German "pocket battleship" Admiral Graf Spee, by three smaller British cruisers.

Bigger ships, said Stark, would present a great target area for torpedoes, mines, bombs and guns. They would be able to get through the proposed new locks of the Panama canal, but Stark said that if the new locks happened to be jammed, the big ships could not negotiate the waterway at all.

He reported, too, that the navy is experimenting with 18-inch guns for battleships.

Its largest now are 16 inches.

NS SAN DIEGO, CALIFORNIA, TUESDAY, JANUARY 9, 1940 SECTION A 5 CENTS—75c PER MONTH

200 MORE S.D.-TYPE BOMBERS FOR NAVY; 50,000-TON SHIPS

Consair Silent On Augmented Plane Order

Indicating Consolidated Aircraft Corp. may receive another large order of navy planes, Adm. Harold R. Stark, chief of naval operations, said today the navy planned to obtain 200 more twin-engine long-range bombers of the Consolidated-built type, which flew in a formation of 48 from San Diego to Panama last year, The Associated Press reported today from Washington, D. C.

"Splendid Weapons"

Already 450 of these planes have been procured, or ordered, it was reported.

Stark's statement was made to the house naval committee during a discussion of battleships, in which he said present studies "indicate" that the navy will build 50,000 or 52,000-ton battleships. Larger vessels, he said, are not indicated.

WASHINGTON, Jan. 9 (A.P.)—Adm. Harold R. Stark today told congress that the navy is seeking $4,000,000 to carry out much of the proposed improvement program at the tiny Pacific island of Guam which the legislators rejected last year.

Stark's statement caused an outburst of questioning by members of the house naval affairs committee, who fought the Guam project at the session a year ago.

Stark, chief of naval operations, said the request for the funds had been included in the budget for the 14th naval district—the Hawaiian area — and explained that procedure was adopted because the navy did not need any congressional authorization for work in that district.

On Dec. 20 Consolidated was awarded a $20,016,699 contract by the navy for an undisclosed number of planes. Earlier last year, on March 22, the navy department awarded a $4,699,000 contract to the firm. The war department also awarded two contracts to Consolidated during 1939, one for $2,880,000 and the other for $8,485,000.

Stark, in revealing that within 22 months the navy will have 450 long-range bombers towards the goal of 650, was quoted by The United Press as stating that these flying boats will "constitute a perfectly

(Continued on Page 4A, Col. 5)

Calif., Tuesday, January 9, 194

Indicates Gain In S. D.-Type Bombers

CONTINUED FROM PAGE ONE

splendid defensive or offensive weapon." The navy now has 250 of these bombers.

Consolidated officials, advised of the press dispatches quoting Stark, said they could make no statement.

Stark's information on the size of battleships contemplated came in response to questions as to what he thought of talk in congressional circles about building super-battleships of 70,000 or 80,000 tons.

Already at Work

Stark also told the house naval committee that the navy planned to obtain 200 more two-engine long-range bombers of the type which flew in a formation of 48 from San Diego to the Panama canal last year. Already 450 of these planes have been procured or ordered.

Stark also revealed that the two battleships for which President Roosevelt last week asked initial funds would be "practically" sister ships of the two 45,000-ton battleships for which congress voted starting funds last year. A house appropriations subcommittee is already at work on the president's latest request.

"Four such ships would be a perfectly splendid, high-speed unit," said Stark. He testified the four vessels were designed to have a speed of 33 knots.

"We are satisfied there is nothing on the ways in any way superior to what we have building or in contemplation," he asserted. Stark's explanation of present construction plans made it plain the navy does not contemplate starting any 50,000 or 52,000-ton ships this year.

Remarking that there had been "much talk" of the advantages of "62,000-ton battleships," Stark said that in his opinion they would be "either too big or not big enough." He did not explain his remark.

"By No Means Asleep"

Most naval officers who have been studying the question closely, he said, "leaned very much toward continuing our own program" and were not in favor of "rushing into something that looks very attractive on paper."

"The navy has not by any means been asleep on this question." The fleet's highest-ranking officer declared.

Comparing the advantages and disadvantages of super-battleships, Stark remarked that while a bigger craft obviously would be superior to an individual smaller ship, it should also be remembered that there is some advantage in numbers.

"A ship can be in only one place at a time," he said, adding that there had been an example of this fact in the south Atlantic recently. He apparently referred to the defeat of the German "pocket battleship" Admiral Graf Spee, by three smaller British cruisers.

Bigger ships, said Stark, would present a great target area for torpedoes, mines, bombs and guns. They would be able to get through the proposed new locks of the Panama canal, but Stark said that if the new locks happened to be jammed, the big ships could not negotiate the waterway at all.

He reported, too, that the navy is experimenting with 18-inch guns for battleships.

Its largest now are 16 inches.

Trib - Sun Jan 16 - '40

TH

14-YEAR EDUCATIONA' PROGRAM FOR S. D., PLAN TO BE OFFERED NEXT FALL AS AID TO STUDENTS

Inauguration of a new 14-year educational program, supplanting the present 12-year schedule, will be effected at San Diego High school next fall, the board of education announced. The additional two years, a junior college course leading to an associate of arts degree, will be designed to increase the vocational preparation of students "who stay in school because they cannot obtain employment because the demand for trained help in industry does not permit them to learn on the job as their parents did, and because university training is financially impossible to many who are qualified," explained John Aseltine, San Diego High principal, who will act as coordinator for the junior college program.

"Nothing will be changed in the present elementary, junior high or high school divisions of work," Will C. Crawford, superintendent of city schools, said. "We will coordinate the junior college program at San Diego High school with junior college work at State college, the Vocational school and San Diego Evening Junior college. There will be no duplication or competition between the different centers where the junior college program is carried on.

"Our high schools offer general cultural enrichment with some specific training," Aseltine said. "We now must do something for the vocational efficiency of our post-high school youth along the line of his or her bent, at a time when the student is ready for it. If two-thirds of our graduates go to college or into jobs immediately, it is for the other third that we offer needed help in our junior college program."

The board of education notified the chamber of commerce that vocational classes, requested for the training of aircraft workers, have been set up, and their number will be increased "as fast as the industry can supply us with competent teachers."

With two members (Dr. Edward L. Hardy and Jacob Weinberger) in the hospital, the other three members assured Don B. Smith, representing the chamber of commerce, and Donald Frye, personnel director at Consolidated Aircraft Corp., that the board was in full sympathy with training San Diego men for the jobs available at the three plane factories here.

Frye said his plant is hiring 200 men each week until July 1, but has to bring them here from other cities when qualified local men are not available.

Aircraft Class Begins

"We already have in operation the aircraft training school which you ask us to set up," Crawford told him, "but we are handicapped by lack of aircraft teachers. We must get these from your industry, with your cooperation, and at a salary that taxpayers can afford. With such teachers, we can push the program already going in our vocational school. Without them, we can do only the best we can."

The board members present, Mrs. Mildred Hale, O. E. Darnall and Mrs. Mary Fay, also:

Instructed board officers to issue diplomas for the 471 students who will be graduated from local high schools Feb. 2. They include 231 boys and 240 girls.

Approved retirement of 37 teachers who have reached retirement age under the new school pension plan at the close of this semester, after Crawford explained that all were either on leave of absence or on part-time, and that no new teachers would be employed to replace them.

Substitutes Named

Appointed as substitute teachers, or to other posts, E. G. King, J. E. Merk, Jack Warshauer, Wesley P. Heath, Anton J. Richetta, Edward D'Amico, Schurer Moe, Mary L. Jannoch, Frances Tupper, Alice Cole, Marie Johnson, R. A. Vernacchia, Mary E. Walker, Alvin Allen, Mrs. Marian V. Ramsay, Riva Bresler, Muriel Bartlett, Rosalie Maiss, Lowell Davies, Edward Janowsky, Richard C. Hager, Harold R. Hartley, Georgia Stebbins, Wilma Murray, Ethel M. Slayton, James Alexander, Levancha Bauman, Harold Charles, Alice B. Hammer, Hazel Holland, Connie Murphy, R. K. Perkiss, Marjorie Smith, L. R. Stillman, June Beebe, Mildred Epler, J. J. Kalstrom, Julia Knowlton and Marie Clavell.

Appointed W. L. Peterson director of the 1940 summer session.

Awarded to George Kruger on his bid of $2740, contract for constructing an additional room at Euclid school.

Bible Parley Asked

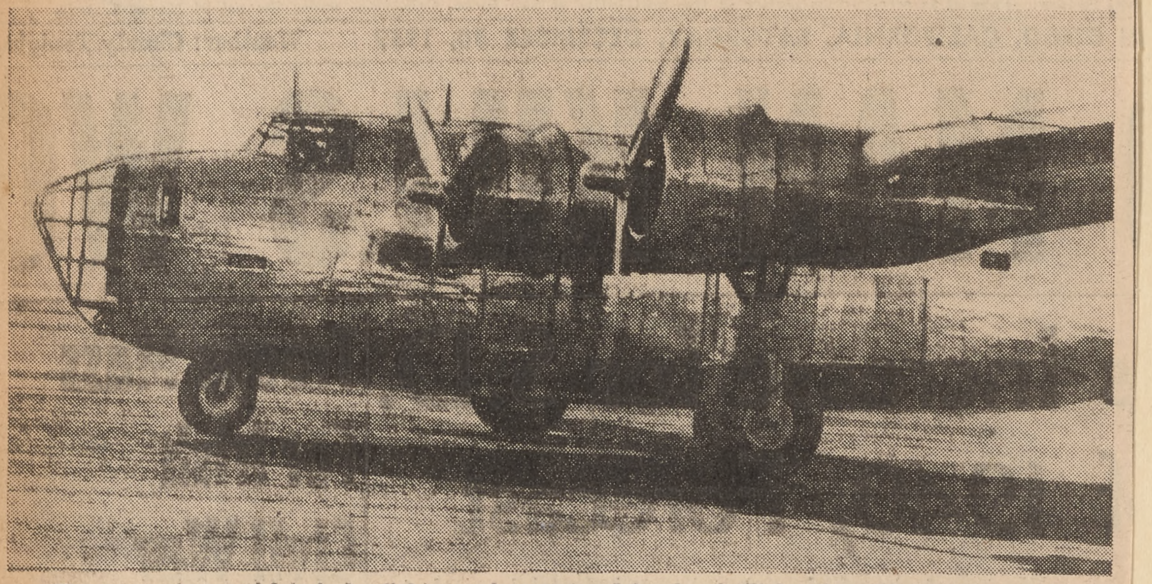
Instructed the clerk to write a letter to the Rev. Orno Tyler, San Diego Ministerial association head, inviting him to call a committee of Jews, Protestants and Catholics together to find a basis of agreement for placing the Bible as a reference in the public schools. It was brought out in discussion that all creeds decry the lack of religious instruction in the schools, but themselves prevent this step by disagreement as to what should be done.

Notified Col. John Sherman that high school students who are members of the national guard will receive leave and an opportunity to make up their work later, although the board requested that national guard officers cooperate by checking on ages of recruits to make sure they are 18 before being accepted.

THE TRIBUNE-SUN, San Diego, Calif., Saturday, December 30, 1

Republican Leaders to Tr

Newest Army Air Fortress, Built in S. D., Tries Wings



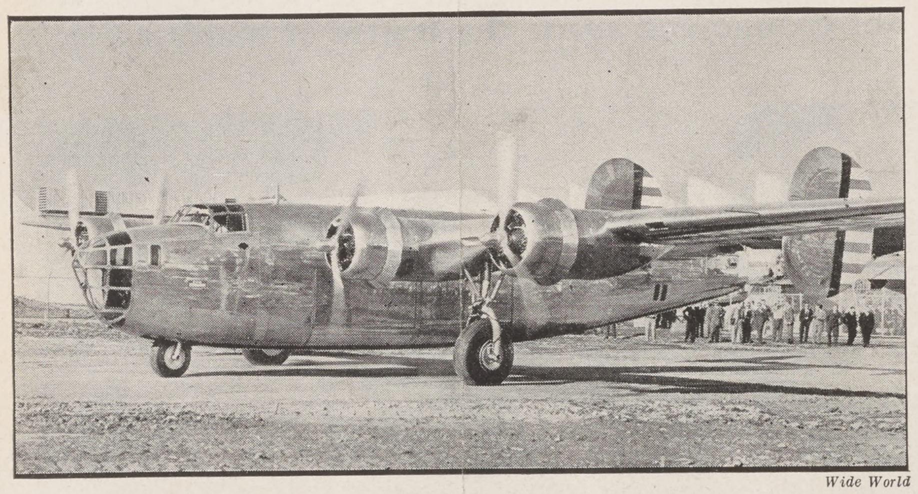
The army air corps' latest sky fighter, a four-motored bomber built by Consolidated Aircraft Corp., is shown here as it prepared to go aloft for initial flight tests. First of an order of an unannounced number of similar bombers, the giant craft was aloft here yesterday afternoon. Details on the plane's armament features and performance ability have not been released by the air corps.—(Photographed by Al Wiese).

---

xx

BUSINESS WEEK Jan 13-40

Consolidated Aircraft Tests a Fast New Army Bomber



Wide World

This Consolidated Aircraft army bomber attained a speed of 325 miles an hour—near top speed for planes of its type—in its initial test flights at San Diego, Calif., recently. Consolidated, builder of navy amphibian and patrol planes, has incorporated several new features in the four-engined, 5,000-h.p. land bomber—including a tricycle landing gear for greater safety, "perfect curve" wings for greater speed.

ARMY AIR CHIEF HOPS IN CONSAIR 4-MOTORED BOMBER ON S. D. VISIT

Union 1-17-40

Flying from Langley field, Va., to the west coast, Maj. Gen. Delos C. Emmons, commanding the army's general headquarters air force, arrived at Lindbergh field yesterday for a brief visit, a feature of which was a flight in the new 4-motored bomber recently completed at the Consolidated Aircraft Corp. plant.

Arriving at 1 p.m., he went with his party to the Consolidated plant. After a tour of the shops they entered the big B-24 plane and had a short flight over the city.

"Nice looking ship," was the general's laconic comment after they landed—and no further statements were forthcoming. The party immediately boarded the big twin-motored Douglas C-42 transport plane and took off for March field, Riverside, their next stop.

Gen. Emmons, a 1909 graduate from West Point, served in the infantry until 1917, when he entered the army's old flight training school at Rockwell field, North island. A year ago, with the rank of brigadier general, he commanded the first wing, GHQ air force, at March field, being promoted to major general last March and sent to Washington, D. C.

Accompanying Gen. Emmons were Capt. Wentworth Goss, his aid; Lt. Col. C. W. Lewis; Maj. Harold A. McGinnis and two mechanics.

Welcoming the party on its arrival here were Capt. W. W. Gross, commanding the local air corps reserve squadron, and Capt. John C. Horton, in command of the air corps training detachment here.

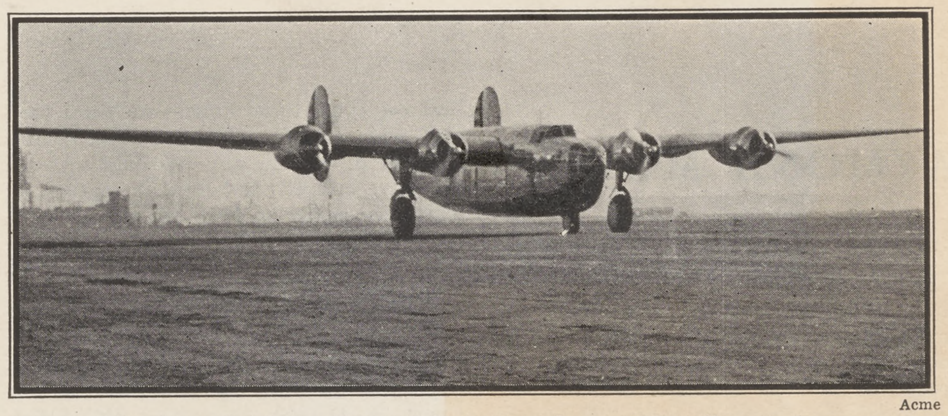
---

wise.)

One of 48 patrol bombers takes off for Panama Jan. 10 on the navy's greatest non-stop massed flight.—(Photo by Harry T. Bishop.)

RECAPITULATION of NEWS of YEAR – DEC. 30 TRIB.

JANUARY 15, 1940 "NEWSWEEK" 59



Acme

The Army's Consolidated B-24 bomber—325 miles an hour

the glass and will silver a 12-foot-square area in 57 seconds, compared with the half hour for conventional processes.

Trends

Steel output for the first full week in 1940 was estimated at 86.1 per cent of capacity, compared with 85.7 in the New Year's week and 51.7 a year ago.

Coffee imports into the United States during 1939 were estimated at 16,104,000 pounds over the 1,900,000,000-pound record set in 1938.

The number of *cremations* during the five years ended Dec. 31, 1938, was recently set at 182,054 by the Cremation Association of America—a 24.7 per cent increase over those reported in the previous five years.

Freight carloadings for the week ended Dec. 30 decreased less than seasonally for the fourth consecutive time; at 550,270 loadings were the highest for that week since 1936.

In squadrons of five, each led by an experienced cross-country pilot, the private flyers hopped from point to point on the trip south, their gasoline and oil being furnished free by the Gulf Oil Corp. At the three-day maneuvers, they watched a program of air acrobatics, military flying, and light-plane racing, attended meetings and social gatherings of fellow air hobbyists, and just sat in the sun. The biggest racing event was the 1,000-mile cross-country flight ending in Miami, for $8,250 in prizes offered by Bernarr Macfadden. The winners of this race were: Homer Rankin, who flew a twin-motored Beechcraft from St. Louis, averaging 234.097 miles an hour; Russell Holderman, pilot of a Lockheed 12 which averaged 208.561 miles an hour from New York, and William M. Cason, who averaged 194.507 miles an hour from Houston, Texas.

¶ American Export Airlines signed a contract for three Vought Sikorsky flying boats for delivery starting next December, if the company gets permission of the Civil Aeronautics Authority to start its proposed Atlantic service. These ships will weigh 58,000 pounds and carry sixteen passengers nonstop across the Atlantic at cruising speeds of about 175 miles an hour.

¶ Pan American Airways, which is opposing American Export Airlines' application for an Atlantic route (NEWSWEEK, Nov. 13, 1939), disclosed it is in the market for a fleet of ocean planes that will dwarf its present 82,500-pound Clippers, the largest commercial air liners now in service. Contracts for planes weighing 125,000 pounds, capable of carrying 50 passengers (present Clipper capacity is 74 on day trips, 40 overnight) to Europe overnight at 300 miles an hour, will be let next summer on the basis of designs to be submitted by aircraft manufacturers.

¶ The Army's newest type bomber, the Consolidated B-24, underwent flight tests last week at San Diego, Calif. This big four-motored ship—5,000 horsepower—is capable of flying about 325 miles an hour with a full bomb load and has a nonstop range of better than 3,000 miles.

L.A. TIMES Jan 16-40

San Diego to Train Aircraft Workers

SAN DIEGO, Jan. 15.—Will Crawford, superintendent of schools, today informed the Board of Education that expansion of facilities of the local vocational schools has been started in response to demands of San Diego aircraft factories for hundreds of aircraft workers.

In six-week courses it is planned to provide by July 1 approximately 2000 young men with sufficient knowledge of aircraft fundamentals to qualify them for positions in the Consolidated, Solar and Ryan plants.

By the end of 1940 these factories expect to increase their pay rolls by 4000 men, to fulfill mounting orders for military aircraft.

Crawford explained that the greatest difficulty encountered in the vocational schools enlargement is the obtaining of competent instructors. He said that teaching salaries cannot equal that offered able technicians by private industry.

Trib. 1-17-40

Emmons Sees City From New Bomber

Maj. Gen. Delos C. Emmons, army general headquarters air force commander, on a brief visit here, yesterday was taken for a short flight over the city in the new four-motored bomber recently completed by Consolidated Aircraft Corp.

Emmons made no comment on the big plane, other than to say: "It's a nice looking ship." After landing at Lindbergh field, members of the officer's party boarded the Douglas C-42 transport plane in which they arrived here and took off for March Field, Riverside.

Emmons, with Capt. Wentworth Goss, aid; Lt. Col. C. W. Lewis, Maj. Harold A. McGinnis and two mechanics, was welcomed at Lindbergh field by Capt. W. W. Gross, local air corps reserve squadron commander, and Capt. John C. Horton, commander of the air corps training detachment here.

L.A. Times

~~ARY~~ JAN. 16, 1940.—[PART I.]

New Warplane Orders Pending

British Negotiations Reported Under Way at Southland Plants

By a Times Staff Correspondent

WASHINGTON, Jan. 15.—Southern California aircraft manufacturers appeared certain today to receive substantial orders for additional fighting planes for the British air force.

Negotiations with a view to placing contracts, primarily for bombers, are said to be proceeding satisfactorily, and there are indications that definite agreements will be reached within the next few weeks.

Large orders are in prospect for Douglas Aircraft Co. of Santa Monica and Lockheed Aircraft Corp. of Burbank, while a smaller order is likely to go to Consolidated Aircraft Corp. of San Diego. There is some chance also that the British will order more ships from North American Aviation, Inc., of Inglewood.

EDISON APPOINTED NAVAL SECRETARY BY THE PRESIDENT

N.Y. Times

Son of Inventor Promoted to Succeed Swanson After Filling the Post for Months

FOR AN 'INVINCIBLE' FLEET

Meanwhile, Officials Discount Talk of 60,000-Ton Warships as an Idle 'Dream'

Special to The New York Times.

WASHINGTON, Dec. 30—President Roosevelt today named Charles Edison, son of Thomas A. Edison, as Secretary of the Navy to fill the post vacant since the death last July 7 of Secretary Claude A. Swanson.

Mr. Edison, who was appointed Assistant Secretary of the Navy on November 17, 1936, had been Acting Secretary since Mr. Swanson's death. His appointment came as no surprise, although it had been expected that the President would await the convening of Congress to announce the selection. The brief White House announcement was as follows:

"The President has appointed Charles Edison as Secretary of the Navy. He gave him a recess appointment today."

Mr. Edison said that he would take the oath of office probably on Tuesday and smilingly told those who called to congratulate him that he did not want to call any one back to work on a government holiday and therefore would wait until the Navy Department opened after New Year's Day.

Plans a Simple Ceremony

Rear Admiral W. B. Woodson, Judge Advocate-General of the Navy, will administer the oath in a ceremony which Mr. Edison said would be a simple one attended by a few friends and officials of the navy and by newspaper men.

Mr. Edison's name probably will be submitted to the Senate for confirmation early in the session, it was said.

As Assistant Secretary Mr. Edison was a member of the "Little Cabinet" as well as one of President Roosevelt's circle of friendly advisers. His office has been a link between the Navy Department and the nation's industries which supply the needs of the naval establishment.

The great navy defense program, involving the expenditure of hundreds of millions of dollars, was entrusted to Mr. Edison, who has been primarily the administrator and the business executive of the navy ever since he took office, due to the almost continuous illness of Mr. Swanson for many months before his death.

Mr. Edison's interest in the navy goes back to the Spanish-American War, when, as a boy of 8 years of age, he was stirred more by the exploits of Admirals Dewey and Sampson than by the amazing inventions of his father. But Mr. Edison was not trained for the sea, being sent instead to Cartaret Academy and later to the Massachusetts Institute of Technology, from which he was graduated as an engineer.

Became Father's Aide in 1913

Mr. Edison joined his father in business in 1913 and soon became the administrator and executive of thirty-three organizations manufacturing, selling and distributing articles invented by the elder Edison.

The younger Edison became a friend of the President soon after the latter's inauguration in 1933 and participated in emergency and business relief programs. He helped to guide the NRA in New Jersey, later was assistant to Donald Richberg, NRA Administrator, and served as regional director of the Federal Housing Administration and as chairman of the New Jersey National Emergency Council.

Mr. Edison, now in his forty-eighth year, believes in an "invincible navy" that can defeat any probable enemy or probable combination of enemies. Such a navy was started under the defense program soon after Mr. Edison took office.

Last month, in making the annual Navy Day address, he said that the navy was now prepared to exercise the vital function of bringing the enemy to "our terms as quickly as possible while keeping him at a safe distance from our shores."

Praised Morale of the Navy

In that address, which was in the nature of a report on the condition of the navy, Mr. Edison declared that the morale of the men was high and the leadership of the officers proven by their accomplishments. He declared then for a continuing navy building program, and for a 100 per cent manning of the ships.

Meanwhile, it was learned today that the navy was not considering any plan involving the construction of battleships of greater than 45,000

Charles Edison Named Naval Secretary; Fills Post Vacant Since Swanson's Death

Continued From Page One

tons. Suggestions that the navy might build giant battleships of from 60,000 to 80,000 tons were not of naval origin and had little, if any, support in the designing, constructing or operating arms of the service, it was stated.

Charles Edison
Times Wide World, 1938

Representative Vinson of Georgia, chairman of the House Committee on Naval Affairs, who on Wednesday will introduce in the House the Administration-approved $1,300,000,000 Naval Expansion Bill, described the agitation for battleships of greater tonnages than ever before conceived as "a pipe dream."

Nothing had happened since the outbreak of the war in Europe, he said, to cause a change in the existing building program. This includes the big expansion bill to be introduced next week and on which public hearings will begin Monday, Jan. 8.

Cites Capacity of Shipyards

Mr. Vinson pointed out that the eight battleships now contracted for, of which six were now under construction, represented about the maximum load which the naval and private yards could take care of, while at the same time carrying forward the construction of other combatant types—aircraft carriers, cruisers, destroyers and submarines, which in their own particular spheres were as vital to the national defense as battleships.

In Mr. Vinson's opinion any two battleships of 35,000 or 40,000 tons would pay bigger dividends than a single giant craft such as had been suggested. The cost of such a ship would certainly be in excess of $100,000,000 and might even go as high as $150,000,000, he said, and to this would have to be added other millions for the building of new drydocks or for increases in the size of old ones, and a further large sum in the event that it was necessary to enlarge the Panama Canal to accommodate such large vessels.

"You can say," Mr. Vinson asserted, "that the navy has made no such suggestion and I am sure I am stating the fact when I say no such proposition is being considered. Furthermore, it would seem that few of our citizens understand the facts of the battleship situation in this country. The fact that the expansion bill which goes to Congress next week provides for no additional battleships seems to have caused a wide misunderstanding of the whole situation."

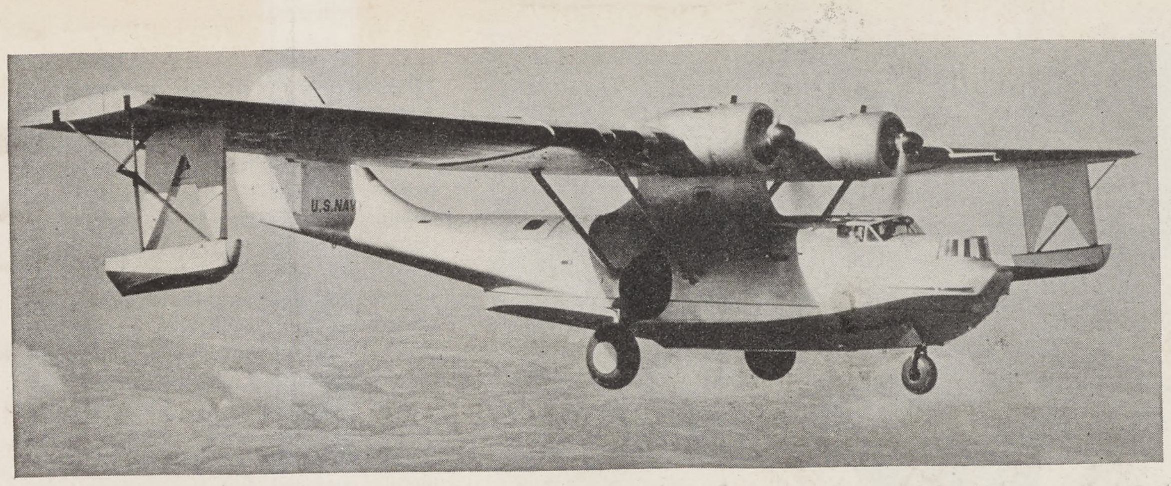
Fleet to Have 18 Battleships

To include battleships in the new expansion bill would be little more than a "silly gesture," in Mr. Vinson's opinion. Under the law as it now stood, he stated, the navy was authorized to construct ten additional battleships in the next five years, which would create a fleet of eighteen new battleships in commission or under construction before Jan. 1, 1946. That, said Mr. Vinson, was why the new expansion bill did not include battleships.

Summed up, the expansion provided for in the new $1,300,000,000 bill would mean the immediate increase of the combatant strength of the navy from 272 to 372 ships. The fleet, with these additions, would comprise eighteen battleships, eleven aircraft carriers, fifty-three cruisers, 202 destroyers, eighty-eight submarines, and an air strength of 6,000 planes. In addition, the bill calls for additional auxiliaries to a total of 125,000 tons.

The first witness to be called by the Naval Affairs Committee will be Admiral Harold R. Stark, chief of naval operations. Admiral Stark will urge passage of the bill in the form in which it will be introduced by Mr. Vinson. Mr. Edison, Rear Admiral John H. Towers, chief of the naval Bureau of Aeronautics, and Rear Admiral C. W. Nimitz, chief of the Bureau of Navigation, also will indorse the measure, it was said today.

Mr. Vinson hopes to conclude hearings in about two weeks and to bring the bill to the House early in February.



Flying Equipment

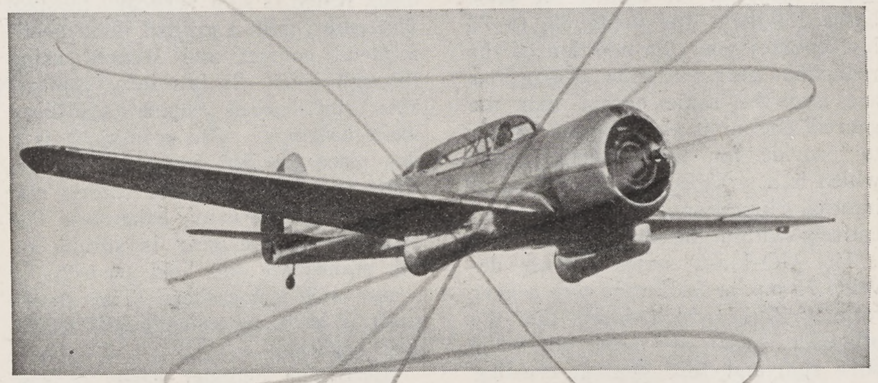
CONSOLIDATED Amphibian

THE latest achievement of the Consolidated Aircraft Corporation is the building of the world's largest amphibian, the Model 28-5A, or as designated by the Navy, the XPBY-5A. The new amphibian is basically the familiar Model 28 twin engine flying boat, better known by its Navy designation, PBY. The change was accomplished chiefly by the addition of a tricycle landing gear which is fully retractable. The side wheels and supporting mechanism, complete with oleo shock struts, retract into wells in the side of the hull. The nose wheel in the retracted position is completely closed over by automatically operated hatches so that no resistance to planing is encountered. All three wheels are operated by a central hydraulic power drive, which handles all the necessary operations in sequence automatically and both the extension and retraction of the gear is controlled by a single lever. Hydraulic pump power is obtained either from the main power plant or from an auxiliary engine, but hand operation is possible, if necessary.

The landing gear has a number of advantages in addition to the obvious one of greatly extending the scope of utility for the Model 28. For rough water taxiing the extended gear greatly assists in control by serving as a sea anchor. More engine power may be applied for short turns without undue acceleration, and turns on the water may be accomplished with far less skidding. Naturally, all danger of scraping the keel on the ramp is eliminated, and no beaching crew is required, for the ship can climb a ramp or beach under its own power. It may operate from sand beaches with no special ramps or facilities for handling.

Since the side wheels are above water when the ship rises on the step, and since automatic means are provided for expelling water from the closed bow wheel hatch before the plane is in the air, the flying trim remains unaffected. Repairs or routine servicing to the landing gear may be made with a minimum of trouble. The beaching gear lugs of the Model 28 have been retained, so that a standard beaching gear may be attached and the plane run out of water. This lifts the landing gear clear of the ground so that any servicing may be carried out.

CURTISS Falcon Trainer



Designed specifically for the training of "fighting pilots" the new, all-metal Curtiss Falcon 22 two-place basic combat and all purpose trainer has been contracted for by a foreign government. The plane has just completed flight tests and while no details concerning its performance are available, it is powered by a Wright Whirlwind 9-cylinder engine, incorporates a wing of special design which provides greatly improved stall and spin characteristics and is equipped with retractable landing gear. Provision has been made for all types of training activities, including gunnery, bombing and instrument flying. This ship is smaller than the well-known Curtiss Hawk 75A pursuit but incorporates the latest in structural design. The wing is of the full-centilever type and is all metal with multiple spars, having an internal structure of longitudinal stiffiners, shear spars and fore and aft bulkheads which are riveted to the skin; and is constructed in five separate units. The center panel contains two fuel tanks with a total capacity of 68 gallons, are located near the center line.

AVIATION FINANCE

REVIEW OF FINANCIAL PICTURE for 1939

By Raymond Hoadley

Who for the past fifteen years has been associated with the financial aspects of the aviation industry. During this time Mr. Hoadley has been writing several financial columns from Wall Street and is Aviation Editor of the New York News Bureau.

As a result of the unprecedented economic development which the aircraft companies experienced last year, the industry now ranks as "big business". The main factor contributing to this marked change in economic stature has been the greatly accelerated demand for military and commercial aircraft witnessed in the past twelve months. This has led to record-breaking shipments and unfilled orders, increased earning power and substantial expansion of production facilities. For the first time the opportunity has come for real assembly line operation sufficient to place the plane, engine and accessory manufacturers in the quantity production field along with most of America's great industries. It is one industrial group that appears assured of near capacity operation extending well into 1941, a unique and enviable position even in times of the most marked prosperity.

Reflecting a portion of this increased demand, shipments in 1939 were the highest in the industry's history. They amounted to around $200,000,000, more than one-third larger than the 1938 total of approximately $135,000,000. Three of the larger companies, Curtiss-Wright, Douglas and United Aircraft together late last fall had unfilled orders somewhat in excess of the estimated $335,000,000 deliveries of the entire industry in the past two years. Unfilled orders now at hand exceed the industry's shipments from 1934 to 1938 inclusive. While 1940 peak production will not be reached until early in the summer, it seems reasonable to expect that shipments this year will range upward from a conservative minimum of $400,000,000, an amount double the record level achieved in 1939.

The following table gives the total shipments and the relative proportion of export shipments from 1929 through 1939.

Aircraft Sales

Year	Total	Export
1929	$71,000,000	$9,100,000
1930	53,300,000	8,800,000
1931	49,100,000	4,800,000
1932	32,800,000	7,600,000
1933	33,200,000	9,100,000
1934	41,500,000	17,400,000
1935	41,500,000	14,200,000
1936	76,800,000	23,800,000
1937	110,000,000	39,400,000
1938	*135,000,000	68,200,000
1939	*200,000,000	*105,000,000

* Estimated.

A glance at the industry's order book easily explains the optimism felt in the trade regarding the 1940 shipment volume. The aircraft companies entered 1939 with a collective backlog of around $160,000,000. At the close of the year unfilled orders had risen to approximately $600,000,000, nearly half of which were received in the fourth quarter. As in 1938 and 1939 more than 50% of current orders are for foreign delivery.

In the first quarter of 1939 nearly $100,000,000 in foreign orders were received. By late summer the U. S. Army Air Corps had placed practically all contracts under its huge new aircraft armament program, the awards totaling $151,800,000 plus options of an additional $7,400,000. The Navy also had contracted for nearly $14,000,000 of its $38,000,000 appropriation for the 1939-40 fiscal year. Then in the early fall the United States air transport companies ordered some $24,000,000 of new equipment. The final buying wave came with the post-embargo orders from the Allied countries, estimated at approximately $170,000,000.

The sharp increase in volume of orders received last year can be seen in the following table showing the approximate unfilled orders of several major companies on December 1, 1939 and on December 31, 1938.

Company	1938	1939
Allison	$500,000	$17,500,000
Aviation Corp.	*.........	11,300,000
Bell	3,675,000	7,500,000
Boeing	14,894,000	27,000,000
Consolidated	2,796,000	18,000,000
Curtiss-Wright	31,000,000	150,000,000
Douglas	23,000,000	76,000,000
Grumman	3,500,000	4,500,000
Lockheed	30,000,000	27,000,000
Martin	13,903,000	53,000,000
No. Amer. Av.	10,914,000	47,000,000
Republic	*.........	10,000,000
United Aircraft	17,464,000	125,000,000
Total	$151,646,000	$573,800,000

* Not available.

Conditioned on continuation of the European War, it would appear that the industry will have an even larger backlog of orders at the close of 1940 than it has today. Great Britain and France, particularly the latter, will wish a continuous supply of American aircraft for the duration of the war. Looking ahead to 1941, France already has taken six month options on equipment for delivery next year. For the present at least, Great Britain probably will not be as large a war customer as France. The English may feel they have two or three months leeway in which to decide just how much outside aid they will require. They are represented as feeling that if the struggle lasts through the winter the chances are that it will be a long war. In that event Great Britain would come into the American market in a more substantial way. European neutrals, such as Norway, Sweden, Holland, Belgium, Portugal, Turkey, etc., are overseas prospects for fairly substantial orders. Italy alone remains an active competitor of the United States for the foreign trade. Air missions from South America are visiting domestic aircraft plants in increasing numbers.

The 1939 Army Air Corps program is not scheduled for completion until June 1941. In the meantime there is every indication that this program will be supplemented by further substantial orders this year. It is expected that Congress also will be asked to increase the authorized strength of the naval air force 100%, or from 3,000 to 6,000 planes, to be built over the next two or three years. A large appropriation will be requested to begin this new program. Within the next three years the United States hopes to have an air force of some 12,000 planes whose annual replacement requirements would be substantially larger than the air defense expenditures of recent years.

Additional transport orders may lag over a rather protracted period due to the rush of orders from the airlines last fall in anticipation of 1940 traffic requirements. However, continued rapid traffic gains, the charting of new routes, and plane retirements may lead to quite substantial purchases again next fall. Eastern Air Lines and American Airlines may follow Pan American Airways, T. W. A. and United Airlines into the four-engine transport field. Foreign airlines will continue to look to the United States for equipment. In the private plane group prospects this year are considered excellent. In the first six months of 1939 private sales amounted to 1,362, as against 602 in the like 1938 period. For the full year it is estimated sales totaled

---

NAVY ORDERS PLANES TO COST $20,000,000

N.Y. TIMES 12/20/39

Consolidated Signs Agreement Covering Production Charges

Special to THE NEW YORK TIMES.

WASHINGTON, Dec. 20—A $20,016,669.60 Navy Department airplane contract was awarded today to the Consolidated Aircraft Corporation of San Diego, the second subject to the 12 per cent profit-limiting provisions of the Vinson-Trammell Act as amended by the National Defense Act. At the same time the Treasury Department stated that it had signed an agreement stipulating how some items may be handled in computing costs.

The agreement provides that, for the period of performance of the contract, Consolidated may charge off as an indirect factory expense the cost of tools consumed during the performance of the contract.

It also provides that the company may charge off as an indirect factory expense the depreciated cost, less salvage value, of buildings which must be demolished in order for the company to carry out the contract. The cost of making the demolition is also to be charged as an indirect factory expense.

With respect to any buildings, machinery, or other similar facilities which must be acquired by the company to perform the contract, the agreement expressly refrains from fixing rates of depreciation and obsolescence, but permits the company to take a deduction with respect to the portion permanently discarded upon completion of the contract.

The allowance permitted with respect to the cost of any facility permanently discarded is subject to adjustments for depreciation and other allowances to the date the facility is discarded and for the salvage value at that time.

The deductions allowed with respect to these new facilities and the demolition of old facilities are not permitted to be treated as direct charges against the contract, but are to be prorated to all new work which the company may have.

BY THE WAY

With BILL HENRY

L.A. TIMES 1-22-40

UP IN THE AIR—Old-time flyers wandering out onto Lindbergh Field at San Diego these days rub their eyes when they see the enormous airplanes which loom up like dinosaurs and pterodactyls alongside normal craft. Business is certainly booming. They have 3500 men working at Consolidated and are likely to have nearly three times that many in another year. The enormous new Army bomber—sh-h-h-h—looks to be super-terrific. It'll carry so many people it'll need an usher to direct traffic. It'll probably upset Boeing's business in "flying fortresses," which will make V. P. Ed Gott feel terrible, no doubt. He used to be with Boeing. They've another enormous seaplane which is the only admiral's flagship in existance and still another that must belong to the guppy family. Makes you feel a bit bloated to look at it.

The Navy's Newest Patrol Bomber Arrives for Tests

T. N. SANDIFER

RATED AS THE WORLD'S LARGEST AMPHIBIAN AIRPLANE, Consolidated Aircraft Corporation's newest patrol bomber for the Navy, the XPBY-5A, roared up from Pensacola Naval Air Station, on December 16, to land without circling at the Anacostia, District of Columbia, air station for a series of performance flights by naval pilots there.

Flown by Lieut. Carl E. Giese, with Lieut. Roy Jackson as co-pilot, both Navy flyers, and with a Navy crew aboard, as well as Consolidated's mechanical expert G. R. Tibbs, the huge ship made the hop in 6½ hours, as the final lap of a transcontinental journey from the West Coast plant where she was built.

Long-range flights over land or ocean are a part of this big plane's heritage. Basically this is Consolidated's Model 28, two-engined flying boat, which in service as a Navy patrol bomber type has established a remarkable series of mass flight records, and other sustained performance records. The latest of the type is therefore a continuation of the series which has made mass flight records to Hawaii, Panama, and over other distances.

This particular plane, which probably will set the pace for others of similar capabilities, is able to fly from San Francisco to New York, and continue on for 1,000 miles beyond, and has other possibilities about which the Navy is decidedly uncommunicative. The new Model 28-5A Amphibian, as it is officially designated, is in fact, decidedly a mystery ship.

A hardy newsman, after the plane's arrival at Anacostia, soon found this out when he asked one of the pilots what his plane's top speed is.

"Sorry, I can't say," was the answer. All the record shows is that the ship took off from San Diego, Calif., December 14, and made overnight stops at Randolph Field, Texas, and Pensacola.

Some commonplace details are available; the ship is a high wing monoplane, all-metal construction, of an approximate gross weight of 12 tons, but capable of taking off with a much heavier load. It has a wing spread of 104 feet, is 65 feet overall, and has wingtip floats which are retractable.

The ship is powered with two Pratt & Whitney *Twin Wasp* engines, but the Navy and its builders are chary of any more detailed facts about technical equipment, including its armament. The big plane has a gun turret forward of the cockpit, in addition to other armament.

* *

A CONSPICUOUS FEATURE OF THE BIG PLANE as it stands on a landing field is one of its most visible points of difference from certain other types of patrol bombers. This is its new tricycle landing gear, which, like its wingtip floats, is retractable and covered by flush metal hatches when the plane is in flight.

This item of the plane's construction is important, so far as the plane's service qualifications are augmented. As will be shown in a detailed explanation of this device, the new landing wheels, in addition to the wing floats, make the plane remarkably versatile. It not only can operate at sea, and with much greater seaworthiness in some respects, because of this land equipment, but can be used inland, as it is equally able to take off from a land station, as from the water.

New Air Bases and Depots Named

PURSUANT TO THE RECOMMENDATIONS of a Board of Officers appointed by the Chief of the Air Corps, new Army Air Corps Stations which are formed, or in the process of being built, have been named as follows:

Northeast Air Base, Holyoke, Mass.—Westover Field, named for the late Maj. Gen. Oscar Westover, former Chief of the Air Corps.

Southeast Air Base, Tampa, Fla.—MacDill Field, named for the late Col. Leslie MacDill, Air Corps.

Bruja Point Air Base, Panama—Howard Field, named for the late Maj. Charles H. Howard, Air Corps.

Puerto Rican Air Base—Borinquen Field, so named because it is the original name of the island of Puerto Rico and its inhabitants were called Borinquenos or Borincuas.

Sacramento Air Depot, Calif.—McClellan Field, named for the late Maj. Hez McClellan, Air Corps.

Ogden Air Depot, Utah—Hill Field, named for the late Capt. Ployer P. Hill, Air Corps.

The plane is thus adapted to service under many different conditions, especially in remote ocean areas where it might be required to operate from some island base, lacking any of the usual requisites for such purpose. First, the landing gear on this new plane makes it independent of a beaching crew. The new ship can climb up a ramp from the water under its own power, if it has landed offshore, or if there is no ramp, it can roll up a beach. It can descend a ramp, or a beach, with perfect safety because of brake power, in the same way.

* *

THIS EQUIPMENT enables the plane to utilize atolls and remote beaches with the same facility as the more formal ramps and landing fields of the mainland. Furthermore, the gear is so constructed, and so operated, as to be easily serviced, and the whole plane is so designed, in fact, as to require a minimum of servicing, and that only such as can be given under active operating conditions.

It will be recalled that the Navy has paid particular attention to the possibilities for its patrol bombers in operating under service conditions from such advance bases as those being developed in Alaska, or those which might be improvised in the Caribbean or far Pacific, for instance. The latest in the series of Consolidated Model 28's therefore appears especially designed for duty of this nature.

Some of the secondary advantages of the landing gear addition relate more to its seagoing qualities perhaps than otherwise. For example, it was found that the extended tricycle gear, when the plane is on the surface of the water, has a stabilizing effect, acting as a sort of sea-anchor, and assisting to control the big hull when in open rough water, or facilitating the approach to a landing ramp or beach, against the wind.

In making turns within a short radius on open water, the pilot, by extending his landing wheels, acquires a sort of centerboard device which checks skid tendencies, and permits application of more engine power in turns, without undue acceleration.

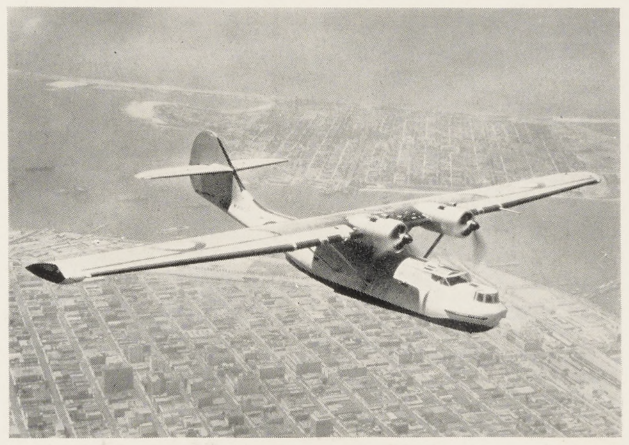
* *

THIS TRICYCLE LANDING GEAR consists of a single wheel forward, with two aft. All three wheels are retractable by operation of a single lever, the wheels, supporting mechanism, including oleo shock struts, all disappearing into the hull, in wells which are covered by automatically closing hatches. When retracted, the hull presents a smooth planing surface, and as noted earlier, even the wingtip floats, for water use, are retractable.

SHELL TRADEMAKER

Dec. 1939

Shell Shots . . . WORLD EXPERIENCE

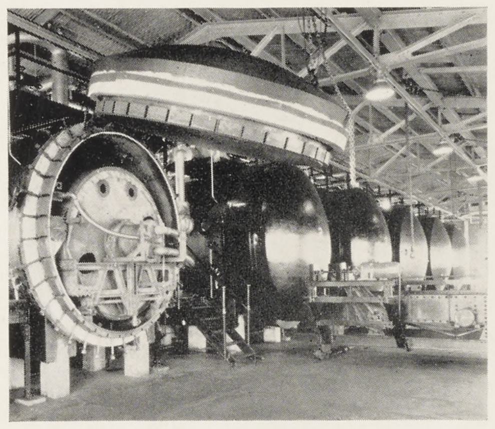


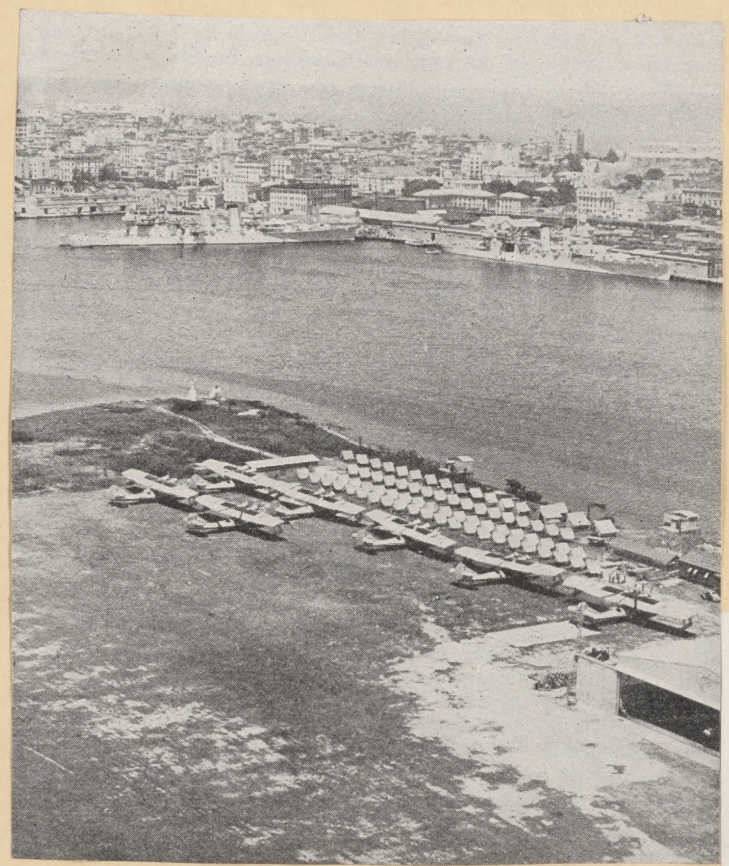
LEFT. Manufactured in San Diego, California, by the Consolidated Aircraft Corporation, this giant flying boat was flown to England for delivery. Shell Aviation gasoline, of course, was used on the long-distance delivery flight.

●

BELOW. A landmark well-known to most Londoners is this attractive building, Shell-Mex House, situated on the Thames Embankment in the Heart of the British Empire.

BELOW. The huge machines pictured immediately below are rotary wax filters used in removing wax from oil. The giant machines are an important part of the modern Shell Refinery at Wood River, Illinois. At the right below is shown a Shell Service Station in Trinidad, off the coast of Venezuela in South America. Even in the tropics, Shell Stations are distinguished by their attractive appearance.





AMERICA PAYS FOR DEFENSE to keep Europe's war away, but that makes jobs for U. S. citizens. Ask a Harvard economist if it creates wealth. UPPER LEFT, Navy pitches camp in Puerto Rico, "Gibraltar of the Atlantic," to start its $10,000,000 airbase. Notice the seven PBY boats which daily patrol the mainland coast under the Neutrality law. BELOW, Future fighters of the Air Corps in caterpillar harness start for a training spin. RIGHT, Douglas hires 1600 men and women, breaks all its employment records, heads for a payroll goal of 12,000 by January; 17,000 by June, 1940. Aviation 12/39 over 3,000 planes. Private plane makers may soon become substantial factors in military training plane production.

The integrated companies—those making planes, engines and propellers—are the largest immediate beneficiaries from war orders. Curtiss-Wright and United Aircraft head this small group. The engine companies, being comparatively few in number, occupy a commanding position in the industry today. General Motor's Allison Engineering Co. is fully occupied with its large Army order. With respect to war orders, France and Canada are more dependent on the United States for motors than for planes.

Along with the record shipments and unfilled orders, the forthcoming annual reports of the aircraft companies will reveal 1939 earnings well ahead of those of the preceding year. Exceptions to this general statement among primary companies may be Bell, Boeing, Consolidated and Republic Aircraft, due to small shipments and large charge-offs in the case of Boeing. All four companies enter 1940 with substantially larger backlogs than a year ago. There were many instances last year where company earnings were the largest on record. Notable in this respect were Curtiss-Wright, Douglas, Lockheed, Martin, North American Aviation and United Aircraft. The Glenn L. Martin Co. experienced its best earning power in the fourth quarter. The others, as shown in the earnings table below, earned more in the first nine months of 1939 than in the twelve months of record earnings in 1938.

Net earnings of several major units in the industry for the first nine months of 1939, as compared with the full year of 1938, are contained in the following table.

Company	1939	1938
Boeing	†$2,606,100	†40,700
Curtiss-Wright	4,543,000	3,599,000
Douglas	2,382,000	2,147,000
Lockheed	*509,000	442,000
Martin	1,514,000	2,349,000
No. Am. Aviation	5,050,000	1,904,000
United Aircraft	5,799,000	5,426,000

† deficit.
* six months ended June 30, 1939.

Profits margins on sales for the primary companies averged substantially higher in 1939 than in other recent years. This may be attributed mainly to heavy deliveries for export on which the profit margin is usually higher than on domestic sales. Other factors in some cases were smaller charge-offs taken for the purpose of writing down the cost of new models, improvement in manufacturing methods and the higher efficiency and lower unit costs that naturally accompany larger production schedules. Until the arms embargo was repealed, it seemed likely that profit margins this year would trend lower due to the large deliveries slated for the United States Government. Profits on aircraft contracts placed with the Army and Navy are restricted to 12%. They have rarely, if ever, reached this maximum in the past and are unlikely to in the near future, although current restrictions are more liberal in several particulars than those formerly obtaining. However the recent wave of foreign buying indicates that profit margins this year will at least approximate 1939 levels. A gain is usually shown in the year following substantial plant expansion. This may augur well for increased profit per dollar sale in 1941.

Increased earnings this year have resulted in more and larger dividend payments to aircraft stockholders. Dividends declared by ten aircraft companies in 1939 (including only the Sperry Corp. in the accessory group) aggregated $20,500,000 as compared with $11,815,000 dispensed by eight companies in 1938, $6,980,000 by eight companies in 1937 and $3,780,000 by three companies in 1936. Initial dividends were declared by Lockheed and the Glenn L. Martin Co. For the first time Curtiss-Wright paid the full $2 a share to which the Class A stockholders are entitled in any given year before common dividends may be declared. North American Aviation, Sperry and United Aircraft increased their dividend disbursements for the third consecutive year. Douglas duplicated its 1938 payment of $3 a share. As a rule the aircraft companies do not establish regular dividend rates or make quarterly payments. Most dividend policies in the industry call for midyear and year-end payments or only one year-end declaration.

With some of the smaller companies becoming more firmly established and several companies having orders booked ahead from twelve to eighteen months, prospects are that somewhat larger dividend payments may be witnessed this year. The outlook for materially higher profits may permit the inauguration of dividends on the 7,429,000 shares of Curtiss-Wright common stock. Most companies probably will continue to plow back a sizeable portion of earnings into development work, plant improvement and working capital to finance an increased volume of business. Lockheed, for example, is understood to be using a substantial share of recent earnings from military deliveries to expand its transport building division.

From its inception in 1922 up through 1937 Douglas Aircraft paid out only 28.3% of its earnings in dividends, retaining the balance for plant expansion and the development of 31 experimental airplanes. Since the latter part of 1938 a more liberal dividend policy has been followed, it being felt that the company had reached a financial position where a major portion of profits might be distributed to shareholders. As company officials recently stated that no further plant expansion was contemplated in the near future, it appears likely that stockholders will share liberally in the record earnings that appear in prospect this year.

Early in 1939 there was a wave of plant expansion which by midyear had increased the floor space of plane factories by 18% and engine factories by 32%. This increase in facilities was undertaken in anticipation of the new Army aircraft program then before Congress. Large export orders held by a few companies were also a consideration. The major portion of this expansion program was publicly financed, a number of companies going into the capital markets with offerings of preferred or common stock.

Large scale foreign war orders for rush delivery were the immediate reason for a second and larger wave of plant and equipment expansion in the fall. In the background was the feeling, held in both trade and military circles, that further expansion was desirable from the standpoint of national defense. In recognition of the added protection that a highly geared aircraft manufacturing industry affords the air forces of the nation, the tax agencies of the federal government are expected to make liberal allowances for the rapid depreciation of new plant and equipment which may be linked in with the national defense program.

So far the major part of the expansion activity which began late in 1939 has been financed from company working capital and advances from the Allied governments. There is some additional expansion under consideration by several companies which may result in public financing this year, on a larger scale than has been witnessed in the recent past and befitting the needs of a rapidly growing and more seasoned industry. Stockholders of Boeing Airplane Co. recently approved an increase in the company's authorized capitalization and directors have under consideration an offer of rights to shareholders to subscribe to additional stock. Boeing arranged bank loans last fall to meet working capital needs but its directors feel that funds for working capital and plant expansion should be provided principally through equity capital rather than large bank loans. Should a major unit like Boeing take the lead in entering the capital markets, there are numerous other aircraft companies that are likely to follow suit, including one or more of the private plane companies that have had notable gains in sales volume in the past year.

Companies that have taken large war orders have been at pains to secure provisions in the contracts which will protect the industry, as far as possible, from a short but severe deflationery period that conceivably might follow an early peace. The bulk of war orders received so far are non-cancellable in the event the war is terminated before deliveries are made. In some instances surcharges may be levied on each unit delivered to permit the full depreciation of war order plant expansion in one or two years. The industry is firmly convinced that the war will stimulate the peacetime use of the airplane.

The change from small order to quantity production brings with it new problems which must be successfully met in the next few months if, in fact, 1940 is to be the industry's "banner year". In such a sudden step-up in production bottlenecks may threaten in the procurement of machine tools, accessories and parts. Already there has been some difficulty in accelerating the delivery of such materials as aluminum alloy sheet, extrusions, castings and steel. With many factories doubling or trebling their forces in a few months time, the available supply of skilled and semiskilled labor may run low. Some of the large foreign contracts, while protecting the companies against rising material and labor costs, include penalties if deliveries are delayed beyond specified dates.

Recent expansion has brought the industry to a point where, according to a survey by the Aeronautical Chamber of Commerce, production capacity is estimated at 15,000 planes a year, nearly three times as great as the 5,500 planes capacity on January 1, 1939. Engine capacity is estimated at 16,000 units and it is predicted that motor builders will be able to produce at an annual rate of 25,000 units later this year.

Thus, after the false start of the 1920 boom, the industry has, in the short span of twenty years reached a sound maturity as it takes its place in "big business".

NAVY ORDERS PLANES TO COST $20,000,000

N.Y. TIMES 12/21/39

Consolidated Signs Agreement Covering Production Charges

Special to THE NEW YORK TIMES.

WASHINGTON, Dec. 20—A $20,016,669.60 Navy Department airplane contract was awarded today to the Consolidated Aircraft Corporation of San Diego, the second subject to the 12 per cent profit-limiting provisions of the Vinson-Trammell Act as amended by the National Defense Act. At the same time the Treasury Department stated that it had signed an agreement stipulating how some items may be handled in computing costs.

The agreement provides that, for the period of performance of the contract, Consolidated may charge off as an indirect factory expense the cost of tools consumed during the performance of the contract.

It also provides that the company may charge off as an indirect factory expense the depreciated cost, less salvage value, of buildings which must be demolished in order for the company to carry out the contract. The cost of making the demolition is also to be charged as an indirect factory expense.

With respect to any buildings, machinery, or other similar facilities which must be acquired by the company to perform the contract, the agreement expressly refrains from fixing rates of depreciation and obsolescence, but permits the company to take a deduction with respect to the portion permanently discarded upon completion of the contract.

The allowance permitted with respect to the cost of any facility permanently discarded is subject to adjustments for depreciation and other allowances to the date the facility is discarded and for the salvage value at that time.

The deductions allowed with respect to these new facilities and the demolition of old facilities are not permitted to be treated as direct charges against the contract, but are to be prorated to all new work which the company may have.

BY THE WAY

With BILL HENRY

L.A. TIMES 1-22-40

UP IN THE AIR—Old-time flyers wandering out onto Lindbergh Field at San Diego these days rub their eyes when they see the enormous airplanes which loom up like dinosaurs and pterodactyls alongside normal craft. Business is certainly booming. They have 3500 men working at Consolidated and are likely to have nearly three times that many in another year. The enormous new Army bomber—sh-h-h-h—looks to be super-terrific. It'll carry so many people it'll need an usher to direct traffic. It'll probably upset Boeing's business in "flying fortresses," which will make V. P. Ed Gott feel terrible, no doubt. He used to be with Boeing. They've another enormous seaplane which is the only admiral's flagship in existance and still another that must belong to the guppy family. Makes you feel a bit bloated to look at it.

The Navy's Newest Patrol Bomber Arrives for Tests

T. N. SANDIFER

RATED AS THE WORLD'S LARGEST AMPHIBIAN AIRPLANE, Consolidated Aircraft Corporation's newest patrol bomber for the Navy, the XPBY-5A, roared up from Pensacola Naval Air Station, on December 16, to land without circling at the Anacostia, District of Columbia, air station for a series of performance flights by naval pilots there.

Flown by Lieut. Carl E. Giese, with Lieut. Roy Jackson as co-pilot, both Navy flyers, and with a Navy crew aboard, as well as Consolidated's mechanical expert G. R. Tibbs, the huge ship made the hop in 6½ hours, as the final lap of a transcontinental journey from the West Coast plant where she was built.

Long-range flights over land or ocean are a part of this big plane's heritage. Basically this is Consolidated's Model 28, two-engined flying boat, which in service as a Navy patrol bomber type has established a remarkable series of mass flight records, and other sustained performance records. The latest of the type is therefore a continuation of the series which has made mass flight records to Hawaii, Panama, and over other distances.

This particular plane, which probably will set the pace for others of similar capabilities, is able to fly from San Francisco to New York, and continue on for 1,000 miles beyond, and has other possibilities about which the Navy is decidedly uncommunicative. The new Model 28-5A Amphibian, as it is officially designated, is in fact, decidedly a mystery ship.

A hardy newsman, after the plane's arrival at Anacostia, soon found this out when he asked one of the pilots what his plane's top speed is.

"Sorry, I can't say," was the answer. All the record shows is that the ship took off from San Diego, Calif., December 14, and made overnight stops at Randolph Field, Texas, and Pensacola.

Some commonplace details are available; the ship is a high wing monoplane, all-metal construction, of an approximate gross weight of 12 tons, but capable of taking off with a much heavier load. It has a wing spread of 104 feet, is 65 feet overall, and has wingtip floats which are retractable.

The ship is powered with two Pratt & Whitney *Twin Wasp* engines, but the Navy and its builders are chary of any more detailed facts about technical equipment, including its armament. The big plane has a gun turret forward of the cockpit, in addition to other armament.

✣ ✣

A CONSPICUOUS FEATURE OF THE BIG PLANE as it stands on a landing field is one of its most visible points of difference from certain other types of patrol bombers. This is its new tricycle landing gear, which, like its wingtip floats, is retractable and covered by flush metal hatches when the plane is in flight.

This item of the plane's construction is important, so far as the plane's service qualifications are augmented. As will be shown in a detailed explanation of this device, the new landing wheels, in addition to the wing floats, make the plane remarkably versatile. It not only can operate at sea, and with much greater seaworthiness in some respects, because of this land equipment, but can be used inland, as it is equally able to take off from a land station, as from the water.

The plane is thus adapted to service under many different conditions, especially in remote ocean areas where it might be required to operate from some island base, lacking any of the usual requisites for such purpose. First, the landing gear on this new plane makes it independent of a beaching crew. The new ship can climb up a ramp from the water under its own power, if it has landed offshore, or if there is no ramp, it can roll up a beach. It can descend a ramp, or a beach, with perfect safety because of brake power, in the same way.

New Air Bases and Depots Named

PURSUANT TO THE RECOMMENDATIONS of a Board of Officers appointed by the Chief of the Air Corps, new Army Air Corps Stations which are formed, or in the process of being built, have been named as follows:

Northeast Air Base, Holyoke, Mass.—Westover Field, named for the late Maj. Gen. Oscar Westover, former Chief of the Air Corps.

Southeast Air Base, Tampa, Fla.—MacDill Field, named for the late Col. Leslie MacDill, Air Corps.

Bruja Point Air Base, Panama—Howard Field, named for the late Maj. Charles H. Howard, Air Corps.

Puerto Rican Air Base—Borinquen Field, so named because it is the original name of the island of Puerto Rico and its inhabitants were called Borinquenos or Borincuas.

Sacramento Air Depot, Calif.—McClellan Field, named for the late Maj. Hez McClellan, Air Corps.

Ogden Air Depot, Utah—Hill Field, named for the late Capt. Ployer P. Hill, Air Corps.

✣ ✣

THIS EQUIPMENT enables the plane to utilize atolls and remote beaches with the same facility as the more formal ramps and landing fields of the mainland. Furthermore, the gear is so constructed, and so operated, as to be easily serviced, and the whole plane is so designed, in fact, as to require a minimum of servicing, and that only such as can be given under active operating conditions.

It will be recalled that the Navy has paid particular attention to the possibilities for its patrol bombers in operating under service conditions from such advance bases as those being developed in Alaska, or those which might be improvised in the Caribbean or far Pacific, for instance. The latest in the series of Consolidated Model 28's therefore appears especially designed for duty of this nature.

Some of the secondary advantages of the landing gear addition relate more to its seagoing qualities perhaps than otherwise. For example, it was found that the extended tricycle gear, when the plane is on the surface of the water, has a stabilizing effect, acting as a sort of sea-anchor, and assisting to control the big hull when in open rough water, or facilitating the approach to a landing ramp or beach, against the wind.

In making turns within a short radius on open water, the pilot, by extending his landing wheels, acquires a sort of centerboard device which checks skid tendencies, and permits application of more engine power in turns, without undue acceleration.

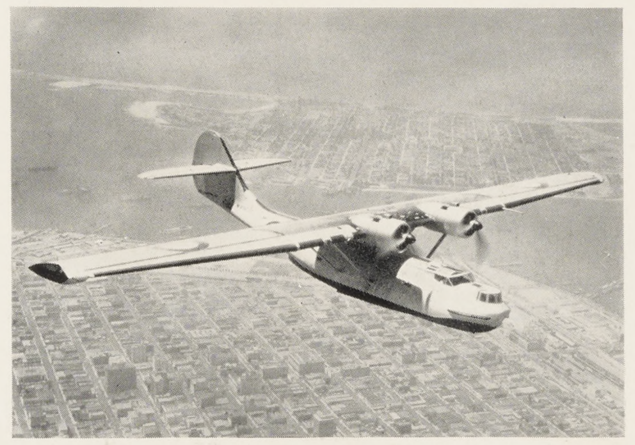
✣ ✣

THIS TRICYCLE LANDING GEAR consists of a single wheel forward, with two aft. All three wheels are retractable by operation of a single lever, the wheels, supporting mechanism, including oleo shock struts, all disappearing into the hull, in wells which are covered by automatically closing hatches. When retracted, the hull presents a smooth planing surface, and as noted earlier, even the wingtip floats, for water use, are retractable.

SHELL TRADEMAKER

DEC. 1939

Shell Shots ... WORLD EXPERIENCE

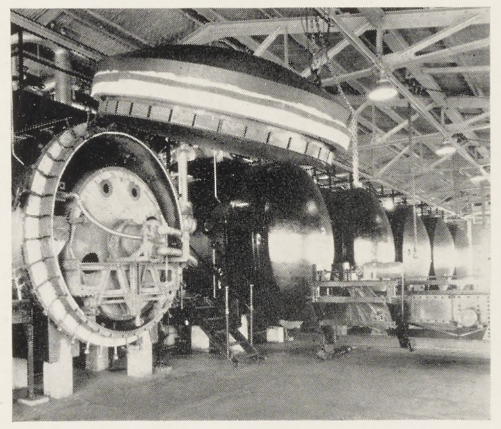


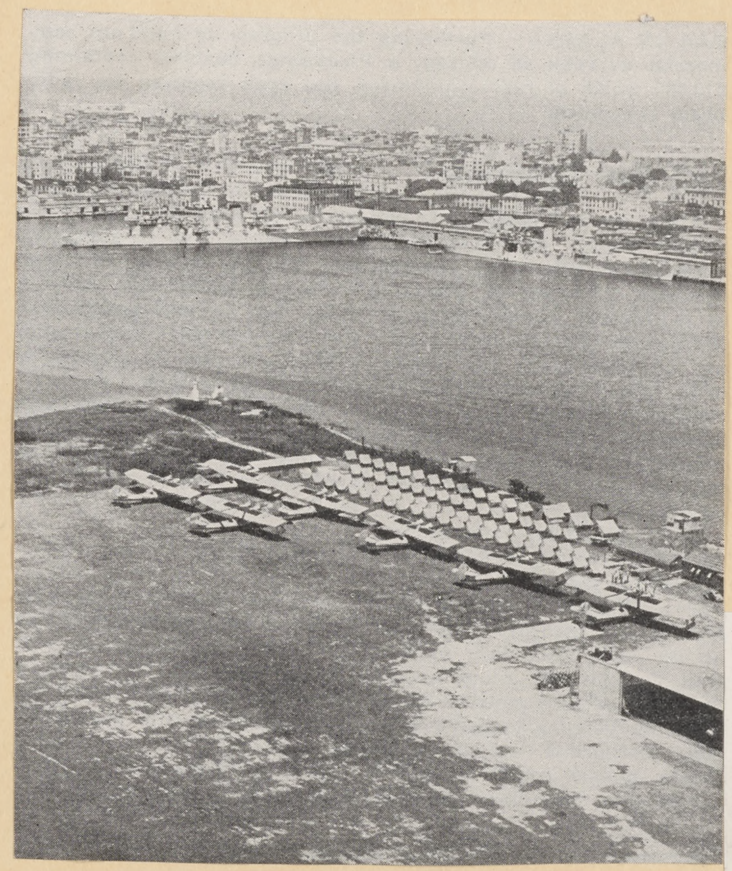
LEFT. Manufactured in San Diego, California, by the Consolidated Aircraft Corporation, this giant flying boat was flown to England for delivery. Shell Aviation gasoline, of course, was used on the long-distance delivery flight.

●

BELOW. A landmark well-known to most Londoners is this attractive building, Shell-Mex House, situated on the Thames Embankment in the Heart of the British Empire.

BELOW. The huge machines pictured immediately below are rotary wax filters used in removing wax from oil. The giant machines are an important part of the modern Shell Refinery at Wood River, Illinois. At the right below is shown a Shell Service Station in Trinidad, off the coast of Venezuela in South America. Even in the tropics, Shell Stations are distinguished by their attractive appearance.





AMERICA PAYS FOR DEFENSE to keep Europe's war away, but that makes jobs for U. S. citizens. Ask a Harvard economist if it creates wealth. UPPER LEFT, Navy pitches camp in Puerto Rico, "Gibraltar of the Atlantic," to start its $10,000,000 airbase. Notice the seven PBY boats which daily patrol the mainland coast under the Neutrality law. BELOW, Future fighters of the Air Corps in caterpillar harness start for a training spin. RIGHT, Douglas hires 1600 men and women, breaks all its employment records, heads for a payroll goal of 12,000 by January; 17,000 by June, 1940. Aviation 12/39

"AVIATION" Jan. 1940

LOFTING *Speeds* PRODUCTION *for* CONSOLIDATED

By Thomas J. Coughlin
Chief Loftsman
Consolidated Aircraft Corporation

Production efficiency begins long before the shop begins cutting up material. Here's how one big West Coast company simplifies things for the shop by adopting an old ship-yard technique.

With the urgent need for aircraft manufacturers to speed up the processes of aircraft building from the inception of design to the delivery of the finished product, methods are being sought constantly which will bring about this result. While the urge is desirable, the means taken to accomplish this end must be aligned with good engineering and must produce sound results or it is wasted effort.

Quite often there is available a supply of skilled workmen who may be 'poured on' to the mechanical phase of constructing and assembling the first of a new design airplane. The full brunt of three shifts of men may be brought to bear if necessary. But this means of rushing completion of the initial airplane is generally not applicable to that phase of the work where the major slow-up occurs, which is in the intermediate work between engineering stage and shop, when a multitude of detail drawings and the construction of necessary tools, forms and layouts are concerned. It is here that there is a tremendous amount of drafting labor and shop conversion work which often has been the "bottle-neck" at the beginning of production. The very nature of this phase of preliminary production work has resulted in considerable pressure being built up at this stage, tending to hold back orderly progress to smooth production.

The lofting approach to this phase of development has proved a boon in relieving this pressure, since it materially speeds up the whole transition process of converting an engineering conception into direct factory aids for workmen, such as tools and fixtures. The method previously accepted has been to transmit to the shop engineering directions through numerous detail drawings. The drafting problem alone, while using this procedure, can become tremendous, especially in the development of large aircraft.

Prior to the adoption of lofting methods, the recording of a shape on paper by the engineering department was usually done on a smaller scale than the actual. The shop had to translate each such drawing back to full scale before constructing any needed forms, assembly boards, fixtures or other necessary shop aids. Variations would result from individual interpretations, particularly where a faired line or double curvature was involved. Difficulties consequently followed in assembly and elsewhere.

Lofting, being a more natural intermediary, and particularly because it is conducted first hand and to full scale, not only eliminates a large percentage of the difficulties experienced with previous methods, but materially reduces the number of engineering drawings ultimately necessary.

Lofting has another advantage over the older method and a rather subtle one, in that it brings the engineering personnel into a more direct contact with shop processes and problems. The full value of this factor is difficult to estimate, but it is considerable. There are many men in aircraft engineering departments who have not had the advantage of shop experience. Due to the current urgent need of trained technical men they are often snatched up at the completion of their formal education and set to work without an intermediate shop phase. Lofting lifts the fog that is apt to descend upon such embryo engineers who have not had their training mellowed through shop experience. The more intimate shop contacts afforded through the medium of lofting serves as a refreshing stimulant for engineers and draftsmen alike, and opens another important bond between shop and engineering. This, of itself, results in closer cooperation and a speeding up of the transition phase from initial engineering to line production.

Above: A general view down the Consolidated lofting department.

Lofting as applied to aircraft production follows the practise used in ship building. This applies to laying out of hull or fuselage bulkheads, beltframes, etc., on a full size scale. In addition, aircraft lofting is applied to the wing, tail, furnishings and armament groups.

The work done by lofting for each group may be broken down into the following categories:

1. Lines: The actual laying out of the shape of hull, fuselage, wing, tail, etc.
2. Assembly Boards: Laying out the assembly boards from which work may begin immediately.
3. Templates: For layout, drilling, marking, shaper work, etc.
4. Form blocks: Wood or metal, for forming two-way curvatures and odd shapes.
5. Drop Hammers: All parts laid out for $\frac{1}{8}$th inch or $\frac{5}{16}$ inch shrink for drop hammer work.
6. Flat patterns.

Briefly, here is how lofting works: Starting with the preliminary design of the airplane in engineering; the beam, overall length, and the height of hull or fuselage are determined, after which a small scale drawing is made showing the desired shape. Next, centerline drawings of the wing structural parts, such as bulkheads, beltframes, and spars are made and the structural sizes determined. From this point the lofting department, which works as an integral part of engineering, takes up the work and lays down and fairs a full size body plan (vertical sections), full size water lines (horizontal sections), buttock lines (longitudinal sections), and any diagonal or special sections necessary to make a completely faired job. No tolerance is allowed in this work as every line must check perfectly with all others related to it. In this manner the lofting department produces a set of master plans, and from these all subsequent lofting work is built. The contour of any part, as for example a beltframe, is lifted from the master plan and transferred directly to a layout board.

After the contour is singled out from the master plan and on a board of its own, and is checked for accuracy, the structural members are drawn directly on the surface of the layout board. By this procedure of transferring from the master plan to layout boards a great number of layouts can be made to progress simultaneously, all originating from the one full size master plan.

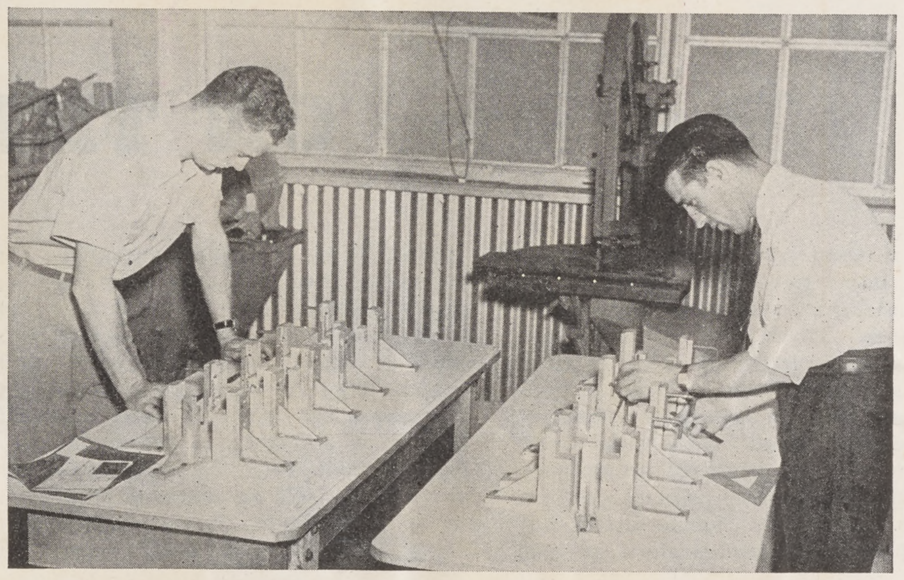
From the contour and structural layout board, the necessary drill templates locating all rivets and cutouts are laid out and sent to the shop for completion. Where locating fixtures are required the tool design department is notified so that the fixtures will be available when required. The lofting department likewise furnishes the contours for all bumping forms, master layouts required by tool design, and templates required for parts procured by sub-contract outside the parent plant.

The layout boards are used in the making of several kinds of templates: marking templates, drill templates, mark and prick punch templates, drop hammer templates, shaper form templates, templates for form blocks, etc. These are all checked back directly against the layout board and the structural information it carries.

The lofted layout board is then turned over to the tool department to

(~~Turn to page 88~~)

(BELOW)



Right: A lofted layout board becomes an assembly board by the addition of blocks to hold the work in place. Assembly boards here being checked.

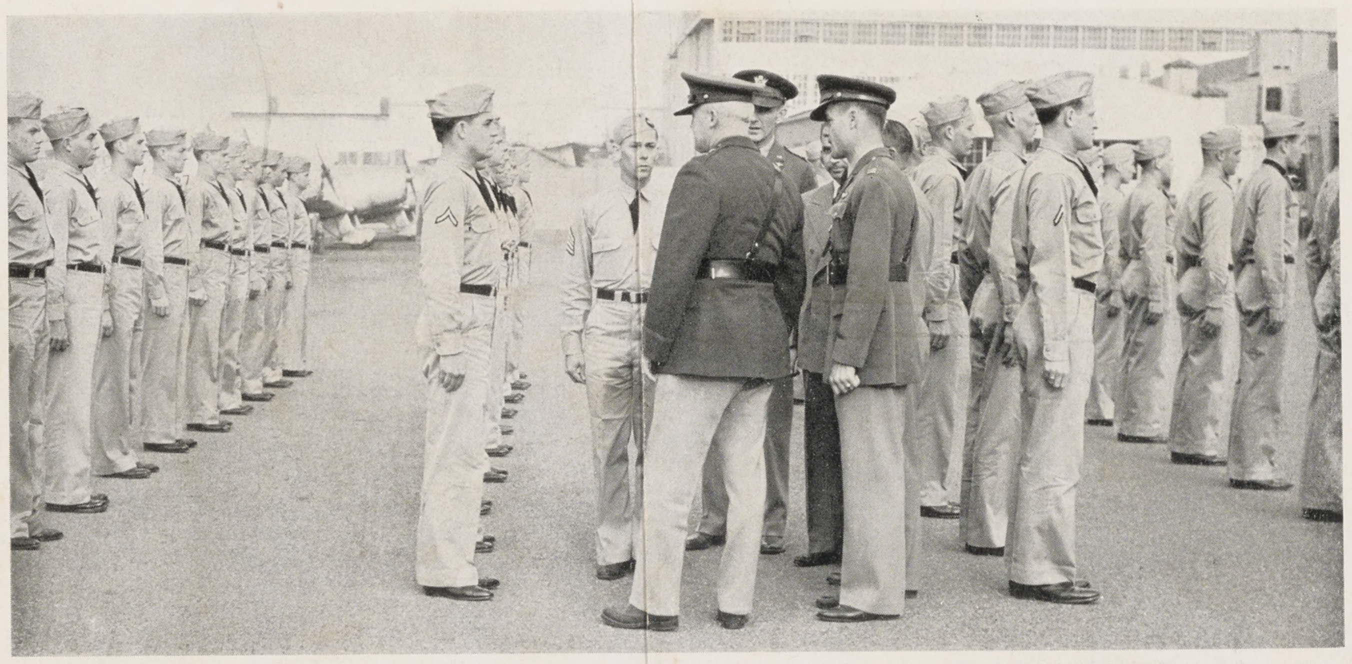
Lofting

(*Continued from page 35*)

have form blocks put on it. These blocks transform the layout board directly into an assembly board, by providing three-dimensional support for the various members which are to become a part of the assembly. Since the templates for the various parts were taken from the lofted layout board, and the tool department worked directly on this original layout (or drawing), and since this is all full scale work, there is slight room for error or misinterpretation. As a matter of fact, the layout phase has been completely eliminated for the tool builders, with obvious economy of time and effort.

The lofting method lifts from engineering a good deal of tedious drafting, makes the actual full scale layout and hands it to the shop for construction. Lofting likewise lifts from the tool and shop departments the work of expanding detail drawings to full scale before attacking tooling. Likewise, the lofting method greatly facilitates rapid construction of preliminary mock-ups.

An example of what can be done with the aid of lofting may be given in the case of the most recent engineering achievement at Consolidated; design and construction of the twin engined, 52-place Model 31 flying boat. Only ten months were required to design, construct, and test fly this entirely new ship, whereas previous development projects dealing with flying boats of comparable size, have required two years or more. While this particular case should not be taken as a direct comparison between various current planes, and the time taken to produce them—since each new model has its own special problems—nevertheless it may be taken as a fair example of the net benefits obtained through application of lofting methods to the process of initial development of new aircraft designs.



MAJ. GEN. H. H. ARNOLD, CHIEF OF AIR CORPS, INSPECTS FLYING CADETS AT AIR CORPS TRAINING DETACHMENT, RYAN SCHOOL OF AERONAUTICS, SAN DIEGO, CALIF.

Consolidated's Twenty-Million-Dollar Navy Contract—Notes

ONE OF THE LARGEST single orders for planes under the present national defense aviation expansion program was announced by the Navy Department on December 22, in the award of a $20,016,669.60 contract to the Consolidated Aircraft Corporation, of San Diego, Calif., for additional numbers of that company's Model 28, which is in use by the Navy as that Service's standard patrol bomber.

As noted elsewhere in this issue, the Navy now has an advanced amphibian version of this big plane at the Anacostia, D. C., Naval Air Station for service performance tests, but it is understood that the present order is for the standard Consolidated ship, such as this company has supplied the Navy for use as patrol bombers in current service.

There is every reason to believe the Navy is well satisfied with this particular model, based on performances of squadrons of these ships in mass flights to Hawaii and Panama. It will be recalled that more recently a squadron of Navy patrol bombers flew across the Pacific to the Philippine Islands, making two stops after leaving Hawaii. These, it is known, were Consolidated's basic Model 28, the famous PBY's.

The Navy confined announcement of its order to the bare fact of the award, as it no longer specifies number of ships, nor the type and number of engines.

⁂

Other Awards

CONTRACTS totaling $9,384,881 for aircraft engines and propeller assemblies were awarded by the Navy on December 19.

Pratt & Whitney Aircraft division of United Aircraft Corporation was awarded a $7,927,000 contract for engines, and the Hamilton Standard Propellers division received a $1,293,000 contract for propeller assemblies.

Curtiss-Wright Corporation's propeller division also was awarded a $163,000 contract for propeller assemblies.

⁂

The Sperry Gyro-Horizon and The Directional Gyro

AN ATTRACTIVE NEW BOOKLET has just been published by the Sperry Gyroscope Company entitled *The Sperry Gyro-Horizon and The Directional Gyro*. It is a 26-page catalog describing these two basic flight instruments, showing how this equipment is arranged and also the principal dimensions. It is profusely illustrated with actual size photographs of the instruments as well as pictures of typical installations.

Copies of this booklet will be sent free to interested parties on request of the Sperry Gyroscope Company, Manhattan Bridge Plaza, Brooklyn, N. Y.

An Interesting Map

THERE IS HANGING ON THE WALL OF THIS OFFICE an unusually interesting as well as instructive map showing the air routes of the world. It is published by the Hydrographic Office, Navy Department, Washington, D. C., and copies may be obtained at 50 cents each. On the map is also shown a table of routine flights made since January 28, 1937 by Consolidated Model 28 flying boats of the U. S. Navy. Commercial models have circled the earth at its maximum diameter, have crossed oceans and continents nonstop, have operated in climes from the Tropics to the North Pole, all without undue incident.

⁂

Aviation Employment Increases

THE NUMBER OF BOEING SCHOOL GRADUATES placed in the aviation industry during the month of October showed a three-hundred-per-cent increase over October a year ago, according to data released by the placement department which is supervised by Herbert Marsh. Nineteen young men received employment as compared with six in the same month in 1938. The increase is attributed to the rapid expansion of the industry and the active assistance given to graduates by the placement department of Boeing School.

Richard Cooley, Arthur Schumann, and Robert Trembley were employed as first officers by the flight department of United Air Lines. Other graduates were placed with airlines and factories as airplane, engine, and instrument mechanics, meteorologists, traffic agents, etc.

TRIBUNE-SUN
1-30-40

Seek Big Fund For Larger S. D. Base

The sum of $2,000,000 for the navy's seaplane base at San Diego is included in supplemental budget estimates sent by President Roosevelt to congress for appropriations totaling $34,267,381 for 16 federal agencies, The International News Service reports from Washington, D. C.

The $2,000,000 is a San Diego harbor project, an undertaking of the war department, according to The Associated Press, which stated that in his request the president concurred in a budget bureau statement that existing world conditions made it advisable to complete the San Diego harbor dredging project as soon as possible.

Comdr. James T. Mathews (CEC), 11th naval district public works officer, reported the $2,000,000 would be used "possibly for dredging and other facilities for navy patrol plane operations here."

Speed-Up Expected

Rumors have been current on the waterfront most of this month that because of the existing unsettled world conditions the government might speed up the port's $4,184,000 dredging project. Initial work was done last year by the Hydraulic Dredging Co.'s dredge Tualatin. Standard Dredging Co. is ready to start work on an $800,000 portion of the major project.

Other funds requested by Roosevelt include:

Six million dollars for Central valley project, California; $8,000,000 for Grand Coulee dam; $1,000,000 for Boulder canyon dam generating plant; $5,125,000 for the census bureau; $1,017,000 for state department expenses growing out of the war; $400,000 for another trans-atlantic weekly mail plane trip after July 1 and $1,500,000 compensation for persons injured or killed on government relief projects.

Night Hours Arranged For Consair Applicants

TRIBUNE
1-30-40

Striving to accommodate applicants unable to visit the employment office in the daytime Consolidated Aircraft Corp. will open its employment office at 1254 India st., Thursday and Friday nights from 6 to 10, Edgar Gott, company executive, reported yesterday.

The office is open daily except Saturday and Sunday, from 7:30 a.m. to 4:30 p.m. Gott, stressing that the corporation wishes to employ local residents, said applicants should have some knowledge of mechanical work. He said Consolidated expects to have a gradual increase in employment in the next 12 months.

Approve $118,649 For S. D. Airport

TRIBUNE SUN 1-30-40

A project calling for construction of hangars, control station buildings, seaplane facilities and a wharf at Lindbergh field at a cost of $118,649 was given presidential approval in Washington, D. C., yesterday, Rep. Ed V. Izac notified chamber of commerce officials in a telegram today.

The project, said Izac, is sponsored by the harbor department. Izac's telegram follows:

"Pleased to advise our WPA project alloting $118,649 improvement municipal airport Lindbergh field and streets adjacent thereto just approved Presidential Letter D2019. Includes construction hangars, control station building, seaplane facilities, wharf, floats and ramp, all power and lighting facilities other incidental work. Sponsored by city harbor department."

Consair Plans $1,500,000 Plant Expansion

UNION 2-2-40

Expenditures of approximately $1,500,000 in construction of new buildings at its Lindbergh field plant was announced yesterday by Consolidated Aircraft Co.

Piling for the new structures, which will increase the plant capacity by 85 percent, is being driven. Steel assembly is expected to be started next month.

The expansion program comprises additions to the final assembly, final finish, paint and wood mill shops, experimental, maintenance and office departments. Sawtooth roof construction similar to the existing buildings will be used.

Officials announced that 3900 workers are now employed at the plant, with about 3000 more to be added when the new buildings reach peak production this spring.

17 CCC Aircraft Workers From Vista Camp on Payroll of Consolidated After Six-Month Course; Government Trains Youths for Aeronautics With New Classes Starting Soon; 50 in Each Group

TRIBUNE-SUN 1-30-40

S. D. County Is Hub Of New Educational Plan, Say Officials

Seventeen CCC-trained aircraft workers have been placed on the payroll of Consolidated Aircraft Corp., coming here directly from the Vista CCC camp after a six months' training course in the camp under the direction of George E. Irvin, aircraft instructor, and Willard T. Day, camp educational advisor.

"This is the first attempt in San Diego county at turning out CCC boys in wholesale quantities for aircraft employment," said Day. He said that from time to time various southern California aircraft companies have been placing youths trained in CCC camps, but that the Vista plan is "the first major attempt in wholesale planning and placing after a training course has been completed."

Seven More at Ryan

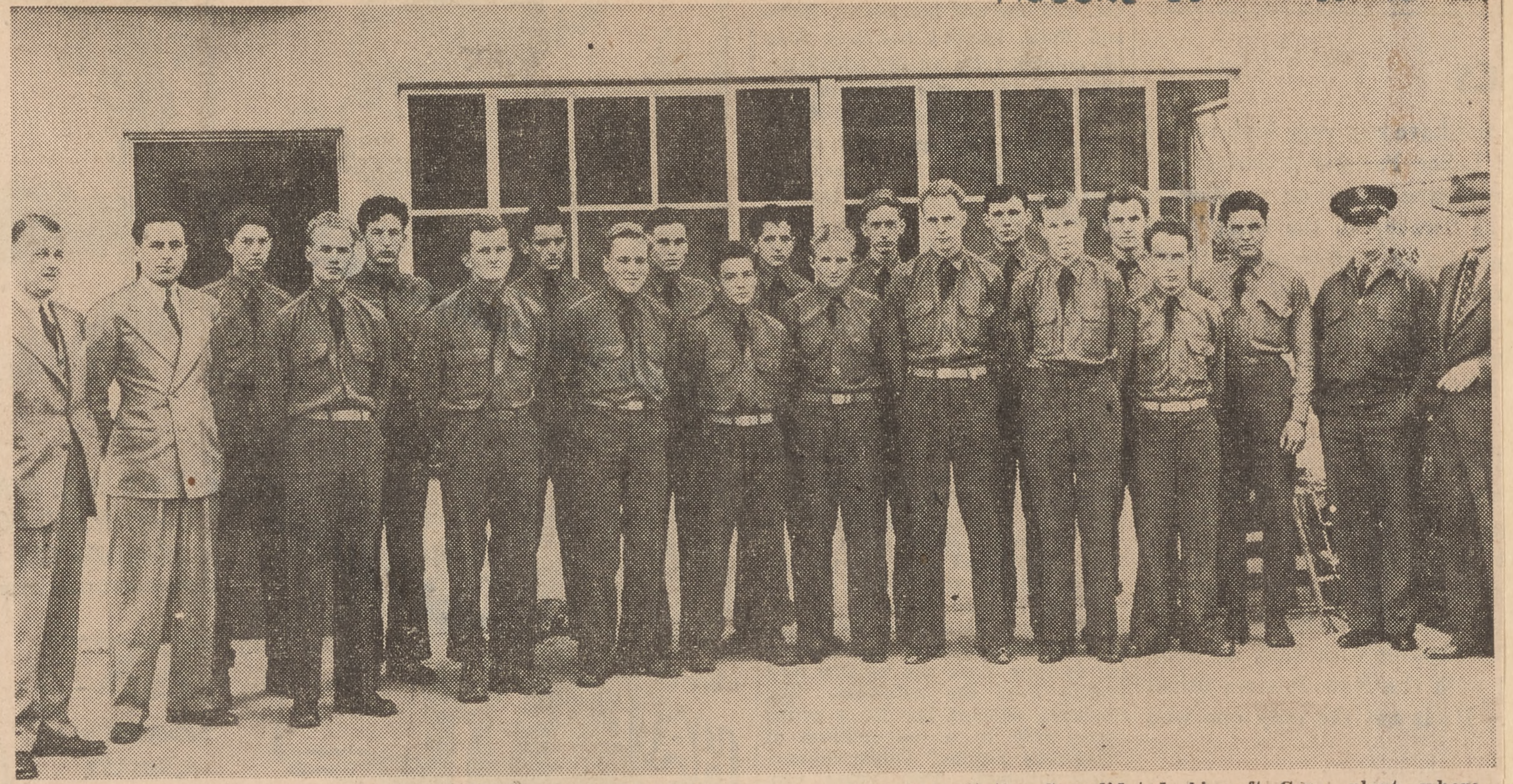
Day reported that in addition to the 17 from the Vista CCC camp placed at Consolidated this month, seven from the same camp have been placed at the Ryan Aeronautical Co. in the same period. He said 10 more young men will be graduated soon from the school and possibly will receive jobs in some San Diego aircraft factory. New classes starting this month will graduate youths by April 1, and it is expected that each graduating class will be composed of not less than 50 students.

J. P. Waterbury, representative of Consolidated Aircraft Corp., conducted a special tour of inspection for the new aircraft employes after they had been placed on the firm's payroll. He declared that employes taken from CCC camps are well-trained in work habits and discipline.

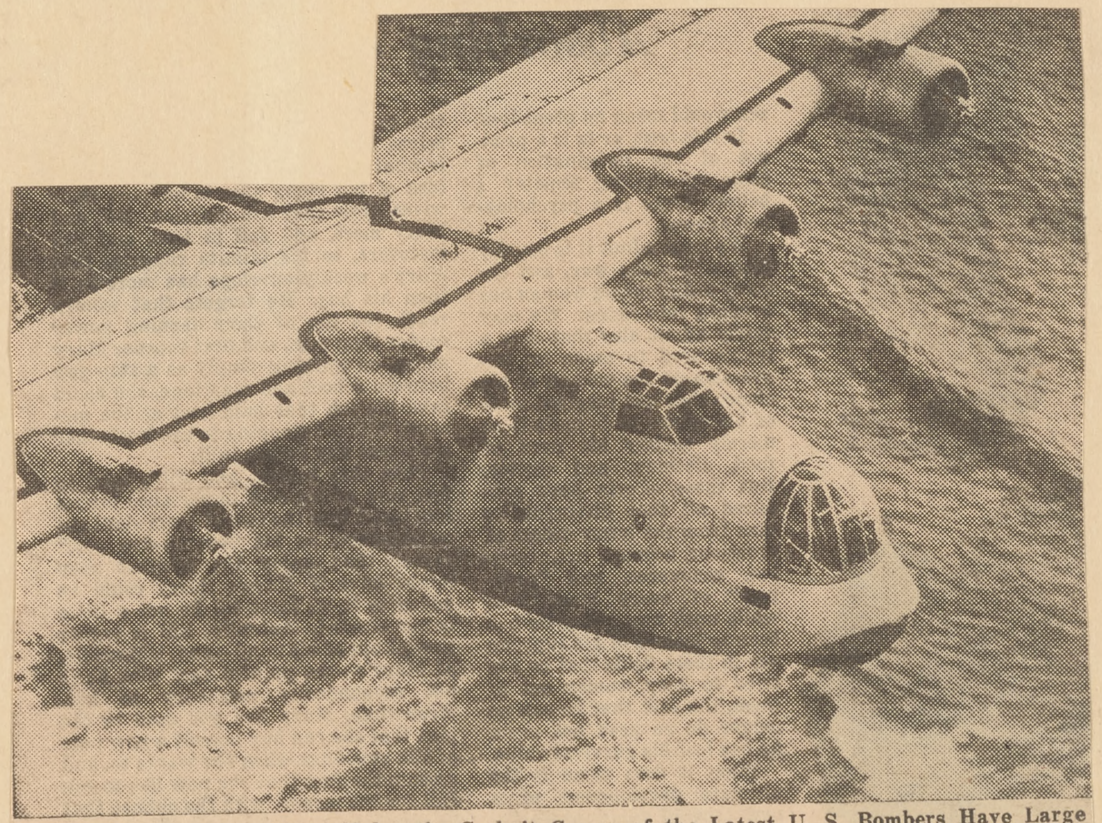
Only Mechanics Wanted

The course in aeronautical engineering and mechanics has been in operation at the Vista CCC camp for the past six months. It is the only CCC camp in San Diego county offering this training, although similar training is given in some of the CCC camps in Los Angeles county. All boys interested in applying for the CCC training course must apply through the San Diego county CCC selecting agency, department of public welfare, Civic Center.

Consolidated officials report that only men with knowledge of mechanical work are being employed by the firm, which has opened a new employment office at 1254 India st. The 17 CCC youths were reported the last to be employed at the firm's former employment office, which was located at the north end of the Consolidated plant.



Vista CCC camp graduates of the camp's aeronautical training class are shown here at the Consolidated Aircraft Corp. plant, where they were given employment this month. Front row, left to right: J. H. Waterbury, of Consolidated; Harry M. Webster, department of public welfare; Hershel L. Whiting, Frederick J. Gianola, Richard L. Ward, Walter E. Hansen, Robert A. Parker, James W. Holes, Anthony Zitnick, Howard E. Taylor, Willard T. Day, CCC educational advisor, and George E. Irvin, aeronautical instructor. Back row, left to right: William C. Fry, Fenton L. Stuck, Leon Basso, Dionisio Molina, John F. Burcham, John C. Stephens, William K. Warren, Frank C. Taylor and Arthur G. Islas.



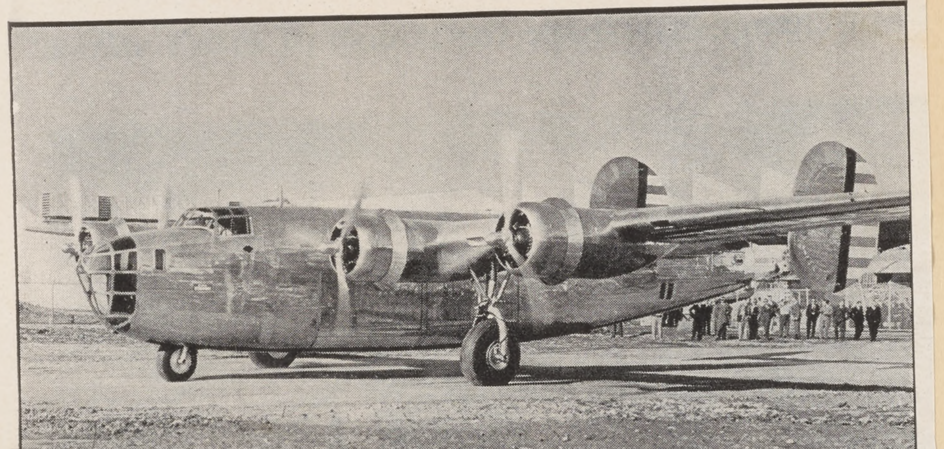
Instead of Armor-Plated Peep Holes, the Cockpit Covers of the Latest U. S. Bombers Have Large Expanses of Plexiglass Affording Larger Areas of Vision, Better Light and Just as Much Protection as Metal Coverings.

UNION 2-4-40

20

Business Week · January 13, 1940

Consolidated Aircraft Tests a Fast New Army Bomber



Wide World

This Consolidated Aircraft army bomber attained a speed of 325 miles an hour—near top speed for planes of its type—in its initial test flights at San Diego, Calif., recently. Consolidated, builder of navy amphibian and patrol planes, has incorporated several new features in the four-engined, 5,000-h.p. land bomber—including a tricycle landing gear for greater safety, "perfect curve" wings for greater speed.

FISH WANTS CONSOLIDATED TO HELP PAY FOR CROSSINGS

UNION 1-24-40

Belief that Pacific highway pedestrian underpasses or overpasses should be constructed for use by Consolidated Aircraft Corp. employes, and that the factory should share in the expense, was expressed yesterday by Herbert Fish, city councilman. His remarks were spurred by a recommendation from Fred Rhodes, city manager, that the dedicated-but-never-opened stub-ends of Redwood and Spruce sts., between California st. and the mean high tide line, be closed, as asked by Consolidated, and that cost of proceedings be paid by the corporation.

CHANCE FOR SWAPPING

Discussion disclosed that if this were done, the closed parts would revert to Consolidated, as the owner of abutting property.

"Here's a chance to do some swapping," said Fish. "Consolidated wants three sets of traffic signals installed on Pacific highway. I think underpasses or overpasses would be better, and that the factory, in return for the land it would receive from the closings, should help pay for the pedestrian walks."

Glenn Rick, city planning engineer, said planning and harbor commissions favor the closings.

"As long as Pacific highway is an arterial, it is advisable to have as few intersections as possible," he said.

QUESTION TABLED

On motion by Fish, seconded by Harley Knox, the question was tabled "indefinitely." The council then referred to the planning commission R. E. Hazard's request that Maple st. be closed between Kettner blvd. and California st.

"There is no connection, nor prospect of one east from Kettner blvd. on account of the topography of the ground," he wrote. "A great overpass west from Kettner blvd. to Pacific highway would have to be built to ever open it up in that direction."

Aircraft Classes Organized by City Schools

UNION 2-6-40

Organization of special classes to speed instruction of students in work being made available in local aircraft factories, was started by the Vocational school yesterday, Will C. Crawford, city school superintendent, reported.

Joseph E. Merk, first of the expert workmen to be released temporarily by Consolidated Aircraft Corp. to serve as instructor, reported yesterday. A second instructor, Edward D'Amico, is expected to check in today. Six instructors have been asked from Consolidated, while Claude Ryan, head of another factory, told Crawford yesterday he hoped he would be able to supply two teachers.

PLAN SPECIAL STUDIES

Purpose of the augmented activity in vocational education is to train local persons for the jobs becoming available as the aircraft factories step up production to meet big orders.

The special classes will concentrate on instruction in riveting, sheet metal work, pattern work, blueprint reading and welding.

Morning, afternoon and evening classes will be scheduled, and with eight instructors it was estimated that 600 students a month could be turned out with fair knowledge of the jobs which are becoming available. Aim of the school is to make this added employment available locally instead of drawing in persons from outside.

'COOPERATION VITAL'

Crawford reported to the board of education yesterday, however, that whether or not San Diego men are trained through the Vocational school for aircraft jobs depends upon cooperation of aircraft industries in providing instructors.

"We can provide classrooms and equipment," said Crawford, "but only those can teach aircraft who know aircraft. Those men are employes of the industries. If they can be released and lent to us, we can do what the chamber of commerce advises us that it wishes done. If they are not, we can't. The whole program hinges upon whether or not the industry supplies us with the teachers for the classes—a matter which does not seem to have been quite clear to some."

ARCHBOLD SEEKS BUYER FOR GUBA; WAR HALTS PLANS

UNION 2-6-40

Guba, the famous round-the-world flying boat which has been resting in an airline hangar at the municipal airport since it completed its globe-girdling and exploration work last summer, may never fly again under the ownership of Richard Archbold, scientist, who bought it from Consolidated Aircraft Corp.

Word came from New York yesterday that Archbold is looking for a buyer for the famous craft, which is an adaptation of the noted navy PBY flying boat line. Archbold had planned further foreign explorations with the Guba but has given them up for the duration of the war, when he may again come to San Diego for a new ship.

Guba is the second flying boat Archbold purchased here. The first was transferred to the Russian government for use in search for one of its fliers lost in an attempted Russia-to-America flight.

Consair Job Office To Open Evenings

UNION 1-30-40

Striving to accommodate applicants unable to visit the employment office in the daytime Consolidated Aircraft Corp. will open its employment office at 1254 India st., Thursday and Friday nights from 6 to 10, Edgar Gott, company executive, reported yesterday.

The office is open daily except Saturday and Sunday, from 7:30 a.m. to 4:30 p.m. Gott, stressing that the corporation wishes to employ local residents, said applicants should have some knowledge of mechanical work. He said Consolidated expects to have a gradual increase in employment in the next 12 months.

AIRCRAFT SCHOOL LAGS BEHIND LOCAL NEEDS, CHAMBER WARNS

UNION 2-2-40

The expansion program at San Diego's vocational school, as outlined by Will C. Crawford, superintendent of schools, at a meeting of chamber of commerce directors yesterday, will not be adequate to meet the demand for aircraft employes in San Diego plants by next July 1, chamber officials stated last night.

Crawford stated that "under our expansion program we will be able to train 150 students a month, and through special classes provide an additional 150 trained youths every 30 days." Chamber officials pointed to the fact that on this basis not more than 1500 will be turned out of the vocational school by July 1, while the aircraft firm's demands for employes will be in excess of 3600.

"This will mean that our local plants will be forced to employ more than 1500 out-of-town men," Frank Forward, chamber president, said he had been advised by the chamber's education committee members. "San Diego is not in a position to accommodate this great influx of out-of-town help when, within the confines of our own county, there are hundreds of men seeking vocational training to equip themselves for this type of industrial activity."

AN EXAMPLE

Tom Bomar, chamber aviation department manager, reported that Consolidated officials "the other day employed 41 men, 15 of whom were from a school at Glendale."

"This is just an example of one day's employment at the local aircraft plant," Bomar said, "and indicates the immediate need for an

(Continued on Page B, Col. 8)

TRIBUNE

February 2, 1940

Can't Train Enough S. D. Workers For Consolidated, School Plaint

Demands of Consolidated Aircraft Corp. for trained workers will exceed the supply to be obtained through San Diego vocational training school, chamber of commerce directors were told yesterday.

School facilities are being expanded to train 150 students a month and, through special classes, provide an additional 150 every 30 days, said Will C. Crawford, superintendent of schools.

Chamber officials were informed the firm's demands for employes will be in excess of 3600 by July 1, while the expansion program at vocational school will be able to turn out not more than 1500 by that time. will be able to turn out not more than 1500 by that time.

"This will mean that our local plants will be forced to employ more than 1500 out-of-town men," Frank Forward, chamber president, said he had been advised by the chamber's education committee members. "San Diego is not in a position to accommodate this great influx of out-of-town help when, within the confines of our own county, there are hundreds of men seeking vocational training to equip themselves for this type of industrial activity."

Glendale Men Hired

Tom Bomar, chamber aviation department manager, reported that Consolidated officials "the other day employed 41 men, 15 of whom were from a school at Glendale."

"This is just an example of one day's employment at the local aircraft plant," Bomar said, "and indicates the immediate need for an adequate training program to qualify San Diego youths for these jobs."

Bomar said that local aircraft firm officials "prefer to hire San Diegans whenever possible."

Crawford, in his outline of the proposed school expansion, stated that "inability to obtain competently trained instructors has delayed us in effecting the expansion we desire."

Plan Special Classes

"Beginning next Monday, the vocational school will be in a position to turn out 150 students a month, and through special classes which will be started, an additional 150 can be trained each 30 days," Crawford said. "Our concern now is to set up a course which will lead directly to employment. We realize that the ultimate objective of our educational system is to get young people happily into work."

The superintendent said that "creation of the vocational training school was not a 'fly-by-night' program, but rather resulted after an intensive study of the vocational needs of the community." He reviewed some of the vocational activities which now are being conducted under the San Diego school system, including industrial and commercial fields.

Chamber officials warned that unless adequate training is provided in the aircraft field the number of persons now being brought to San Diego from Glendale and Kansas City schools will increase.

Directors were told, after a discussion of the matter by members of the chamber's executive committee, that "Mr. Steinmetz of the State college faculty had been stirring up opposition to the vocational training program of the city schools, especially that part of the program relating to supplying the quota of San Diego youths to the Consolidated Aircraft Corp."

Maj. T. C. Macaulay, chamber executive secretary, told the directors that "reports to our organization indicate that since Mr. Steinmetz was acting as spokesman of the left-wing elements of the C.I.O. his opposition was receiving more attention in certain quarters than it merited."

Crawford was assured by Maj. Macaulay that "this community stands solidly behind a vocational program adequate to qualify the hundreds of young men who seek employment in industry."

"Our chamber of commerce is interested in but one thing," Forward said, "and that is to do all in our power to encourage sufficient training so that San Diego, not out-of-town, young people will be afforded the waiting jobs in our local industry. Much of our unemployment problem, especially as it relates to young people, can be solved as a result of this great aircraft expansion. All possible must be done to train our local people for these positions. This emergency presents a challenge—a challenge which this community can and must meet."

The chamber praised Crawford for his efforts in meeting the emergency of training young people for industrial jobs, and voiced the hope that adequate instructors and facilities would be made available so that the local jobs could be filled by San Diegans.

Aircraft School Needs Outlined

(Continued from Page 1)

adequate training program to qualify San Diego youths for these jobs."

Bomar said that local aircraft firm officials "prefer to hire San Diegans whenever possible."

Crawford, in his outline of the proposed school expansion, stated that "inability to obtain competently trained instructors has delayed us in effecting the expansion we desire."

PLANS TOLD

"Beginning next Monday, the vocational school will be in a position to turn out 150 students a month, and through special classes which will be started, an additional 150 can be trained each 30 days," Crawford said. "Our concern now is to set up a course which will lead directly to employment. We realize that the ultimate objective of our educational system is to get young people happily into work."

The superintendent said that "creation of the vocational training school was not a 'fly-by-night' program, but rather resulted after an intensive study of the vocational needs of the community." He reviewed some of the vocational activities which now are being conducted under the San Diego school system, including industrial and commercial fields.

Chamber officials warned that unless adequate training is provided in the aircraft field the number of persons now being brought to San Diego from Glendale and Kansas City schools will increase.

OPPOSITION CHARGED

Directors were told, after a discussion of the matter by members of the chamber's executive committee, that "Mr. Steinmetz of the State college faculty had been stirring up opposition to the vocational training program of the city schools, especially that part of the program relating to supplying the quota of San Diego youths to the Consolidated Aircraft Corp."

Maj. T. C. Macaulay, chamber executive secretary, told the directors that "reports to our organization indicate that since Mr. Steinmetz was acting as spokesman of the left-wing elements of the C.I.O. his opposition was receiving more attention in certain quarters than it merited."

Crawford was assured by Maj. Macaulay that "this community stands solidly behind a vocational program adequate to qualify the hundreds of young men who seek employment in industry."

TRAINING ENCOURAGED

"Our chamber of commerce is interested in but one thing," Forward said, "and that is to do all in our power to encourage sufficient training so that San Diego, not out-of-town, young people will be afforded the waiting jobs in our local industry. Much of our unemployment problem, especially as it relates to young people, can be solved as a result of this great aircraft expansion. All possible must be done to train our local people for these positions. This emergency presents a challenge—a challenge which this community can and must meet."

The chamber praised Crawford for his efforts in meeting the emergency of training young people for industrial jobs, and voiced the hope that adequate instructors and facilities would be made available so that the local jobs could be filled by San Diegans.

Consair Starts On 87 Percent Expansion

TRIBUNE 2-1-40

As a result of a navy department contract to Consolidated Aircraft Corp. for $20,016,699, awarded Dec. 20, Consolidated is effecting an 87 percent expansion, aggregating approximately 396,000 square feet, according to report today at the plant. An announcement on the factory expansion was released as follows:

"The $20,016,699 contract from the navy department is the largest single order for airplanes ever placed by the United States government, and it increased the backlog of Consolidated to more than $40,000,000. With work on other contracts occupying most of the production capacity, the new record order has made it necessary for the company to add new plant facilities to meet the deliveries required by the contract.

"The present plant of Consolidated is one of the finest airplane manufacturing plants in the United

Continued on Page 4-A Col. 4)

Expansion Begun At Consair Plant

CONTINUED FROM PAGE ONE

States. When the company erected its new plant at San Diego the buildings were designed and constructed to meet the most advanced type of airplane manufacturing facilities. The original factory buildings are less than five years old and the large experimental building, the photo, physical and chemical laboratory and the paint storage and tool storage buildings are just over three years old.

To Cover 396,000 feet

"Prior to the expansion now under way, Consolidated had under lease 24.7 acres on which the factory buildings are located, and an additional 7.6 acres under option. New leases and options now cover an area of 64 acres. This area is all located on Lindbergh field, San Diego's municipal airport.

"The building expansion, comprising additions to the final assembly, final finish, paint shop, wood mill, experimental, maintenance and office departments, will aggregate approximately 396,000 square feet, or an increase in the present area of 87 percent. The largest single area to be roofed is the new final assembly building, measuring 360 by 720 feet. This has a clear span of 120 feet and a clearance from floor to roof truss bottoms of 36 feet. Sawtooth roof construction, similar to the existing buildings, will be used.

Yards To Be Paved

"In addition to the buildings, all factory yard areas will be paved with asphaltic concrete. These areas, due to the mild southern California climate, can be used virtually the entire year around for final assembly operations. Many maintenance activities likewise may be practically completed out of doors, and then transferred to the plant with a minimum of interference with production.

"In undertaking the plant expansion, which will enable the delivery requirements of the $20,016,699 contract to be met, a closing agreement between Consolidated Aircraft and the United States treasury department was entered into. This agreement provides that the cost of certain additional excess production facilities, less depreciation, required to meet deliveries may be charged to the cost of performing contracts received by the company.

Consair Aiding In Vocational Program

Training of 600 San Diegans a month to meet employment demands in the local aircraft industry is the new goal of the San Diego Vocational school.

It will be made possible through cooperation of the industry, with Consolidated Aircraft Corp. already having pledged aid in overcoming the major problem confronting educational executives here—lack of sufficient qualified instructors.

Consolidated will give immediate leaves of absence to two skilled workmen, who will be placed on the public school payroll for the duration of the emergency training program, Will C. Crawford, city schools superintendent, announced. Under the new arrangement, twice the number previously set as the vocational school's expanded capacity will be trained.

As each additional pair of instructors becomes available the capacity of the school will be increased 150 a month, Crawford estimated. This would require eight instructors, who should be assured their jobs in the aircraft business when their classwork is over, he added. The 600-a-month figure is adequate to care for expected needs, but could be expanded if necessary.

From the chamber of commerce, which had criticized a previous school program as inadequate and tending to draw in men from other cities while San Diegans were idle, came approval of the expanded program.

Chamber Favors Plan

"The chamber of commerce is happy to hear the news that 600 persons a month can be given this aircraft training," said Don Smith, chairman of the chamber's education committee. "We anticipate that the aircraft industry will continue cooperation with the schools by supplying the necessary skilled workmen as instructors and by assuring the workmen that they will have their jobs back when the instruction program ends."

Bud Waterbury, assistant personnel director of Consolidated Aircraft, who accompanied a chamber party in a tour of the vocational school yesterday, expressed belief that there would be no difficulty in obtaining complete cooperation between the schools and the company in making instructors available.

Prefer Actual Workers

"We prefer to have instructors in our classes who are now doing the sort of work the students would do when employed in aircraft factories," Crawford said in discussing the case. "We have been handicapped in getting good instructors. We don't want fly-by-nights, and the state law requires that the instructors qualified to teach in vocational schools have seven years' experience at their trade.

"We'd like to get instructors from Ryan and Solar as well as Consolidated, for the graduates of the school probably would be seeking work in those plants and would be familiar with their procedure. We had hoped to get the special aircraft classes going last week but there was difficulty in getting the first two instructors promised us. We have checked on the availability of instructors in other places but would much prefer to have local men do the teaching."

Crawford said there are 1000 or more names of prospective students on the school's waiting list and these would be assigned classes as rapidly as instructors are obtained.

Others Hard-Pressed

"We want to do all we can for the aircraft industry but we can't afford to cripple our work in other lines which also are hard-pressed," he went on. "For instance, the body and fender people tell us workers are leaving them to go into aircraft work, and they need workers now. The same thing is true in cases of men who know how to read blue prints, and in machine-shop work. These industries need help in training their workers also.

"The school system feels a responsibility to the community for all industry and wants to serve the best way possible."

Among those conferring on the vocational school matter and inspecting the school yesterday were Don Hanson, Lester G. Bradley, Smith, Irving Friedman, W. B. Whitcomb, Joe Dryer, Maj. T. C. Macaulay, D. W. Campbell, Tom Bomar, Earle Farnsworth, Charles Davies, Crawford and H. C. Tiemann.

UNION

FEB. 7, 1940

City Weighs Consair Plant Traffic Puzzle

Sharp division of city council opinion developed yesterday as to advisability of further interrupting the flow of Pacific highway traffic by installing additional signals in front of Consolidated Aircraft Corp. plant.

Fred Rhodes, city manager, told the council the corporation had offered to contribute $1000 toward installation of signals to protect employes who use crosswalks at the north and south ends of the plant. These two sets of signals, he said, would be synchronized with the existing signal in front of the main entrance.

Discussion disclosed that when plant employment hits its peak, 3500 men will change shifts, and that these changes also will occur at hours when automobile traffic is the heaviest.

Councilman Herbert Fish expressed belief the state division of highways would not approve installation of the additional signals, but the council instructed Rhodes to confer with E. E. Wallace, district highway engineer.

Guba Buy

TRIBUNE 2-6-40

ARCHBOLD QUITS

-:- -:- -:- -:- -:-

Selling Flying Boat

"For sale: A round-the-world flying boat, suitable for exploration work."

This is the latest news on the Guba, Consolidated-built twin-engine flying boat which Richard Archbold, research associate of the American Museum of Natural History, used in scientific exploration operations in New Guinea last year, later flying on around the world.

Word from New York states Archbold has decided to place the Guba for sale, having abandoned plans for further foreign explorations because of the war.

Union Feb 3-'40

School to Train 600 Monthly For Plane Jobs

Aircraft Industry Cooperating on New Project Here

An expanded vocational education program calling for cooperation of the public school system, the aircraft industry and the chamber of commerce to make 600 San Diegans available monthly for jobs making planes was outlined yesterday after a series of conferences.

This figure, double the highest previous estimate, will be possible through cooperation of the aircraft industry in supplying skilled workers to act as instructors, Will C. Crawford, city school superintendent, said. Consolidated Aircraft has promised two instructors, who already have received their school certificates and are expected to start classes Monday. The school system will pay their salaries and provide equipment and quarters for the classes.

TO TEACH 600 MONTHLY

As each additional pair of instructors becomes available the capacity of the school will be increased 150 a month, Crawford estimated. This would require eight instructors, who should be assured their jobs in the aircraft business when their classwork is over, he added. The 600-a-month figure is adequate to care for expected needs, but could be expanded if necessary.

From the chamber of commerce, which had criticized a previous school program as inadequate and tending to draw in men from other cities while San Diegans were idle, came approval of the expanded program.

CHAMBER FAVORS PLAN

"The chamber of commerce is happy to hear the news that 600 persons a month can be given this aircraft training," said Don Smith, chairman of the chamber's education committee. "We anticipate that the aircraft industry will continue cooperation with the schools by supplying the necessary skilled workmen as instructors and by assuring the workmen that they will have their jobs back when the instruction program ends."

Bud Waterbury, assistant personnel director of Consolidated Air-

(Continued on Page 2-A, Col. 1)

School to Train 600 Monthly For Plane Jobs

(Continued from Page 1)

craft, who accompanied a chamber party in a tour of the vocational school yesterday, expressed belief that there would be no difficulty in obtaining complete cooperation between the schools and the company in making instructors available.

PREFER ACTUAL WORKERS

"We prefer to have instructors in our classes who are now doing the sort of work the students would do when employed in aircraft factories," Crawford said in discussing the case. "We have been handicapped in getting good instruct[illegible]. We don't want fly-by-nights, and the state law requires that the instructors qualified to teach in vocational schools have seven years' experience at their trade.

"We'd like to get instructors from Ryan and Solar as well as Consolidated, for the graduates of the school probably would be seeking work in those plants and would be familiar with their procedure. We had hoped to get the special aircraft classes going last week but there was difficulty in getting the first two instructors promised us. We have checked on the availability of instructors in other places but would much prefer to have local men do the teaching."

Crawford said there are 1000 or more names of prospective students on the school's waiting list and these would be assigned classes as rapidly as instructors are obtained.

OTHERS HARD-PRESSED

"We want to do all we can for the aircraft industry but we can't afford to cripple our work in other lines which also are hard-pressed," he went on. "For instance, the body and fender people tell us workers are leaving them to go into aircraft work, and they need workers now. The same thing is true in cases of men who know how to read blue prints, and in machine-shop work. These industries need help in training their workers also.

"The school system feels a responsibility to the community for all industry and wants to serve the best way possible."

Among those conferring on the vocational school matter and inspecting the school yesterday were Don Hanson, Lester G. Bradley, Smith, Irving Friedman, W. B. Whitcomb, Joe Dryer, Maj. T. C. Macaulay, D. W. Campbell, Tom Bomar, Earle Farnsworth, Charles Davies, Crawford and H. C. Tiemann.

CHAMBER OFFICIALS INSPECT VOCATIONAL PLANT

S.D.VOC
SCHOOL

Activities at the Vocational training school were observed yesterday by a delegation representing the chamber of commerce. Part of the group watching Donald Steagall, student, work on a plane motor. Left to right, Donald E. Hanson, Earle Farnsworth, Charles Davies, D. W. Campbell and H. C. Tiemann, Vocational school director.

Speed Bomber O.K. In Local Tests

The army announced today its huge new 20-ton XB-24 superbomber, built by Consolidated Aircraft corp., has completed initial flight tests at Lindbergh field successfully, The United Press reports from Washington, D. C. Army authorities said initial flights indicated the 40,000-pound, four-engined bomber will "live up to advancements" predicted for it, including a speed of more than 300 miles an hour, a cruising range of approximately 3000 miles and a bomb-carrying capacity of approximately four tons.

TRIBUNE 2-12-40

EXPLORER'S FAMOUS PLANE GOES ON AUCTION BLOCK

LOS ANGELES TIMES 2-5-40

NEW YORK, Feb. 4. (Exclusive) — The winged ship of a modern explorer—a huge flying boat which was the first to follow the equator around the world and helped discover a new tribe of 60,000 in a land of cannibals and head hunters—was put on the block this week.

His twin-motored United States Navy PBY bomber, the faithful Guba, is being sold because the European war caused postponement of plans for a fourth expedition to New Guinea this year, explained Richard Archbold, explorer and aviator. He is research associate of mammalogy at the American Museum of Natural History, and has studied animals and birds in far corners of the world for 10 years.

NEW GUINEA TRIP

Archbold and his Guba made aviation and scientific history during a 1938 foray into New Guinea which unexpectedly was extended to survey flights and a round-the-world journey which did not end until last July. They made record crossings of Australia, Africa and the Indian Ocean as well as spanning the Pacific and Atlantic Oceans.

Choosing the big bomber, with its 4200-mile cruising range, because he needed a large plane to carry men and supplies far to the interior of New Guinea, Archbold stripped her of armament and tossed superstition out the window in naming her.

SAVED BY RAFT

Guba, in a New Guinea dialect, means "sudden storm"—something which had wrecked a plane of his one night in the harbor at Port Moresby and forced the expedition to travel by raft to save itself.

While testing a first Guba in 1937, Archbold sold her at the request of the Soviet government for the rescue of Sigismund Leverevsky and a party lost in the Arctic, and for whom Sir Hubert Wilkins made a vain search. Archbold soon had a second Guba, however, and took off from San Francisco Bay June 2, 1938.

RETURNS TO U.S.

With Russell Rogers as copilot and Lewis Yancey as navigator, Archbold reached the expedition's base camp at Hollandia, Dutch New Guinea, eight days later after flying the Pacific via Hawaii and Wake Islands. From there supplies, Netherlands Indies soldiers, Dyak carriers and others of a party of 200 were flown to the inland base on Lake Habbema, 11,500 feet above sea level in the unexplored interior of New Guinea.

Returning to the United States after almost a year with many discoveries new to biologists, after discovering the new tribe and adding new lakes and valleys to the admittedly incomplete maps, Archbold was sidetracked at Sydney, Australia.

SURVEY FLIGHT

He agreed to make a survey flight of the Indian Ocean for the British and Australian governments for an alternate route between the two countries in the event of war. Capt. P. G. Taylor, co-pilot for the late Sir Charles Kingsford Smith, noted British flyer, came aboard as an official observer.

The Guba became the first flying boat to span Australia when it flew nonstop across to Port Hedland. From there the Guba made the first plane crossing of the Indian Ocean via the Cocos, Diego Garcia and the Seychelles islands to Mombasa, Africa.

CROSSES AFRICA

Then Archbold sent his craft on the first crossing of Africa by a flying boat. The Guba's hull rested en route in such romantic spots as Lake Victoria, the Belgian Congo and Nigeria before arriving at Dakar, Senegal, on June 26, 1939.

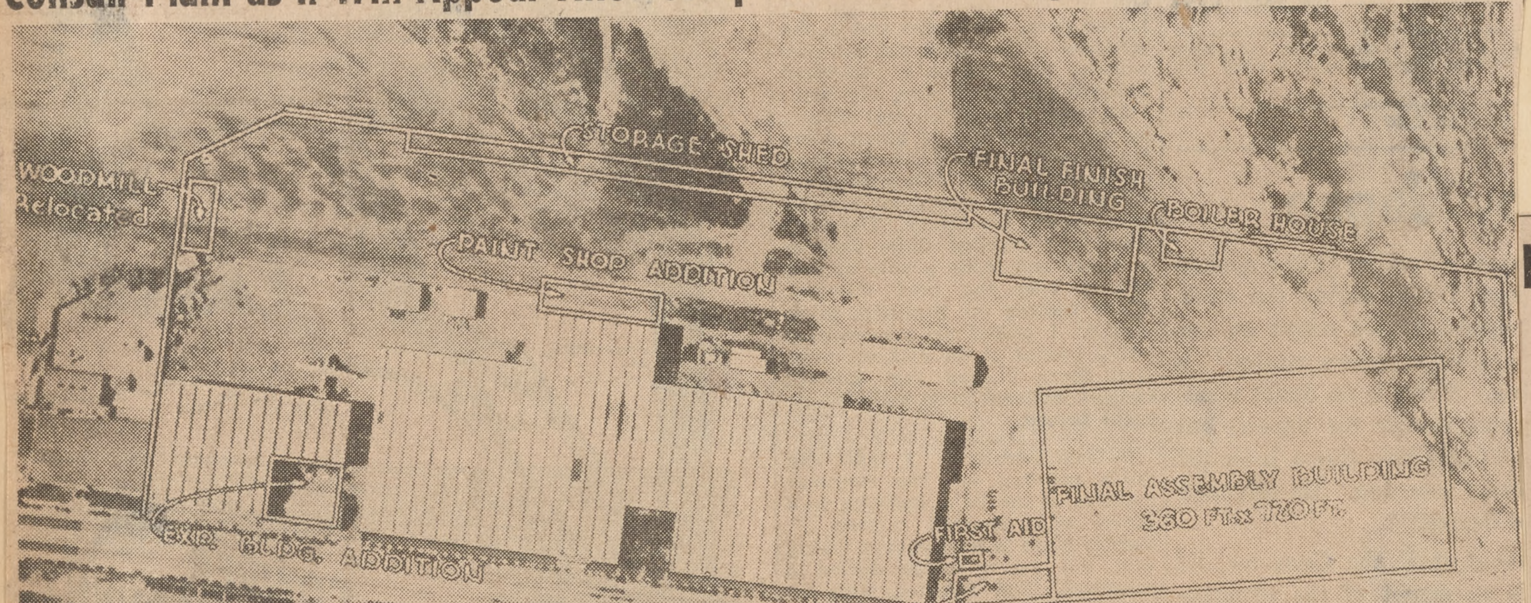
Three days later the Guba flew nonstop across the Atlantic to the Virgin Islands in what is said to have been the longest over-water flight of its kind at the time. The big flying boat landed on the waters of Jamaica Bay at Floyd Bennett Field, Brooklyn, on July 1. The unexpected around-the-world odyssey via the globe's widest diameter ended a few days later in San Diego.

WILL CONTINUE WORK

Sale of the Guba does not mean, however, that Archbold has given up exploring. It means only that he is postponing work in foreign fields "until the people of Europe decide to call a halt to killing each other," he said. He soon will announce plans for an expedition to a section of the United States where there still is much to be discovered by biologists, added Archbold.

TRIBUNE 2-12-40

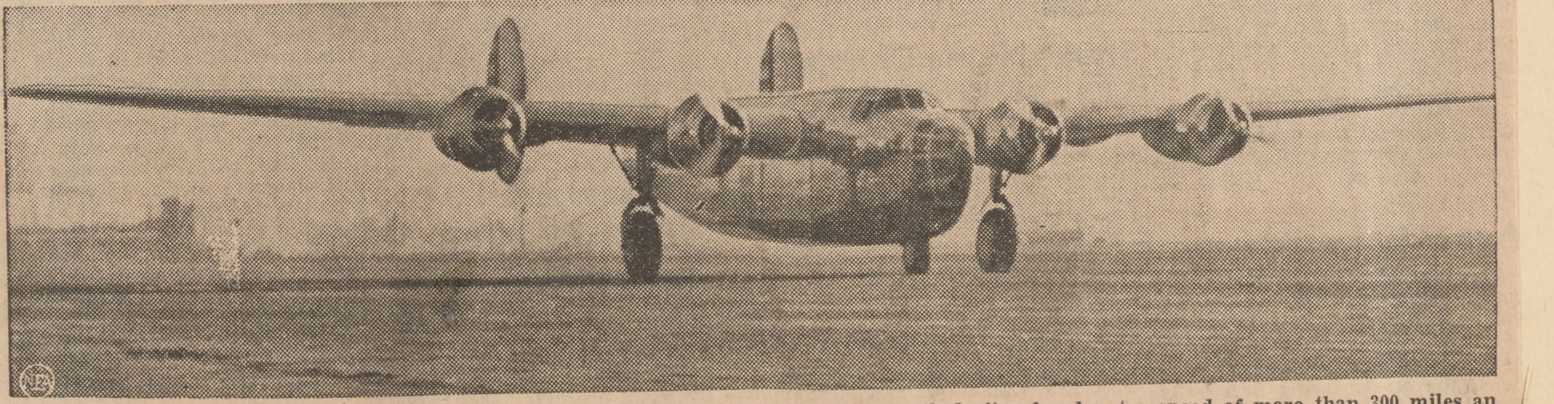
Consair Plant as It Will Appear After Completion of New Expansion Program



Air view looking down on the Consolidated Aircraft Corp. buildings, with outline drawing showing the expansion of the plant now under way to take care of increased navy orders. The largest new unit will be the final assembly building, 360 feet by 720 feet, adjoining the plant to the north and shown in the outline at the lower right. Between it and the main building will be a small office building and a first-aid structure. West of it, on the Lindbergh field side of the factory, will be the boiler house and final finish building. An addition is planned to the paint shop at the west side of the present main buildings, and another addition is being made on the experimental building, lower left. The woodmill will be relocated on the southwest corner, while a storage shed will be along the west side.

New Army Terror of Skies Makes First Test Flights at San Diego Field

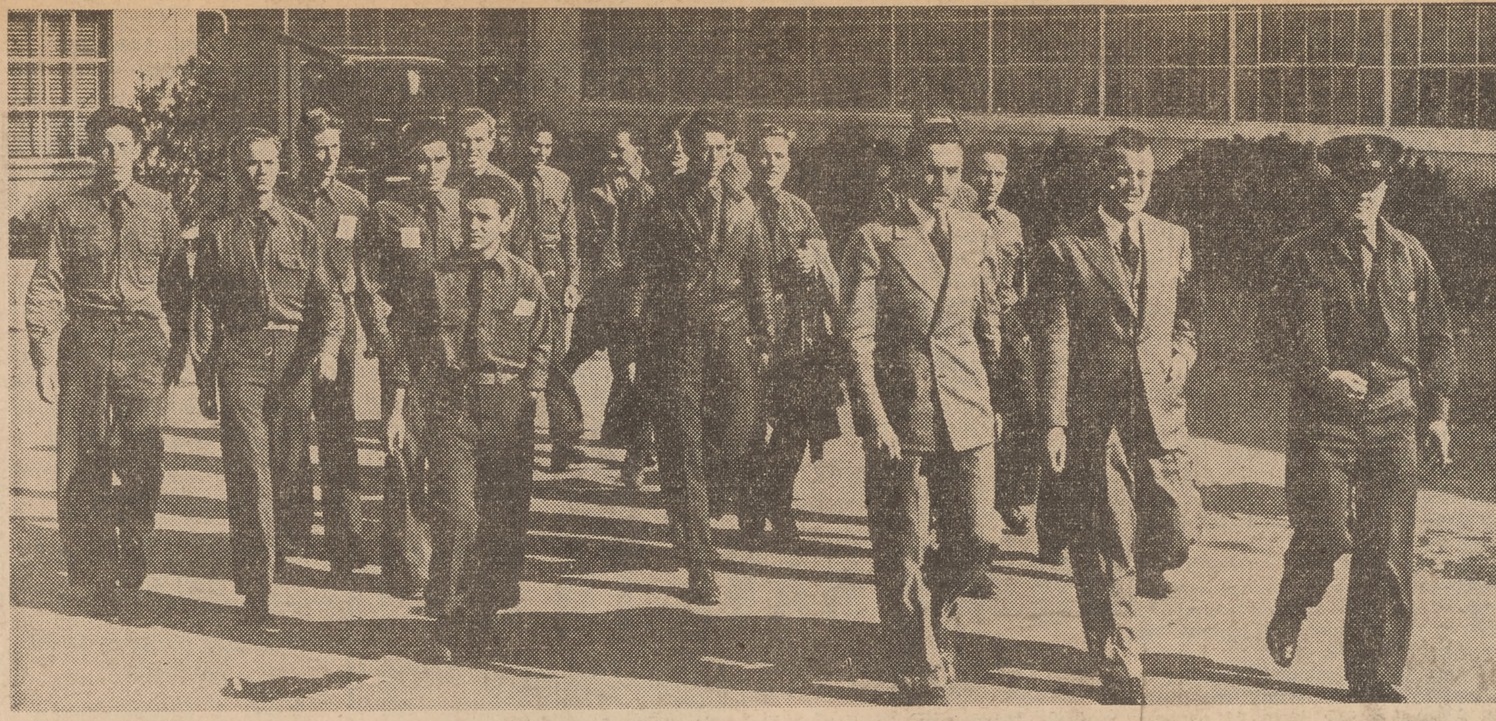
2-13-40 TRIBUNE



America's newest sky terror, a huge bomber, capable of carrying four tons of death-dealing bombs at a speed of more than 300 miles an hour, is shown above after initial test flights at San Diego. It is a Consolidated Aircraft Corp. product, known as the XB-24. Army air corps officials, according to The Associated Press, state it has a range of approximately 3000 miles. Of all-metal construction, it is powered by four Pratt & Whitney 18-cylinder, twin-row, radial air-cooled engines, rated at 1200 horsepower each. Approximate gross weight is 40,000 pounds, wing span 110 feet and over all height, 19 feet. It will carry a crew of from six to nine. An official test board was dispatched to San Diego yesterday. The bomber is described in a report from Washington as a variation of a somewhat similar four-motored bomber, the B-17, of which the army has more than 50 in service or on order. The only experimental bomber with a greater capacity is the army's 37-ton "B-15," which last July 31 carried a payload of 15½ tons to an altitude of 8200 feet for a world record.

UNION 1-30-40

GRADUATES OF CAMP TRAINING CLASS TOUR CONSOLIDATED PLANT



Former civilian conservation corps enrollees, these new employes of Consolidated Aircraft Corp. make their first tour of the plant. Leading the group are (left to right) Harry W. Webster, departmeht of public welfare; J. H. Waterbury, Consolidated's assistant personnel director, and Willard T. Day, camp education adviser.

* * *

Aircraft Firms Take CCC Boys

Aircraft employes taken from civilian conservation corps camps are well trained in work habits and discipline, giving them a sound foundation for employment in aviation work, J. H. Waterbury, assistant personnel director, Consolidated Aircraft Corp., said yesterday.

Waterbury led 17 CCC-trained aircraft workers, placed on the Consolidated payroll after a six-month training course at Vista CCC camp aeronautical training school, on their first tour of the plant. Seven others were employed by the Ryan Aeronautical Co.

Willard T. Day, camp educational adviser, said employment of these youths marked the first time CCC workers had been trained for aircraft work in San Diego county. Ten more youths soon will be graduated from the school.

UNION 2-13-40

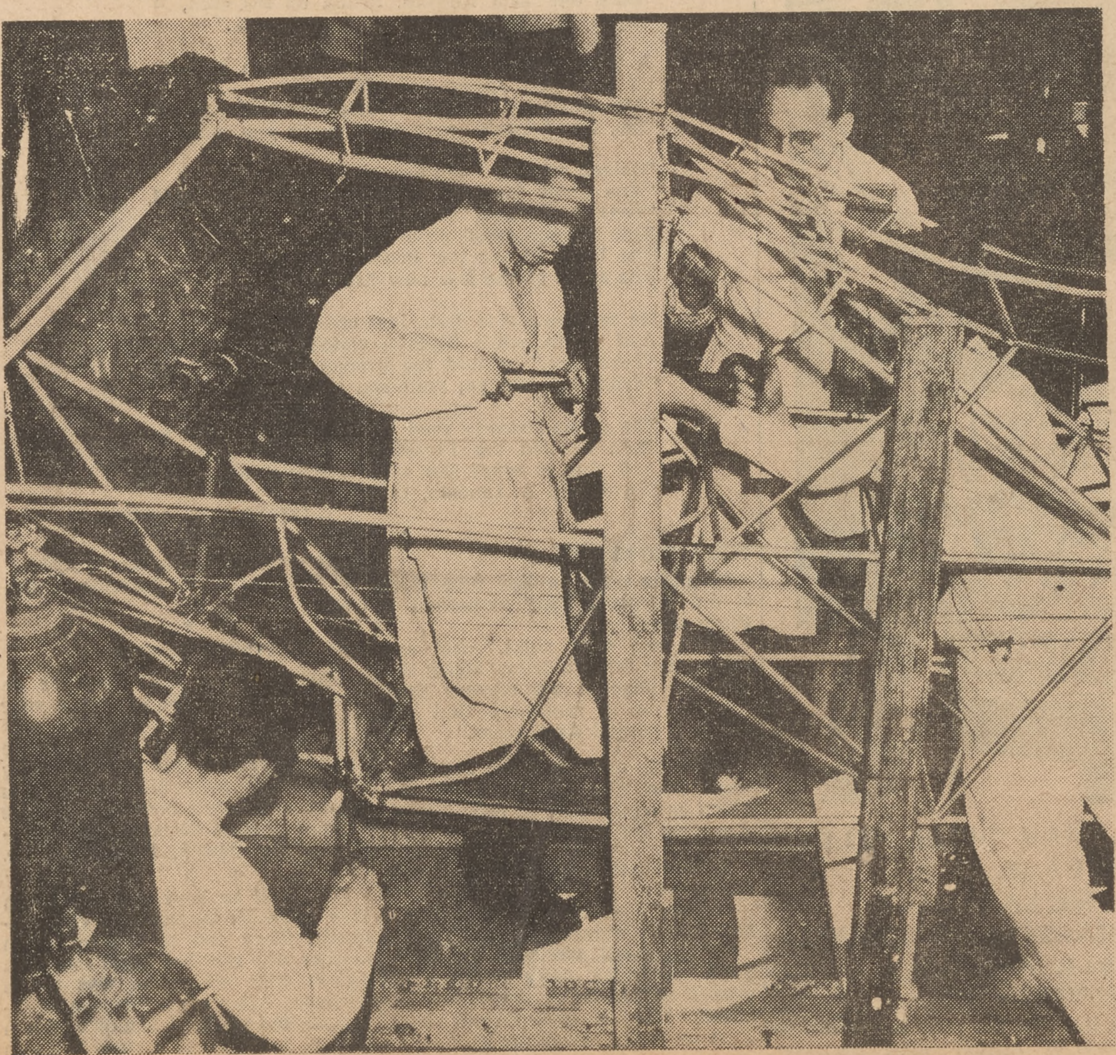
San Diego Bomber Passes First Tests

Initial tests of the new four-motored army bomber, built by Consolidated Aircraft Corp. here, have proved successful, the war department announced at Washington yesterday, United Press reported.

The big aircraft, with a wing span of 100 feet, and weighing 20 tons, is supposed to be fast enough to cross the continent in eight hours, thus making it the fastest bomber ever built for the army. It has been making performance tests over the city and county for more than a week.

The new air giant can carry a crew of six to nine men and a bomb load of four tons over a cruising range of 3000 miles, according to war department reports.

VOCATIONAL SCHOOL UNDERTAKES NEW PROGRAM



HARRY WAUGH FRANK AMODT JOSEPH E. MERK FRANK TYLER

. . . Instructor Merk supervises welding and riveting instruction in aircraft class at Vocational school.

UNION 2-9-40

Space Marked For Aircraft Study Classes

Orders to clear additional space for special classes in aircraft making have been issued at Vocational school, 348 W. Market st., as arrangements were made yesterday to place 12 instructors in charge of the program to make San Diegans available for jobs in the local aviation industry.

Joseph E. Merk, first instructor to go on the job, is to be joined today by Edward D'Amico, another expert workman from Consolidated Aircraft Crop. Eight additional instructors are to report as soon as their papers are cleared through the state department of education which must certify the vocational teachers and two more are to be added when the classes are expanded to handle 600 new students monthly.

A gas engine works operating on school property adjoining Vocational school has been ordered to vacate to make room for the expanded classes. Classes are held daily from 8 to 12 and from 1 to 5, Walter L. Thatcher, coordinator for trade and industrial education under Eliot F. Landon, Vocational school principal, reported. Night classes from 7 to 9 are to be added as the program speeds up.

The special classes are part of the city's vocational training program. There is a $1 charge for registration and $5 partly to reimburse the school district for money spent for materials used by the students, Thatcher reported.

S. D. Plane Plants Employ 5365 With 4100 More Jobs by July, Plan

TRIBUNE 2-8-40

A total of 5365 men and women are employed at San Diego's three aircraft factories, the Consolidated, Ryan and Solar aircraft plants, representing a new peak in employment at all three plants, where backlog orders total more than $43,000,000. The total monthly payroll is $675,000, which exceeds the cost to the city for construction of Lindbergh field.

Consair Employs 4000

Consolidated has set an all-time employment high with 4000 workers and a monthly payroll of $500,000.

Solar employs 465 with a $50,000 payroll.

The Ryan Co., with 900 employes, an increase of more than 100 percent over its previous all-time high, has a monthly payroll of $120,000 exclusive of its army cadet flying school.

Executives of the three aircraft firms have advised the industrial committee of the chamber of commerce that approximately 4100 additional employes must be taken on before the factories reach their employment peaks about July. This would send the monthly payroll above the $1,000,000 mark, it was estimated.

Half Local Men

About half the men being employed are drawn from local sources and the remainder are being brought in from industrial centers where there are machinists, tool and die makers and other expert mechanics available. The 50 percent drawn locally is all the San Diego labor market offers, Tom Bomar, chamber of commerce industrial committee executive, said.

"We are hearing rumbles that men are leaving work in local fender, body and sheet metal plants to work at the factories," Bomar said. "There has been no serious dislocation, however, but our vocational training must give this factor consideration."

From fender, body, sheet metal and radiator plants came reports of a man here and another there going to the aircraft factory. The sheet metal business has been at a somewhat low ebb and no large staffs have been maintained by local firms.

Still More Needed

Virtually none of the outside workers have come from other aircraft centers, for these places are having experiences similar to those of the local factories.

Consolidated, which had 2630 employes six months ago, is now taking on workers at the rate of 200 a week.

Included in this total are 25 a week from a Kansas City technical school and another 15 from a Glendale training center. Consolidated expects to take on 3500 more workers by July, Solar about 100 and Ryan around 500, according to reports in industrial circles.

Local Men Called First

"There is apparently every disposition on the part of the manufacturers to give local men the call ahead of outsiders where experience is equal," Bomar said. "The trouble throughout the country is that there is no reservoir of aircraft labor to draw on."

Beginners are getting a minimum wage of 50 cents an hour, with the 40-hour week, it was reported. Skilled mechanics get the union scale, running above $1 an hour, it was added.

Rapid expansion of employment has resulted in speeding up the vocational school's special aircraft trade classes.

While local industrial leaders are happy at the rise in employment, they are concerned with the problem to be expected when the war-boom orders taper off and lay-offs begin.

TRIBUNE 2-14-40

Army Experts Here For Consair Tests

A group of 10 army majors and captains, from Washington, D. C., Dayton, O., and March field, and 10 civilian inspectors from the army's air corps material depot at Dayton, today began extensive inspection and flight tests of Consolidated Aircraft Corp.'s newest 25-ton, four-motored bomber.

Consair officials expected the tests to require about two weeks to complete. The big plane, designed for the army, is known as the XB-24, the designation it will carry until it is graduated from the experimental stage.

The bomber, which has a wingspread of 110 feet, is said to have a speed of more than 300 miles an hour, with a full load, and a range of 3000 miles. The all-metal ship is powered by four 1200-horsepower engines and will carry a war crew of nine. A feature is a tricycle-type landing gear. Upon final acceptance by the army, it probably will be flown to Dayton's Wright field.

Consair authorities also revealed that bids were opened yesterday on the projected plant expansion project, which, according to estimates, will cost about $1,800,000. They said results of the bidding would not be known until bidding data has been carefully checked, probably within the next day or two.

Army Officers To Fly Bomber

UNION 2-20-40

Army officials this morning formally will take over the huge Consolidated Model 32 four-motored bombing plane recently completed at the local plant, and which had its last test flight yesterday afternoon before delivery.

At the controls of the big plane—the XB-24—was William B. Wheatley, chief test pilot for Consolidated aircraft corp.; he was accompanied by Maj. Stanley Umstead who probably will pilot the plane from now on. Maj. Umstead and Maj. K. B. Wolfe of Wright field, Dayton, O., have been here to confer with Consolidated officials relative to delivery of the plane.

The plane, which has a wingspread of 110 feet and flies at better than 300 miles an hour, left the ground soon after 3 p. m., and was in the air three-quarters of an hour, circling over the bay, city and surrounding territory.

While no information relative to the plane's performance was released it was reported the tests were highly satisfactory.

Trib- 2-19-40

Cook Switches Plane To Patrol Wing 1

Transfer of his aerial flagship, the XPB2Y, to Patrol Wing 1 at North Island is announced by Rear Adm. Arthur B. Cook, commander aircraft scouting force. The plane, built by Consolidated, is four-motored, and will be used in training pilots and crews for the four-motored patrol bombers soon to be delivered by Consolidated to the navy.

NAVY'S FIRST AERIAL FLAGSHIP SHIFTED TO TRAINING DUTY

UNION 2-19-40

Rear Adm. Arthur B. Cook, commander of scouting force aircraft and the navy's fleet patrol wings in the Pacific, Caribbean and Atlantic, announced yesterday that his aerial flagship, the XPB2Y, has been transferred to Patrol Wing 1 at North island.

The huge four-motored Consolidated-built plane is to be used in training pilots and crews for the four-motored patrol bombers which Consolidated Aircraft Corp. soon will deliver to the navy.

Adm. Cook said the XPB2Y will not be used again as his aerial flagship. It is the first plane ever designated as a flagship.

Army to Open Tests Of Consair Bomber

UNION 2-19-40

First official army air corps tests of the XB-24, one of the world's largest and fastest bombers, will be conducted at Lindbergh field this morning, starting at 10, by 20 army aviators and technicians headed by Maj. K. B. Wolfe of Wright field, Dayton, O.

The Consolidated-built plane has completed preliminary builder's test flights by William B. Wheatley, Consair test pilot.

The 20-ton, four-motored bomber will make trial flights for the next 10 days. The plane, according to present plans, then will be flown to Dayton, O.

According to Washington advices, the army air corps is planning to award a $10,400,000 contract for 42 of the new bombers.

The XB-24 has a speed in excess of 300 miles an hour and can carry four tons of bombs 3000 miles without refueling.

3 S. D. PLANE PLANTS SET NEW MARK AS 5365 NOW EMPLOYED

Combined Monthly Payroll Is $675,000; Consair Taking on 200 Workers a Week

UNION 2-8-40

Reaching a new peak in employment in all three plants, officials of the Consolidated, Ryan and Solar Aircraft companies announced yesterday that a total of 5365 men and women are employed at the municipal airport factories. All three plants are employing more workers than any other time since they started in business. They are working virtually around the clock on backlog orders amounting to more than $43,000,000, company representatives said.

An interesting fact is that the total monthly payroll of $675,000 exceeds the amount it cost the city for construction of Lindbergh field.

4000 WORK AT CONSAIR

Consolidated has set an all-time employment high with 4000 workers and a monthly payroll of $500,000.

Solar employs 465 with a $50,000 payroll.

The Ryan Co., with 900 employes, an increase of more than 100 percent over its previous all-time high, has a monthly payroll of $120,000 exclusive of its army cadet flying school.

Executives of the three aircraft firms have advised the industrial committee of the chamber of commerce that approximately 4100 additional employes must be taken on before the factories reach their employment peaks about July. This would send the monthly payroll above the $1,000,000 mark, it was estimated.

S. D. FURNISHES HALF

About half the men being employed are drawn from local sources and the remainder are being brought in from industrial centers where there are machinists, tool and die makers and other expert mechanics available. The 50 percent drawn locally is all the San Diego labor market offers, Tom Bomar, chamber of commerce industrial committee executive, said.

(Continued on Page B, Col. 1)

(Continued from Page 1)

"We are hearing rumbles that men are leaving work in local fender, body and sheet metal plants to work at the factories," Bomar said. "There has been no serious dislocation, however, but our vocational training must give this factor consideration.

From fender, body, sheet metal and radiator plants came reports of a man here and another there going to the aircraft factory. The sheet metal business has been at a somewhat low ebb and no large staffs have been maintained by local firms.

OTHER PLANTS BUSY

Virtually none of the outside workers have come from other aircraft centers, for these places are having experiences similar to those of the local factories.

Consolidated, which had 2630 employes six months ago, is now taking on workers at the rate of 200 a week.

Included in this total are 25 a week from a Kansas City technical school and another 15 from a Glendale training center. Consolidated expects to take on 3500 more workers by July, Solar about 100 and Ryan around 500, according to reports in industrial circles.

LOCAL MEN PREFERRED

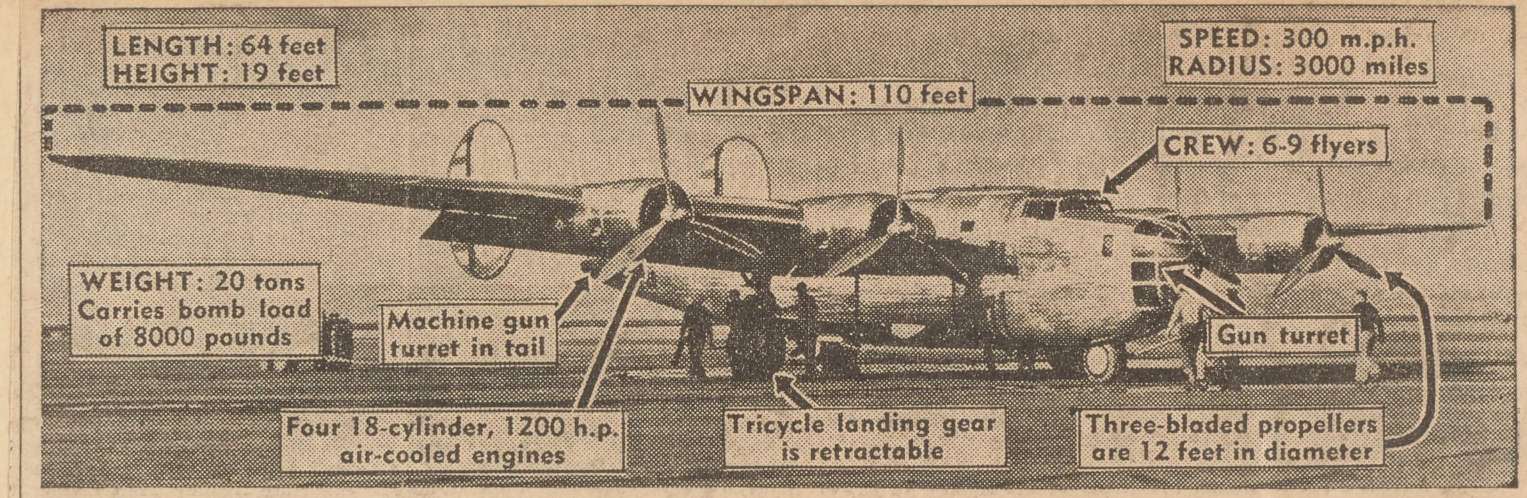
"There is apparently every disposition on the part of the manufacturers to give local men the call ahead of outsiders where experience is equal," Bomar said. "The trouble throughout the country is that there is no reservoir of aircraft labor to draw on."

Beginners are getting a minimum wage of 50 cents an hour, with the 40-hour week, it was reported. Skilled mechanics get the union scale, running above $1 an hour, it was added.

Rapid expansion of employment has resulted in speeding up the vocational school's special aircraft trade classes.

While local industrial leaders are happy at the rise in employment, they are concerned with the problem to be expected when the war-boom orders taper off and lay-offs begin.

Army Records Claimed for New Consair Bomber After First Tests Over San Diego


LENGTH: 64 feet
HEIGHT: 19 feet
SPEED: 300 m.p.h.
RADIUS: 3000 miles
WINGSPAN: 110 feet
CREW: 6-9 flyers
WEIGHT: 20 tons Carries bomb load of 8000 pounds
Machine gun turret in tail
Gun turret
Four 18-cylinder, 1200 h.p. air-cooled engines
Tricycle landing gear is retractable
Three-bladed propellers are 12 feet in diameter

Performance and military record of the new Consolidated-built United States army super-bomber, XB-24, is charted on photogram above, after initial tests at San Diego. An army test board arrived here from the east to inspect the craft.

Sat - Feb 17 - 1940
Tribune Sun
S. D.

Larson Bid Wins Consair Contract

UNION 2-15-40

To B. O. Larson, San Diego, with a bid of $209,000, yesterday was awarded the contract for construction of seven steel frame buildings by the Consolidated Aircraft Corp.

M. H. Golden submitted a bid of $210,284; E. F. Ryan, $220,268, and Charles L. Hoskins, $221,705. Five other contractors submitted bids ranging from $221,000 to $225,000.

The new structure, which will virtually double the plant's capacity, will include a final assembly building, addition to the paint shop, final finish building, boiler house, maintenance and storage shed, office and first-aid station.

San Diego Considered For Boeing Plant

TRIB 2-19-40

Officials of Boeing Aircraft Co. today disclosed that wage rates and labor relations factors were paramount considerations in the possibility the large airplane manufacturing firm may move its operations from Seattle to some other Pacific coast city, The United Press reported from San Francisco. San Diego, it is rumored, is being considered as a possible site for the plant. Officials of the firm said invitations had been received from San Francisco, Portland and "southern California cities and other communities."

HARBOR DRIVE AND NAVY EXPANSION PLANS MOVE AHEAD; 2 BILLS O. K.'D

UNION 2-20-40

Plans of the city to develop a scenic drive around the harbor and of the navy to expand local shore establishments moved forward yesterday when two bills were passed by the senate and sent to the house, International News Service reported.

One measure authorized the navy to accept land voted recently by National City for destroyer base improvements. The second bill, said Comdr. J. T. Mathews, 11th Naval district public works officer, included land grants and exchanges as approved by San Diegans at the spring primary and general elections last year. These included deeding to the navy of 40 acres in Balboa park for Naval hospital expansion; 14 acres northerly of and adjacent to the destroyer base, and four parcels, totaling 10 acres, between Harbor st. and Pacific highway and Broadway and Market st., and a small parcel south of navy pier.

The navy, in return, is to convey to the city 61.72 acres adjacent to Lindbergh field; a triangular piece of land on the west side of Pacific highway between E and F sts.; a strip of Naval Training station property for street improvement, and a triangular piece at the corner of Barnett ave. and Pacific highway. Another small piece of Marine base land near Water st. also is involved.

The government is to issue a revocable permit for a 200-foot-wide right-of-way for construction of Harbor dr. bordering the bay in front of Naval Training station and the Marirne base, and the navy department is to recommend and support the construction of a bridge to carry the drive across the mouth of a lagoon leading to the Marine base and training station if and when emergency appropriation funds are available.

Glenn Rick, city planning engineer, said some of the land the city will receive was provided under the last bay dredging contract, and that the rest of the land across which the right-of-way will extend, will be filled in under the current dredging program.

New Ryan Plane, Consair Bomber Tested by Army

UNION 2-21-40

Army air corps officers yesterday started a series of tests on Consolidated's Aircraft Corp.'s new army four-motored bomber, XB-24, and Ryan's new type high-wing monoplane which has many of the characteristics of a helicopter.

With a wing span of 50 feet and equipped with a 425-horsepower motor, the Ryan plane can climb at an angle of 60 degrees, remain almost stationary in midair, and land with the ease and low speed of a helicopter.

Maj. K. B. Wolfe, head of the army trial board of 20 officers and technicians, which is conducting tests of the new bomber and the Ryan scout plane, has designated the Ryan craft as the YO-51.

The plane carries no armament and its primary function, according to Maj. Wolfe, is to take messages to military units operating behind the front lines and to coordinate infantry movements from the air.

The Ryan company is building three of these planes for the army air corps at a cost of $132,000.

The Consolidated bomber is receiving altitude tests preliminary to being flown next month to Dayton, O.

Army Will Test Consair Bomber

UNION 2-14-40

Eight army air corps officers from the office of the chief of army air corps at Washington, Wright field, Dayton, O., and March field, Riverside, arrived here yesterday to conduct a series of flight tests on Consolidated's new army bomber, the XB-24.

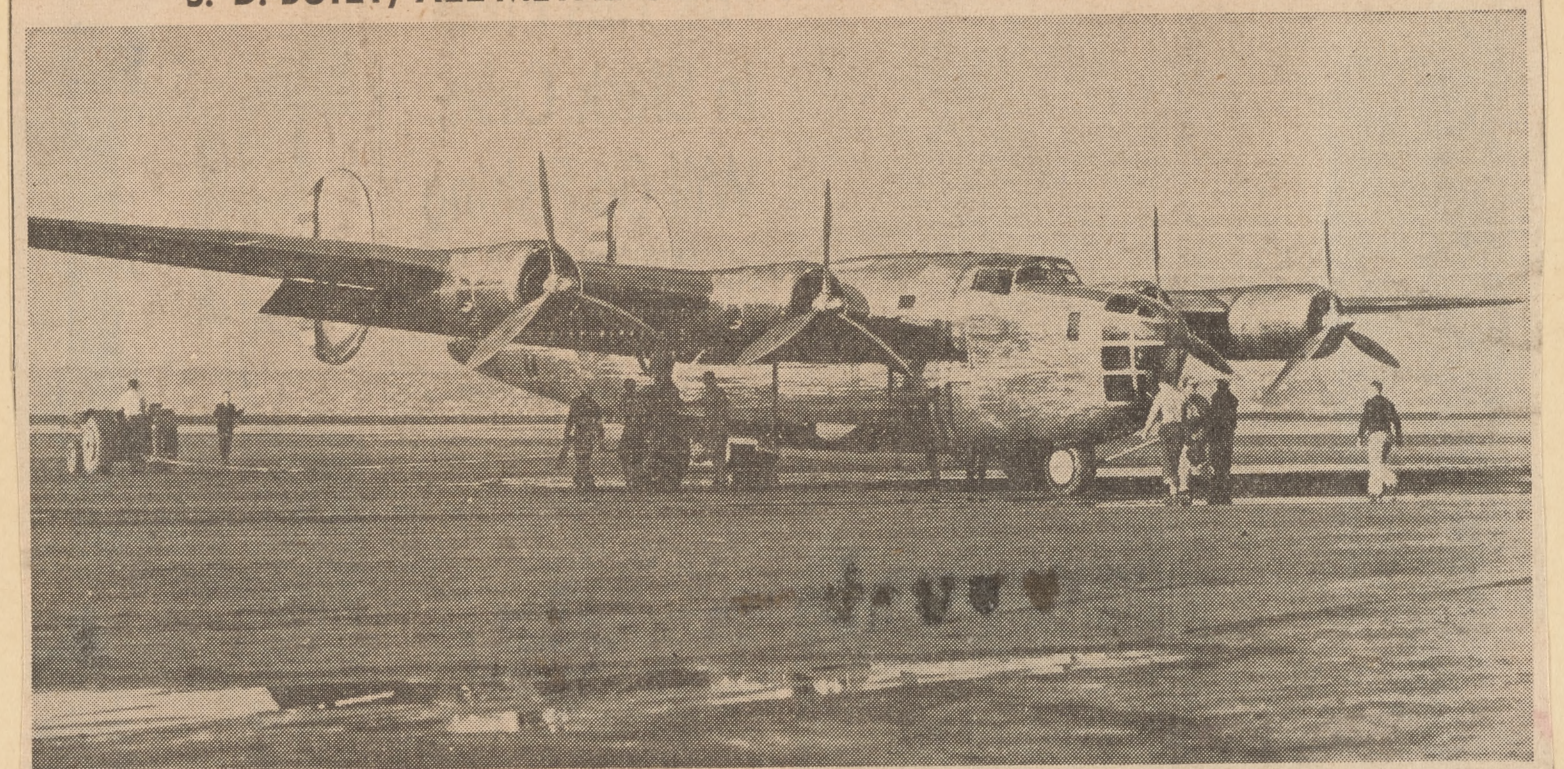
The officers are Majs. K. B. Wolfe, Stanley Umstead, E. M. Powers, A. W. Martinstein, Richard C. Coupland and Capts. D. L. Putt, E. J. Timberlake and H. A. Moore. They will remain here two weeks. After the tests, it is reported the bomber will be flown to Wright field.

The bomber, said to be the largest and fastest ship of its type, is of all-metal contruction. It is powered with four 18-cylinder radial air-cooled Pratt & Whitney engines

(Continued on Page 3-A, Col. 4)

E SAN DIEGO UNION: WEDNESDAY MORNING, FEB. 14, 1940

S. D.-BUILT, ALL-METAL CRAFT HAS 3000-MILE CRUISING RANGE



Consolidated's XB-24, reputed the world's largest and fastest bomber, which will undergo tests by a board of army air corps officers who arrived here yesterday from Washington and Dayton.

* * *

Army Will Test Consair Bomber

(Continued from Page 1)

totaling 4800 horsepower, giving the plane a cruising speed of 300 miles an hour and a cruising range, when carrying four tons of explosives, exceeding 3000 miles.

Equipped for wartime flying, the bomber weighs 25 tons and carries a crew of nine including two gunners. The plane has a wing spread of 110 feet, the length of the hull is 64 feet and the top of the pilot compartment is 19 feet from the ground. The four propellers are 12 feet in diameter.

The metal hull is equipped with hatches and windows in the nose, tail, turtledeck, back and bottom. The landing gear is of tricycle type with a single wheel forward to prevent the bomber from ground looping. The rear wheels retract into the wing wells similar to those of an amphibian.

The bomber has been under construction more than a year at Consolidated under secret orders from the war department.

TRIB 2-14-40

Army Experts Here For Consair Tests

A group of 10 army majors and captains, from Washington, D. C., Dayton, O., and March field, and 10 civilian inspectors from the army's air corps material depot at Dayton, today began extensive inspection and flight tests of Consolidated Aircraft Corp.'s newest 25-ton, four-motored bomber.

Consair officials expected the tests to require about two weeks to complete. The big plane, designed for the army, is known as the XB-24, the designation it will carry until it is graduated from the experimental stage.

The bomber, which has a wingspread of 110 feet, is said to have a speed of more than 300 miles an hour, with a full load, and a range of 3000 miles. The all-metal ship is powered by four 1200-horsepower engines and will carry a war crew of nine. A feature is a tricycle-type landing gear. Upon final acceptance by the army, it probably will be flown to Dayton's Wright field.

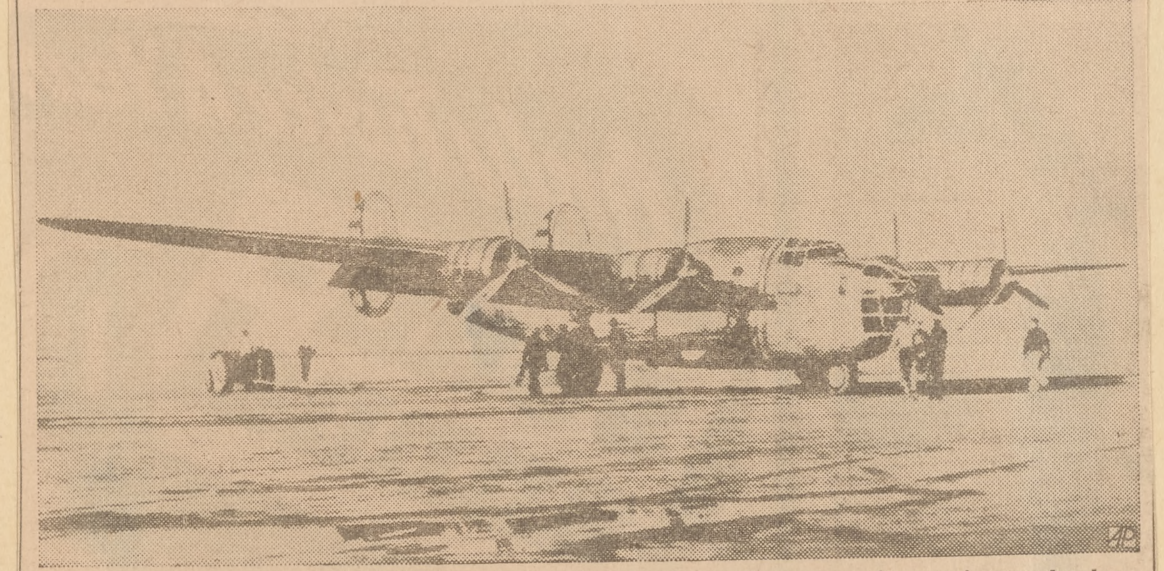
Consair authorities also revealed that bids were opened yesterday on the projected plant expansion project, which, according to estimates, will cost about $1,800,000. They said results of the bidding would not be known until bidding data has been carefully checked, probably within the next day or two.

EVERETT, WASH.

FEB. 15, 1940

THE EVERETT DAILY HERALD

MORE NEW WINGS FOR UNCLE SAM



This picture, just released by the war department, shows the army air corps' new bomber, the XB-24, at San Diego, Calif. Built by the Consolidated Aircraft corporation, it is an all-metal, four-motored, high-wing plane, with a wing span of 110 feet, a 64-foot fuselage and height of 19 feet. Its speed is over 300 miles an hour, range 3000 miles, bomb-load capacity four tons. (Associated Press Wirephoto.)

Army Will Open Bids Soon For 186 Planes

Consair in Line For Contract on 42 Big Bombers

UNION 2-14-40

Bids for 186 planes, including 42 huge four-motored bombers which will cost $250,000 each and 144 scout planes, will be called for by the war department within a few weeks, United Press reported yesterday from Washington.

The army has options with the Consolidated Aircraft Corp., San Diego, and Boeing Co., Seattle, for construction of the four-motored bombers with the probability that Consolidated, designer and builder of the bomber, would receive the contract.

1450 CRAFT BUILT

A survey of the aircraft industry showed the nation is engaged in the greatest mass production era in its history as a result of huge foreign orders for wartime needs and the domestic demand for a vastly expanded national defense program.

Authoritative sources said that aviation plants, working at capacity, have filled foreign and domestic orders for 1450 combat planes and still must complete 7700 for the army, navy and foreign purchasers.

Foreign orders, principally British and French, have totaled 5000 planes, 1100 of which have been delivered or are ready for transportation overseas.

350 DELIVERED

The army and navy have placed orders for 4450 planes, only 350 of which, all for the army, have been delivered.

The growing importance of American aircraft in foreign defense programs is shown in a compilation of export licenses prepared by the joint army and navy clearance

(Continued on Page B, Col. 8)

Army Will Open Bids on Planes

(Continued from Page 1)

as to speed, armor and guns as ships now being built abroad.

President Roosevelt told his press conference he hoped the battleship funds would be restored. Meanwhile, he signed a deficiency bill providing $252,340,776 for defense and neutrality functions of the navy, army, coast guard and federal bureau of investigation in the current fiscal year.

19 NEW SHIPS, 352 PLANES

Presenting the drastically curtailed bill to the house as a "by-product of the unrest in international affairs" and not "a product of militarism," Chairman Scrugham (D-Nev) of the naval appropriations subcommittee declared that because this country owns or controls almost half the world's raw materials, it "cannot avoid the issue."

Chairman Vinson (D-Ga) of the naval committee expressed belief the cuts would not impede the ship building program, but he scheduled an executive session of his committee for tomorrow to analyze the bill before deciding whether to oppose any of the reductions.

The bill would provide funds to start work on 19 new combat ships and five auxiliaries; to purchase 352 new planes and to continue work on 79 warships and 18 auxiliary vessels already under construction.

GUAM FIGHT BEGINS ANEW

Its cuts gave the economy drive one of its strongest boosts. Tentative reductions in measures already passed by the house and senate or pending in the senate or its appropriations committee total about $150,000,000. The house committee cut the farm bill approximately $129,000,000 originally, but restorations left a net reduction of about $66,000,000 below budget estimates.

In addition to the $111,699,699 reduction in direct appropriations sought for the navy, the committee lopped $16,316,250 from so-called contract authorizations under which the navy could order work done and get appropriations later.

Echoes of last year's furious controversy over the navy's proposal to make Guam a Pacific outpost were heard almost immediately after debate opened.

1500 MILES FROM TOKYO

The appropriations committee recommended the harbor dredging and breakwater construction as essential to the safe landing of trans-Pacific commercial planes at the island, described as the only port open to American planes in the 3000 miles between Midway and Wake islands and the Philippines.

Rep. Thomason (D-Tex) protested against extension of naval facilities so far to the east—less than 1500 miles from Tokyo—and contended it would lead to fortification of Guam. Rep. Crawford (R-Mich), who fought the Guam project last year, told the house he was inclined to support the pending proposal.

In defense of the project, Rep. Maas (R-Minn) said he did not think Japan would "get mad" if this country removed some coral beds from the Guam harbor. He added that he knew of no better way of increasing Japan's respect for the United States than by letting her know "we'll do as we damn please."

'FLIGHT OF BUMBLE BEE' IS SEEN

-:- -:- -:- -:- -:- -:-

New S. D. 'Rooster Plane' Hovers Over Field

By HAROLD KEEN

TRIB 2-20-40

The crowd at Lindbergh Field yesterday came to marvel at the mighty Consolidated XB-24 in its final company flight tests and stayed to chuckle at the Ryan YO-51 "bantam rooster," sensational new observation plane.

After the four-motored sky juggernaut roared to a majestic landing, Bob Kerlinger "trotted" Ryan's latest, secretly developed product out on the same runway, gunned the 420 horse power Pratt-Whitney Wasp engine and, if spectators blinked just once, they probably missed the take-off. Nothing like it ever has been seen in San Diego—or anywhere in the nation.

The YO-51 left the field like a frightened chicken, charged almost straight up in the air, and at a respectable height, hovered virtually motionless. Maj. K. B. Wolfe, head of the army air corps test board, smiled and commented:

"There's the heavier-than-air competition to the autogiro."

Anyone who has seen an autogiro in action could appreciate the unique performance of the marvelous new plane. Hardly more

(Continued on Next Page, Col. 2)

Witness S. D. Flight Of 'Rooster Plane'

CONTINUED FROM PAGE ONE

than 50 feet was required for the takeoff of the high-winged, slender fuselaged monoplane. The nose was pointed at an alarmingly steep angle, all of 60 degrees, perhaps more.

Wolfe explained that it is virtually a "flying motorcycle," to be used behind the lines in infantry liaison as a courier delivering messages or coordinating troop movements.

It is not intended to carry defensive armament, a single gun reducing its primary observation characteristics. Hence, the Ryan YO-51 probably never will be employed behind the enemy lines.

In wartime, where landing fields are likely to be cramped, the YO-51 will be able to take off and land in an amazingly restricted area. The ship came down at an angle almost as precipitous as on the takeoff, and almost stood stock still once the wheels touched ground.

Partly responsible for this performance is the tremendous area of the 50-foot wing. The Fowler-type flaps are so broad that they represent, in essence, a "retractable wing."

The YO-51, it was pointed out, has all the advantages of the autogiro, with none of the drawbacks, such as low speed. If necessary, the plane can streak away at high velocity. Ryan has a $132,000 order for three of these craft, now being given the official army once over.

Start Tests Today For New Army Bombers

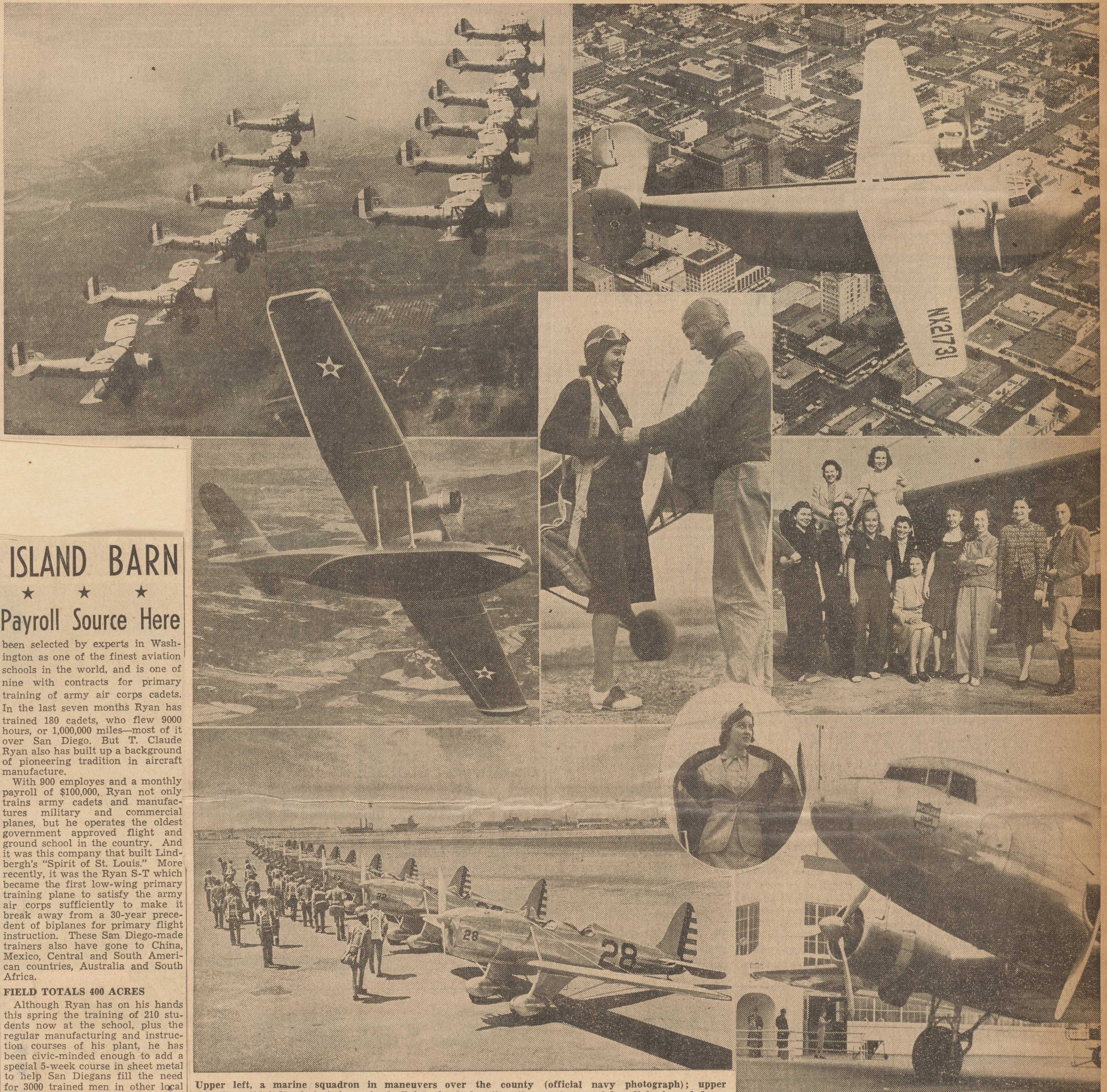
TRIB 2-20-40

Tests by the army air corps of Consolidated's new four-motored army bomber were started today. The plane took to the air at Lindbergh field late yesterday for a 45-minute flight, piloted by William B. Wheatley, chief test pilot for Consolidated. Maj. Stanley Umstead, army pilot, is conducting the army's tests here.

The big plane was seen over San Diego again in mid-morning. The army flight tests are expected to last several days.

* SAN DIEGO, CALIFORNIA, SUNDAY MORNING, FEB. 18, 1940

HUMBLE BEGINNINGS BY GLENN CURTISS GIVE RISE TO VAST S. D. ENTERPRISE



Upper left, a marine squadron in maneuvers over the county (official navy photograph); upper ight, Consolidated's fast twin-engined flying boat, boasting the most powerful radial air-cooled enines ever to be installed in a plane; center left, the navy's PBY model is another Consolidated model No. 28); center, Walter McClain, instructor, helps Helen Ferguson, one of San Diego's many women tudent pilots, into her parachute; center right, women students who learned (or are learning) to fly t Ryan's or Speer's include (left to right) Viola Lindsey, Florence Brown, Sally Westcott, Peggy Bruen, Iargie Covington, Thelma Knox, Adelaide Smith, Marian Bowler, Dora Kolbeck, Grace Prescott, who wns her plane, and Ann Frankman; lower left, army cadets who are receiving primary flight training t Ryan's; lower right, one of the big transport planes used in the four round trips daily at Lindbergh ield, with (inset) Jo Conner, stewardess, whose air-miles are equivalent to three times around world.

* * *

INDUSTRY STARTED IN NORTH ISLAND BARN

★ ★ ★ ★ ★ ★ ★ ★ ★

Aircraft Manufacture Now Second Largest Payroll Source Here

By RUTH TAUNTON

In 1910, Glenn Curtiss rented an old barn on North island, cut a runway through the brush so that his 40 horsepower biplane, held together with baling wire, could take off. These preparations completed, the birdman hung up a home-made sign.

That was the beginning of the aviation industry in San Diego that in 30 years has grown into the second largest payroll in the community. So swiftly has come the change since the Curtiss plane amazed the natives by remaining in the air over San Diego bay for 20 minutes, that few San Diegans realize that 11 percent of the population now is supported by aviation.

PAYROLL 1½ MILLION

But although 22,230 San Diegans are benefited by a monthly payroll in the aviation industry, including the navy, of $1,500,000, we still have no reason for smiling at the days when Curtiss ran out of his barn-hangar and held up a handkerchief to see which way the wind was blowing. Aviation's earliest beginnings in San Diego never were unimportant. It was at Curtiss Training school that Charles Witmer learned to fly—and it was Witmer who was called to St. Petersburg to train Russia's first air corps. And it was on North island that Glenn H. Martin tested in 1913 the first plane he ever sold to the U. S. army for military purpose.

In 1940 the aviation industry in San Diego has two phases: The number of people to whom it gives employment, with the large payroll released here as a stimulation to all other lines of business; and the great diversity of the industry.

Aviation in this community is only half-told when you think of the navy and Consolidated Aircraft Corp., tremendously important as they are. Speer Flying Service, for instance, is doing more flying than any other non-military school in the country with one exception, according to a recent survey.

So highly regarded is the flying school headed by W. Arnet Speer on Barnett ave. that so far, it is the only one in the country to receive two contracts under the new civil aeronautics authority, which is financing the training of 10,000 civilian men and women pilots each year on the theory that these young persons will continue to fly and advance aviation in the United States. Thirty students at State college, including two girls, are CAA students, and 20 from San Diego Junior college are being trained as pilots.

The CAA program is open only to college students, but at Speer's there also are more women student pilots than ever enrolled at one time in any U. S. flying school, according to information available here. Many of these women are clerks and stenographers with small incomes, as is the case with many men students.

'LITTLE MAN' FLIES MOST

"Contrary to popular belief," said Speer, "the bulk of private flying in this country is done by men and women earning $30 a week or less. This income-group buys 75 percent of the private flying time and instruction."

Ryan School of Aeronautics has been selected by experts in Washington as one of the finest aviation schools in the world, and is one of nine with contracts for primary training of army air corps cadets. In the last seven months Ryan has trained 180 cadets, who flew 9000 hours, or 1,000,000 miles—most of it over San Diego. But T. Claude Ryan also has built up a background of pioneering tradition in aircraft manufacture.

With 900 employes and a monthly payroll of $100,000, Ryan not only trains army cadets and manufactures military and commercial planes, but he operates the oldest government approved flight and ground school in the country. And it was this company that built Lindbergh's "Spirit of St. Louis." More recently, it was the Ryan S-T which became the first low-wing primary training plane to satisfy the army air corps sufficiently to make it break away from a 30-year precedent of biplanes for primary flight instruction. These San Diego-made trainers also have gone to China, Mexico, Central and South American countries, Australia and South Africa.

FIELD TOTALS 400 ACRES

Although Ryan has on his hands this spring the training of 210 students now at the school, plus the regular manufacturing and instruction courses of his plant, he has been civic-minded enough to add a special 5-week course in sheet metal to help San Diegans fill the need for 3000 trained men in other local plants. At this "West Point of the Air" on Lindbergh field there are

(Continued on Page 8, Col. 2)

(See next page)

1910 VENTURE START OF HUGE PLANE INDUSTRY

this week 72 army cadets taking flight training.

Lindbergh field is an aviation saga in itself. In 1927 San Diegans voted $650,000 in bonds to build it. Today the industrial payroll on it is $650,000 a month. The work projects administration has spent $1,500,000 on the field. When the first airmail service was established there in 1930, the airport had 75 acres. There are 400 acres now, and when completed will have more than 1000. It is said to be the only municipal airport in the country whose cost of operation does not exceed its income.

It is the southwest terminal for the Western Air Express and United Air Lines. Planes that carry from 10 to 21 passengers arrive at 7 and 11:10 a.m., 5:15 and 8:15 p.m.; leave at 7:45 and 11:25 a.m., 5:35 and 9 p.m. Although it took from two days to a week, depending on the weather, to come from San Francisco to San Diego in the days when George W. Marston first made the trip on the old steamer Orizaba, passenger planes leaving Lindbergh field arrive in San Francisco today in three hours flying time.

SAFE RECORD CITED

United and Western have made 29,200 flights between the local field and Los Angeles—equal to 233 flights around the world—with never an injury to a passenger. They brought in and took out of Lindbergh field last year 11,000 passengers, and carried 80,420 pounds of airmail for San Diegans, along with 4300 pieces of express that included 50 pounds of carrots from Imperial valley to a New York display. Among passengers arriving at the terminal were one 91 years old and an eight-week-old baby.

Also at Lindbergh field, or adjoining, are Solar Aircraft Co.; Army Air Corps Reserve; Airtech Flying Service, and the big plant of Consolidated.

Solar, established in 1927 and headed by Edmund T. Price, manufactures exhaust manifolds—will have manufactured 10,000 of them by June. It has 464 men on an annual payroll of $750,000. The army air corps reserve has two hangars on the field; and there Airtech Flying Service has its storage and service garages—the first buildings, in fact, on Lindbergh field Headed by Douglas T. Kelly, the company stores and services private planes, an average of about 20 San Diegans leaving their planes at the garage every night.

The army air corps reserve here includes 52 San Diegans and one resident of Calexico who are reserve officers, permitted to use the six army planes in the corps hangars for a maximum of 100 hours a year in the air. William Van Dusen, San Diego board of air control president, is one of the veterans in this group; and Judge Clarence Terry is among the candidates who soon will be petitioning for a commission. Capt. Walter W. Gross is in command of the corps, with Lt. H. B. Duckworth as his assistant instructor. He also has 16 regular army men as mechanics and office force on Lindbergh field.

COAST GUARD ACTIVE

At the coast guard air station, involved in so much rescue romance, there now is one pilot, Lt. C. G. Bowman, with his plane. Other planes formerly in the large hangar which was completed in April, 1937, have been flown to the Atlantic coast to do neutrality patrol duty. The coast guard has maintained plane service at Lindbergh field since 1934, with most of the calls for rescue coming in the summer when fishing vessels go south, and swimmers venture too far beyond the breakers.

Consolidated covers an area, in leases and options, of more than

(Continued from Page 1)

60 acres at Lindbergh field. One of the best integrated plane manufacturing plants in the United States, it received as a Christmas surprise the largest single order for planes ever placed by the U. S. government, increasing the company's backlog to over $40,000,000 and raising employment to 4200, with the expectation that 7500 will be employed by summer. The Dec. 20 contract awarded Consolidated by the navy department was for $20,016.699 in plane construction.

BUILDINGS 5 YEARS OLD

The original factory buildings of the corporation are only five years old; and the large experimental buildings, laboratories and storage rooms were built just three years ago. Prior to the present expansion program, Consolidated had 24 acres under lease at the municipal airport. Headed by Maj. Rueben H. Fleet, the corporation has sent model flying boats on routine flights to Pearl Harbor, Coco Solo, New York, the Polar area, Miami, New Guinea, Australia, Indian ocean, Africa, England, Europe and the Philippines. More than any other plant, in any other local industry, Consolidated is at present the great hope of the community in getting jobless young men to work as fast as they can be trained in vocational schools.

Marine corps aviation began on North island in 1924, when an observation squadron, with all hands and material, was transferred here upon evacuation of Santo Domingo. Marine aviation here has grown steadily ever since; and now the second marine aircraft group, fleet marine force, consists of four operating squadrons—fighting, scouting, bombing and utility. In addition, the headquarters and service squadron handles the administration, while the base air detachment carries out routine engineering details. Lt. Col. L. E. Woods, U.S.M.C., is in command.

LARGEST NAVY AIR BASE

As for the navy—few San Diegans outside of the service realize that all of the west coast fleet air activities are based on San Diego, and that San Diego's naval air bases include the majority of the land-based activities of the navy on the west coast.

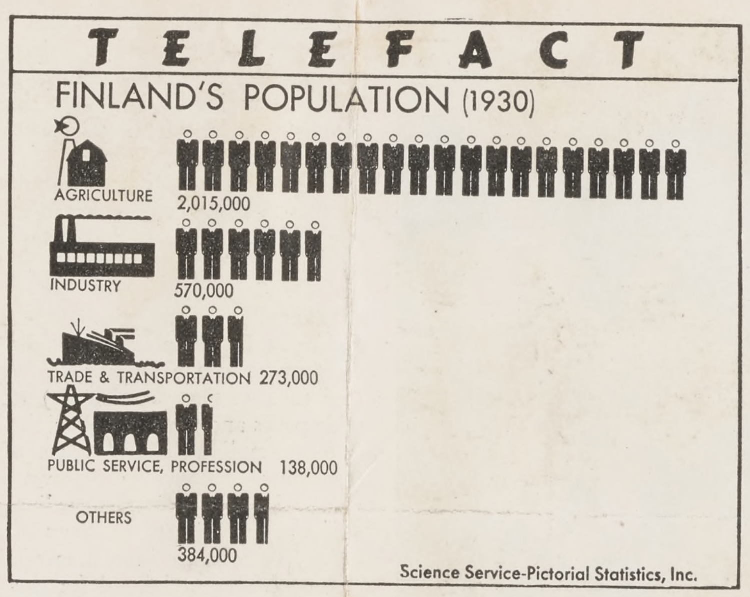
To understand the tremendous scope of naval air operations at San Diego, one must bear in mind that there are two distinct naval aircraft activities in this area: Forces attached to the fleet, and forces operating from shore establishments. Aircraft activities under the jurisdiction of the naval commandant at San Diego include the naval air station at San Pedro, under Comdr. J. C. Monfort, and the naval reserve aviation base, Long Beach, under Comdr. T. A. Gray, as well as naval air station here, commanded by Capt. J. S. McCain, and the second marine aircraft group, fleet marine force. The naval battle force aircraft is based here under command of Vice Adm. C. A. Blakely. Constant fleet movements preclude any accurate figures to total personnel, but an estimate is 3390 officers and men on North island. In addition there are more than 3000 officers, enlisted men and civil service employes attached to naval air station, with a payroll of $15,000 a day in the latter group.

CARRIERS ATTACHED HERE

The aviation groups of the aircraft carriers Lexington, Saratoga, Enterprise and Yorktown are based at North Island, with 300 planes attached to the four carriers.

The naval air station was established here in 1917, a result of the World war. Aside from the main activities on North island, the navy also has landing fields at Del Mar, Miramar, Camp Kearny, Rosedale, Ream, Border (near Imperial Beach), Otay, Jacumba, Ocotillo, Borego and Clark Dry Lake. Other airports in the county, aside from the bee-hive Lindbergh field, include commercial fields at Peik, Hall, Madsen, Chula Vista, Speer, and Linda Vista; the CAA field at Oceanside; private fields at Grande Vista, Gibbs, Ryan. In fact, a fine cross-word puzzle for this evening would be to mark on a map of the county the landing fields not listed here, as well as those that are!

Aside from these chief aviation activities in San Diego there are many more—glider clubs, model airplane clubs, San Diego Sheriff's Aero squadron, and San Diego Flying club, founded in 1935. The Flying club has three planes, which the 60 members not only pilot, but keep in tip-top shape all the time. Altogether, San Diego is one of the most air-minded spots on earth and, unlike Asia and Europe, has no unhappy memories. If Glenn Curtiss started it, all of San Diego in one way or another seems destined to carry on.



AERONAUTICS—ENGINEERING

Retractable Wing Pontoons For Giant Flying Boats

Patents Are Also Granted on Improved Machine Gun, Radio Beacons, Alloys, Warm Sheets, Vulcanized Carpet

HIGHER flying speeds and greater flying range are promised by a new method of retracting the huge wing pontoons of great seaplanes into the wings, described in Patent No. 2,187,040 granted by the U. S. Patent Office to I. M. Laddon, W. A. Ring and H. I. Mandolf of San Diego, Calif., and assigned to the Consolidated Aircraft Corporation. The patent shows how the landing pontoons fold up beneath the wing tips, become part of the airfoil section and decrease air resistance greatly.

An improved type of machine gun which is claimed to provide more accurate firing is described in patent No. 2,186,969 of Samuel G. Green of Gray, Ga. The invention times the firing position of the gun so that it comes always at the proper period of the recoil and counter recoil cycle. According to the patent, other machine guns fire when the breech block is near the closed position regardless of the position of the gun in its recoil cycle.

A new kind of vulcanized, sponge rubber carpet is the invention of H. P. Faris, Philadelphia, and D. W. Yochum and R. B. Logan of Trenton, N. J., granted patent No. 2,187,140. The carpet fabric is cemented onto a base of soft rubber which is simultaneously vulcanized and blown with air to form a sponge rubber base.

Two new types of radio beacon systems were among the patents of the week, No. 2,187,097 to Francis Pope of Glendale, Calif., improves the present quadrant signals which are now used extensively in aviation to mark airports. Signals A and N are sent in code by this device. They blend into an "on course" signal in the pilot's earphones.

The new invention overcomes a prior trouble of these systems; that the pilot —when receiving the on course signal, could not tell by the signal alone along which line he was approaching.

Another new radio beacon is that of Ernst Gerhard of Berlin (No. 2,187,618) which employs a parabolic type of reflector to project—in searchlight fashion —two nearly parallel short wave radio signals into space. As these signals diverge, a line of equal intensity is provided which can be used to mark a given position or a line of descent for an airplane.

From Germany also came patent No. 2,187,094 granted to J. Pink of Wiesswasser in Lausitz for an improved means of spinning glass filaments and fibers from molten glass.

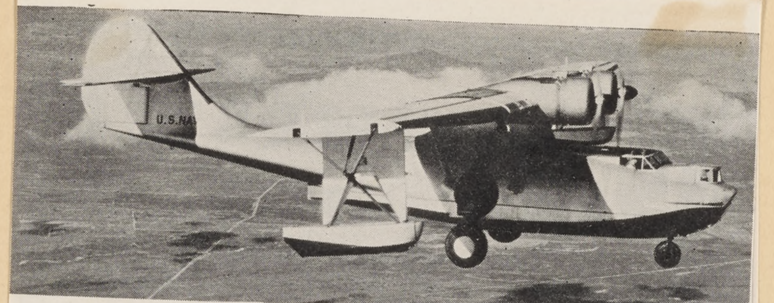
Two new metal alloys received patents. No. 2,187,379 went to F. R. Hensel and K. L. Emmert of Indianapolis, Ind., for a new silver base alloy of high tensile strength that is useful for electrical make-and-break contacts and switches.

Charles J. Schafer of Baltimore, Md., was awarded patent No. 2,187,630 for a superior quality alloy metal for machine cutting tools. Among the elements used in the alloy are iron, zirconium, molybdenum, yttrium and combined columbium-tantalum.

For sleepers who dread cold sheets on a chilly night is patent No. 2,186,965 of Annette Fridolph, New York City, for a sheet woven in two ways. The middle part is the standard weave with its relatively smooth, cold feel, while the ends are woven with a napped surface forming a relatively soft, warmer surface.

To the well-known facsimile expert W. G. H. Finch, Spuyten Duyvil, N. Y., was awarded patent No. 2,187,374 for an improved method of transmitting colored and black-white pictures over telegraph lines.

Science News Letter, February 3, 1940



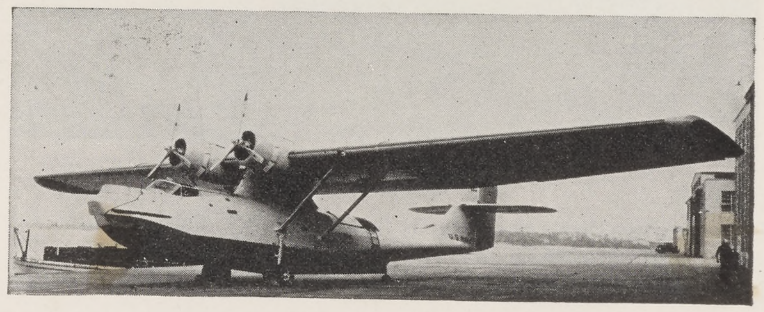
Consolidated 28 Amphibian

CONSOLIDATED'S Model 28 Amphibion has two P & W Twin Wasps delivering 2,100 hp total at 7,800 ft. High speed, 199 mph. at 7,800 ft.; cruising, 179 mph. at 7,800 ft.

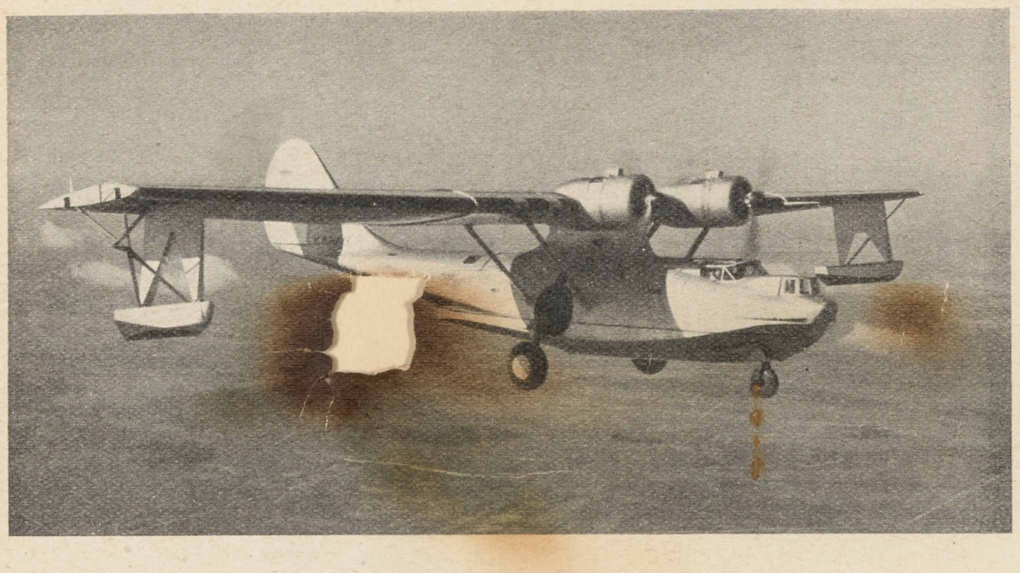
AVIATION FEB. 1940

Consolidated 28

CONSOLIDATED'S Model 28 twin-engined flying boat features a wide scope of possible operations, 9-man crew space, machine gun and bombing equipment.



AVIATION FEB. 1940



THE BIGGEST AMPHIBIAN.—The new Consolidated Model 28-5A amphibian (two 1,200 h.p. Pratt and Whitney Hornets) based on the well-tried PBY boats supplied to the U.S. Navy. The photograph shows the amphibian with the retractable wheels and floats extended.

The Consolidated Amphibian

AN AEROPLANE, to be useful in every possible sphere of operation, must be an amphibian. Obviously something must be paid for the advantage of being able to take off from or alight on land and water. Up till now the disadvantages in extra weight and decreased performance have been held to outweigh the advantages to be gained. Economic operation is achieved all too hardly, anyway. Only in an exceptional aeroplane are the advantages worth while.

Now at last an amphibian gear has been applied to an exceptional aeroplane—the Consolidated Model 28—which, designated the PBY by the U.S. Navy, has achieved many fine flights over long distances in formation. An aeroplane of this type was flown non-stop across the Atlantic last Summer from Botwood to Felixstowe, 2,450 miles in 15½ hrs., and another, the Guba, was flown round the World, stopping in New Guinea on the way to do useful work.

The new amphibian version of the Consolidated boat, the Model 28-5A, was built for the U.S. Navy as the XPBY-5A. Makers' trials are complete and the boat has been delivered to the U.S. Navy for trials at Anacostia. The chief modification is the incorporation of a retractable tricycle landing gear. The nose wheel is retracted backwards into the bottom of the hull and enclosed by flush-fitting hatches—the side wheels with their oleo shock-struts retract into wells in the side of the hull. All the three wheels are operated by hydraulics from a central power unit. A single lever controls extension and retraction.

The flying characteristics of the boat have been found to be unaffected by the landing gear. It has been flown with this gear in all positions and with the retractable wing-tip floats up and down, without any adverse effects. When the gear is retracted the top speed of more than 200 m.p.h. at 12,300 ft. remains unaffected.

We have heard no figures for the increased weight, but the reduction of payload must be of the order of at least 1,000 lb. Normally the Consolidated boat has a payload of 4,000 lb. for 2,700 miles at 160 m.p.h. on 57% rated power.

The makers claim for the landing gear that apart from the obvious advantage of making possible operation from land aerodromes, it is a great advantage for taxying in rough water. The extended gear serves as a sea anchor and assists control, and the approach to a mooring or ramp in a difficult wind is made easier. More power can be taken from the motors for turns of small radius without gaining too great acceleration and with less skidding. The danger of scraping the keel on a ramp is eliminated. Beaching is simple and no extra crew is needed. The machine can be operated from remote sandy beaches without any special ramp and this is of very great use when the boat may be flown on active service. The boat can run out of the water under its own power and in going down a ramp is completely controlled by its wheel-brakes.

All these advantages are not confined to the Consolidated amphibian and naturally apply equally to our own small Vickers-Supermarine Walrus which has been in operation with the Fleet Air Arm for many years.

An advantage so far peculiar to the Consolidated boat is its tricycle gear, which naturally has all the points which make tricycle undercarriages popular with pilots. The brakes can be put full on when landing with no adverse effects.

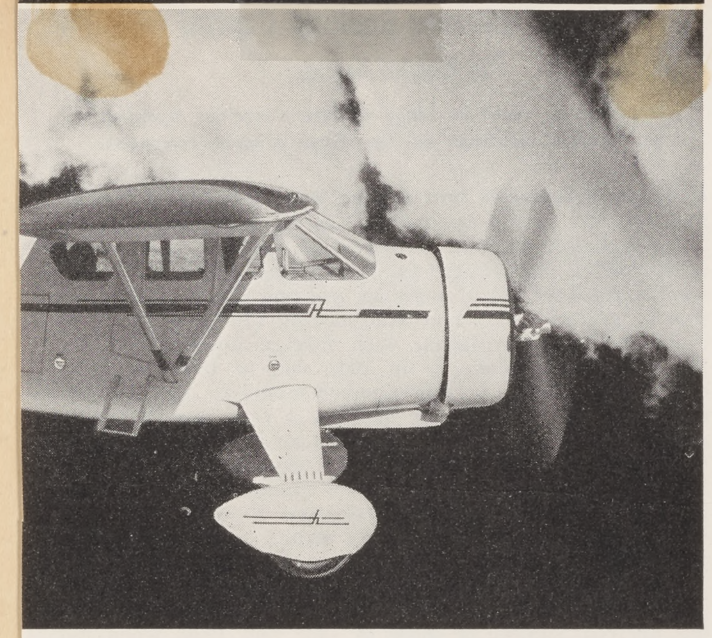
Two other features are worthy of note. There is automatic draining of the hatch of the nose wheel before the machine takes off from the water, so that the trim is unaffected. The machine retains the usual lugs for the beaching gear. Thus when the tricycle undercarriage requires servicing, the standard beach gear is attached and the boat runs out of the water. The landing wheels are carried clear of the ground.

Details of the operation of the Consolidated amphibian will be interesting when forthcoming. By virtue of its range and impartiality to land or sea alightings, it could be operated from anywhere to anywhere in the World.

The interests of the Consolidated Corporation are handled in this country by Aviation Corporates Ltd., of 55, Pall Mall, London, W.1. Recently there have been more unconfirmed rumours of British orders for these boats.

CONSOLIDATED

THE BRITISH BOAT. — The Consolidated Model 28-5 two-motor flying-boat supplied to the Royal Air Force for experiments. It was flown across the Atlantic non-stop from Botwood to Felixstowe. The photograph shows the machine on its beaching chassis. It is not an amphibian.



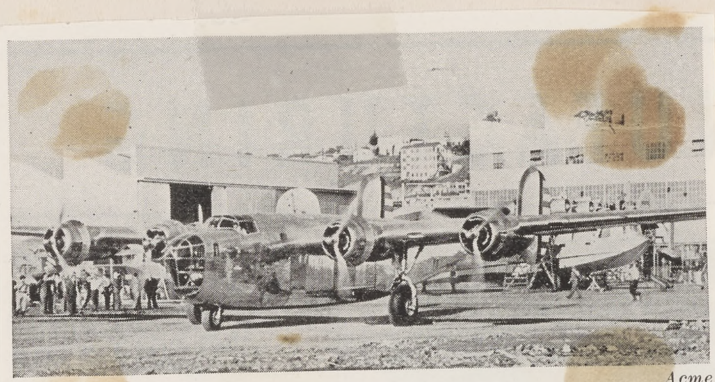
The new Howard, Model 15, powered with Jacobs 330 HP engine

–Superior in Performance,
flight Characteristics

Specification and Performance Data

Elsewhere in this Directory Issue will be found detailed specifications and performance data on the new Howard equipped with various powered

AVIATION FEB. 1940



Acme

THIS FOUR-MOTORED THREE-WHEEL CONSOLIDATED BOMBER is capable of 400 miles per hour, loaded. Here you see it at San Diego, California, rolling along after a test flight, which was watched by high Army officials.

AVIATION FEB. 1940

Bomber to Get Final Tests At March Field

UNION 2-26-40

For final tests before being flown to Wright field, Dayton, O., the army's latest and most powerful long-range bomber, XB-24, left Lindbergh field yesterday for March field, Riverside.

The huge Consolidated-built four-motored bomber carried a crew of eight, including Majs. K. B. Wolfe and Stanley Umstead, Capt. E. F. Harmon and five air corps technicians.

The XB-24 is to return here Wednesday and will remain a month while additional equipment is installed before taking off for Dayton.

The bomber has a speed of 300 miles an hour, a cruising range exceeding 3000 miles and carries in addition to a heavy armament of machine guns four tons of bombs. It weighs 20 tons loaded.

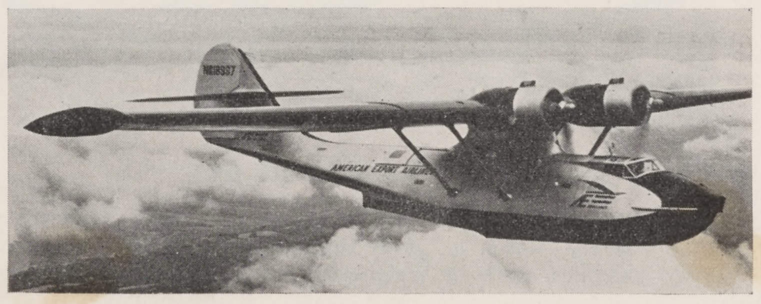
---

dent Ted Lynn. Largest single order was received from Lockheed for 200 additional sets of equipment and spare parts for use on the re-ordered Lockheed-Hudson bombers for England. Other unfilled orders are on hand from Boeing, Brewster, Consolidated, Naval Aircraft Factory, Sweden, Vought-Sikorsky and Vultee.

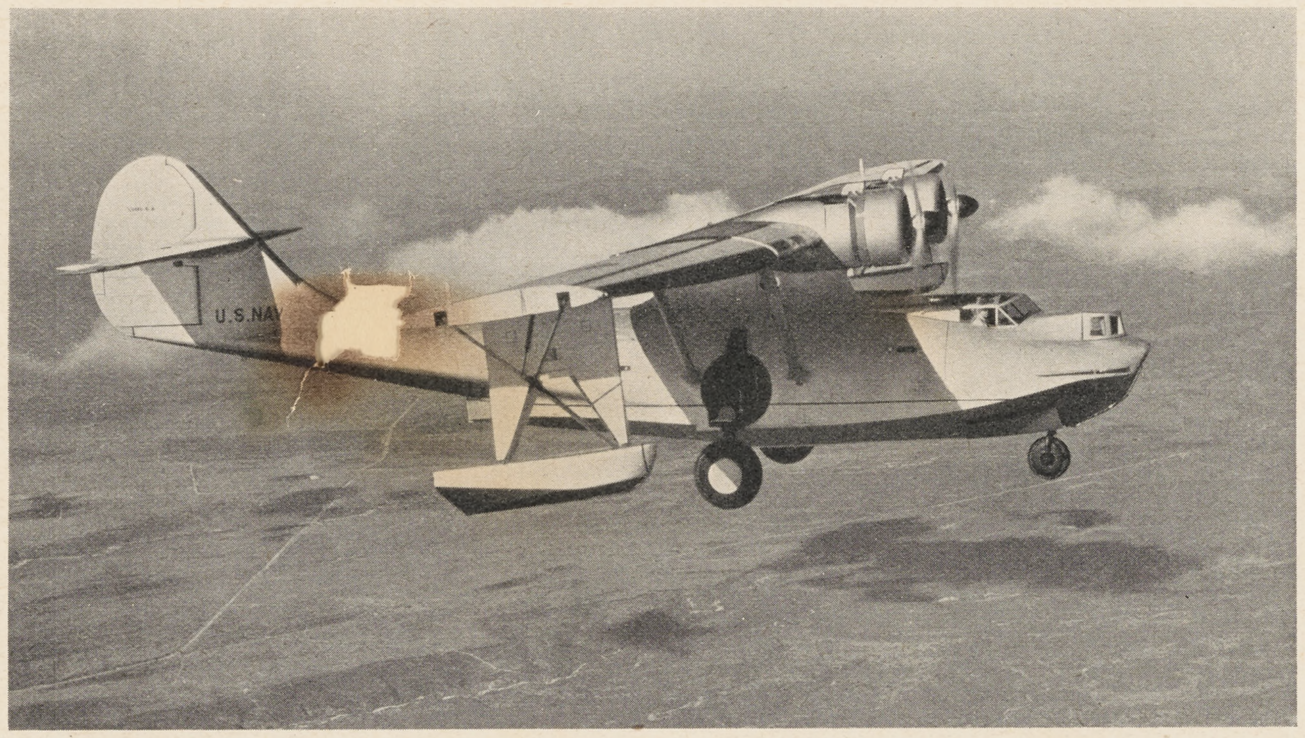
Consolidated 28 Flying Boat

No A.T.C.

CONSOLIDATED Model 28 is 20 passenger flying boat. Two P. & W. Twin Wasps, total 2100 h.p. Cruising speed, 179 m.p.h. at 7800 ft.; gross weight, 27,000 lb.



THE AEROPLANE 32 JANUARY 12, 1940



THE BIGGEST AMPHIBIAN.—A new Consolidated Model 28-5 flying-boat converted to a tricycle amphibian with rectractable wheels. It has been built for the U.S. Navy who have given it the number XPBY—5A. In this form the Consolidated boat is one of the most useful aeroplanes in the World because it can operate from land or sea bases and has a range sufficient to cross the Atlantic with a payload. The British agents are Aviation Corporates Ltd.

MEMO

Date 2/16/40

D. G. FLEET

To Lad — L
Le — LK
K — JK
Carp — C
Newman — [illegible]
Wheatley — WBW
Seaman — JHS
Davidson — file

gas + oil

+ what else?

~~crew~~ +

need printing or lithographing is
FRYE & SMITH
AVENUE, SAN DIEGO, CALIFORNIA

, 1940 S. D. Tribune - Sun

$22.71 AN HOUR FOR NAVY BOMBER ON NEUTRAL DUTY

WASHINGTON, Feb. 15 (A.P.)—Here's one for the motorist who thinks it's expensive to operate his auto. The operating cost of the navy bombers, now on neutrality patrol, has been $22.71 an hour—and it's going up.

This cost, Rear Adm. John H. Towers told the house appropriations committee, did not include overhaul and depreciation. The cost was rising, he said, because newer models require a higher quality gasoline than older ones.

With The Aircraft Manufacturers

(from the listings on the N. Y. Stock and Curb Exchanges)

COMPANY	SALES in Millions			NET INCOME			EARNINGS Per Common Share			DIVIDENDS Per Common Share			BACK-LOG in Millions		
	*1939	1938	1937	*1939	1938	1937	*1939	1938	1937	1939	1938	1937	*1939	1938	1937
Aviation Corp.	$3.7	$6.4	$4.0	d	$244,909	$479,993	d	$0.09	$0.17	....	$0.185	.....	$11.3	$1.2	....
Bell Aircraft	0.2	1.2	1.7	$10,000	65,488	43,241	.....	0.33	0.25	....	.....	.....	7.0	3.7	$1.2
Boeing	10.0	2.0	5.5	d	554,958	311,685	d	d 0.77	0.45	....	.....	$0.40	26.0	14.9	14.1
Brewster	0.8	1.5	0.7	....	233,879	19,328	.....	0.66	0.06	$0.20	0.30	0.05	11.0	2.1	1.4
Consolidated	4.8	12.2	11.9	750,000	1,535,110	462,959	$1.00	2.55	0.68	....	1.00	0.50	37.0	2.8	14.0
Curtiss-Wright	49.0	33.1	24.1	5,200,000	3,598,739	1,983,609	0.40	0.17	d 0.05	....	.....	.....	160.0	30.0	28.0
Douglas	27.0	28.3	20.9	2,850,000	2,147,392	1,051,778	5.00	3.76	1.84	3.00	3.00	.....	76.0	22.5	31.3
Grumman	4.5	4.9	2.3	750,000	617,074	139,062	1.60	1.30	0.32	1.05	0.75	0.25	4.2	3.5	3.2
Lockheed	35.0	10.3	5.2	3,000,000	442,111	137,919	4.00	0.67	0.21	1.00	.....	.....	46.0	33.3	5.8
Martin G. L.	25.0	12.4	7.8	3,550,000	12,417,417	1,144,858	3.25	2.15	1.32	1.00	.....	.....	50.0	13.9	17.6
No. American Av.	28.0	10.1	8.3	7,200,000	1,904,086	496,103	2.10	0.55	0.14	1.40	0.40	0.125	45.0	10.9	9.3
Republic	1.0	3.6	0.3	d	d 553,819	d 1,210,510	d	d 0.95	d 2.09	....	.....	.....	11.6	0.1	1.3
United Aircraft	50.0	36.8	29.3	9,000,000	5,426,276	3,856,272	3.40	2.05	1.52	2.00	1.25	1.00	135.0	17.5	23.8
Waco	a 0.9	0.7	0.9	a 4,582	d 34,326	d 30,214	a 0.03	d 0.24	d 0.21	....	.....	.....	.....	....	....

* Estimated d Deficit a actual

Stinson Aircraft Div. .... SR-10D .... 678 ...... CML 4-5 Ly,Rm 225 S.L. 76 660 17.0 102 ...... 147.5 4,000 57 855 13,80
Stinson Aircraft Div. .... SR-10D .... 678 ...... CML* 4-5 Ly,Rm 245 S.L. 76 640 18.0 102 ...... 151.5 4,000 57 950 15,00
.... Military Amphibian. Mil ...... 679 ...... CML 4-5 Wr, Ww, Rm 285 S.L. 100 830 18.8 102 ...... 156 5,500 60 1,040 15,80
.... 28 Military Flying Boat. Mil ...... CMF

MILITARY AIRCRAFT SPEC.

AVIATION FEB. 1940

Consolidated Aircraft Corp .... 28 Com. Amphibian .... 150 3,000 24 315 11.4 84 150 S.L. 124 3,000 48 900 18,500
Consolidated Aircraft Corp .... 28 Com. Flying .... 175 S.L. 27 900 1,728 133 150 310 13,500 135 3,000 50 1,350 19,500
Consolidated Aircraft Corp
North American Aviation, Inc. .... NA-35 .... CML 2 MenId 2,550 12,000 256 11,000 84 1,880 26,000
North American Aviation, Inc. .... NA-35 .... Mil ...... CML 2 RanId
North American Aviation, Inc. .... NA-40-A .... CML 5 WrCyRi
.... X-PT .... Mil ...... CML 2 Ranger 165 S.L.
Phillips Aviation Co. ....

AVIATION FEB. 1940

M'FG'RS. DIRECTORY

Consolidated Aircraft Corp., Lindbergh Field, San Diego, Cal. R. H. Fleet, Pres., I. M. Laddon, Chas. T. Leigh, C. A. Van Dusen, E. N. Gott, H. E. Weinmiller, V. Pres., R. H. Fleet, Gen. Mgr., I. M. Laddon, Ch. Engr., D. M. Carpenter, Prod. Mgr., W. M. Shanahan, Teas., R. A. Stanberry, Sec., J. L. Kelley, Asst. Sec. & Factory Mgr. .50, 51, 52

AVIATION FEB. 1940

Order Hydraulic Equip.

Aircraft Accessories Corp. has received over $100,000 in new business from aircraft manufacturers for hydraulic equipment, according to Presi-

AVIATION FEB. 1940

TRIB FEB 26, 1940

Consair Plane Flown North for Tests

For test flights at March field, the new Consolidated built four-motored army bomber XB-24 flew from San Diego to Riverside Sunday, carrying a crew of eight, including Majs. K. B. Wolfe and Stanley Umstead and Capt. E. F. Harmon. The plane is expected to remain at March field until Wednesday, when it returns here for installation of additional equipment before being flown to Wright field, Dayton, O., next month for finals tests.

Western Flying

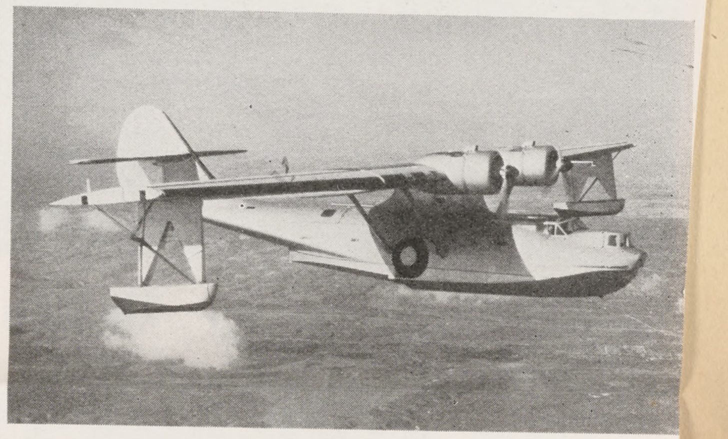
Jan 1940

AMPHIBIAN FEATURE ADDED TO CONSOLIDATED PBY BOATS

THE Consolidated Aircraft Corporation's new Model 28-5A amphibian, designed by the U. S. Navy for whom it was constructed as the XPBY-5A, has undergone its flight testing and is now in the Navy's hands at Anacostia.

Consolidated announced receipt of an order amounting to $20,016,699 for an undisclosed number of four-engined patrol bombers of the PBY series from the **U. S. Navy Department** on December 20.

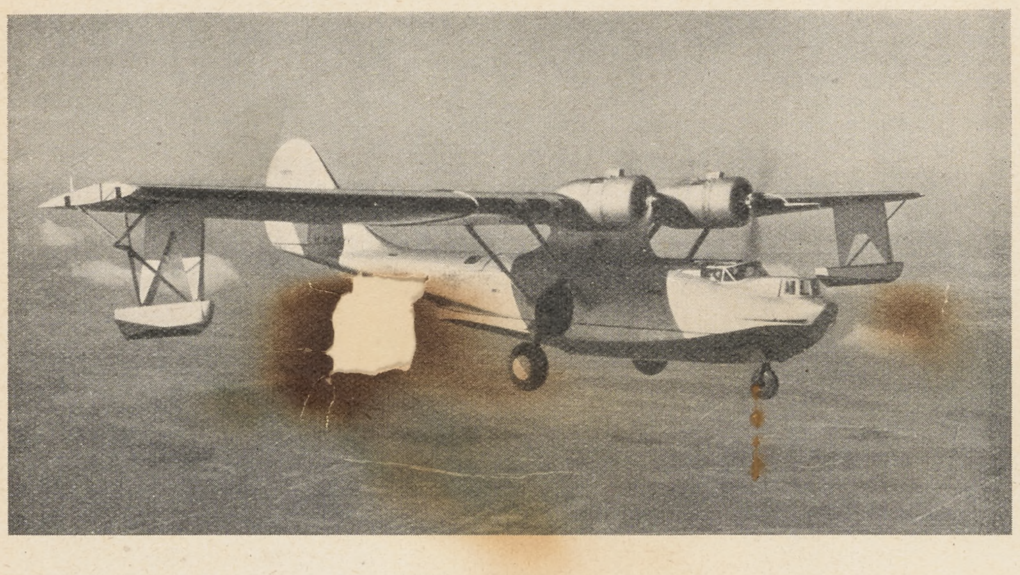
Whether the new patrol boats will incorporate the amphibian feature was not disclosed.



With the order, Consolidated's backlog of unfilled orders zoomed to more than $37,000,000. Reports from the factory said that this new contract will require increased manufacturing facilities and necessitate an expansion program which will cost between $1,500,000 and $2,000,000. The same report said that no outside financing will be required for the expansion, which will increase production facilities by 50 per cent.

Basically the new Consolidated amphibian is the Model 28 twin engined flying boat which the Navy knows as the PBY, now having incorporated in the structure, the amphibian feature. The inherent advantages of the Model 28 boat have been retained, and the great advantage of land plane operation added.

The landing gear is of the tricycle type, with a single wheel forward and two aft, all fully retractable. The side wheel and supporting mechanism, complete with oleo shock struts, retract into wells in the side of the hull. The nose wheel in the bow is completely closed over in the retracted position by automatic ally operated hatches so tha no resistance to planing is en countered. All three wheel are operated by a central hy draulic power drive, and th operations are carried out i sequence automatically. single lever controls both th extension and the retractio of the landing gear. Hydrauli pump power is derived from the main power plant or from an auxiliary engine, and may be operated by hand if necessary.



THE BIGGEST AMPHIBIAN.—The new Consolidated Model 28-5A amphibian (two 1,200 h.p. Pratt and Whitney Hornets) based on the well-tried PBY boats supplied to the U.S. Navy. The photograph shows the amphibian with the retractable wheels and floats extended.

The Consolidated Amphibian

AN AEROPLANE, to be useful in every possible sphere of operation, must be an amphibian. Obviously something must be paid for the advantage of being able to take off from or alight on land and water. Up till now the disadvantages in extra weight and decreased performance have been held to outweigh the advantages to be gained. Economic operation is achieved all too hardly, anyway. Only in an exceptional aeroplane are the advantages worth while.

Now at last an amphibian gear has been applied to an exceptional aeroplane—the Consolidated Model 28—which, designated the PBY by the U.S. Navy, has achieved many fine flights over long distances in formation. An aeroplane of this type was flown non-stop across the Atlantic last Summer from Botwood to Felixstowe, 2,450 miles in 15½ hrs., and another, the Guba, was flown round the World, stopping in New Guinea on the way to do useful work.

The new amphibian version of the Consolidated boat, the Model 28-5A, was built for the U.S. Navy as the XPBY-5A. Makers' trials are complete and the boat has been delivered to the U.S. Navy for trials at Anacostia. The chief modification is the incorporation of a retractable tricycle landing gear. The nose wheel is retracted backwards into the bottom of the hull and enclosed by flush-fitting hatches—the side wheels with their oleo shock-struts retract into wells in the side of the hull. All the three wheels are operated by hydraulics from a central power unit. A single lever controls extension and retraction.

The flying characteristics of the boat have been found to be unaffected by the landing gear. It has been flown with this gear in all positions and with the retractable wing-tip floats up and down, without any adverse effects. When the gear is retracted the top speed of more than 200 m.p.h. at 12,300 ft. remains unaffected.

We have heard no figures for the increased weight, but the reduction of payload must be of the order of at least 1,000 lb. Normally the Consolidated boat has a payload of 4,000 lb. for 2,700 miles at 160 m.p.h. on 57% rated power.

The makers claim for the landing gear that apart from the obvious advantage of making possible operation from land aerodromes, it is a great advantage for taxying in rough water. The extended gear serves as a sea anchor and assists control, and the approach to a mooring or ramp in a difficult wind is made easier. More power can be taken from the motors for turns of small radius without gaining too great acceleration and with less skidding. The danger of scraping the keel on a ramp is eliminated. Beaching is simple and no extra crew is needed. The machine can be operated from remote sandy beaches without any special ramp and this is of very great use when the boat may be flown on active service. The boat can run out of the water under its own power and in going down a ramp is completely controlled by its wheel-brakes.

All these advantages are not confined to the Consolidated amphibian and naturally apply equally to our own small Vickers-Supermarine Walrus which has been in operation with the Fleet Air Arm for many years.

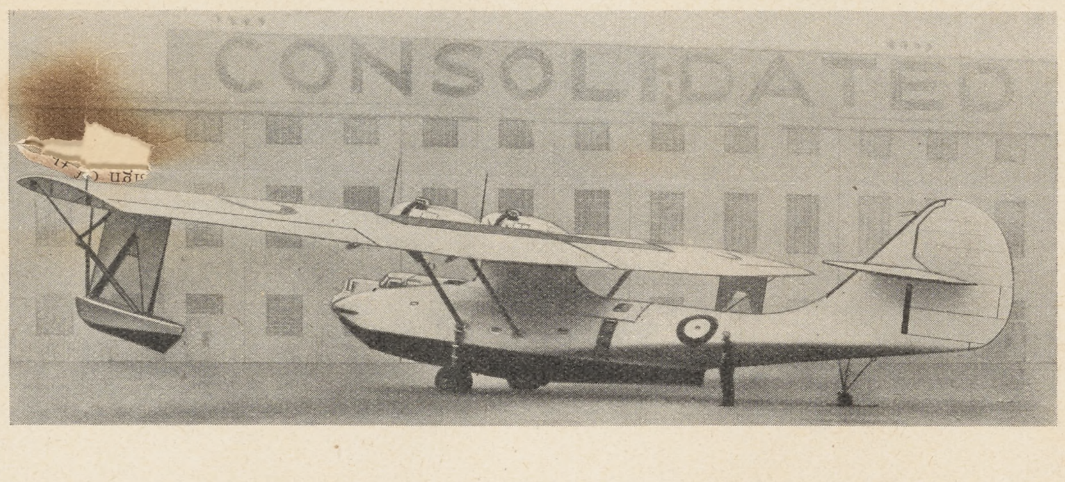
An advantage so far peculiar to the Consolidated boat is its tricycle gear, which naturally has all the points which make tricycle undercarriages popular with pilots. The brakes can be put full on when landing with no adverse effects.

Two other features are worthy of note. There is automatic draining of the hatch of the nose wheel before the machine takes off from the water, so that the trim is unaffected. The machine retains the usual lugs for the beaching gear. Thus when the tricycle undercarriage requires servicing, the standard beach gear is attached and the boat runs out of the water. The landing wheels are carried clear of the ground.

Details of the operation of the Consolidated amphibian will be interesting when forthcoming. By virtue of its range and impartiality to land or sea alightings, it could be operated from anywhere to anywhere in the World.

The interests of the Consolidated Corporation are handled in this country by Aviation Corporates Ltd., of 55, Pall Mall, London, W.1. Recently there have been more unconfirmed rumours of British orders for these boats.

THE BRITISH BOAT. — The Consolidated Model 28-5 two-motor flying-boat supplied to the Royal Air Force for experiments. It was flown across the Atlantic non-stop from Botwood to Felixstowe. The photograph shows the machine on its beaching chassis. It is not an amphibian.



Bomber to Get Final Tests At March Field

UNION 2-26-40

For final tests before being flown to Wright field, Dayton, O., the army's latest and most powerful long-range bomber, XB-24, left Lindbergh field yesterday for March field, Riverside.

The huge Consolidated-built four-motored bomber carried a crew of eight, including Majs. K. B. Wolfe and Stanley Umstead, Capt. E. F. Harmon and five air corps technicians.

The XB-24 is to return here Wednesday and will remain a month while additional equipment is installed before taking off for Dayton.

The bomber has a speed of 300 miles an hour, a cruising range exceeding 3000 miles and carries in addition to a heavy armament of machine guns four tons of bombs. It weighs 20 tons loaded.

Manufacturers Seeking Capital

By Raymond Hoadley

Mr. Hoadley would be happy to answer inquiries regarding the financial condition of the listed aviation companies.

As the rush begins to turn out the huge backlogs of foreign and domestic orders accumulated in the past four months, aircraft manufacturers, in increasing number, are looking to the capital markets for funds to finance plant and equipment expansion and to augment working capital. In addition to unfilled orders now approaching $700,000,000, many companies are negotiating with foreign governments for large orders for delivery in 1941 and in 1940 wherever capacity remains. A large number intend to double delivery rates in the next few months, a few hope to triple production by June. Obviously such an increase in production activity means large cash requirements this winter. Besides the recently announced new financing, it is reported in trade circles that Boeing, Brewster, Piper and possibly Consolidated may be seeking new equity money in the not distant future.

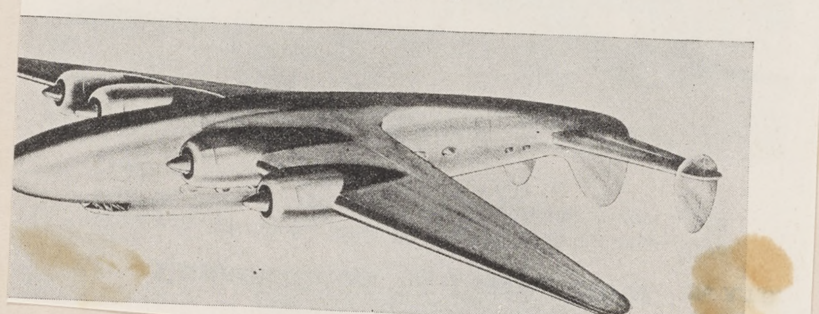
The transport companies will be big factors in the new capital markets in the next year. Another transition stage has arrived, similar to those of 1932 and 1936, when the re-equipment of lines was undertaken in wholesale manner to meet future traffic demands. New equipment, some of which has been under development since 1936, is, or shortly will be available to handle larger loads. The Air Traffic Conference predicts that 500,000 more passengers will be carried on domestic airlines in 1940 than were transported in 1938. Many new routes are likely to be established this year. Some $25,000,000 in new plane orders have been placed for 1940 delivery and bookings running to around $15,000,000 are scheduled for early 1941 shipment. New capital will be required to finance the bulk of this equipment and, if the markets are right, these funds will be secured largely through common stock flotations rather than equipment trust certificates, the time honored favorite method of the railroads.

NUFACTURING

ving toward more-than-double

Auto to Aircraft. In connection with its current reorganization, Hayes Body Corp. is expanding beyond the auto field and will manufacture aircraft, parts, and accessories.

And Even Gliders. Probably war orders have nothing to do with the fact that Schweizer Aircraft Corp. (formerly Schweizer Metal Aircraft Co.)



Lockheed 44

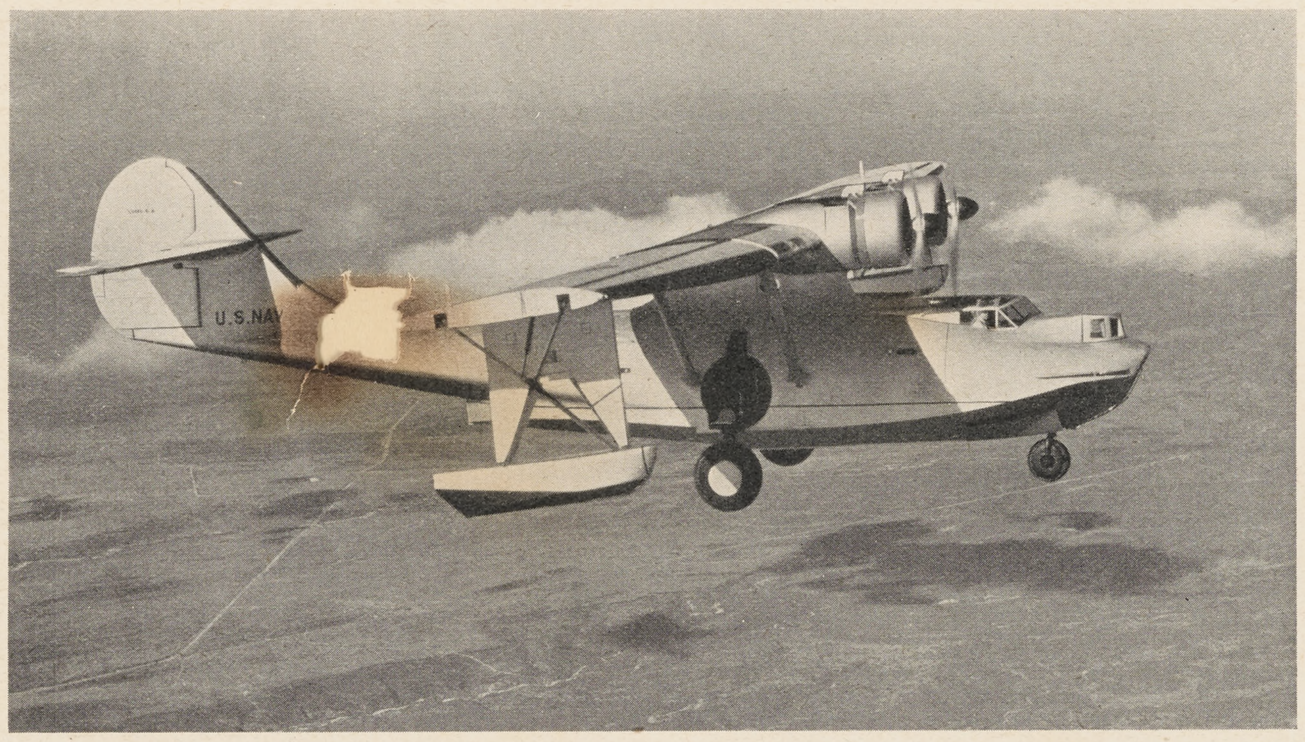
LOCKHEED'S offering in the line of four engine transports is the Model 44. It is supplied with a choice of four engines, either by Wright or Pratt & Whitney. Total pow-

N

ABROAD

AVIATION FEB. 1940

THE AEROPLANE 32 JANUARY 12, 1940



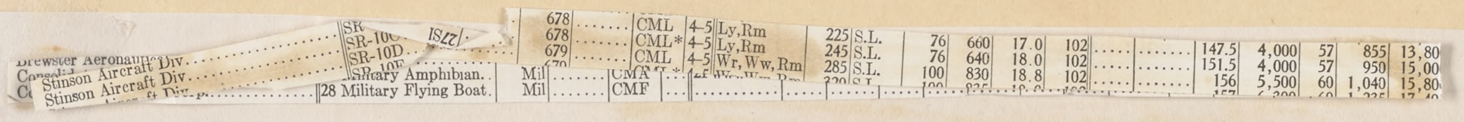
THE BIGGEST AMPHIBIAN.—A new Consolidated Model 28-5 flying-boat converted to a tricycle amphibian with rectractable wheels. It has been built for the U.S. Navy who have given it the number XPBY—5A. In this form the Consolidated boat is one of the most useful aeroplanes in the World because it can operate from land or sea bases and has a range sufficient to cross the Atlantic with a payload. The British agents are Aviation Corporates Ltd.

With The Aircraft Manufacturers

(from the listings on the N. Y. Stock and Curb Exchanges)

COMPANY	SALES in Millions			NET INCOME			EARNINGS Per Common Share			DIVIDENDS Per Common Share			BACK-LOG in Millions		
	*1939	1938	1937	*1939	1938	1937	*1939	1938	1937	1939	1938	1937	*1939	1938	1937
Aviation Corp....	$3.7	$6.4	$4.0	d	$244,909	$479,993	d	$0.09	$0.17	....	$0.185	.....	$11.3	$1.2	....
Bell Aircraft.....	0.2	1.2	1.7	$10,000	65,488	43,241	.....	0.33	0.25	....	.....	.....	7.0	3.7	$1.2
Boeing..........	10.0	2.0	5.5	d	554,958	311,685	d	d 0.77	0.45	....	.....	$0.40	26.0	14.9	14.1
Brewster.........	0.8	1.5	0.7	....	233,879	19,328	.....	0.66	0.06	$0.20	0.30	0.05	11.0	2.1	1.4
Consolidated.....	4.8	12.2	11.9	750,000	1,535,110	462,959	$1.00	2.55	0.68	....	1.00	0.50	37.0	2.8	14.0
Curtiss-Wright...	49.0	33.1	24.1	5,200,000	3,598,739	1,983,609	0.40	0.17	d 0.05	....	.....	.....	160.0	30.0	28.0
Douglas.........	27.0	28.3	20.9	2,850,000	2,147,392	1,051,778	5.00	3.76	1.84	3.00	3.00	.....	76.0	22.5	31.3
Grumman........	4.5	4.9	2.3	750,000	617,074	139,062	1.60	1.30	0.32	1.05	0.75	0.25	4.2	3.5	3.2
Lockheed........	35.0	10.3	5.2	3,000,000	442,111	137,919	4.00	0.67	0.21	1.00	.....	.....	46.0	33.3	5.8
Martin G. L.....	25.0	12.4	7.8	3,550,000	12,417,417	1,144,858	3.25	2.15	1.32	1.00	.....	.....	50.0	13.9	17.6
No. American Av.	28.0	10.1	8.3	7,200,000	1,904,086	496,103	2.10	0.55	0.14	1.40	0.40	0.125	45.0	10.9	9.3
Republic.........	1.0	3.6	0.3	d	d 553,819	d 1,210,510	d	d 0.95	d 2.09	....	.....	.....	11.6	0.1	1.3
United Aircraft...	50.0	36.8	29.3	9,000,000	5,426,276	3,856,272	3.40	2.05	1.52	2.00	1.25	1.00	135.0	17.5	23.8
Waco............	a 0.9	0.7	0.9	a 4,582	d 34,326	d 30,214	a 0.03	d 0.24	d 0.21	....	.....	.....	.....	....	....

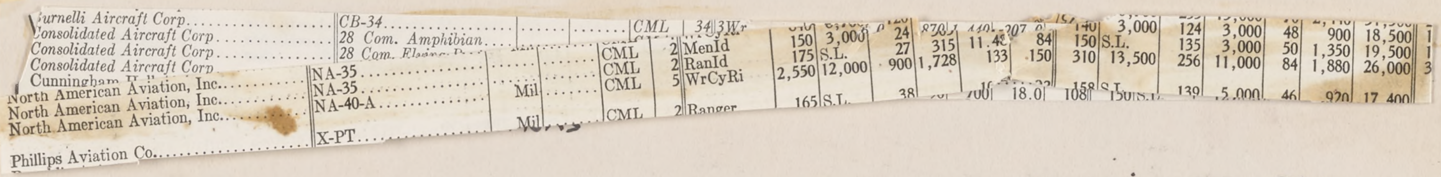
* Estimated d Deficit a actual



Brewster Aeronautical Div.
Stinson Aircraft Div.
Stinson Aircraft Div.
SR-10D
Military Amphibian.
28 Military Flying Boat. Mil CMF
678 CML 4-5 Ly,Rm 225 S.L. 76 660 17.0 102 147.5 4,000 57 855 13,80
678 CML* 4-5 Ly,Rm 245 S.L. 76 640 18.0 102 151.5 4,000 57 950 15,00
679 CML 4-5 Wr,Ww,Rm 285 S.L. 100 830 18.8 102 156 5,500 60 1,040 15,80

MILITARY AIRCRAFT SPEC.

AVIATION FEB. 1940



Burnelli Aircraft Corp. CB-34 CML 34 3Wr
Consolidated Aircraft Corp 28 Com. Amphibian
Consolidated Aircraft Corp 28 Com. Flying
Consolidated Aircraft Corp
Cunningham
North American Aviation, Inc. NA-35 CML 2 MenId 150 3,000 24 84 150 S.L. 124 3,000 48 900 18,500
North American Aviation, Inc. NA-35 CML 2 RanId 175 S.L. 27 315 133 150 310 13,500 135 3,000 50 1,350 19,500
North American Aviation, Inc. NA-40-A Mil CML 5 WrCyRi 2,550 12,000 900 1,728 256 11,000 84 1,880 26,000
X-PT Mil CML 2 Ranger 165 S.L.
Phillips Aviation Co.

AVIATION FEB. 1940

M'F'G'R. DIRECTORY

Consolidated Aircraft Corp., Lindbergh Field, San Diego, Cal. R. H. Fleet, Pres., I. M. Laddon, Chas. T. Leigh, C. A. Van Dusen, E. N. Gott, H. E. Weinmiller, V. Pres., R. H. Fleet, Gen. Mgr., I. M. Laddon, Ch. Engr., D. M. Carpenter, Prod. Mgr., W. M. Shanahan, Teas., R. A. Stanberry, Sec., J. L. Kelley, Asst. Sec. & Factory Mgr. . 50, 51, 52

AVIATION FEB. 1940

Order Hydraulic Equip.

Aircraft Accessories Corp. has received over $100,000 in new business from aircraft manufacturers for hydraulic equipment, according to Presi-

AVIATION
FEB. 1940

MEMO Date 2/16/40

D. G. FLEET

To Sad — L
Le — L
K — JK
Carp
Newman
Wheatley WBW
Seaman
Davidson — file

gas + oil
+ what else?
~~crew~~

need printing or lithographing is
FRYE & SMITH
AVENUE, SAN DIEGO, CALIFORNIA

, 1940 S. D. Tribune - Sun

$22.71 AN HOUR FOR NAVY BOMBER ON NEUTRAL DUTY

WASHINGTON, Feb. 15 (A.P.)—Here's one for the motorist who thinks it's expensive to operate his auto. The operating cost of the navy bombers, now on neutrality patrol, has been $22.71 an hour—and it's going up.

This cost, Rear Adm. John H. Towers told the house appropriations committee, did not include overhaul and depreciation. The cost was rising, he said, because newer models require a higher quality gasoline than older ones.

TRIB FEB 26, 1940

Consair Plane Flown North for Tests

For test flights at March field, the new Consolidated built four-motored army bomber XB-24 flew from San Diego to Riverside Sunday, carrying a crew of eight, including Majs. K. B. Wolfe and Stanley Umstead and Capt. E. F. Harmon. The plane is expected to remain at March field until Wednesday, when it returns here for installation of additional equipment before being flown to Wright field, Dayton, O., next month for finals tests.

Western Flying

Jan 1940

AMPHIBIAN FEATURE ADDED TO CONSOLIDATED PBY BOATS

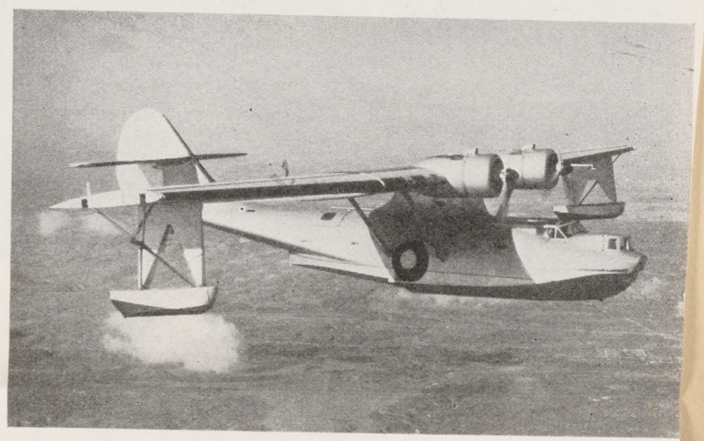
THE Consolidated Aircraft Corporation's new Model 28-5A amphibian, designed by the U. S. Navy for whom it was constructed as the XPBY-5A, has undergone its flight testing and is now in the Navy's hands at Anacostia.

Consolidated announced receipt of an order amounting to $20,016,699 for an undisclosed number of four-engined patrol bombers of the PBY series from the **U. S. Navy Department** on December 20.

Whether the new patrol boats will incorporate the amphibian feature was not disclosed.

dated amphibian is the Model 28 twin engined flying boat which the Navy knows as the PBY, now having incorporated in the structure, the amphibian feature. The inherent advantages of the Model 28 boat have been retained, and the great advantage of land plane operation added.

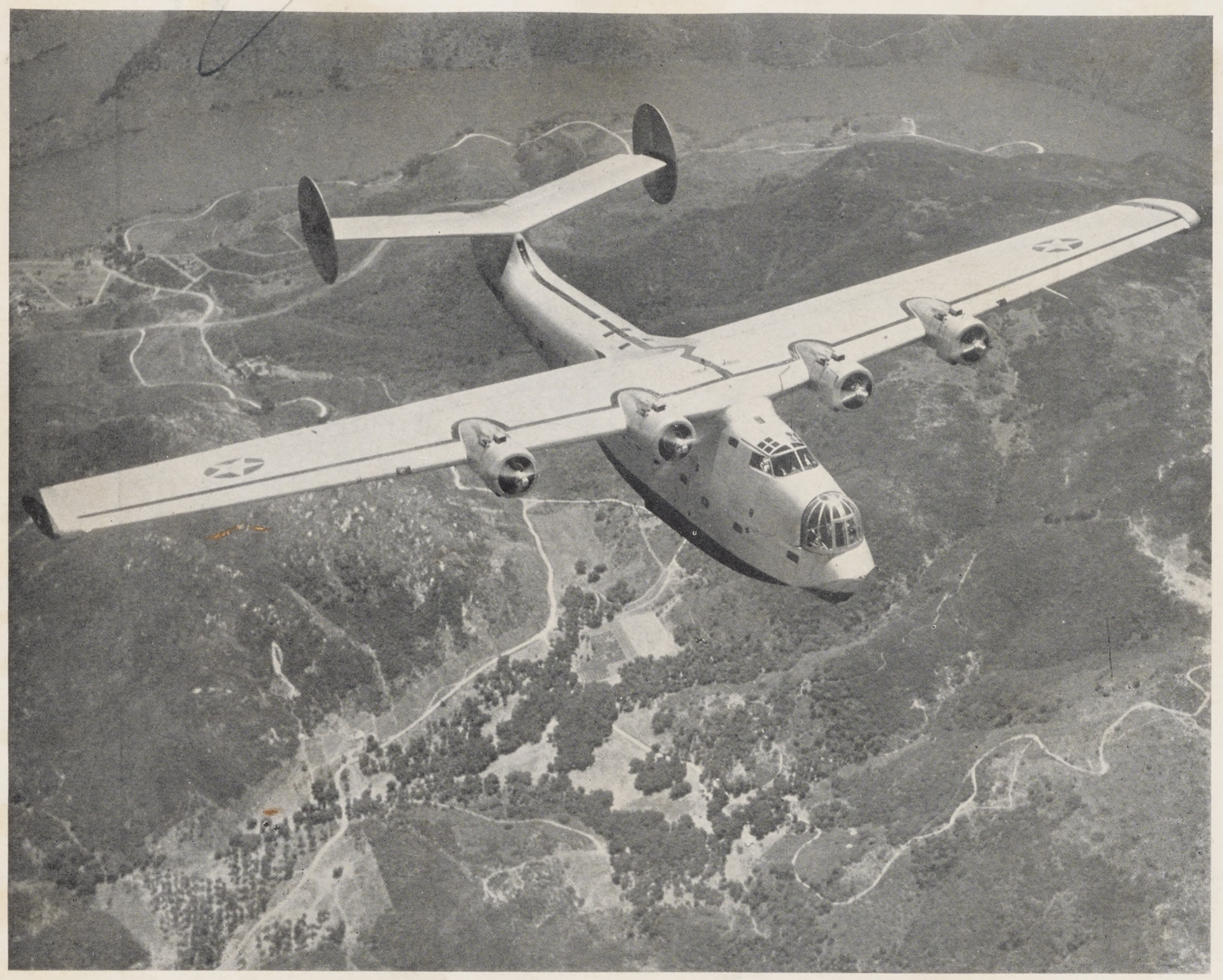
The landing gear is of the tricycle type, with a single wheel forward and two aft, all fully retractable. The side wheel and supporting mechanism, complete with oleo shock struts, retract into wells in the side of the hull. The nose wheel in the bow is completely closed over in the re-



With the order, Consolidated's backlog of unfilled orders zoomed to more than $37,000,000. Reports from the factory said that this new contract will require increased manufacturing facilities and necessitate an expansion program which will cost between $1,500,000 and $2,000,000. The same report said that no outside financing will be required for the expansion, which will increase production facilities by 50 per cent.

Basically the new Consoli-

tracted position by automati ally operated hatches so tha no resistance to planing is en countered. All three wheel are operated by a central hy draulic power drive, and th operations are carried out i sequence automatically. A single lever controls both th extension and the retractio of the landing gear. Hydrauli pump power is derived from the main power plant or from an auxiliary engine, and may be operated by hand if necessary.



XPB2Y-1

SEA POWER FEB. 1940

XPB2Y-1

SEA POWER FEB. '40

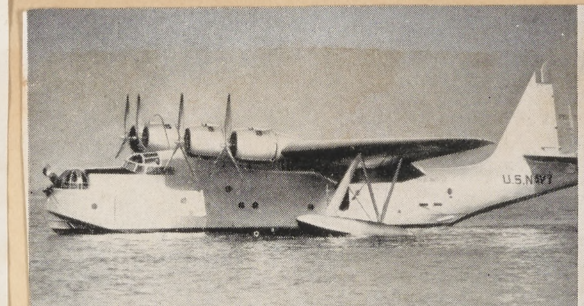
Our cover this issue is a picture of XPB2Y-1. On August 24th, 1939, this Consolidated Aircraft Corporation four engined flying boat became a Flagplane of the United States Navy. On that date, Admiral A. B. Cook, commanding the Aircraft Squadron of the Aircraft Scouting Force, by dispatch, removed his flag from the U.S.S. MEMPHIS at Seattle, and hoisted it aboard the XPB2Y-1, thereby establishing another milestone in naval air history. Only a few times before had such a flag been officially hoisted over an airplane. The huge plane, by formal procedure, thus became a flagplane of the U. S. Navy . . . a signal honor. It had been flown to Seattle by Navy personnel commanded by Commander Andrew Crinkley.

Commander Crinkley and his crew, in October of 1938, flew the XPB2Y-1, while still fitted with experimental apparatus and equipment, on a precedent setting flight across the United States. The XPB2Y-1 is a flying boat, yet the flight was made entirely over land, demonstrating confidence in the smooth functioning of the ship. The flight was non-stop from the waters of San Diego Bay, northward over spectacular mountain terrain via Salt Lake City and thence due east to Anacostia (Washington, D. C.), where the airplane was inspected personally by President Roosevelt. Flight time was 13 hours. Very cold weather, darkness over much of the route, tailwinds and a closing in fog at Anacostia marked this outstanding transcontinental flight. The return to San Diego, a few days later, was likewise cross-continent, and non-stop, this time by a southern route and against headwinds of considerable magnitude which were met without difficulty.

The casual manner in which these flights were accomplished was expressed by Commander Crinkley soon after the ship's return: "This flight was made in all respects in a routine operation manner and no special consideration or preparation was necessary in its accomplishment. Upon our return to San Diego the crew felt confident that the ship could have been refueled to depart for Honolulu or any other point immediately."

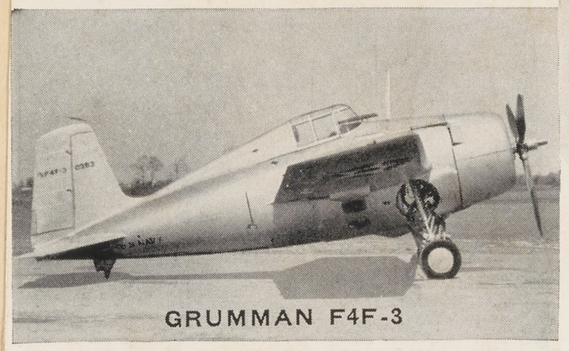
This double spanning of the continent may, in retrospect, be seen as a striking potentiality, together with the recent honor of becoming an official Flagplane. . . . Such a performance could easily have been one for transporting the commanding officers and members of their staff, with lightning speed, to positions thousands of miles away, even though the Naval destinations might be separated by a whole continent. An official Flagplane thus appears to have in it latent usage of very wide nature. The recent flight of the XPB2Y-1 to Seattle, for instance, coincided with the arrival of Admiral A. B. Cook on the U.S.S. MEMPHIS en route to Sitka, Alaska; by using the XPB2Y-1, however, the Admiral had time for inspection in Seattle and for another inspection period in Sitka, before the MEMPHIS reached port.

As beaching gear had not been shipped in advance, or carried aboard, the Flagplane simply rode at anchor thus becoming a surface vessel, fully equipped as the Admiral's Headquarters. It was the first four engined plane to visit the harbor. Particularly excellent weather prevailed for the official Flagship's flights, and several of these, for observation purposes, were made to take full advantage of the opportunity afforded. One flight took the party over the Juneau, Cross Bay and Inland Passageway which allowed unsurpassed views of some five large glaciers in that region. With the disembarking of Admiral Cook for Kodiak with a patrol formation of Consolidated PBY airplanes, Commander Crinkley headed the huge plane back for San Diego, stopping enroute only at San Francisco. Elapsed time from Alaska to within ten miles of the Mexican Border was just 11 hours.

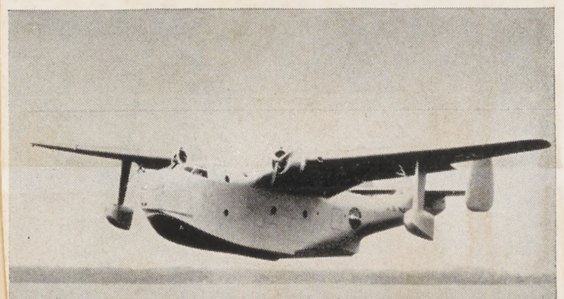


SIKORSKY XPBS-1

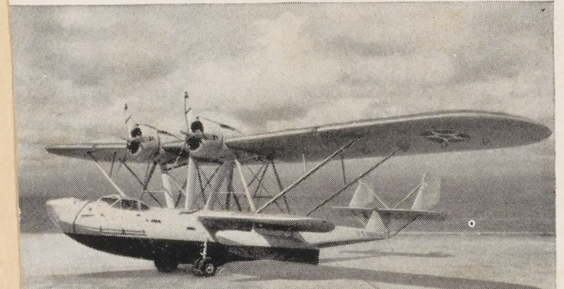
BREWSTER F2A-2



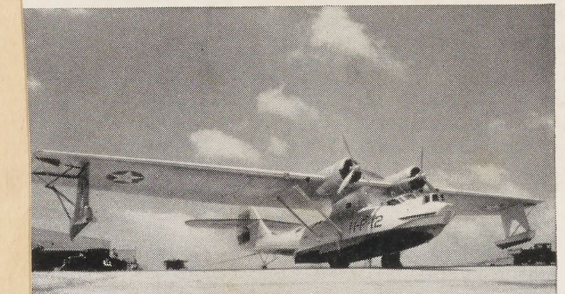
GRUMMAN F4F-3



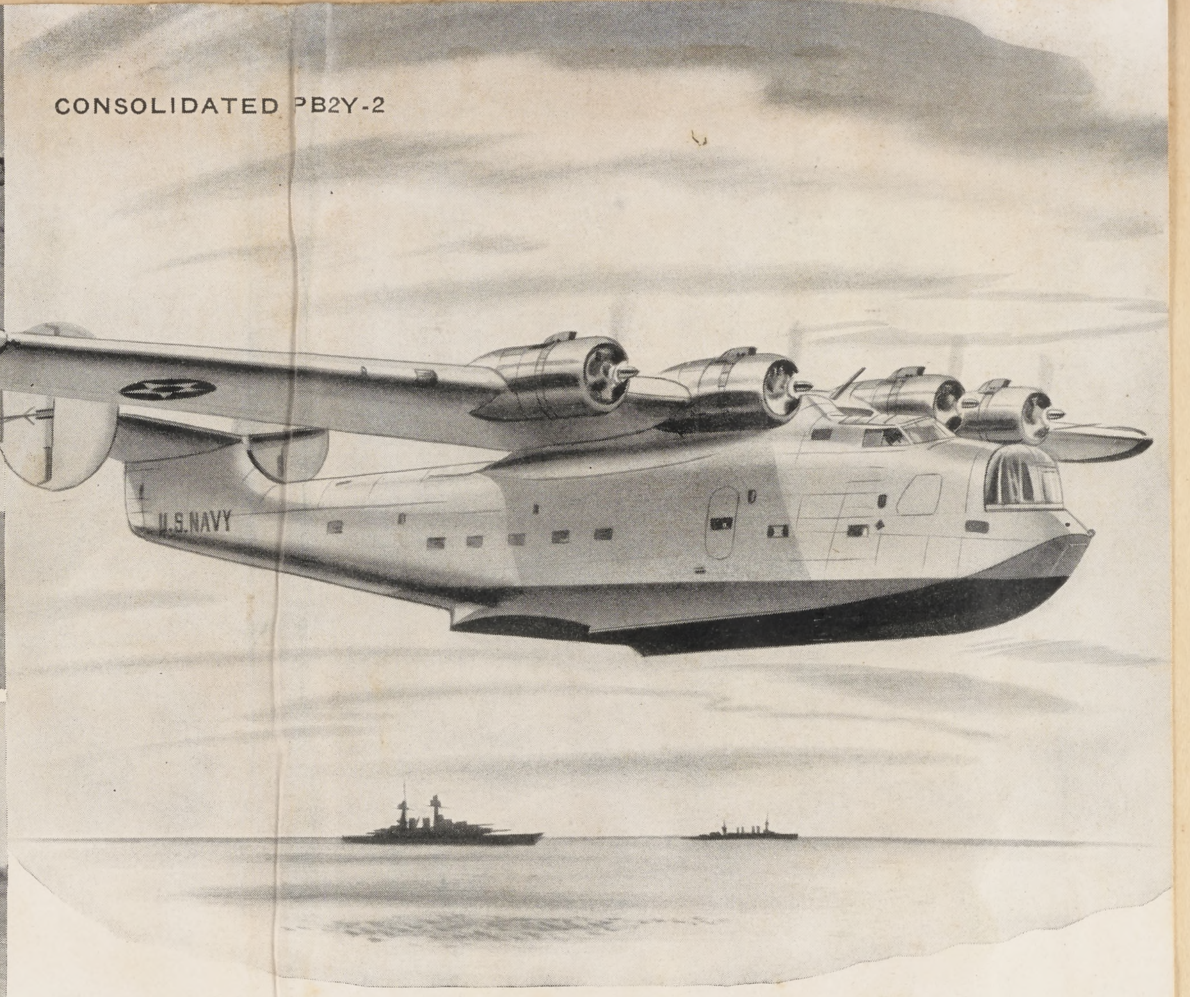
MARTIN PBM-1



CONSOLIDATED P2Y-3



CONSOLIDATED PBY-2



CONSOLIDATED PB2Y-2

CURTISS ELECTRICS ON PATROL *with the* NAVY

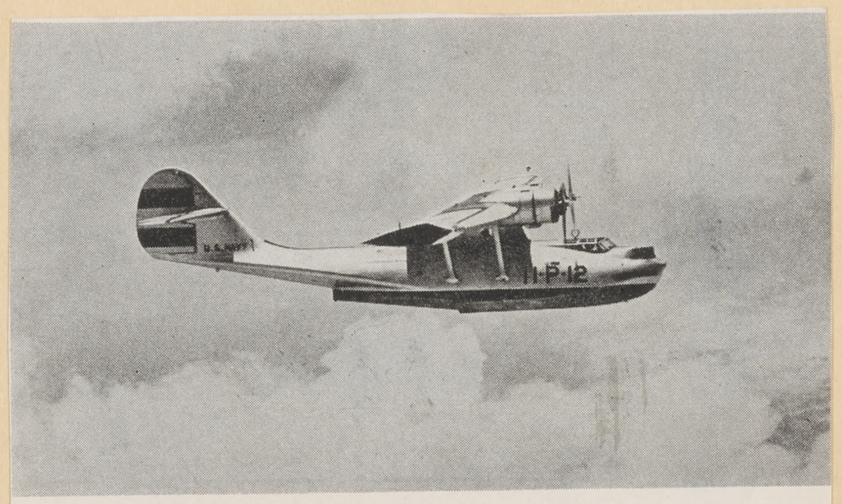
The U. S. Navy, "First with Feathering" in 1934, when it equipped its Consolidated P2Y-3 Patrol Planes with Curtiss Electric Propellers, is again First in developing, with Curtiss engineers, the Reverse-pitch Propeller to provide its giant seaplanes with water-maneuverability hitherto unparalleled. Another degree of utility has thus been added to the outstanding four-engined Consolidated Patrol Bomber.

The adaptability of Curtiss Electrics has also led to their selection for the Navy's newest fast fighters in which air-maneuverability and high performance are paramount.

CURTISS WRIGHT CORPORATION

CURTISS PROPELLER DIVISION

CLIFTON, N.J.

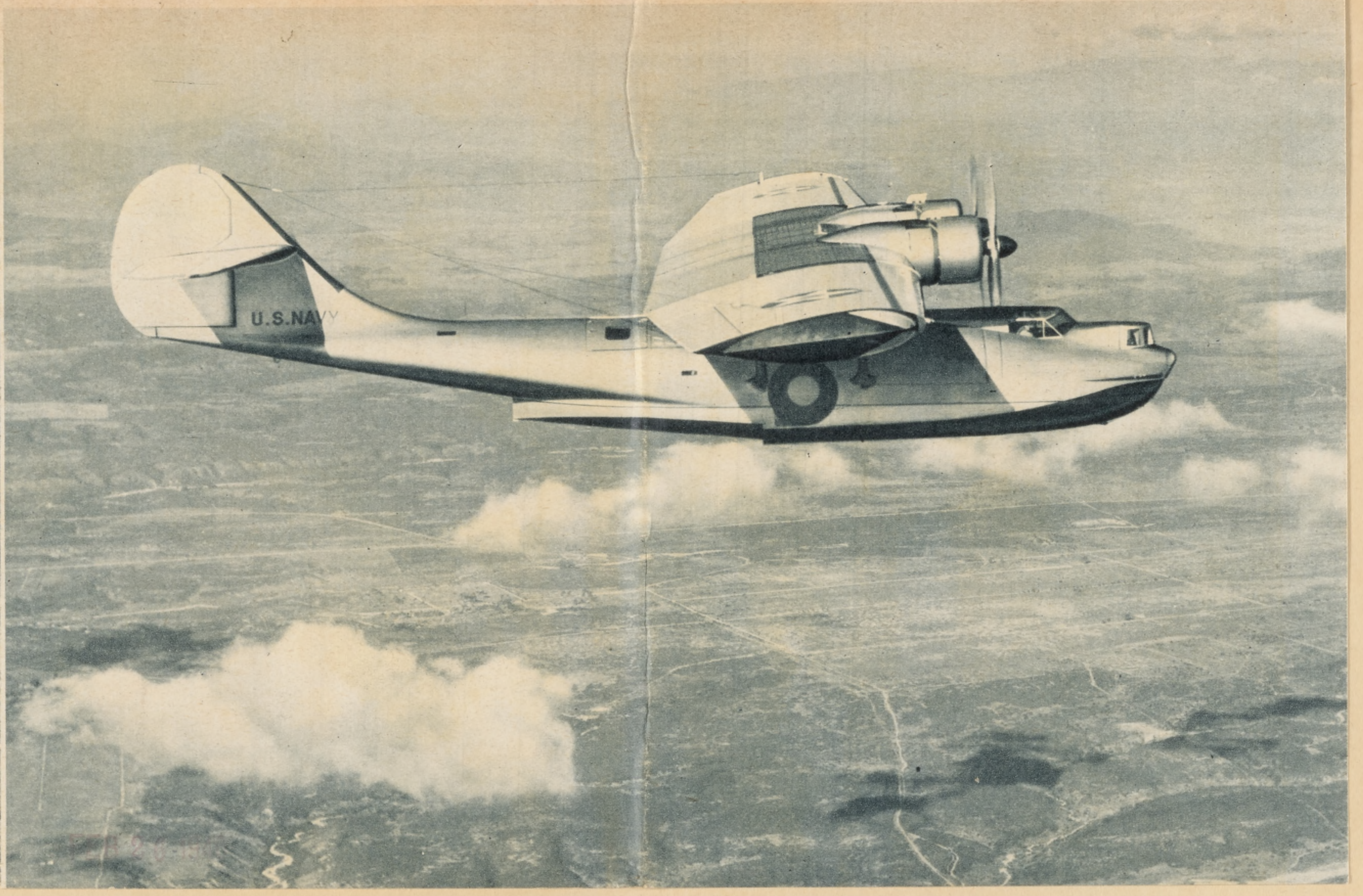


Consolidated PBY-2 in flight

THE LOG FEB. 16, '40

Consolidated Amphibium Modell 28-5 A (Artikel Seite 17).

SWISS AERO-REVUE JAN. 1940



Consolidated Amphibium Modell 28-5 A.

(Bild auf Seite 11.)

SWISS AERO-REVUE JAN. 1940

Aus ihrem bekannten Modell 28, welches bei der U. S. Navy als « PBY Flugboot » bezeichnet wird, hat die Consolidated Aircraft Corporation in San Diego in Kalifornien vor einiger Zeit ein Amphibienflugzeug entwickelt, über welches soeben einige Einzelheiten bekanntgegeben wurden.

Das Flugboot, das bei der Firma Modell 28-5 A und bei der U. S. Navy « XPBY-5 A » heisst, ist das grösste bisher gebaute Amphibienflugzeug. Sonst in fast allen Einzelheiten dem Modell 28 gleichend, hat es ein Dreiradfahrgestell bekommen, bei dem alle drei Räder einziehbar sind. Das vordere Rad, das bei der Landung aus dem Bug herausragt, wird während des Fluges in den Rumpf zurückgezogen, wobei das etwa eingedrungene Seewasser erst vollständig auslaufen muss, ehe sich die Verschlussklappe dicht schliessen kann. Die beiden unter der Tragfläche liegenden Haupträder klappen sich nach oben und seitlich in für sie vorgesehene Vertiefungen ein.

Die bekannt guten Flugeigenschaften des Modells 28 sind durch diesen Zusatz in keiner Weise beeinträchtigt oder verändert worden. Es ist in jeder Hinsicht das gleiche Flugboot, nur dass es mit dem zusätzlichen Landegestell nun auch Landflugplätze anlaufen kann. Ausgedehnte Versuche haben ergeben, dass es gelegentlich auch von Vorteil ist, das Fahrgestell im Wasser auszustrecken. Die Räder haben dann die Wirkung von See-Ankern, d. h. sie erhöhen durch ihren Wasserwiderstand die Stabilität des Flugbootes. Das ist besonders beim Schwimmen auf grober See vorteilhaft, zwar wird die Schwimmgeschwindigkeit etwas herabgesetzt, aber ein ruhigeres Fahren gewährleistet.

Mit ausgestrecktem Fahrgestell kann das Flugboot auch einen flachen Strand aus eigener Kraft erklimmen, ohne auf eine besondere Landemannschaft angewiesen zu sein. Ebenfalls kann es vom Ufer aus sich aus eigener Kraft in das Wasser gleiten lassen, um dann von der Wasserfläche aus abzufliegen. Es ist natürlich sehr oft leichter, ein auf dem Strande festliegendes Flugboot mit Brennstoff zu beladen, als ein schwimmendes.

Willy Ley.

CONSOLIDATED AIRCRAFT CORPORATION
San Diego, California

MEMO
D: G. FLEET

Date 1/9/40

To

Scott ~~[illegible]~~ 1/10/40 for "Consolidator"? Yes - ok &

RHF — ?
VD — [illegible]
Tad — L
Ziegle [illegible]
K — [illegible]
Carp ✓
Sham [illegible]
Stan [illegible]
~~Seaman~~ [illegible]
Davidson —
D. 1-19-40
(Prepared for 7th Consolidator)

HALF-MINUTE Interviews
BY FORREST WARREN

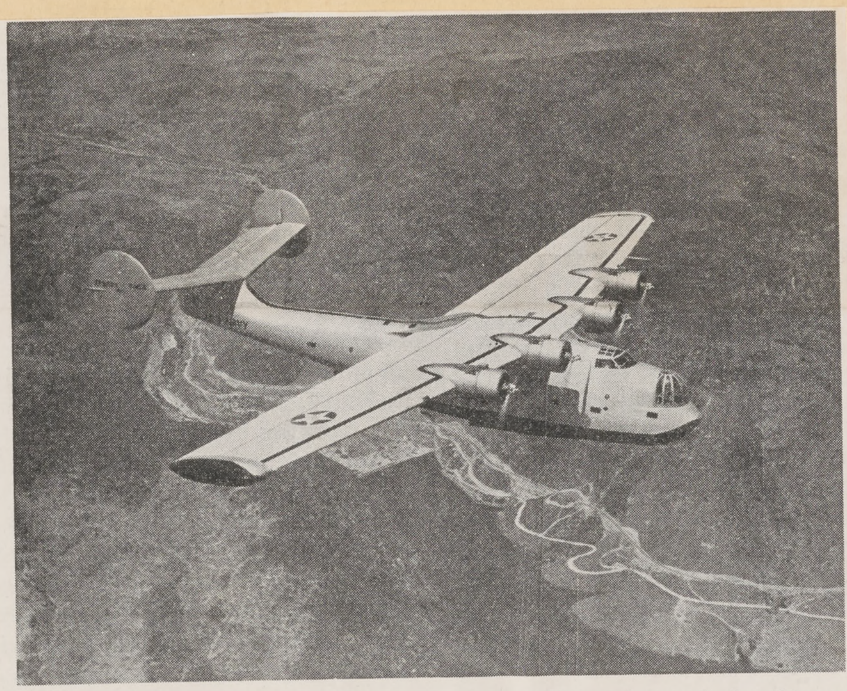
S.D. Union Jan 7 1940

Mrs. F. T. Scripps: "The people of San Diego and its visitors certainly owe a thank-you to the Consolidated Aircraft for the beautiful and perfect Christmas tree with its hundreds of jeweled lights, making it the most glorious tree ever seen here. As I was driving by with my four-year-old granddaughter, she said, 'It is the most beautiful Christmas tree in the world; grandmother, please drive slow so I can see for a long time.' It is something to remember, and we both say, 'Thank you,' to Consolidated."

* * *

Have acknowledged — & thanked Mrs Scripps
Dan

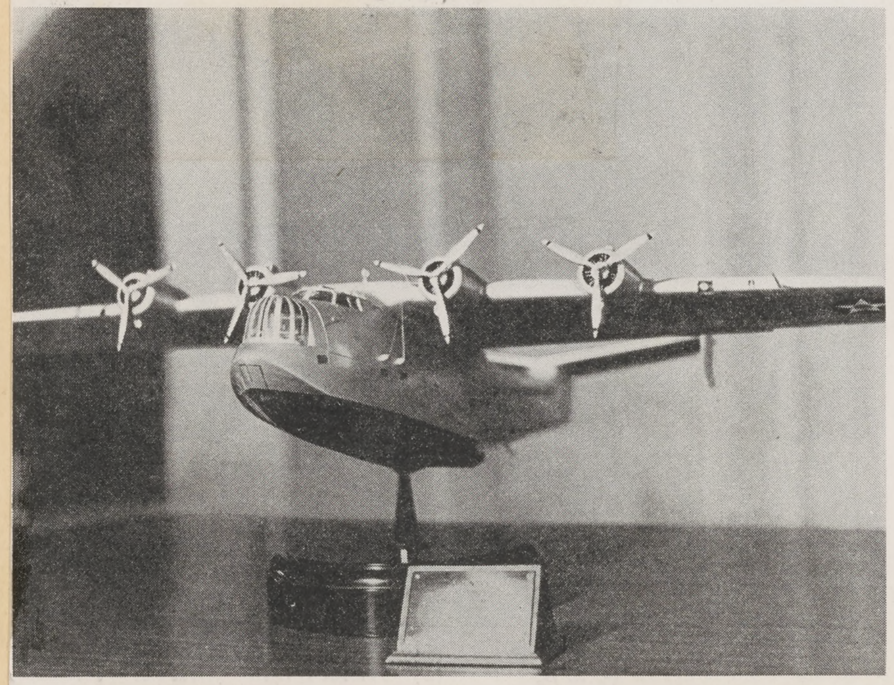
Frye & Smith, Ltd., Printers, Main 8175



The Consolidated XPB2 Y-1 four engined flying boat of the Aircraft Scouting Force.

LOG FEB. 16, 1940

FEB. 16, 1940



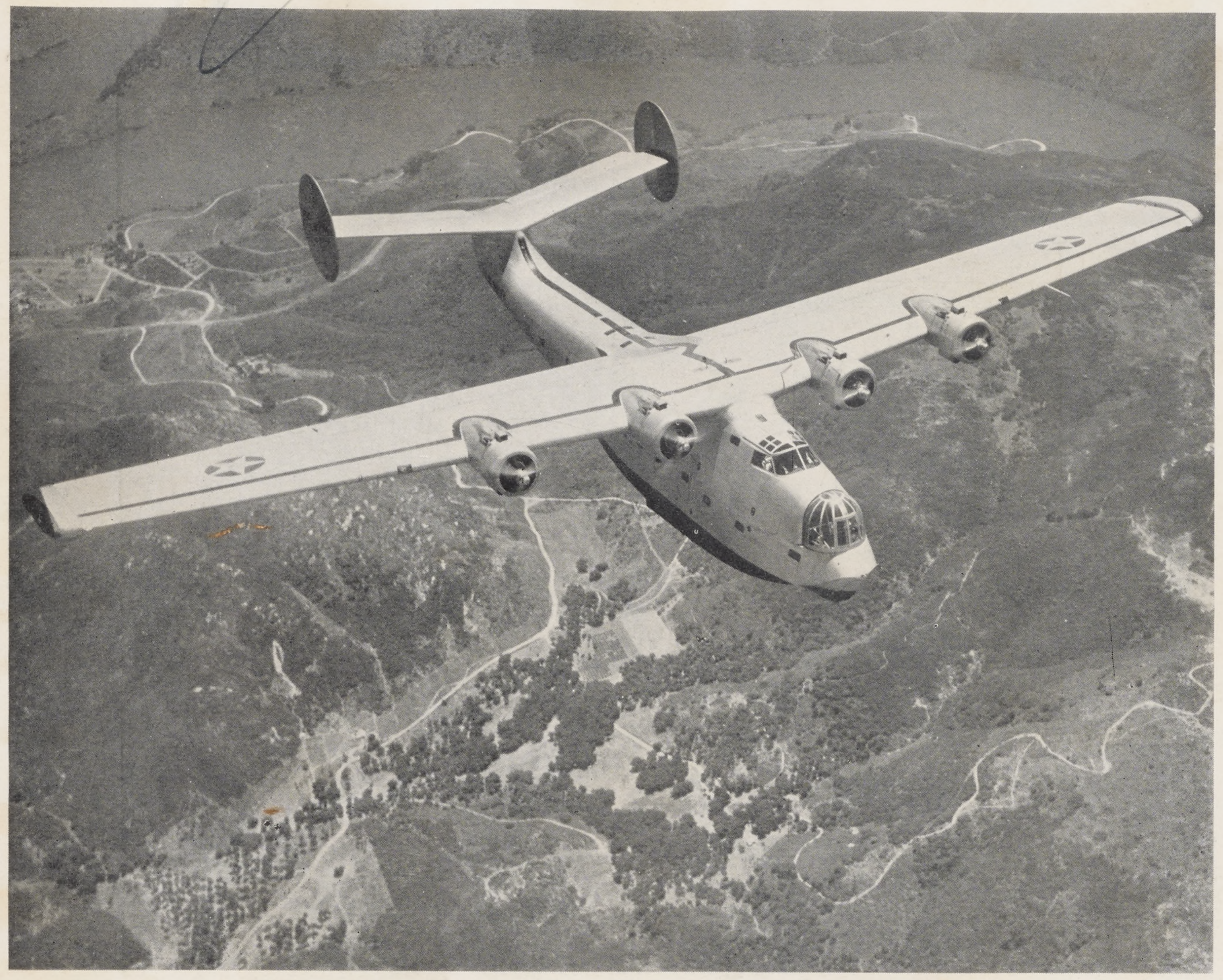
XPB2Y Newest Navy 4 engine flying boat six of which are now on order for the Navy Department. It houses a complete bridge, galley, and chart room; and will carry a crew of ten or twelve—including a Captain, Navigator, and three Pilots—with all supplies required for about a week's cruise. Two models similar to these are made up for each new type of plane that the Navy Department considers; one of these will be made available to the Naval Academy immediately upon completion in every case.

Archbold Pilot Dies In New York, Word

TRIB 3/4/40

Lewis A. Yancey, 44, who piloted Richard Archbold's Consoliidated-built flying boat Guba around the world after a flight from San Diego to New Guinea for 10 months' scientific research there, died Saturday night at Yonkers, N. Y., The Associated Press reported. In 1929 Yancey flew from the United States to Italy with Roger Q. Williams, and later flew an autogiro to Cuba and Mexico.

Yancey was born Sept. 16, 1895. Surviving is his widow, the former Gertrude Civello. Funeral services are to be held tomorrow, and burial will be in Arlington national cemetery. Yancey was in the navy 13 years.



XPB2Y-1

SEA POWER FEB. 1940

XPB2Y-1

SEA POWER FEB. '40

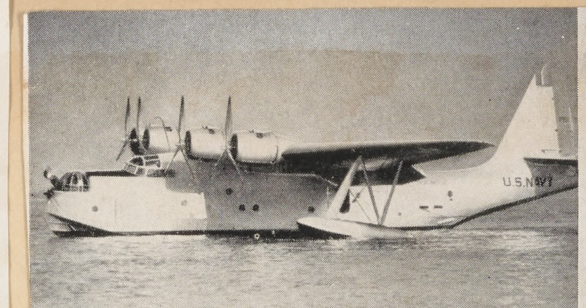
Our cover this issue is a picture of XPB2Y-1. On August 24th, 1939, this Consolidated Aircraft Corporation four engined flying boat became a Flagplane of the United States Navy. On that date, Admiral A. B. Cook, commanding the Aircraft Squadron of the Aircraft Scouting Force, by dispatch, removed his flag from the U.S.S. MEMPHIS at Seattle, and hoisted it aboard the XPB2Y-1, thereby establishing another milestone in naval air history. Only a few times before had such a flag been officially hoisted over an airplane. The huge plane, by formal procedure, thus became a flagplane of the U. S. Navy . . . a signal honor. It had been flown to Seattle by Navy personnel commanded by Commander Andrew Crinkley.

Commander Crinkley and his crew, in October of 1938, flew the XPB2Y-1, while still fitted with experimental apparatus and equipment, on a precedent setting flight across the United States. The XPB2Y-1 is a flying boat, yet the flight was made entirely over land, demonstrating confidence in the smooth functioning of the ship. The flight was non-stop from the waters of San Diego Bay, northward over spectacular mountain terrain via Salt Lake City and thence due east to Anacostia (Washington, D. C.), where the airplane was inspected personally by President Roosevelt. Flight time was 13 hours. Very cold weather, darkness over much of the route, tailwinds and a closing in fog at Anacostia marked this outstanding transcontinental flight. The return to San Diego, a few days later, was likewise cross-continent, and non-stop, this time by a southern route and against headwinds of considerable magnitude which were met without difficulty.

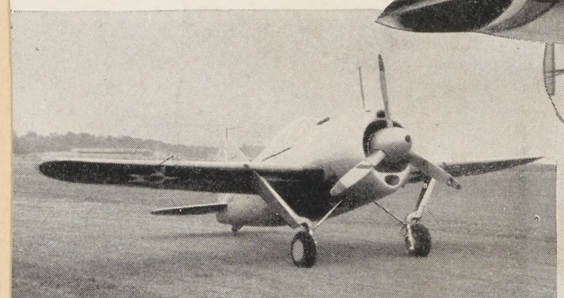
The casual manner in which these flights were accomplished was expressed by Commander Crinkley soon after the ship's return: "This flight was made in all respects in a routine operation manner and no special consideration or preparation was necessary in its accomplishment. Upon our return to San Diego the crew felt confident that the ship could have been refueled to depart for Honolulu or any other point immediately."

This double spanning of the continent may, in retrospect, be seen as a striking potentiality, together with the recent honor of becoming an official Flagplane. . . . Such a performance could easily have been one for transporting the commanding officers and members of their staff, with lightning speed, to positions thousands of miles away, even though the Naval destinations might be separated by a whole continent. An official Flagplane thus appears to have in it latent usage of very wide nature. The recent flight of the XPB2Y-1 to Seattle, for instance, coincided with the arrival of Admiral A. B. Cook on the U.S.S. MEMPHIS en route to Sitka, Alaska; by using the XPB2Y-1, however, the Admiral had time for inspection in Seattle and for another inspection period in Sitka, before the MEMPHIS reached port.

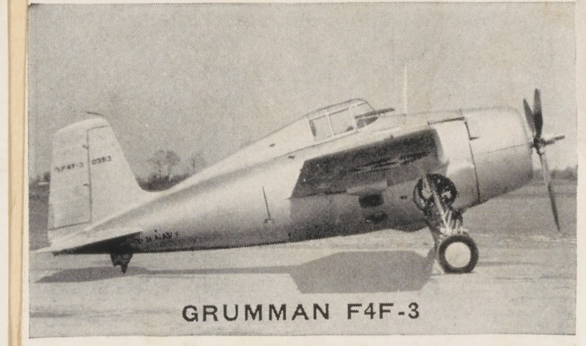
As beaching gear had not been shipped in advance, or carried aboard, the Flagplane simply rode at anchor thus becoming a surface vessel, fully equipped as the Admiral's Headquarters. It was the first four engined plane to visit the harbor. Particularly excellent weather prevailed for the official Flagship's flights, and several of these, for observation purposes, were made to take full advantage of the opportunity afforded. One flight took the party over the Juneau, Cross Bay and Inland Passageway which allowed unsurpassed views of some five large glaciers in that region. With the disembarking of Admiral Cook for Kodiak with a patrol formation of Consolidated PBY airplanes, Commander Crinkley headed the huge plane back for San Diego, stopping enroute only at San Francisco. Elapsed time from Alaska to within ten miles of the Mexican Border was just 11 hours.



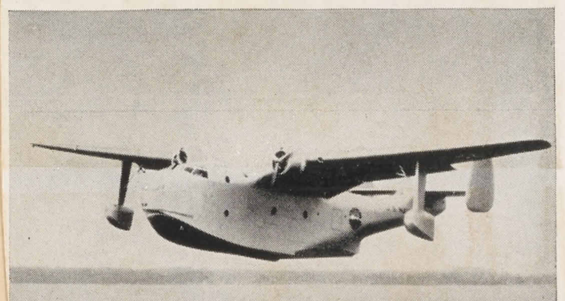
SIKORSKY XPBS-1



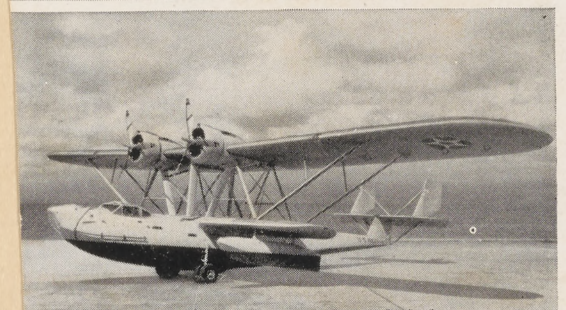
BREWSTER F2A-2



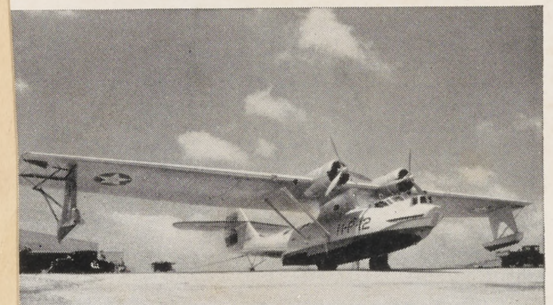
GRUMMAN F4F-3



MARTIN PBM-1

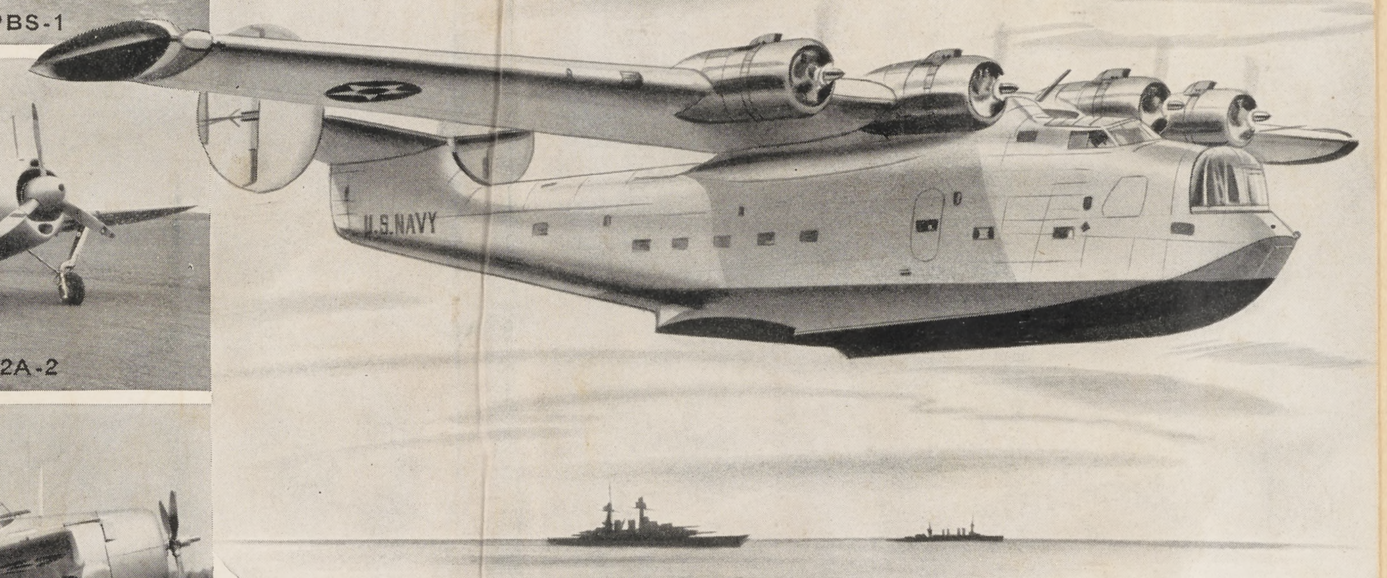


CONSOLIDATED P2Y-3



CONSOLIDATED PBY-2

CONSOLIDATED PB2Y-2

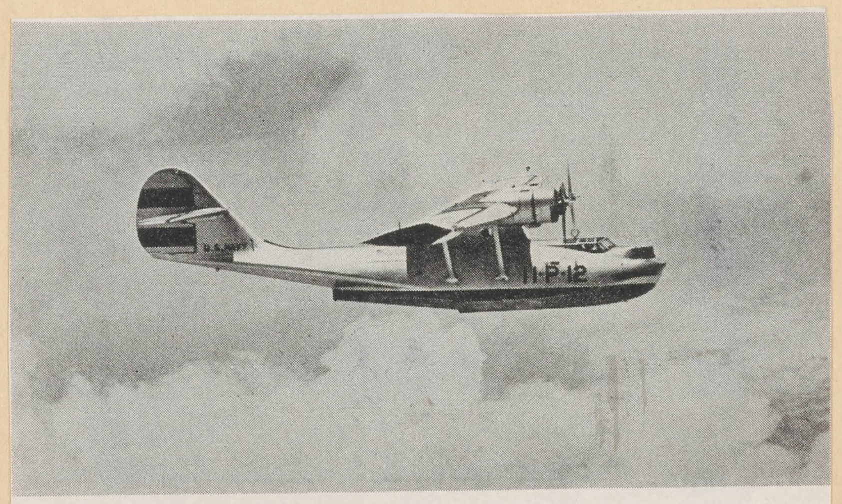


CURTISS ELECTRICS ON PATROL *with the* NAVY

The U. S. Navy, "First with Feathering" in 1934, when it equipped its Consolidated P2Y-3 Patrol Planes with Curtiss Electric Propellers, is again First in developing, with Curtiss engineers, the Reverse-pitch Propeller to provide its giant seaplanes with water-maneuverability hitherto unparalleled. Another degree of utility has thus been added to the outstanding four-engined Consolidated Patrol Bomber.

The adaptability of Curtiss Electrics has also led to their selection for the Navy's newest fast fighters in which air-maneuverability and high performance are paramount.

CURTISS WRIGHT CORPORATION
CURTISS PROPELLER DIVISION
CLIFTON, N.J.

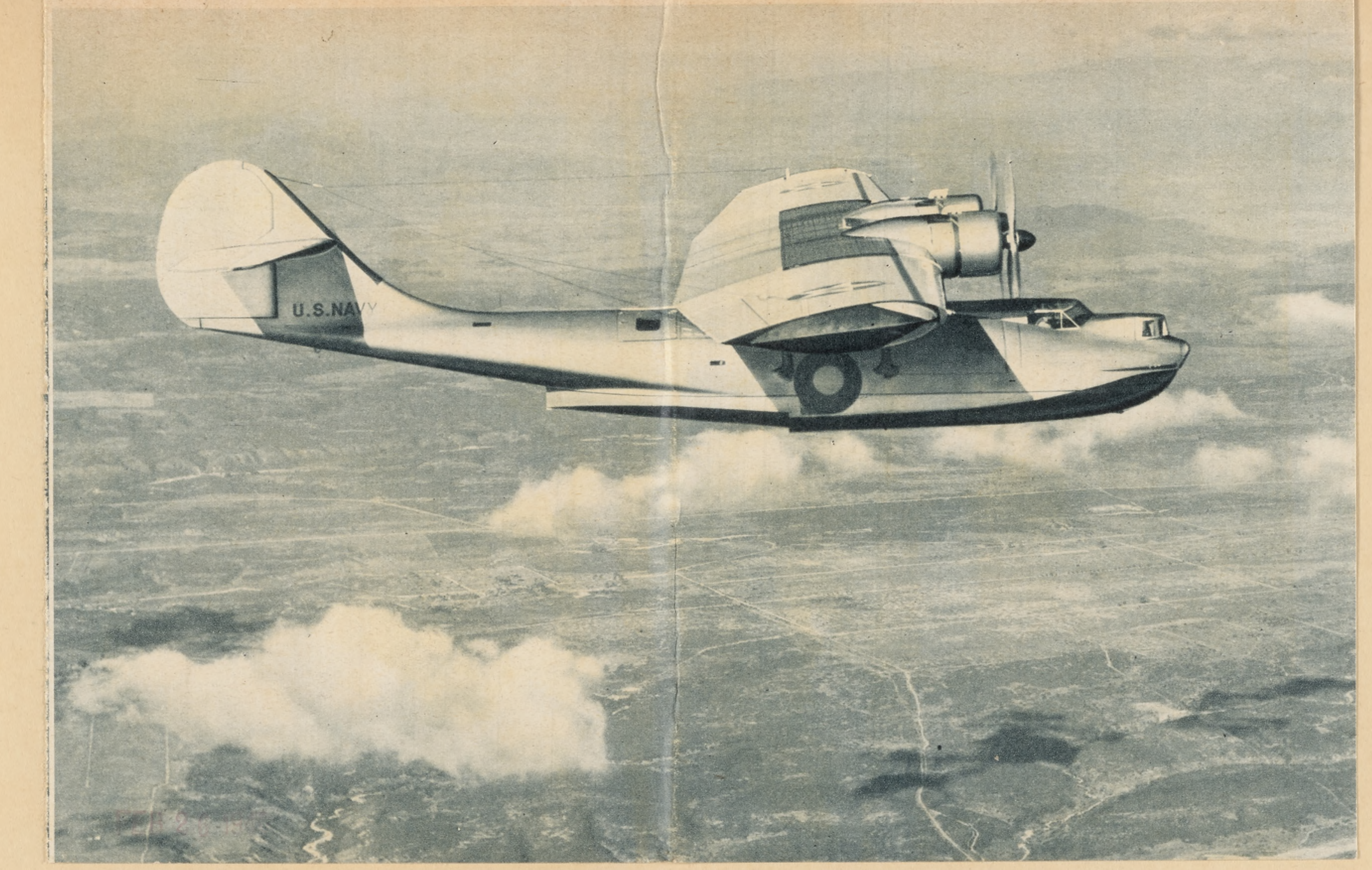


Consolidated PBY-2 in flight

THE LOG FEB. 16, '40

Consolidated Amphibium Modell 28-5 A (Artikel Seite 17).

SWISS AERO-REVUE JAN. 1940



Consolidated Amphibium Modell 28-5 A.

(Bild auf Seite 11.)

SWISS AERO-REVUE JAN. 1940

Aus ihrem bekannten Modell 28, welches bei der U. S. Navy als «PBY Flugboot» bezeichnet wird, hat die Consolidated Aircraft Corporation in San Diego in Kalifornien vor einiger Zeit ein Amphibienflugzeug entwickelt, über welches soeben einige Einzelheiten bekanntgegeben wurden.

Das Flugboot, das bei der Firma Modell 28-5 A und bei der U. S. Navy «XPBY-5 A» heisst, ist das grösste bisher gebaute Amphibienflugzeug. Sonst in fast allen Einzelheiten dem Modell 28 gleichend, hat es ein Dreiradfahrgestell bekommen, bei dem alle drei Räder einziehbar sind. Das vordere Rad, das bei der Landung aus dem Bug herausragt, wird während des Fluges in den Rumpf zurückgezogen, wobei das etwa eingedrungene Seewasser erst vollständig auslaufen muss, ehe sich die Verschlussklappe dicht schliessen kann. Die beiden unter der Tragfläche liegenden Haupträder klappen sich nach oben und seitlich in für sie vorgesehene Vertiefungen ein.

Die bekannt guten Flugeigenschaften des Modells 28 sind durch diesen Zusatz in keiner Weise beeinträchtigt oder verändert worden. Es ist in jeder Hinsicht das gleiche Flugboot, nur dass es mit dem zusätzlichen Landegestell nun auch Landflugplätze anlaufen kann. Ausgedehnte Versuche haben ergeben, dass es gelegentlich auch von Vorteil ist, das Fahrgestell im Wasser auszustrecken. Die Räder haben dann die Wirkung von See-Ankern, d. h. sie erhöhen durch ihren Wasserwiderstand die Stabilität des Flugbootes. Das ist besonders beim Schwimmen auf grober See vorteilhaft, zwar wird die Schwimmgeschwindigkeit etwas herabgesetzt, aber ein ruhigeres Fahren gewährleistet.

Mit ausgestrecktem Fahrgestell kann das Flugboot auch einen flachen Strand aus eigener Kraft erklimmen, ohne auf eine besondere Landemannschaft angewiesen zu sein. Ebenfalls kann es vom Ufer aus sich aus eigener Kraft in das Wasser gleiten lassen, um dann von der Wasserfläche aus abzufliegen. Es ist natürlich sehr oft leichter, ein auf dem Strande festliegendes Flugboot mit Brennstoff zu beladen, als ein schwimmendes.

Willy Ley.

CONSOLIDATED AIRCRAFT CORPORATION
San Diego, California

MEMO
D. G. FLEET

Date 1/9/40

To

Scott 1/10/40 for "Consolidator"?
Yes - ok

RHF –

VD

Lad –

Liegle

K

Carp

Sham

Stam

~~Seaman~~

Davidson –

D. 1-19-40
(prepared for Feb. Consolidator

Have acknowledged –
& thanked Mrs Scripps

Dcm

Frye & Smith, Ltd., Printers, Main 8175

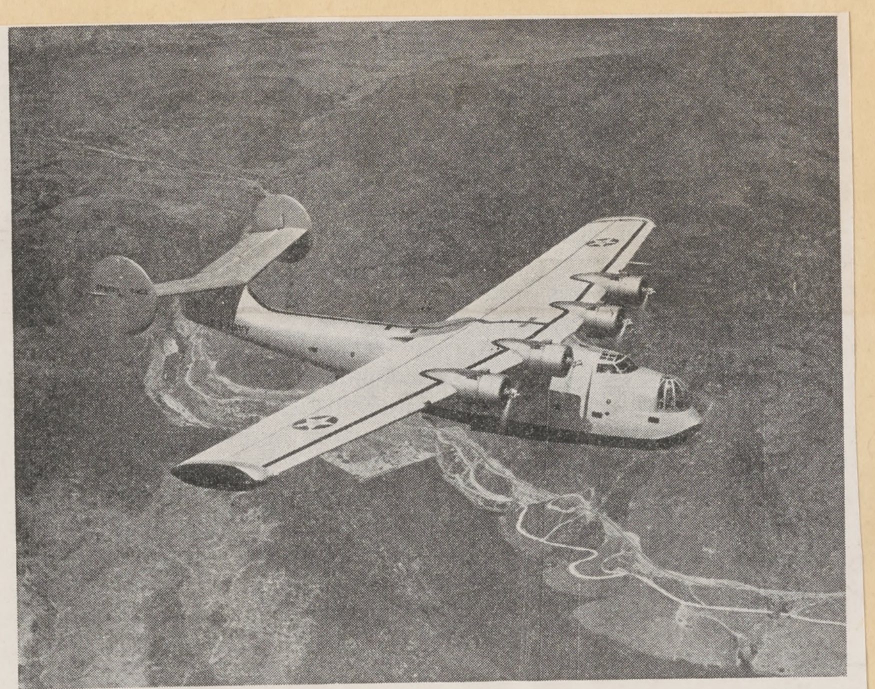
Carried Savings

S. D. MAN MISSED CHANCE TO HUNT COCOS TREASURE

FARMERSVILLE, Ill., Jan. (I.N.S.) — Gordon Brawner is a horny-handed son of the soil but—

Had he known once what he knows today he might have had $20,000,000.

Brawner with two companions



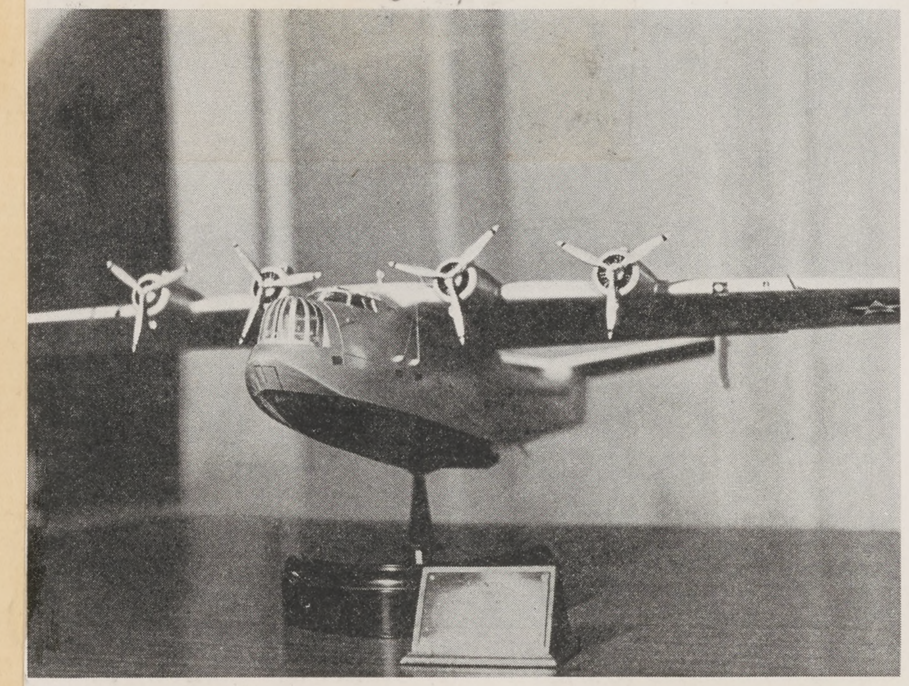
The Consolidated XPB2 Y-1 four engined flying boat of the Aircraft Scouting Force.

LOG FEB. 16, 1940

---

8 THE LOG

FEB. 16, 1940



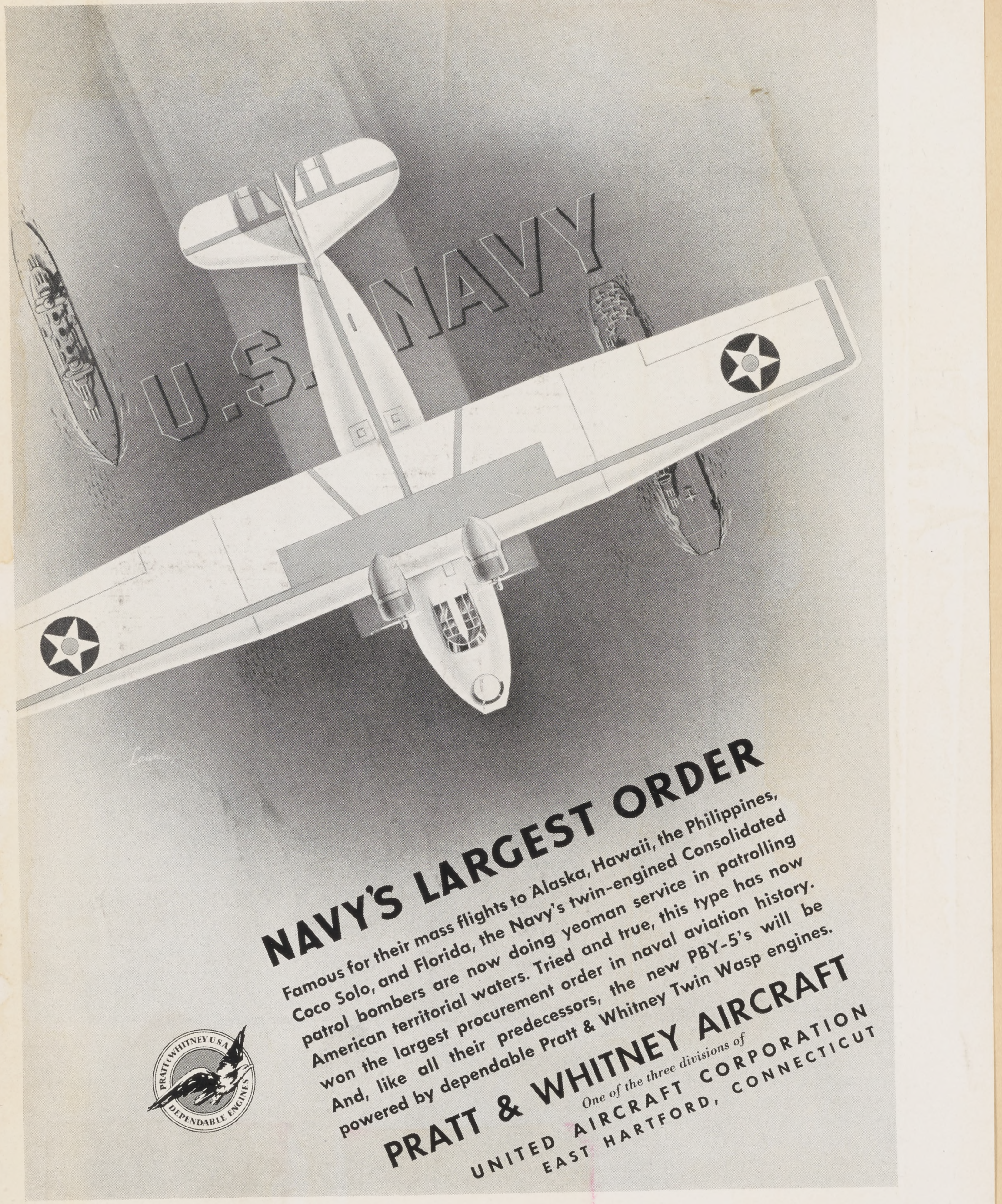
XPB2Y Newest Navy 4 engine flying boat six of which are now on order for the Navy Department. It houses a complete bridge, galley, and chart room; and will carry a crew of ten or twelve—including a Captain, Navigator, and three Pilots—with all supplies required for about a week's cruise. Two models similar to these are made up for each new type of plane that the Navy Department considers; one of these will be made available to the Naval Academy immediately upon completion in every case.

Archbold Pilot Dies In New York, Word

3/4/40 TRIB

Lewis A. Yancey, 44, who piloted Richard Archbold's Consoliidated-built flying boat Guba around the world after a flight from San Diego to New Guinea for 10 months' scientific research there, died Saturday night at Yonkers, N. Y., The Associated Press reported. In 1929 Yancey flew from the United States to Italy with Roger Q. Williams, and later flew an autogiro to Cuba and Mexico.

Yancey was born Sept. 16, 1895. Surviving is his widow, the former Gertrude Civello. Funeral services are to be held tomorrow, and burial will be in Arlington national cemetery. Yancey was in the navy 13 years.



NAVY'S LARGEST ORDER

Famous for their mass flights to Alaska, Hawaii, the Philippines, Coco Solo, and Florida, the Navy's twin-engined Consolidated patrol bombers are now doing yeoman service in patrolling American territorial waters. Tried and true, this type has now won the largest procurement order in naval aviation history. And, like all their predecessors, the new PBY-5's will be powered by dependable Pratt & Whitney Twin Wasp engines.

PRATT & WHITNEY U.S.A.
DEPENDABLE ENGINES

PRATT & WHITNEY AIRCRAFT
One of the three divisions of
UNITED AIRCRAFT CORPORATION
EAST HARTFORD, CONNECTICUT

UNION 2-29-40

Consair Gets Permit For $1,050,000 Unit

San Diego's biggest single building permit in almost 15 years was issued yesterday when Consolidated Aircraft Corp., was granted a permit to build their $1,050,000 plant addition.

Recalling big permits of the past, Oscar Knecht, city building inspector, said last night that the permit for building the Civic Center totaled more, but was taken out in two parts. Last one of that size, he recalled, was about 1926 when the San Diego Trust and Savings Bank building was constructed.

The Consolidated permit calls for erection of six steel and sheet metal buildings which will house factory and office space and provide additional store room.

Issuance of the permit brought the year's total for the city to $2,741,579, compared to $1,068,963 for the same period last year.

$1,050,000 ADDED TO PERMIT TOTAL BY CONSOLIDATED

Preparatory to doubling their output and workers' staff, Consolidated Aircraft Co. today was issued a permit authorizing construction of six new manufacturing and assembly buildings, cost of which is estimated at $1,050,000.

Issuance of the building permit swelled the month's permits to $1,600,523 as compared with $451,766 of a year ago and raised the year's total to $2,741,579, more than double last year's figure of $1,039, 54.

The permit issued today provides for construction of six steel and sheet metal buildings, according to Oscar Knecht, city building inspector, plans for all of which were drafted by Architect Edward Cray Taylor. All are to be built under direction of Ellis Wing Taylor, contractor.

The structures contemplated, several of which are now under construction, include one assembly plant, 50 by 125 feet; a manufacturing building, 300 to 720 feet; another 120 by 240 feet; an office building, 50 by 200 feet; a boiler house, 50 by 100 feet, and a material and store building, 30 by 1000 feet.

Work already is under way on two of the structures and will be pushed as rapidly as possible to allow work of construction on a number of new planes, contracts for which have been awarded by the army and navy departments.

It is estimated that with completion of the new buildings the working staff at the plant will be increased from 4100 to more than 7500 men.

TRIB 2-28-40

What of the Past—and the Future?

Recently CONTACT asked outstanding figures in the aeronautical industry the following questions:

1 What do you consider the greatest contribution to the progress of Aviation during the year 1939?

2 What is the biggest job confronting Aviation for the year 1940?

On this page appear the replies—a concensus of opinion representing a cross section of the industry—manufacturers, commercial airlines, airports, schools, etc.

Edgar N. Gott
Vice-President Consolidated Aircraft Corporation

San Diego, Calif.

It is the writer's personal opinion that the greatest contribution to progress of Aviation in 1939 was the successful operation by the Navy of its patrol planes on mass flights; and of the new flying boat bases established on both the Atlantic and Pacific oceans.

It is felt that the biggest problem for 1940 will be for the industry to fill the orders on hand without excessive plant expansion, which might later become idle.

CONTACT —o— FEB. 40

5416 Employed Here In Aircraft Plants

UNION 2-28-40

A total of 5416 men and women are employed at the Consolidated Aircraft Corp., Ryan Aeronautical Co. and Solar Aircraft Co. plants, officials announced yesterday.

Forty-one hundred are employed at Consolidated, 850 at Ryan and 466 at Solar.

Personnel of the Douglas Aircraft Co.'s factories at Santa Monica and El Segundo total 15,000, according to Carl A. Cover, general manager. The Douglas payroll last week was in excess of $440,000.

There are 11,700 employed at the Santa Monica plant and 3300 at El Segundo.

Cite Need For Trained Aircraft Workers at San Diego Factories

CONTACT FEB. 1940

Personnel Managers of Plane Plants Prepare To Meet Coming Demand

More than 3000 factory workers will have to be added to the payrolls of San Diego aircraft factories during the balance of the year in order to meet the heavy production schedules called for in filling the more than $50,000,000 in plane orders now on hand.

Such is the aircraft employment situation as outlined there recently at a meeting of personnel managers of the Consolidated, Ryan and Solar aircraft factories.

So that Southern California labor may be employed in preference to out-of-state workers, it will be necessary to train hundreds of skilled technicians during the coming months, according to Marvin Marco, employment manager of one of the local plants.

In order that competent, industry-recognized training may be available to those interested in factory employment, the long-established Ryan School of Aeronautics, San Diego, is now organizing special Sheet Metal classes designed specifically to equip local workers for factory employment in the shortest time consistent with proper training.

Complete in scope, the new Ryan sheet metal course offers 200 hours of technical training in blue print reading, metallurgy, layout and patterns, riveting, assembly, forming, drilling, filing and bumping. Lasting five weeks, the training is given eight hours a day, Monday through Friday.

Pacific Coast Edition
THE WALL STREET JOURNAL

DOW-JONES
ELECTRIC PAGE NEWS PRINTERS

623 CENTRAL BUILDING
LOS ANGELES
PHONE TRINITY 0881

Press Clipping
FROM
ALBERT F. COUDERC

L-2
L-
Sham S
Stan Rtd
DGX-DGa
Earl-✓
JR
K
GN-JR
B
1/17/40

X

JAN 10 1940

JAN 15 1940

BRITISH TO BUY MORE AIRCRAFT

Purchase of 10,000 Planes in U. S. During Next 18-Month Period Is Planned

Dow Jones News Service

WASHINGTON—British plans for the purchase of approximately 10,000 military airplanes in this country during the next 18 months were placed before United States Government officials recently, it was learned last night.

This figure is based upon British estimates of the amount of foreign help necessary in order to achieve air supremacy over Germany by the middle of 1941, it is understood.

As far as can be determined, it does not take into account the extent of possible French purchases here. In view of the coordination of the procurement agencies of the two Allies, however, it is thought that it will be increasingly difficult to draw a sharp distinction between their respective purchases.

British Output Near 1,000 Monthly

Plans to place orders in the United States for 10,000 planes during 1940 and the first half of 1941 were discussed informally with Washington authorities by a high ranking official of the British Empire who paid a brief visit here several weeks ago, it was learned. Apparently he went away satisfied.

Latest reports current in Washington are that British air production is now in the neighborhood of 1,000 planes a month. A number of new large factories are understood to be practically finished and equipped, and it is reported that when they get into production Great Britain will be equipped to turn out about 2,200 planes a month. Efforts to speed up French air factory schedules have been disappointing to the Allies, and French current production is reported to be still short of 300 a month.

Although accurate estimates, of course, are impossible to obtain, some Government officials believe that the current German air production is at the rate of about 2,000 planes a month. Combined British and French purchases in the United States since before the outbreak of the war are estimated at about 5,000 craft.

In the event of a large-scale German air offensive in the spring, which Prime Minister

Continued on Fifth Page, Column 4

EDNESDAY, JANUARY 10, 1940

TO BUY
AIRCRAFT

rom First Page
r British statesmen have
t is considered almost in-
ign and domestic demands
ustry will be greatly in-
nates of their own needs
are based on the theory
ne plants will not suffer
enemy air raids and that
r will not be substantial.
hington that a violent in-
uropean war in the spring
hoed in increased demands
es War and Navy depart-
ary planes.
ates of current production
aircraft industry show its
ate is approximately 17,000
in officials are understood
ever, by the lag in engine
eported at the rate of only
As far as can be learned,
intention on the part of
e present time to intervene
tion.
itish and French business,
cial quarters, other foreign
larly the small neutrals,
ly larger orders in this
port of the Munitions Con-
trol Board gave indications of this trend, and it was officially predicted that future reports would show a continuation in that direction.

little more than four times the $156,000,000 reported a year previous. In both instances there is a certain amount of duplication where—in the case of some foreign orders—airplane companies have reported in their backlogs such equipment as engines, propellers and the like which are also included in the unfilled orders of the actual manufacturer. These backlog totals do not include a large amount of accessory and equipment business ordered by the purchasers directly from those manufacturers.

Estimated unfilled orders of 15 aircraft companies as of January 1, 1940, and a year earlier, compare as follows:

	Jan. 1, 1940	Jan. 1, 1939
*Allison	$16,000,000	......
Bell	8,000,000	$3,675,000
†Beech	1,473,876	......
Boeing	27,000,000	14,894,918
Brewster	10,900,000	......
Consolidated	37,000,000	2,798,881
Curtiss-Wright	170,000,000	33,000,000
‡Douglas	76,000,000	22,500,926
Grumman	4,200,000	3,500,000
Lockheed	46,000,000	33,330,587
Glenn L. Martin	48,000,000	13,903,006
North American	46,000,000	10,914,000
Republic	11,500,000	......
United Aircraft	140,000,000	17,463,969
Vultee	6,300,000	......
Total	$648,373,876	$155,979,287

* Wholly owned subsidiary of General Motors. † For fiscal year ended September 30. ‡ For fiscal year ended November 30.

Sales Gain 50% Over 1938

Sales by these 15 companies during 1939 approximated $238,000,000, a gain of 50% over the $158,000,000 reported for 1938.

Earnings, however, did not show as large a gain as might be expected from such a sharp rise in sales volume, the total being estimated at $28,000,000 for the past year as compared with $17,749,456 for 1938. This gain in profits of 58% was distorted somewhat by the large loss experienced by Boeing which made heavy

---

Consolidated Installs Four "Earthquakes"

By David Hellyer

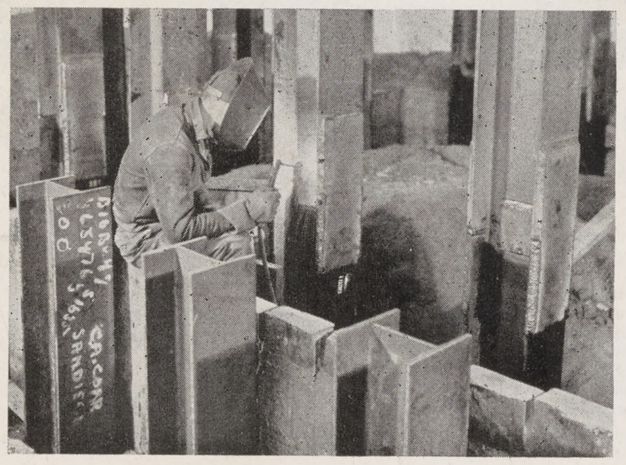
"FIGURATIVELY speaking, gentlemen, our problem is to confine an earthquake to a teacup."

Thus William A. Maloney, plant engineer of the Consolidated Aircraft Corporation of San Diego, Calif., summarized the engineering problem facing his firm in the installation of four new Chambersburg drop hammers to be used in shaping duralumin parts for Consolidated's flying boats. He was speaking to Ellis Wing Taylor, Los Angeles consulting engineer, and Edmund G. Grant, mechanical technician for the astrophysical laboratory at California Institute of Technology.

Taylor, as an expert in his field, and Grant, the engineer who solved the vibration-isolation problem on the giant new 200-inch Palomar telescope near San Diego, were well equipped to collaborate with Maloney, who is himself a recognized authority. It is interesting to note, however, that the problem facing Consolidated was the exact reverse of that which confronted the engineers at Palomar. In setting up the telescope, the engineers were put to the necessity of finding a way to keep vibration *out* of the "teacup," while at Consolidated the problem consisted in confining vibration *to* the "teacup."

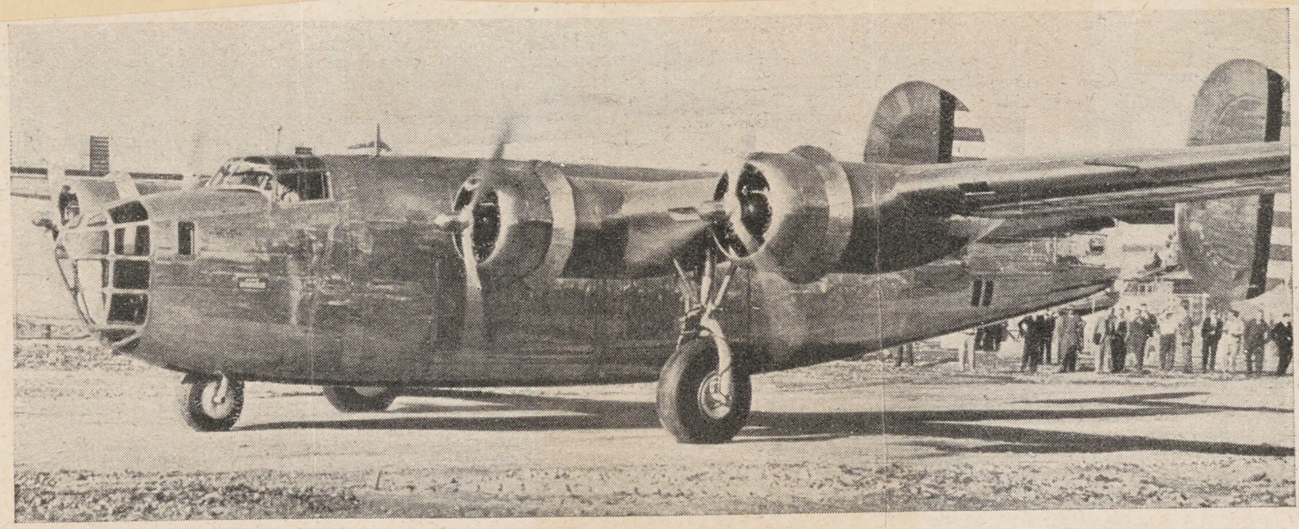
"We must mount these hammers," asserted Maloney, "so that they may operate efficiently in relation to other equipment on the production line and still not disturb nearby machines and offices by the vibration caused by the terrific pounding."

▲



Welding Splice in Steel H-Pile for Drop Hammer Foundation at Plant of Consolidated Aircraft Corporation

---



FASTEST OF THE BIG BOMBERS is this new Consolidated, the prototype of a batch for the U.S. Army Air Corps. It will be noted that it has a tail turret and that in certain respects, notably in the somewhat ugly design of the tail, it resembles the Model 31 flying boat. It is reported that this new machine "approaches a speed of 335 m.p.h.," presumably at very high altitudes.

FLIGHT Feb. 1, 1940

Consair Steel For Buildings On Way Here

UNION 3/8/40

Fabricated steel for new buildings soon to be constructed at the Consolidated Aircraft Co.'s plant is included in the cargo of the American Hawaiian freighter American due Thursday from Philadelphia.

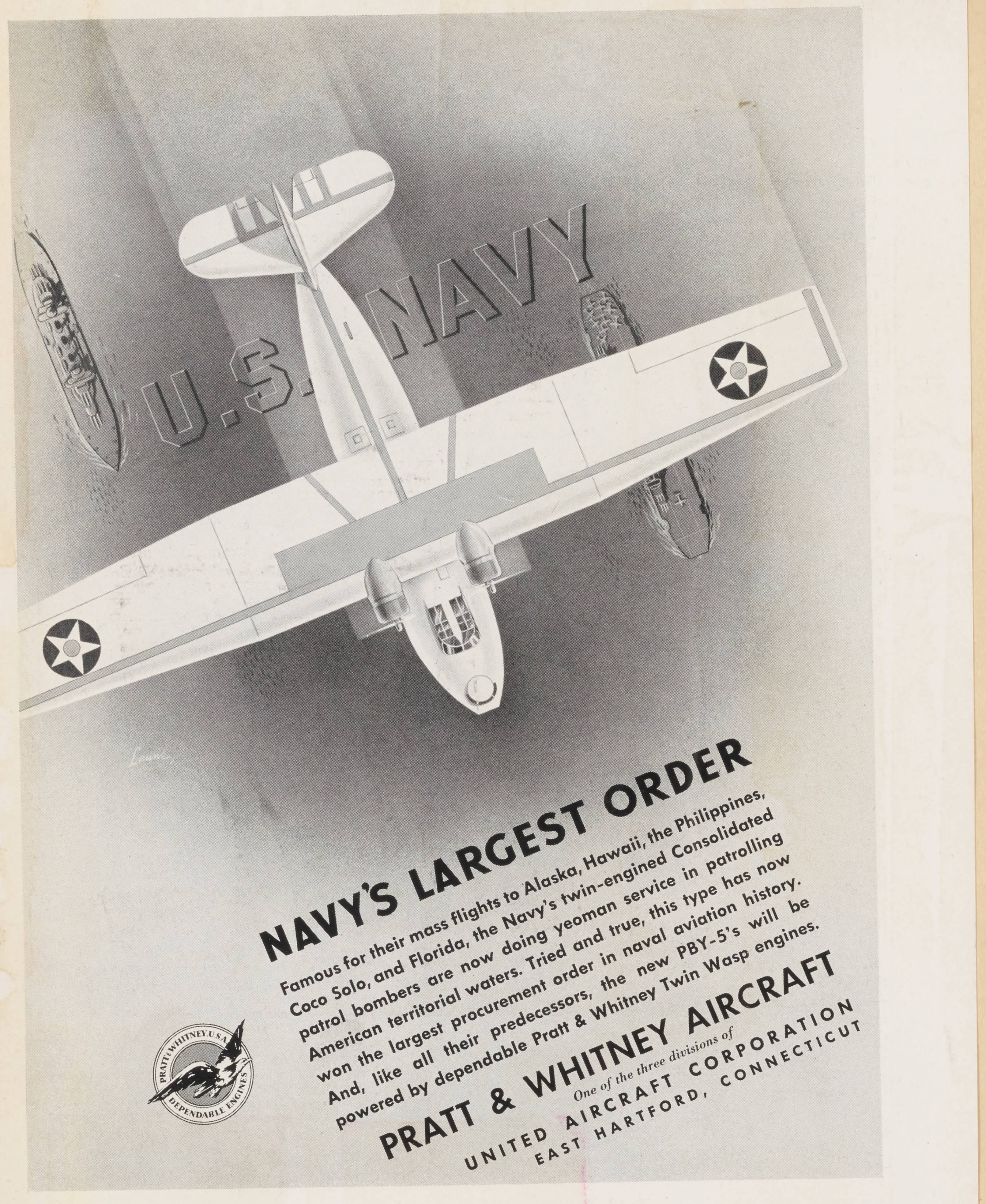
The American is one of a fleet of eight intercoastal vessels to call here in the next three weeks, all of them laden to the plimsoll mark.

Aircraft Firms Seen By Metallurgist

TRIB 3/7/40

Dr. E. H. Dix jr., chief metallurgist of the Aluminum Co. of America, today visited the Consolidated, Ryan and Solar Aircraft factories, conferring with officials at the plants on the latest developments in aluminum, used in the manufacture of planes because of its lightness. Accompanying Dix were M. J. Moffett, southern California district representative; W. C. Lynch, Los Angeles manager, and C. Pyne Frederick, sales manager, Pittsburgh, Pa.

This evening Dix will be honor guest at a dinner at the San Diego hotel, at which Consolidated representatives, T. Claude Ryan, head of the Ryan Co., and Edmund T. Price, Solar head, will attend. Others at the dinner will be Maj. Edwin R. McReynolds, army air corps aircraft factory representative, and Comdr. R. G. Mayer, navy representative. Following the dinner, a closed meeting will be held at the chamber of commerce, at which Dix will show pictures and lecture on the latest aluminum developments.



NAVY'S LARGEST ORDER

Famous for their mass flights to Alaska, Hawaii, the Philippines, Coco Solo, and Florida, the Navy's twin-engined Consolidated patrol bombers are now doing yeoman service in patrolling American territorial waters. Tried and true, this type has now won the largest procurement order in naval aviation history. And, like all their predecessors, the new PBY-5's will be powered by dependable Pratt & Whitney Twin Wasp engines.

PRATT & WHITNEY AIRCRAFT
One of the three divisions of
UNITED AIRCRAFT CORPORATION
EAST HARTFORD, CONNECTICUT

UNION 2-29-40

Consair Gets Permit For $1,050,000 Unit

San Diego's biggest single building permit in almost 15 years was issued yesterday when Consolidated Aircraft Corp., was granted a permit to build their $1,050,000 plant addition.

Recalling big permits of the past, Oscar Knecht, city building inspector, said last night that the permit for building the Civic Center totaled more, but was taken out in two parts. Last one of that size, he recalled, was about 1926 when the San Diego Trust and Savings Bank building was constructed.

The Consolidated permit calls for erection of six steel and sheet metal buildings which will house factory and office space and provide additional store room.

Issuance of the permit brought the year's total for the city to $2,741,579, compared to $1,068,963 for the same period last year.

$1,050,000 ADDED TO PERMIT TOTAL BY CONSOLIDATED

Preparatory to doubling their output and workers' staff, Consolidated Aircraft Co. today was issued a permit authorizing construction of six new manufacturing and assembly buildings, cost of which is estimated at $1,050,000.

Issuance of the building permit swelled the month's permits to $1,600,523 as compared with $451,766 of a year ago and raised the year's total to $2,741,579, more than double last year's figure of $1,039, 54.

The permit issued today provides for construction of six steel and sheet metal buildings, according to Oscar Knecht, city building inspector, plans for all of which were drafted by Architect Edward Cray Taylor. All are to be built under direction of Ellis Wing Taylor, contractor.

The structures contemplated, several of which are now under construction, include one assembly plant, 50 by 125 feet; a manufacturing building, 300 to 720 feet; another 120 by 240 feet; an office building, 50 by 200 feet; a boiler house, 50 by 100 feet, and a material and store building, 30 by 1000 feet.

Work already is under way on two of the structures and will be pushed as rapidly as possible to allow work of construction on a number of new planes, contracts for which have been awarded by the army and navy departments.

It is estimated that with completion of the new buildings the working staff at the plant will be increased from 4100 to more than 7500 men. TRIB 2-28-40

What of the Past—and the Future?

Recently CONTACT asked outstanding figures in the aeronautical industry the following questions:

1 What do you consider the greatest contribution to the progress of Aviation during the year 1939?

2 What is the biggest job confronting Aviation for the year 1940?

On this page appear the replies—a concensus of opinion representing a cross section of the industry—manufacturers, commercial airlines, airports, schools, etc.

Edgar N. Gott
Vice-President Consolidated Aircraft Corporation

San Diego, Calif.

It is the writer's personal opinion that the greatest contribution to progress of Aviation in 1939 was the successful operation by the Navy of its patrol planes on mass flights; and of the new flying boat bases established on both the Atlantic and Pacific oceans.

It is felt that the biggest problem for 1940 will be for the industry to fill the orders on hand without excessive plant expansion, which might later become idle.

CONTACT —o— FEB. 40

5416 Employed Here In Aircraft Plants

UNION 2-28-40

A total of 5416 men and women are employed at the Consolidated Aircraft Corp., Ryan Aeronautical Co. and Solar Aircraft Co. plants, officials announced yesterday.

Forty-one hundred are employed at Consolidated, 850 at Ryan and 466 at Solar.

Personnel of the Douglas Aircraft Co.'s factories at Santa Monica and El Segundo total 15,000, according to Carl A. Cover, general manager. The Douglas payroll last week was in excess of $440,000.

There are 11,700 employed at the Santa Monica plant and 3300 at El Segundo.

Cite Need For Trained Aircraft Workers at San Diego Factories

CONTACT FEB. 1940

Personnel Managers of Plane Plants Prepare To Meet Coming Demand

More than 3000 factory workers will have to be added to the payrolls of San Diego aircraft factories during the balance of the year in order to meet the heavy production schedules called for in filling the more than $50,000,000 in plane orders now on hand.

Such is the aircraft employment situation as outlined there recently at a meeting of personnel managers of the Consolidated, Ryan and Solar aircraft factories.

So that Southern California labor may be employed in preference to out-of-state workers, it will be necessary to train hundreds of skilled technicians during the coming months, according to Marvin Marco, employment manager of one of the local plants.

In order that competent, industry-recognized training may be available to those interested in factory employment, the long-established Ryan School of Aeronautics, San Diego, is now organizing special Sheet Metal classes designed specifically to equip local workers for factory employment in the shortest time consistent with proper training.

Complete in scope, the new Ryan sheet metal course offers 200 hours of technical training in blue print reading, metallurgy, layout and patterns, riveting, assembly, forming, drilling, filing and bumping. Lasting five weeks, the training is given eight hours a day, Monday through Friday.

From The Wall Street Journal

REVIEW *and* OUTLOOK

Opinion vs. Legislation

The Senate will probably take up soon the Logan-Walters bill which passed that body by unanimous consent at the last session, but was not acted upon by the House. As most people know, the purpose of this bill is to tighten up the procedure of various administrative bodies and commissions, and facilitate a review by the courts of quasi-judicial decisions by these agencies.

That there is need for legislative action in both directions has become increasingly evident since this bill was first introduced. Everyone will admit that the strict rules of court procedure in the matter of testimony are neither necessary nor fully appropriate in the forum of administrative law and that a certain degree of latitude must be accorded in the latter practice. It is, however, manifest that there is need for reform in the practice of some of these bodies around which has gathered a storm of criticism that is substantial in character and impressive in volume. Furthermore, it is clear that there is need for bringing within court review a class of quasi-judicial decisions not at present reached by such review.

In dealing with this problem, however, Congress will be well-advised to avoid the danger of rushing from one extreme to the other, and by so doing nullify its effort at reform. The truth of the matter is that in this department of government the all-important thing is the personnel to whom the extensive powers which must be delegated are entrusted. No rules

---

Press Clipping
FROM
ALBERT F. COUDERC

L-2
L-
Shan S
Stan Rtd
DGX-DGR
Barf-4
K
GN-CJR
B
X
JAN 15 1940
1/17/40

EET JOURNAL, WEDNESDAY, JANUARY 10, 1940

BRITISH TO BUY MORE AIRCRAFT

Continued from First Page

Chamberlain and other British statesmen have repeatedly predicted, it is considered almost inevitable that both foreign and domestic demands on the American industry will be greatly increased. British estimates of their own needs from foreign sources are based on the theory that their own airplane plants will not suffer severe damage from enemy air raids and that their losses in the air will not be substantial. It is believed in Washington that a violent intensification of the European war in the spring would promptly be echoed in increased demands from the United States War and Navy departments for more military planes.

Government estimates of current production in the United States aircraft industry show its potential production rate is approximately 17,000 planes a year. Certain officials are understood to be concerned, however, by the lag in engine production which is reported at the rate of only about 12,000 a year. As far as can be learned, however, there is no intention on the part of the Government at the present time to intervene directly in this situation.

In addition to British and French business, it is surmised in official quarters, other foreign governments, particularly the small neutrals, will place increasingly larger orders in this country. The last report of the Munitions Control Board gave indications of this trend, and it was officially predicted that future reports would show a continuation in that direction.

little more than four times the $156,000,000 reported a year previous. In both instances there is a certain amount of duplication where—in the case of some foreign orders—airplane companies have reported in their backlogs such equipment as engines, propellers and the like which are also included in the unfilled orders of the actual manufacturer. These backlog totals do not include a large amount of accessory and equipment business ordered by the purchasers directly from those manufacturers.

Estimated unfilled orders of 15 aircraft companies as of January 1, 1940, and a year earlier, compare as follows:

	Jan. 1, 1940	Jan. 1, 1939
*Allison	$16,000,000	......
Bell	8,000,000	$3,675,000
†Beech	1,473,876	......
Boeing	27,000,000	14,894,918
Brewster	10,900,000	......
Consolidated	37,000,000	2,798,881
Curtiss-Wright	170,000,000	33,000,000
‡Douglas	76,000,000	22,500,926
Grumman	4,200,000	3,500,000
Lockheed	46,000,000	33,330,587
Glenn L. Martin	48,000,000	13,903,006
North American	46,000,000	10,914,000
Republic	11,500,000	......
United Aircraft	140,000,000	17,463,969
Vultee	6,300,000	......
Total	$648,373,876	$155,979,287

* Wholly owned subsidiary of General Motors. † For fiscal year ended September 30. ‡ For fiscal year ended November 30.

Sales Gain 50% Over 1938

Sales by these 15 companies during 1939 approximated $238,000,000, a gain of 50% over the $158,000,000 reported for 1938.

Earnings, however, did not show as large a gain as might be expected from such a sharp rise in sales volume, the total being estimated at $28,000,000 for the past year as compared with $17,749,456 for 1938. This gain in profits of 58% was distorted somewhat by the large loss experienced by Boeing which made

---

Consolidated Installs Four "Earthquakes"

By David Hellyer

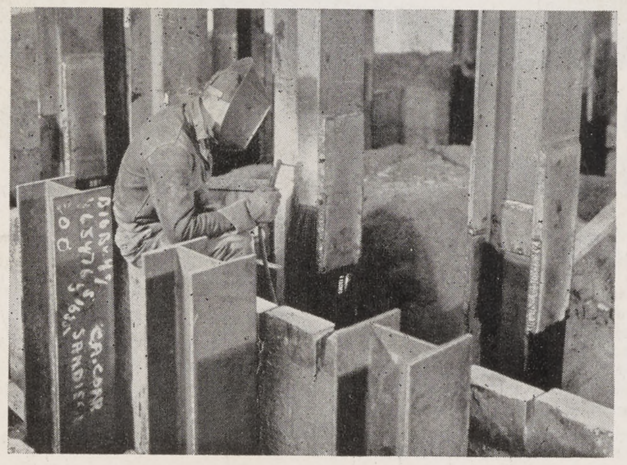
"FIGURATIVELY speaking, gentlemen, our problem is to confine an earthquake to a teacup."

Thus William A. Maloney, plant engineer of the Consolidated Aircraft Corporation of San Diego, Calif., summarized the engineering problem facing his firm in the installation of four new Chambersburg drop hammers to be used in shaping duralumin parts for Consolidated's flying boats. He was speaking to Ellis Wing Taylor, Los Angeles consulting engineer, and Edmund G. Grant, mechanical technician for the astrophysical laboratory at California Institute of Technology.

Taylor, as an expert in his field, and Grant, the engineer who solved the vibration-isolation problem on the giant new 200-inch Palomar telescope near San Diego, were well equipped to collaborate with Maloney, who is himself a recognized authority. It is interesting to note, however, that the problem facing Consolidated was the exact reverse of that which confronted the engineers at Palomar. In setting up the telescope, the engineers were put to the necessity of finding a way to keep vibration *out* of the "teacup," while at Consolidated the problem consisted in confining vibration *to* the "teacup."

"We must mount these hammers," asserted Maloney, "so that they may operate efficiently in relation to other equipment on the production line and still not disturb nearby machines and offices by the vibration caused by the terrific pounding."

▲



Welding Splice in Steel H-Pile for Drop Hammer Foundation at Plant of Consolidated Aircraft Corporation

78 MODERN MACHINE SHOP February, 1940

Consair Steel For Buildings On Way Here

UNION 3/8/40

Fabricated steel for new buildings soon to be constructed at the Consolidated Aircraft Co.'s plant is included in the cargo of the American Hawaiian freighter American due Thursday from Philadelphia.

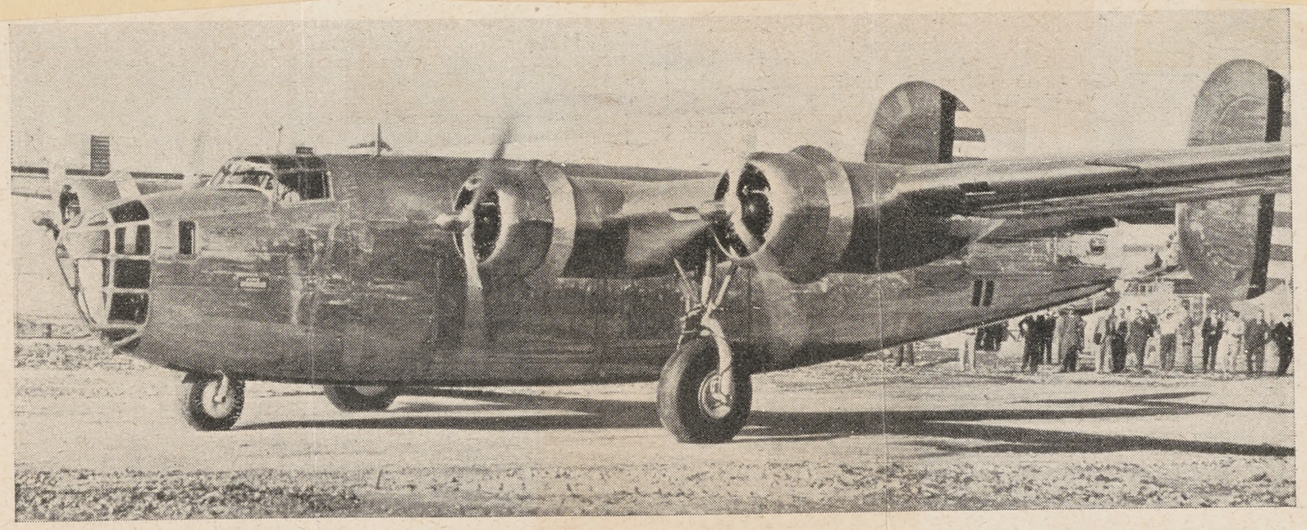
The American is one of a fleet of eight intercoastal vessels to call here in the next three weeks, all of them laden to the plimsoll mark.

Aircraft Firms Seen By Metallurgist

TRIB 3/7/40

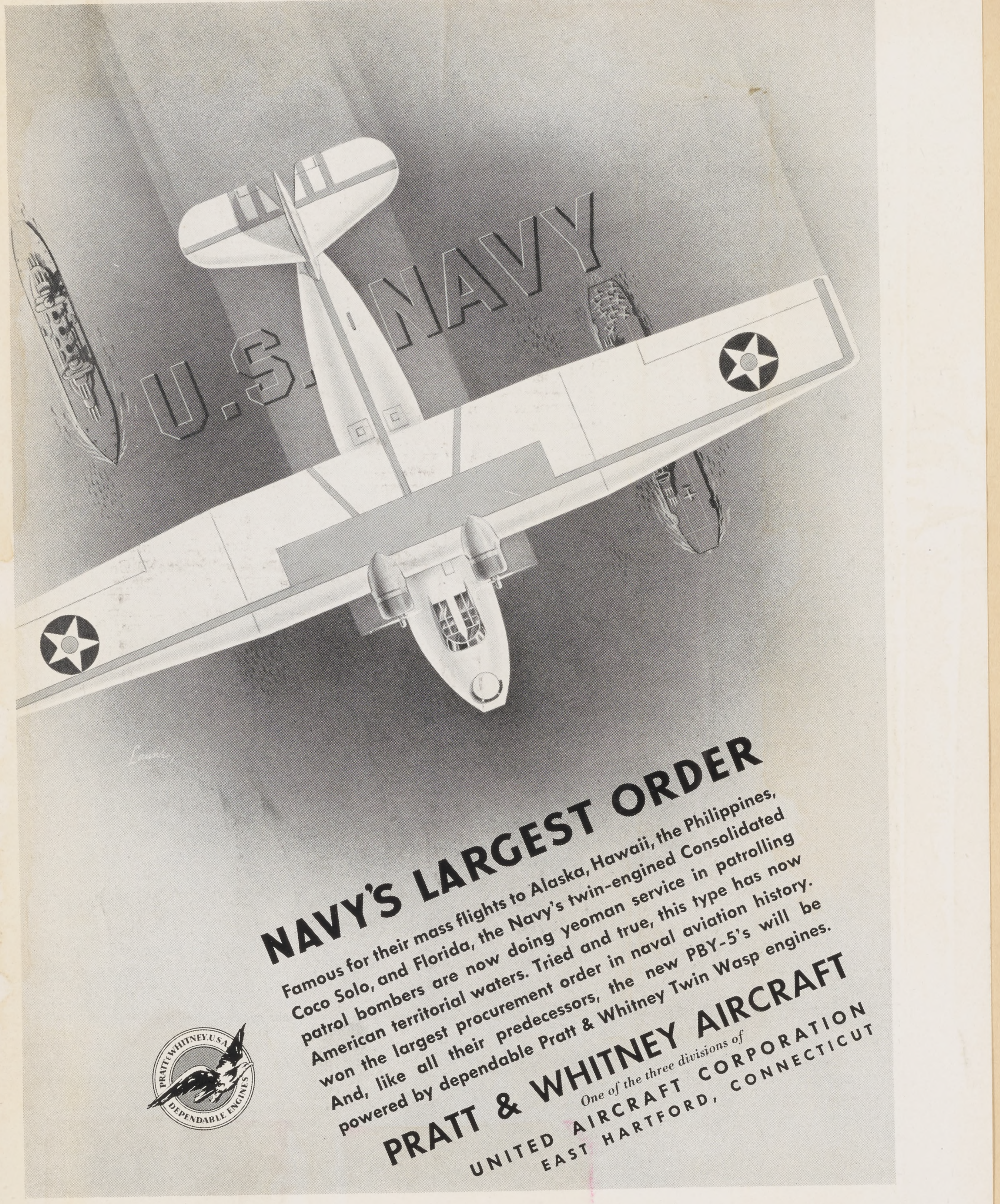
Dr. E. H. Dix jr., chief metallurgist of the Aluminum Co. of America, today visited the Consolidated, Ryan and Solar Aircraft factories, conferring with officials at the plants on the latest developments in aluminum, used in the manufacture of planes because of its lightness. Accompanying Dix were M. J. Moffett, southern California district representative; W. C. Lynch, Los Angeles manager, and C. Pyne Frederick, sales manager, Pittsburgh, Pa.

This evening Dix will be honor guest at a dinner at the San Diego hotel, at which Consolidated representatives, T. Claude Ryan, head of the Ryan Co., and Edmund T. Price, Solar head, will attend. Others at the dinner will be Maj. Edwin R. McReynolds, army air corps aircraft factory representative, and Comdr. R. G. Mayer, navy representative. Following the dinner, a closed meeting will be held at the chamber of commerce, at which Dix will show pictures and lecture on the latest aluminum developments.



FASTEST OF THE BIG BOMBERS is this new Consolidated, the prototype of a batch for the U.S. Army Air Corps. It will be noted that it has a tail turret and that in certain respects, notably in the somewhat ugly design of the tail, it resembles the Model 31 flying boat. It is reported that this new machine "approaches a speed of 335 m.p.h.," presumably at very high altitudes.

FLIGHT Feb 1, 1940



NAVY'S LARGEST ORDER

Famous for their mass flights to Alaska, Hawaii, the Philippines, Coco Solo, and Florida, the Navy's twin-engined Consolidated patrol bombers are now doing yeoman service in patrolling American territorial waters. Tried and true, this type has now won the largest procurement order in naval aviation history. And, like all their predecessors, the new PBY-5's will be powered by dependable Pratt & Whitney Twin Wasp engines.

PRATT & WHITNEY U.S.A. DEPENDABLE ENGINES

PRATT & WHITNEY AIRCRAFT

One of the three divisions of
UNITED AIRCRAFT CORPORATION
EAST HARTFORD, CONNECTICUT

UNION 2-29-40

Consair Gets Permit For $1,050,000 Unit

San Diego's biggest single building permit in almost 15 years was issued yesterday when Consolidated Aircraft Corp., was granted a permit to build their $1,050,000 plant addition.

Recalling big permits of the past, Oscar Knecht, city building inspector, said last night that the permit for building the Civic Center totaled more, but was taken out in two parts. Last one of that size, he recalled, was about 1926 when the San Diego Trust and Savings Bank building was constructed.

The Consolidated permit calls for erection of six steel and sheet metal buildings which will house factory and office space and provide additional store room.

Issuance of the permit brought the year's total for the city to $2,741,579, compared to $1,068,963 for the same period last year.

$1,050,000 ADDED TO PERMIT TOTAL BY CONSOLIDATED

Preparatory to doubling their output and workers' staff, Consolidated Aircraft Co. today was issued a permit authorizing construction of six new manufacturing and assembly buildings, cost of which is estimated at $1,050,000.

Issuance of the building permit swelled the month's permits to $1,600,523 as compared with $451,766 of a year ago and raised the year's total to $2,741,579, more than double last year's figure of $1,039, 54.

The permit issued today provides for construction of six steel and sheet metal buildings, according to Oscar Knecht, city building inspector, plans for all of which were drafted by Architect Edward Cray Taylor. All are to be built under direction of Ellis Wing Taylor, contractor.

The structures contemplated, several of which are now under construction, include one assembly plant, 50 by 125 feet; a manufacturing building, 300 to 720 feet; another 120 by 240 feet; an office building, 50 by 200 feet; a boiler house, 50 by 100 feet, and a material and store building, 30 by 1000 feet.

Work already is under way on two of the structures and will be pushed as rapidly as possible to allow work of construction on a number of new planes, contracts for which have been awarded by the army and navy departments.

It is estimated that with completion of the new buildings the working staff at the plant will be increased from 4100 to more than 7500 men.

TRIB 2-28-40

What of the Past—and the Future?

Recently CONTACT asked outstanding figures in the aeronautical industry the following questions:

1 What do you consider the greatest contribution to the progress of Aviation during the year 1939?

2 What is the biggest job confronting Aviation for the year 1940?

On this page appear the replies—a concensus of opinion representing a cross section of the industry—manufacturers, commercial airlines, airports, schools, etc.

Edgar N. Gott
Vice-President Consolidated Aircraft Corporation

San Diego, Calif.

It is the writer's personal opinion that the greatest contribution to progress of Aviation in 1939 was the successful operation by the Navy of its patrol planes on mass flights; and of the new flying boat bases established on both the Atlantic and Pacific oceans.

It is felt that the biggest problem for 1940 will be for the industry to fill the orders on hand without excessive plant expansion, which might later become idle.

CONTACT ——o—— FEB. 40

5416 Employed Here In Aircraft Plants

UNION 2-28-40

A total of 5416 men and women are employed at the Consolidated Aircraft Corp., Ryan Aeronautical Co. and Solar Aircraft Co. plants, officials announced yesterday.

Forty-one hundred are employed at Consolidated, 850 at Ryan and 466 at Solar.

Personnel of the Douglas Aircraft Co.'s factories at Santa Monica and El Segundo total 15,000, according to Carl A. Cover, general manager. The Douglas payroll last week was in excess of $440,000.

There are 11,700 employed at the Santa Monica plant and 3300 at El Segundo.

Cite Need For Trained Aircraft Workers at San Diego Factories

CONTACT FEB. 1940

Personnel Managers of Plane Plants Prepare To Meet Coming Demand

More than 3000 factory workers will have to be added to the payrolls of San Diego aircraft factories during the balance of the year in order to meet the heavy production schedules called for in filling the more than $50,000,000 in plane orders now on hand.

Such is the aircraft employment situation as outlined there recently at a meeting of personnel managers of the Consolidated, Ryan and Solar aircraft factories.

So that Southern California labor may be employed in preference to out-of-state workers, it will be necessary to train hundreds of skilled technicians during the coming months, according to Marvin Marco, employment manager of one of the local plants.

In order that competent, industry-recognized training may be available to those interested in factory employment, the long-established Ryan School of Aeronautics, San Diego, is now organizing special Sheet Metal classes designed specifically to equip local workers for factory employment in the shortest time consistent with proper training.

Complete in scope, the new Ryan sheet metal course offers 200 hours of technical training in blue print reading, metallurgy, layout and patterns, riveting, assembly, forming, drilling, filing and bumping. Lasting five weeks, the training is given eight hours a day, Monday through Friday.

Press Clipping

FROM

ALBERT F. COUDERC

K

JAN 15 1940

1/17/40

From The Wall Street Journal

REVIEW *and* OUTLOOK

Opinion vs. Legislation

The Senate will probably take up soon the Logan-Walters bill which passed that body by unanimous consent at the last session, but was not acted upon by the House. As most people know, the purpose of this bill is to tighten up the procedure of various administrative bodies and commissions, and facilitate a review by the courts of quasi-judicial decisions by these agencies.

That there is need for legislative action in both directions has become increasingly evident since this bill was first introduced. Everyone will admit that the strict rules of court procedure in the matter of testimony are neither necessary nor fully appropriate in the forum of administrative law and that a certain degree of latitude must be accorded in the latter practice. It is, however, manifest that there is need for reform in the practice of some of these bodies around which has gathered a storm of criticism that is substantial in character and impressive in volume. Furthermore, it is clear that there is need for bringing within court review a class of quasi-judicial decisions not at present reached by such review.

In dealing with this problem, however, Congress will be well-advised to avoid the danger of rushing from one extreme to the other, and by so doing nullify its effort at reform. The truth of the matter is that in this department of government the all-important thing is the personnel to whom the extensive powers which must be delegated are entrusted. No rules

---

EET JOURNAL, WEDNESDAY, JANUARY 10, 1940

BRITISH TO BUY MORE AIRCRAFT

Continued from First Page

Chamberlain and other British statesmen have repeatedly predicted, it is considered almost inevitable that both foreign and domestic demands on the American industry will be greatly increased. British estimates of their own needs from foreign sources are based on the theory that their own airplane plants will not suffer severe damage from enemy air raids and that their losses in the air will not be substantial. It is believed in Washington that a violent intensification of the European war in the spring would promptly be echoed in increased demands from the United States War and Navy departments for more military planes.

Government estimates of current production in the United States aircraft industry show its potential production rate is approximately 17,000 planes a year. Certain officials are understood to be concerned, however, by the lag in engine production which is reported at the rate of only about 12,000 a year. As far as can be learned, however, there is no intention on the part of the Government at the present time to intervene directly in this situation.

In addition to British and French business, it is surmised in official quarters, other foreign governments, particularly the small neutrals, will place increasingly larger orders in this country. The last report of the Munitions Control Board gave indications of this trend, and it was officially predicted that future reports would show a continuation in that direction.

Aircraft Backlogs

NEW YORK—New business booked by the aircraft manufacturers continues to run well in excess of production despite the increasing rate of deliveries and volume of unfilled orders established a new peak at the beginning of this year.

Orders placed with the primary companies during December approximated $75,000,000 while deliveries ran around $25,000,000. The preponderance of incoming business over deliveries averaged about this same 3 to 1 ratio for the entire year 1939. Indicated new business signed by 15 companies during the year amounted to $715,000,000 while deliveries by the same group totaled approximately $238,000,000.

Companies sharing in the new contracts awarded during December and the amounts added to their backlogs in excess of deliveries are estimated as follows: Consolidated, $20,000,000; Curtiss-Wright, $16,000,000; Lockheed, $20,000,000; Republic, $1,300,000; and United Aircraft, $15,000,000. There also were several miscellaneous contracts awarded during the month.

Douglas Contracts

Since beginning of 1940, Douglas Aircraft Co. announced that contracts are in final stage of negotiation for $14,000,000 worth of its new DC-4 commercial transport. Other contracts that are understood to be near the signing stage include: A British order from Douglas for between $30,000,000 and $40,000,000 of attack bombers for 1941 delivery; a British contract with Consolidated Aircraft for approximately $5,000,000 of patrol bombers; another French order with Glenn L. Martin Co., one or more British contracts for pursuit planes.

Total backlog of the 15 companies on January 1, 1940, is estimated at $648,000,000, or a little more than four times the $156,000,000 reported a year previous. In both instances there is a certain amount of duplication where—in the case of some foreign orders—airplane companies have reported in their backlogs such equipment as engines, propellers and the like which are also included in the unfilled orders of the actual manufacturer. These backlog totals do not include a large amount of accessory and equipment business ordered by the purchasers directly from those manufacturers.

Estimated unfilled orders of 15 aircraft companies as of January 1, 1940, and a year earlier, compare as follows:

	Jan. 1, 1940	Jan. 1, 1939
*Allison	$16,000,000	......
Bell	8,000,000	$3,675,000
†Beech	1,473,876	......
Boeing	27,000,000	14,894,918
Brewster	10,900,000	......
Consolidated	37,000,000	2,798,881
Curtiss-Wright	170,000,000	33,000,000
‡Douglas	76,000,000	22,500,926
Grumman	4,200,000	3,500,000
Lockheed	46,000,000	33,330,587
Glenn L. Martin	48,000,000	13,903,006
North American	46,000,000	10,914,000
Republic	11,500,000	......
United Aircraft	140,000,000	17,463,969
Vultee	6,300,000	......
Total	$648,373,876	$155,979,287

* Wholly owned subsidiary of General Motors. † For fiscal year ended September 30. ‡ For fiscal year ended November 30.

Sales Gain 50% Over 1938

Sales by these 15 companies during 1939 approximated $238,000,000, a gain of 50% over the $158,000,000 reported for 1938.

Earnings, however, did not show as large a gain as might be expected from such a sharp rise in sales volume, the total being estimated at $28,000,000 for the past year as compared with $17,749,456 for 1938. This gain in profits of 58% was distorted somewhat by the large loss experienced by Boeing which made heavy charges against 1939 operations for losses incurred in contracts that have been in process for the past two or three years.

A considerably more liberal policy was followed by the industry as a whole in disbursements to stockholders. During 1939 nine companies paid $16,721,123 out in dividends as compared with $8,593,194 by seven companies during 1938, a gain of 95%.

Current rate of deliveries of $25,000,000 a month by these companies is expected to be doubled within a comparatively short period as new facilities are placed in production and effect of preliminary work begins to be reflected in actual deliveries. Delivery guarantees and penalty clauses in the event that deliveries do not meet predetermined dates indicate the industry will be forced to jump the current rate quickly or be subject to penalties.

Estimated sales and common share earnings of aircraft companies for 1939 compare as follows with reported results for 1938:

	Sales		Com. sh. earnings	
	*1939	1938	*1939	1938
Bell	$100,000	$1,219,253	...	$0.33
†Beech	1,328,296	1,141,399	§...	§...
Boeing	11,000,000	2,006,345	§...	§...
Brewster	600,000	1,490,339	...	.66
Consolidated	3,200,000	12,245,067	...	2.55
Curtiss-Wright	48,000,000	33,102,962	.35	.17
‡Douglas	27,000,000	28,347,474	5.50–6.00	3.76
Grumman	4,485,000	4,904,916	1.50	1.30
Lockheed	35,000,000	10,274,503	4.00	.67
Martin	25,800,000	12,417,417	3.35	2.15
North American	29,000,000	10,062,346	2.23	.55
Republic	1,000,000	3,618,201	§...	§...
United Aircraft	50,000,000	36,799,545	3.20	2.12

* Estimated. † For fiscal year ended September 30. ‡ For fiscal year ended November 30. § Deficit.

FASTE
noted t
51 flyir

FLI

will be
Model
titudes.

Consolidated Installs Four "Earthquakes"

By David Hellyer

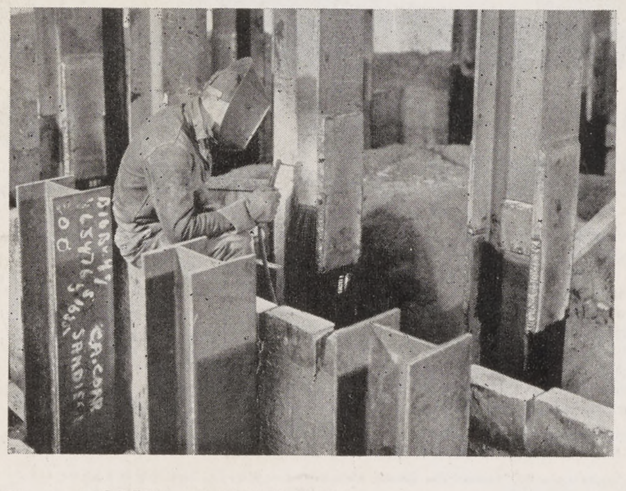
"FIGURATIVELY speaking, gentlemen, our problem is to confine an earthquake to a teacup."

Thus William A. Maloney, plant engineer of the Consolidated Aircraft Corporation of San Diego, Calif., summarized the engineering problem facing his firm in the installation of four new Chambersburg drop hammers to be used in shaping duralumin parts for Consolidated's flying boats. He was speaking to Ellis Wing Taylor, Los Angeles consulting engineer, and Edmund G. Grant, mechanical technician for the astrophysical laboratory at California Institute of Technology.

Taylor, as an expert in his field, and Grant, the engineer who solved the vibration-isolation problem on the giant new 200-inch Palomar telescope near San Diego, were well equipped to collaborate with Maloney, who is himself a recognized authority. It is interesting to note, however, that the problem facing Consolidated was the exact reverse of that which confronted the engineers at Palomar. In setting up the telescope, the engineers were put to the necessity of finding a way to keep vibration *out* of the "teacup," while at Consolidated the problem consisted in confining vibration *to* the "teacup."

"We must mount these hammers," asserted Maloney, "so that they may operate efficiently in relation to other equipment on the production line and still not disturb nearby machines and offices by the vibration caused by the terrific pounding."

▲



Welding Splice in Steel H-Pile for Drop Hammer Foundation at Plant of Consolidated Aircraft Corporation

---

Consair Steel For Buildings On Way Here

UNION 3/8/40

Fabricated steel for new buildings soon to be constructed at the Consolidated Aircraft Co.'s plant is included in the cargo of the American Hawaiian freighter American due Thursday from Philadelphia.

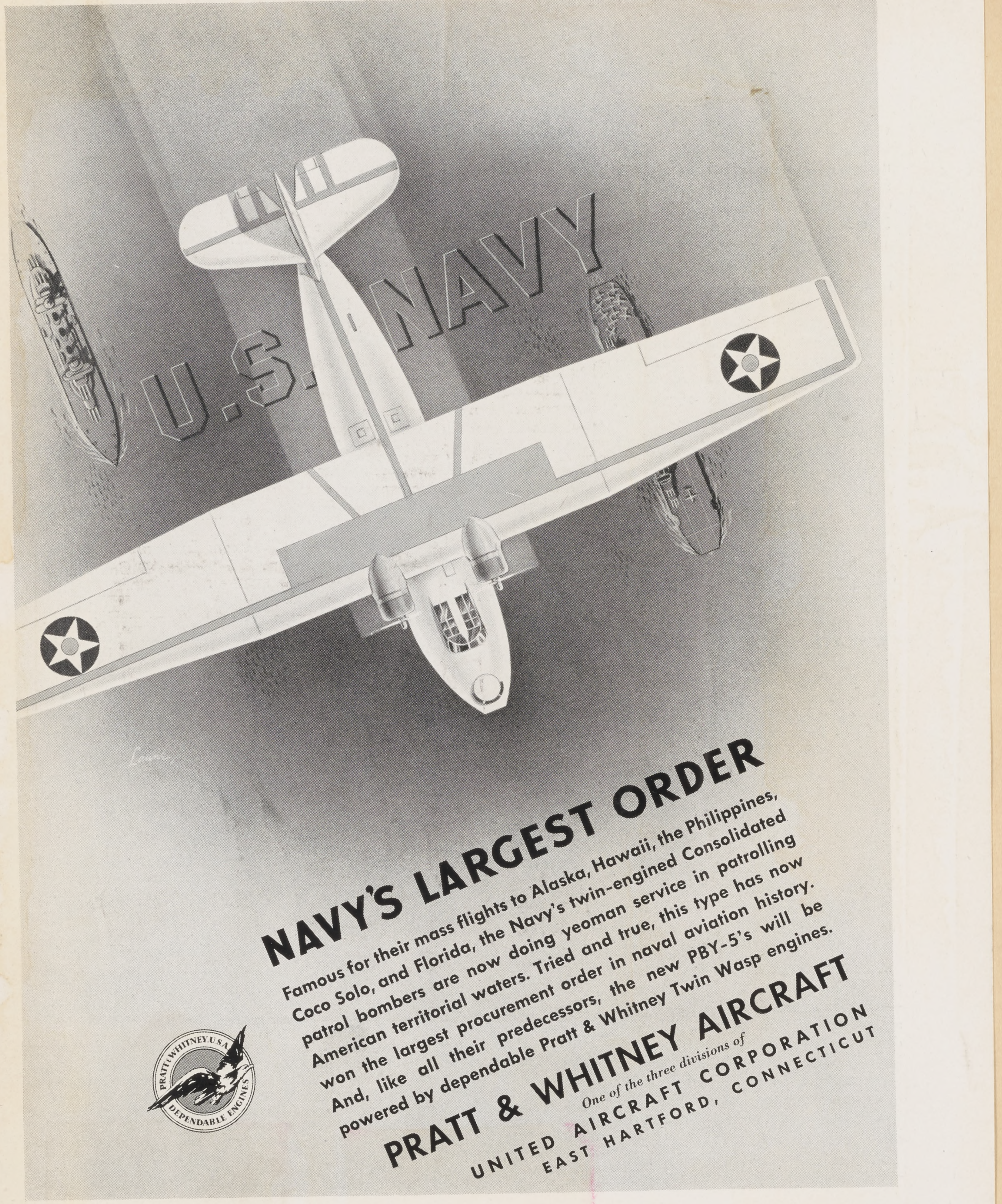
The American is one of a fleet of eight intercoastal vessels to call here in the next three weeks, all of them laden to the plimsoll mark.

Aircraft Firms Seen By Metallurgist

TRIB 3/7/40

Dr. E. H. Dix jr., chief metallurgist of the Aluminum Co. of America, today visited the Consolidated, Ryan and Solar Aircraft factories, conferring with officials at the plants on the latest developments in aluminum, used in the manufacture of planes because of its lightness. Accompanying Dix were M. J. Moffett, southern California district representative; W. C. Lynch, Los Angeles manager, and C. Pyne Frederick, sales manager, Pittsburgh, Pa.

This evening Dix will be honor guest at a dinner at the San Diego hotel, at which Consolidated representatives, T. Claude Ryan, head of the Ryan Co., and Edmund T. Price, Solar head, will attend. Others at the dinner will be Maj. Edwin R. McReynolds, army air corps aircraft factory representative, and Comdr. R. G. Mayer, navy representative. Following the dinner, a closed meeting will be held at the chamber of commerce, at which Dix will show pictures and lecture on the latest aluminum developments.



NAVY'S LARGEST ORDER

Famous for their mass flights to Alaska, Hawaii, the Philippines, Coco Solo, and Florida, the Navy's twin-engined Consolidated patrol bombers are now doing yeoman service in patrolling American territorial waters. Tried and true, this type has now won the largest procurement order in naval aviation history. And, like all their predecessors, the new PBY-5's will be powered by dependable Pratt & Whitney Twin Wasp engines.

PRATT & WHITNEY AIRCRAFT

One of the three divisions of

UNITED AIRCRAFT CORPORATION
EAST HARTFORD, CONNECTICUT

UNION 2-29-40

Consair Gets Permit For $1,050,000 Unit

San Diego's biggest single building permit in almost 15 years was issued yesterday when Consolidated Aircraft Corp., was granted a permit to build their $1,050,000 plant addition.

Recalling big permits of the past, Oscar Knecht, city building inspector, said last night that the permit for building the Civic Center totaled more, but was taken out in two parts. Last one of that size, he recalled, was about 1926 when the San Diego Trust and Savings Bank building was constructed.

The Consolidated permit calls for erection of six steel and sheet metal buildings which will house factory and office space and provide additional store room.

Issuance of the permit brought the year's total for the city to $2,741,579, compared to $1,068,963 for the same period last year.

$1,050,000 ADDED TO PERMIT TOTAL BY CONSOLIDATED

Preparatory to doubling their output and workers' staff, Consolidated Aircraft Co. today was issued a permit authorizing construction of six new manufacturing and assembly buildings, cost of which is estimated at $1,050,000.

Issuance of the building permit swelled the month's permits to $1,600,523 as compared with $451,766 of a year ago and raised the year's total to $2,741,579, more than double last year's figure of $1,039, 54.

The permit issued today provides for construction of six steel and sheet metal buildings, according to Oscar Knecht, city building inspector, plans for all of which were drafted by Architect Edward Cray Taylor. All are to be built under direction of Ellis Wing Taylor, contractor.

The structures contemplated, several of which are now under construction, include one assembly plant, 50 by 125 feet; a manufacturing building, 300 to 720 feet; another 120 by 240 feet; an office building, 50 by 200 feet; a boiler house, 50 by 100 feet, and a material and store building, 30 by 1000 feet.

Work already is under way on two of the structures and will be pushed as rapidly as possible to allow work of construction on a number of new planes, contracts for which have been awarded by the army and navy departments.

It is estimated that with completion of the new buildings the working staff at the plant will be increased from 4100 to more than 7500 men. TRIB 2-28-40

5416 Employed Here In Aircraft Plants

UNION 2-28-40

A total of 5416 men and women are employed at the Consolidated Aircraft Corp., Ryan Aeronautical Co. and Solar Aircraft Co. plants, officials announced yesterday.

Forty-one hundred are employed at Consolidated, 850 at Ryan and 466 at Solar.

Personnel of the Douglas Aircraft Co.'s factories at Santa Monica and El Segundo total 15,000, according to Carl A. Cover, general manager. The Douglas payroll last week was in excess of $440,000.

There are 11,700 employed at the Santa Monica plant and 3300 at El Segundo.

Cite Need For Trained Aircraft Workers at San Diego Factories

CONTACT FEB. 1940

Personnel Managers of Plane Plants Prepare To Meet Coming Demand

More than 3000 factory workers will have to be added to the payrolls of San Diego aircraft factories during the balance of the year in order to meet the heavy production schedules called for in filling the more than $50,000,000 in plane orders now on hand.

Such is the aircraft employment situation as outlined there recently at a meeting of personnel managers of the Consolidated, Ryan and Solar aircraft factories.

So that Southern California labor may be employed in preference to out-of-state workers, it will be necessary to train hundreds of skilled technicians during the coming months, according to Marvin Marco, employment manager of one of the local plants.

In order that competent, industry-recognized training may be available to those interested in factory employment, the long-established Ryan School of Aeronautics, San Diego, is now organizing special Sheet Metal classes designed specifically to equip local workers for factory employment in the shortest time consistent with proper training.

Complete in scope, the new Ryan sheet metal course offers 200 hours of technical training in blue print reading, metallurgy, layout and patterns, riveting, assembly, forming, drilling, filing and bumping. Lasting five weeks, the training is given eight hours a day, Monday through Friday.

What of the Past—and the Future?

Recently CONTACT asked outstanding figures in the aeronautical industry the following questions:

1 What do you consider the greatest contribution to the progress of Aviation during the year 1939?

2 What is the biggest job confronting Aviation for the year 1940?

On this page appear the replies—a concensus of opinion representing a cross section of the industry—manufacturers, commercial airlines, airports, schools, etc.

Edgar N. Gott
Vice-President Consolidated Aircraft Corporation

San Diego, Calif.

It is the writer's personal opinion that the greatest contribution to progress of Aviation in 1939 was the successful operation by the Navy of its patrol planes on mass flights; and of the new flying boat bases established on both the Atlantic and Pacific oceans.

It is felt that the biggest problem for 1940 will be for the industry to fill the orders on hand without excessive plant expansion, which might later become idle.

CONTACT —o— FEB. '40

Pacific Coast Edition
THE WALL STREET JOURNAL

DOW-JONES
ELECTRIC PAGE NEWS PRINTERS

623 CENTRAL BUILDING
LOS ANGELES
PHONE TRINITY 0881

L-2
L-
Sham s
Stan Ptd
DGX-DGa
Bark-4
K
GN-ljh
B
1/17/40

Press Clipping
FROM
ALBERT F. COUDERC

JAN 10 1940

BRITISH TO BUY MORE AIRCRAFT

Purchase of 10,000 Planes in U. S. During Next 18-Month Period Is Planned

Dow Jones News Service

WASHINGTON—British plans for the purchase of approximately 10,000 military airplanes in this country during the next 18 months were placed before United States Government officials recently, it was learned last night.

This figure is based upon British estimates of the amount of foreign help necessary in order to achieve air supremacy over Germany by the middle of 1941, it is understood.

As far as can be determined, it does not take into account the extent of possible French purchases here. In view of the coordination of the procurement agencies of the two Allies, however, it is thought that it will be increasingly difficult to draw a sharp distinction between their respective purchases.

British Output Near 1,000 Monthly

Plans to place orders in the United States for 10,000 planes during 1940 and the first half of 1941 were discussed informally with Washington authorities by a high ranking official of the British Empire who paid a brief visit here several weeks ago, it was learned. Apparently he went away satisfied.

Latest reports current in Washington are that British air production is now in the neighborhood of 1,000 planes a month. A number of new large factories are understood to be practically finished and equipped, and it is reported that when they get into production Great Britain will be equipped to turn out about 2,200 planes a month. Efforts to speed up French air factory schedules have been disappointing to the Allies, and French current production is reported to be still short of 300 a month.

Although accurate estimates, of course, are impossible to obtain, some Government officials believe that the current German air production is at the rate of about 2,000 planes a month. Combined British and French purchases in the United States since before the outbreak of the war are estimated at about 5,000 craft.

In the event of a large-scale German air offensive in the spring, which Prime Minister

Continued on Fifth Page, Column 4

EDNESDAY, JANUARY 10

TO BUY AIRCRAFT

om First Page
r British statesmen have
t is considered almost in-
ign and domestic demands
ustry will be greatly in-
nates of their own needs
are based on the theory
ne plants will not suffer
enemy air raids and that
r will not be substantial.
hington that a violent in-
ropean war in the spring
oed in increased demands
es War and Navy depart-
ry planes.
tes of current production
aircraft industry show its
te is approximately 17,000
in officials are understood
ever, by the lag in engine
eported at the rate of only
As far as can be learned,
intention on the part of
e present time to intervene
tion.
itish and French business,
ial quarters, other foreign
larly the small neutrals,
ly larger orders in this
port of the Munitions Control Board gave indications of this trend, and it was officially predicted that future reports would show a continuation in that direction.

little more
ported a y
is a certai
case of s
nies have
ment as e
are also i
actual ma
not inclu
equipmen
directly f
Estima
panies as
compare

*Allison		
Bell		
†Beech		
Boeing		
Brewster		
Consolidate		
Curtiss-Wri		
‡Douglas		
Grumman		
Lockheed		
Glenn L.		
North Am		
Republic		
United Aircraft	140,000,000	
Vultee	6,300,000	......
Total	$648,373,876	$155,979,287

* Wholly owned subsidiary of General Motors. † For fiscal year ended September 30. ‡ For fiscal year ended November 30.

Sales Gain 50% Over 1938

Sales by these 15 companies during 1939 approximated $238,000,000, a gain of 50% over the $158,000,000 reported for 1938.

Earnings, however, did not show as large a gain as might be expected from such a sharp rise in sales volume, the total being estimated at $28,000,000 for the past year as compared with $17,749,456 for 1938. This gain in profits of 58% was distorted somewhat by the large loss experienced by Boeing which

---

"YANKEE" No. 993

"YANKEE"

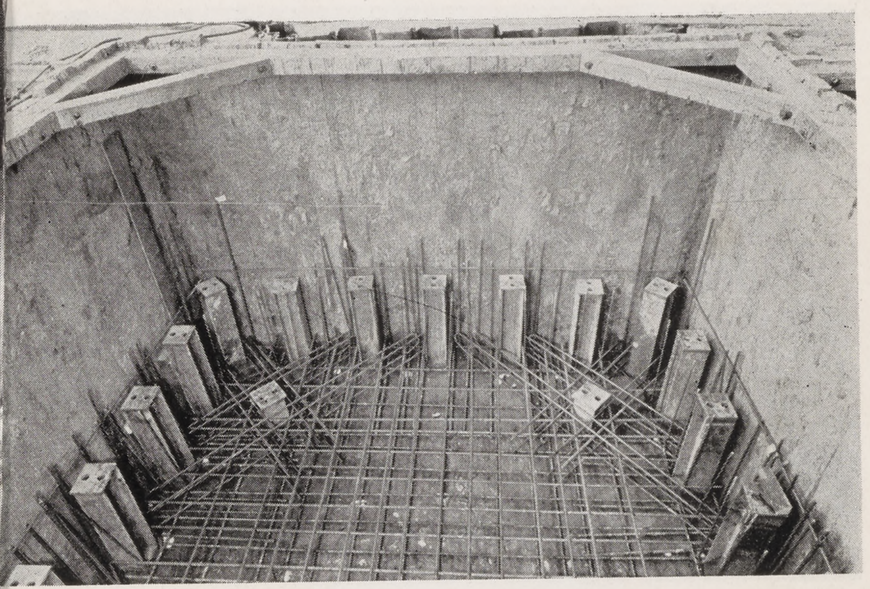
VISE and VISE CLAMP

"YANKEE" Vises and Vise Clamps are made to work together—for more accurate results in less time. "YANKEE" Vises are a real convenience in any shop. Work can be kept in alignment for a series of jobs. The clamp holds Vise rigidly for machining operations. Its long slotted body makes for quick and easy adjustment of work on Drill Press table. Vise illustrated available in four sizes: No. 991; 1½" jaw width. No. 992; 2" jaw width. No. 993; 2¾" jaw width. No. 994; 4" jaw width.

"Yankee" Vise Clamp made in two sizes only: Clamp No. 2992, length 9¾", for Vise No. 992. Clamp No. 2993, length 10½", for Vise No. 993.

"Yankee" Vise Clamp easily attaches "Yankee" Vise to face plate. Assures rigidity and accuracy, in holding work for drilling and machining operations

Order From Your Supply House. For "Yankee" Vise Circular, Write North Bros. Mfg. Co., Dept. MS, Philadelphia, U. S. A.



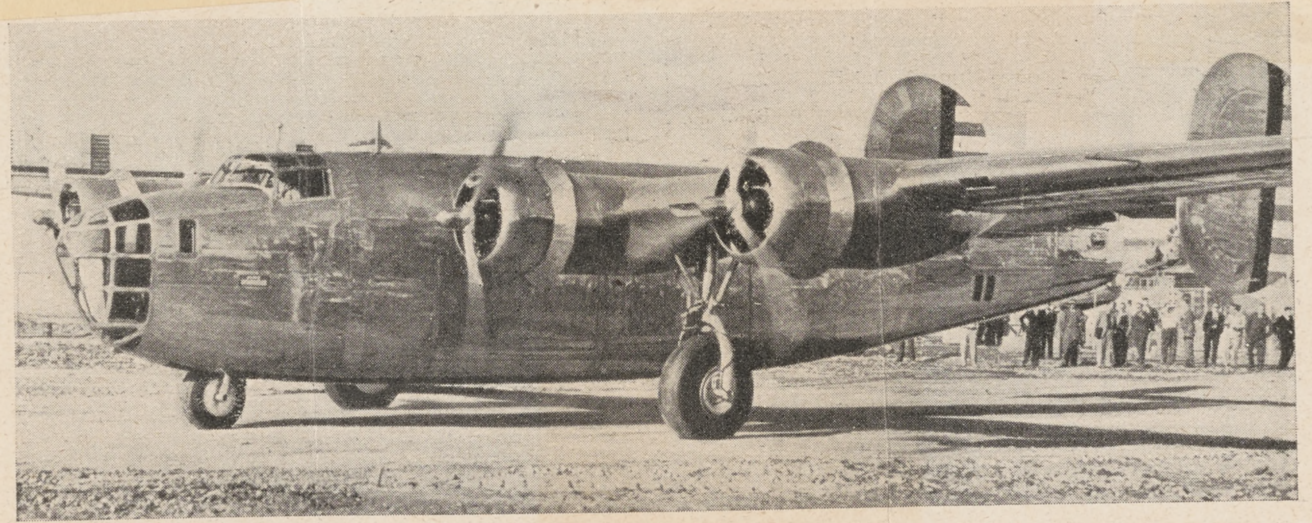
Bottom Reinforcements in Place, Ready for Pouring

The ultimate solution represented the best effort of three minds working in collaboration. "Floating power" was their solution—the same principle that is employed by automobile engineers in "floating power" plants on shock-absorbing mountings.

Having determined the principle they were to employ, they found themselves faced with a series of lesser puzzles. First, the land on which the hammers were to be mounted was hydraulic fill (reclaimed tideland) with a bearing value of only 1,250 lbs. per square foot. A series of tests indicated that they would have to go 50 feet or more for foundation, necessitating the use of pile foundations. A number of considerations, chief of which was the fact that the piles were to be driven indoors with only 30 feet clearance beneath the roof trusses, prompted the selection of steel "H" piles. Accordingly, the piles were driven in 20-ft. sections, and these sections were welded together.

The tremendous weight of the hammers contributed to the problem. Largest of these mechanical behemoths tips the scales at 101,000 lbs., and can carry punch and die weights up to 30,000 lbs. It has a platen area to accommodate dies of 96 x 48-inch, and exerts a maximum theoretical force on the foundations at moment of impact of approximately 1,060,000 lb. The medium-sized hammer, no toy itself, weighs about 65,000 lb., with a punch and die capacity of some 15,000 lb. and a platen area of 60 x 36-inch. At moment of impact, under maximum conditions, it exerts a theoretical force of 405,000 lb. The two smaller Chambersburgs total 33,000 lb. apiece; each accommodates punch and die weights of about 10,000 lb., with platen areas of 41 x 36-inch. The theoretical maximum force developed by these ham-

---



FASTEST OF THE BIG BOMBERS is this new Consolidated, the prototype of a batch for the U.S. Army Air Corps. It will be noted that it has a tail turret and that in certain respects, notably in the somewhat ugly design of the tail, it resembles the Model 51 flying boat. It is reported that this new machine "approaches a speed of 335 m.p.h.," presumably at very high altitudes.

FLIGHT Feb 1, 1940

Consair Steel For Buildings On Way Here

UNION 3/8/40

Fabricated steel for new buildings soon to be constructed at the Consolidated Aircraft Co.'s plant is included in the cargo of the American Hawaiian freighter American due Thursday from Philadelphia.

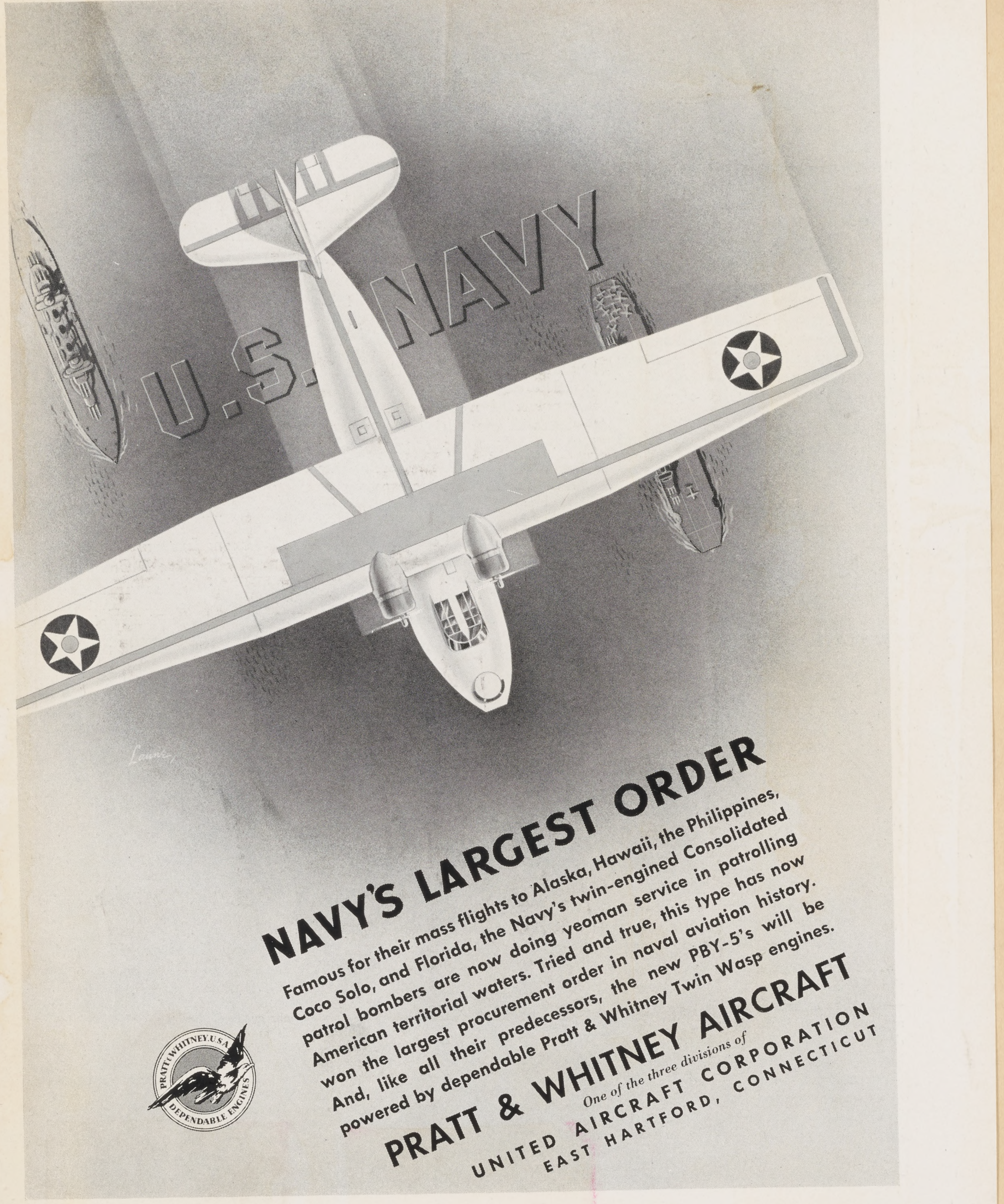
The American is one of a fleet of eight intercoastal vessels to call here in the next three weeks, all of them laden to the plimsoll mark.

Aircraft Firms Seen By Metallurgist

TRIB 3/7/40

Dr. E. H. Dix jr., chief metallurgist of the Aluminum Co. of America, today visited the Consolidated, Ryan and Solar Aircraft factories, conferring with officials at the plants on the latest developments in aluminum, used in the manufacture of planes because of its lightness. Accompanying Dix were M. J. Moffett, southern California district representative; W. C. Lynch, Los Angeles manager, and C. Pyne Frederick, sales manager, Pittsburgh, Pa.

This evening Dix will be honor guest at a dinner at the San Diego hotel, at which Consolidated representatives, T. Claude Ryan, head of the Ryan Co., and Edmund T. Price, Solar head, will attend. Others at the dinner will be Maj. Edwin R. McReynolds, army air corps aircraft factory representative, and Comdr. R. G. Mayer, navy representative. Following the dinner, a closed meeting will be held at the chamber of commerce, at which Dix will show pictures and lecture on the latest aluminum developments.



NAVY'S LARGEST ORDER

Famous for their mass flights to Alaska, Hawaii, the Philippines, Coco Solo, and Florida, the Navy's twin-engined Consolidated patrol bombers are now doing yeoman service in patrolling American territorial waters. Tried and true, this type has now won the largest procurement order in naval aviation history. And, like all their predecessors, the new PBY-5's will be powered by dependable Pratt & Whitney Twin Wasp engines.

PRATT & WHITNEY AIRCRAFT

One of the three divisions of

UNITED AIRCRAFT CORPORATION
EAST HARTFORD, CONNECTICUT

UNION 2-29-40

Consair Gets Permit For $1,050,000 Unit

San Diego's biggest single building permit in almost 15 years was issued yesterday when Consolidated Aircraft Corp., was granted a permit to build their $1,050,000 plant addition.

Recalling big permits of the past, Oscar Knecht, city building inspector, said last night that the permit for building the Civic Center totaled more, but was taken out in two parts. Last one of that size, he recalled, was about 1926 when the San Diego Trust and Savings Bank building was constructed.

The Consolidated permit calls for erection of six steel and sheet metal buildings which will house factory and office space and provide additional store room.

Issuance of the permit brought the year's total for the city to $2,741,579, compared to $1,068,963 for the same period last year.

$1,050,000 ADDED TO PERMIT TOTAL BY CONSOLIDATED

Preparatory to doubling their output and workers' staff, Consolidated Aircraft Co. today was issued a permit authorizing construction of six new manufacturing and assembly buildings, cost of which is estimated at $1,050,000.

Issuance of the building permit swelled the month's permits to $1,600,523 as compared with $451,766 of a year ago and raised the year's total to $2,741,579, more than double last year's figure of $1,039, 54.

The permit issued today provides for construction of six steel and sheet metal buildings, according to Oscar Knecht, city building inspector, plans for all of which were drafted by Architect Edward Cray Taylor. All are to be built under direction of Ellis Wing Taylor, contractor.

The structures contemplated, several of which are now under construction, include one assembly plant, 50 by 125 feet; a manufacturing building, 300 to 720 feet; another 120 by 240 feet; an office building, 50 by 200 feet; a boiler house, 50 by 100 feet, and a material and store building, 30 by 1000 feet.

Work already is under way on two of the structures and will be pushed as rapidly as possible to allow work of construction on a number of new planes, contracts for which have been awarded by the army and navy departments.

It is estimated that with completion of the new buildings the working staff at the plant will be increased from 4100 to more than 7500 men.

TRIB 2-28-40

What of the Past—and the Future?

Recently CONTACT asked outstanding figures in the aeronautical industry the following questions:

1 What do you consider the greatest contribution to the progress of Aviation during the year 1939?

2 What is the biggest job confronting Aviation for the year 1940?

On this page appear the replies—a concensus of opinion representing a cross section of the industry—manufacturers, commercial airlines, airports, schools, etc.

Edgar N. Gott
Vice-President Consolidated Aircraft Corporation

San Diego, Calif.

It is the writer's personal opinion that the greatest contribution to progress of Aviation in 1939 was the successful operation by the Navy of its patrol planes on mass flights; and of the new flying boat bases established on both the Atlantic and Pacific oceans.

It is felt that the biggest problem for 1940 will be for the industry to fill the orders on hand without excessive plant expansion, which might later become idle.

CONTACT —o— FEB. 40

5416 Employed Here In Aircraft Plants

UNION 2-28-40

A total of 5416 men and women are employed at the Consolidated Aircraft Corp., Ryan Aeronautical Co. and Solar Aircraft Co. plants, officials announced yesterday.

Forty-one hundred are employed at Consolidated, 850 at Ryan and 466 at Solar.

Personnel of the Douglas Aircraft Co.'s factories at Santa Monica and El Segundo total 15,000, according to Carl A. Cover, general manager. The Douglas payroll last week was in excess of $440,000.

There are 11,700 employed at the Santa Monica plant and 3300 at El Segundo.

Cite Need For Trained Aircraft Workers at San Diego Factories

CONTACT FEB. 1940

Personnel Managers of Plane Plants Prepare To Meet Coming Demand

More than 3000 factory workers will have to be added to the payrolls of San Diego aircraft factories during the balance of the year in order to meet the heavy production schedules called for in filling the more than $50,000,000 in plane orders now on hand.

Such is the aircraft employment situation as outlined there recently at a meeting of personnel managers of the Consolidated, Ryan and Solar aircraft factories.

So that Southern California labor may be employed in preference to out-of-state workers, it will be necessary to train hundreds of skilled technicians during the coming months, according to Marvin Marco, employment manager of one of the local plants.

In order that competent, industry-recognized training may be available to those interested in factory employment, the long-established Ryan School of Aeronautics, San Diego, is now organizing special Sheet Metal classes designed specifically to equip local workers for factory employment in the shortest time consistent with proper training.

Complete in scope, the new Ryan sheet metal course offers 200 hours of technical training in blue print reading, metallurgy, layout and patterns, riveting, assembly, forming, drilling, filing and bumping. Lasting five weeks, the training is given eight hours a day, Monday through Friday.

Pacific Coast Edition
THE WALL STREET JOURNAL

DOW-JONES
ELECTRIC PAGE NEWS PRINTERS

623 CENTRAL BUILDING
LOS ANGELES
PHONE TRINITY 0881

Press Clipping
FROM
ALBERT F. COUDERC

L-2
L-
Shan S
Stan Rd
DG X-DGa
Bank-
K
GN-GJr
B
1/17/40

JAN 10 1940

BRITISH TO BUY MORE AIRCRAFT

Purchase of 10,000 Planes in U. S. During Next 18-Month Period Is Planned

Dow Jones News Service

WASHINGTON—British plans for the purchase of approximately 10,000 military airplanes in this country during the next 18 months were placed before United States Government officials recently, it was learned last night.

This figure is based upon British estimates of the amount of foreign help necessary in order to achieve air supremacy over Germany by the middle of 1941, it is understood.

As far as can be determined, it does not take into account the extent of possible French purchases here. In view of the coordination of the procurement agencies of the two Allies, however, it is thought that it will be increasingly difficult to draw a sharp distinction between their respective purchases.

British Output Near 1,000 Monthly

Plans to place orders in the United States for 10,000 planes during 1940 and the first half of 1941 were discussed informally with Washington authorities by a high ranking official of the British Empire who paid a brief visit here several weeks ago, it was learned. Apparently he went away satisfied.

Latest reports current in Washington are that British air production is now in the neighborhood of 1,000 planes a month. A number of new large factories are understood to be practically finished and equipped, and it is reported that when they get into production Great Britain will be equipped to turn out about 2,200 planes a month. Efforts to speed up French air factory schedules have been disappointing to the Allies, and French current production is reported to be still short of 300 a month.

Although accurate estimates, of course, are impossible to obtain, some Government officials believe that the current German air production is at the rate of about 2,000 planes a month. Combined British and French purchases in the United States since before the outbreak of the war are estimated at about 5,000 craft.

In the event of a large-scale German air offensive in the spring, which Prime Minister

Continued on Fifth Page, Column 4

EDNESDAY, JANUARY 1

TO BUY
AIRCRAFT

om First Page
r British statesmen have
t is considered almost in-
ign and domestic demands
ustry will be greatly in-
nates of their own needs
are based on the theory
ne plants will not suffer
enemy air raids and that
r will not be substantial.
hington that a violent in-
ropean war in the spring
oed in increased demands
es War and Navy depart-
ry planes.
tes of current production
aircraft industry show its
ate is approximately 17,000
in officials are understood
ever, by the lag in engine
eported at the rate of only
As far as can be learned,
intention on the part of
e present time to intervene
tion.
tish and French business,
ial quarters, other foreign
larly the small neutrals,
ly larger orders in this
port of the Munitions Control Board gave indications of this trend, and it was officially predicted that future reports would show a continuation in that direction.

little mor
ported a
is a certa
case of s
nies have
ment as
are also
actual m
not inclu
equipmen
directly f
Estim
panies as
compare

*Allison
Bell
†Beech
Boeing
Brewster
Consolidate
Curtiss-Wri
‡Douglas
Grumman
Lockheed
Glenn L.
North Ame
Republic
United Air
Vultee 6,300,000

Total $648,373,876 $155,979,287

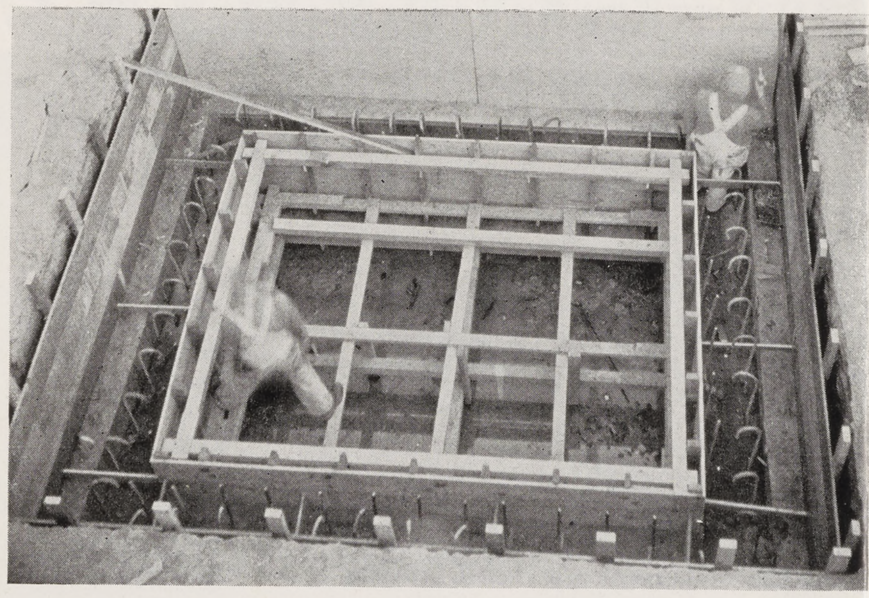
* Wholly owned subsidiary of General Motors. † For fiscal year ended September 30. ‡ For fiscal year ended November 30.

Sales Gain 50% Over 1938

Sales by these 15 companies during 1939 approximated $238,000,000, a gain of 50% over the $158,000,000 reported for 1938.

Earnings, however, did not show as large a gain as might be expected from such a sharp rise in sales volume, the total being estimated at $28,000,000 for the past year as compared with $17,749,456 for 1938. This gain in profits of 58% was distorted somewhat by the large loss experienced by Boeing which made

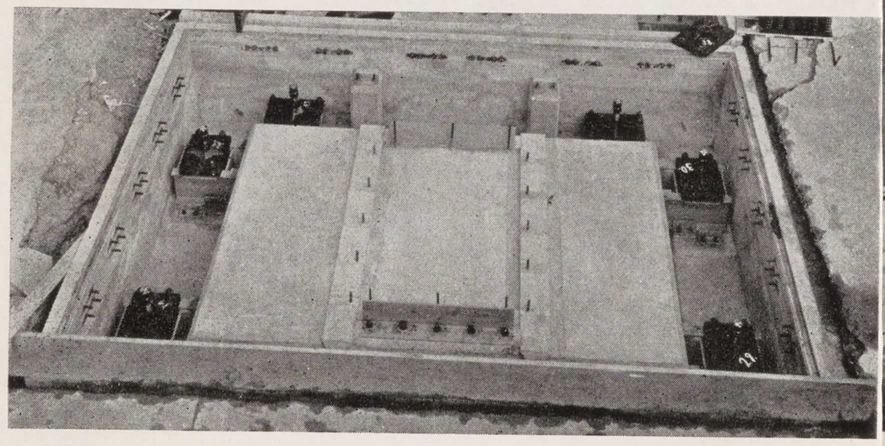
---



Forming Shell for Drop Hammer Foundation

mers equals 275,000 pounds.

With the steel H-beams down and welded, the engineers turned to the problem of inertia blocks, which were to serve as mountings for the hammers. If poured of concrete alone, they determined, the blocks would of necessity be too large, the normal density of concrete being but 150 lb. per cubic foot. So, adding



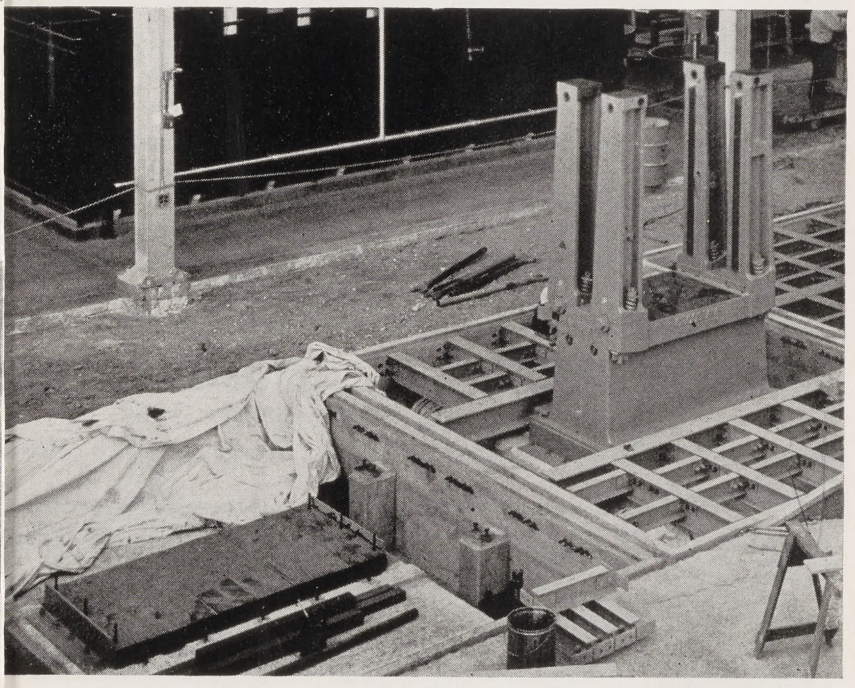
Drop Hammer Foundation with Inertia Block Completed

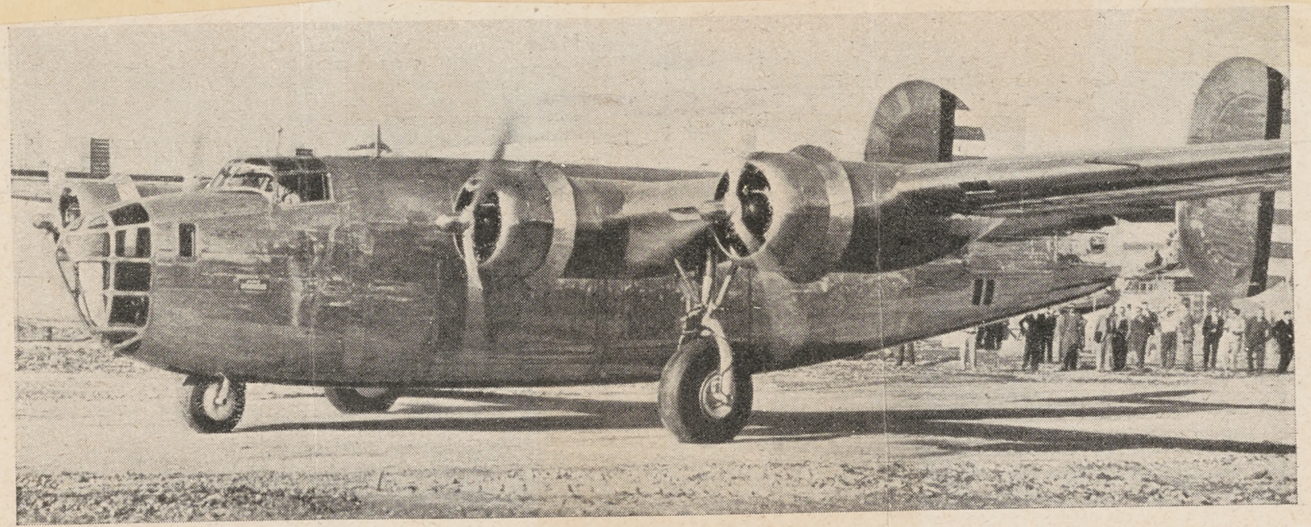
eel boiler punchings to the mixture stead of using rock alone, they in- eased the density of the concrete 224 lb. per cubic foot, very neatly creasing mass and decreasing vol- me in the same operation. Consoli- ated Aircraft is possibly the first to se boiler punchings in this unique anner, and probably the first to in- all such extensive vibration-isola- on equipment.

The mixture determined, the iner- a blocks were poured in sections. oncrete foundation boxes having een prepared to receive the blocks, pper pans two feet deep were aced on the bottoms of these boxes, d the first two feet of the blocks ured into them. The remainder of e concrete was then poured into slip forms. Steel cross-beams were embedded in the blocks, and allowed to project. These arms served to suspend the blocks within the foundation boxes, and rest on Korfund coil springs, which in turn rested on the concrete pit walls carried by the steel piles. The inertia blocks were poured in the "down" position and were then raised, to clear the bottom of the pits 2¼ inch by compressing the supporting springs.

In operation these blocks, each with a hammer aboard, "float" on springs. Average deflection of the springs under impact approximates one-quarter inch. The normal weight of the hammers deflects the springs about 0.71 inch. Houdaille shock absorbers are used in connection with

Drop Hammers in Process of Erection





FASTEST OF THE BIG BOMBERS is this new Consolidated, the prototype of a batch for the U.S. Army Air Corps. It will be noted that it has a tail turret and that in certain respects, notably in the somewhat ugly design of the tail, it resembles the Model 51 flying boat. It is reported that this new machine "approaches a speed of 335 m.p.h.," presumably at very high altitudes.

FLIGHT Feb 1, 1940

Consair Steel For Buildings On Way Here

UNION 3/8/40

Fabricated steel for new buildings soon to be constructed at the Consolidated Aircraft Co.'s plant is included in the cargo of the American Hawaiian freighter American due Thursday from Philadelphia.

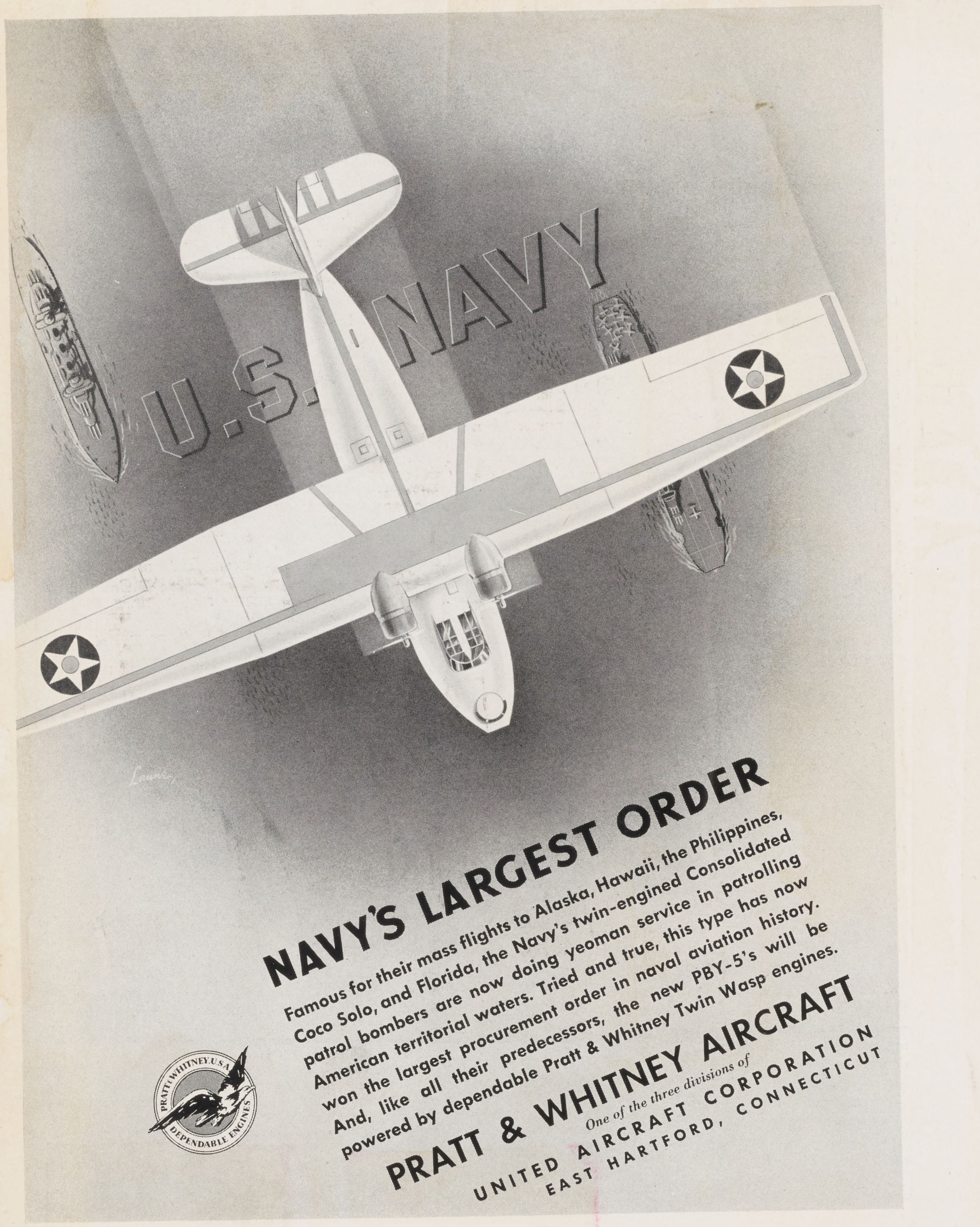
The American is one of a fleet of eight intercoastal vessels to call here in the next three weeks, all of them laden to the plimsoll mark.

Aircraft Firms Seen By Metallurgist

TRIB 3/7/40

Dr. E. H. Dix jr., chief metallurgist of the Aluminum Co. of America, today visited the Consolidated, Ryan and Solar Aircraft factories, conferring with officials at the plants on the latest developments in aluminum, used in the manufacture of planes because of its lightness. Accompanying Dix were M. J. Moffett, southern California district representative; W. C. Lynch, Los Angeles manager, and C. Pyne Frederick, sales manager, Pittsburgh, Pa.

This evening Dix will be honor guest at a dinner at the San Diego hotel, at which Consolidated representatives, T. Claude Ryan, head of the Ryan Co., and Edmund T. Price, Solar head, will attend. Others at the dinner will be Maj. Edwin R. McReynolds, army air corps aircraft factory representative, and Comdr. R. G. Mayer, navy representative. Following the dinner, a closed meeting will be held at the chamber of commerce, at which Dix will show pictures and lecture on the latest aluminum developments.



NAVY'S LARGEST ORDER

Famous for their mass flights to Alaska, Hawaii, the Philippines, Coco Solo, and Florida, the Navy's twin-engined Consolidated patrol bombers are now doing yeoman service in patrolling American territorial waters. Tried and true, this type has now won the largest procurement order in naval aviation history. And, like all their predecessors, the new PBY-5's will be powered by dependable Pratt & Whitney Twin Wasp engines.

PRATT & WHITNEY AIRCRAFT
One of the three divisions of
UNITED AIRCRAFT CORPORATION
EAST HARTFORD, CONNECTICUT

UNION 2-29-40

Consair Gets Permit For $1,050,000 Unit

San Diego's biggest single building permit in almost 15 years was issued yesterday when Consolidated Aircraft Corp., was granted a permit to build their $1,050,000 plant addition.

Recalling big permits of the past, Oscar Knecht, city building inspector, said last night that the permit for building the Civic Center totaled more, but was taken out in two parts. Last one of that size, he recalled, was about 1926 when the San Diego Trust and Savings Bank building was constructed.

The Consolidated permit calls for erection of six steel and sheet metal buildings which will house factory and office space and provide additional store room.

Issuance of the permit brought the year's total for the city to $2,741,579, compared to $1,068,963 for the same period last year.

5416 Employed Here In Aircraft Plants

UNION 2-28-40

A total of 5416 men and women are employed at the Consolidated Aircraft Corp., Ryan Aeronautical Co. and Solar Aircraft Co. plants, officials announced yesterday.

Forty-one hundred are employed at Consolidated, 850 at Ryan and 466 at Solar.

Personnel of the Douglas Aircraft Co.'s factories at Santa Monica and El Segundo total 15,000, according to Carl A. Cover, general manager. The Douglas payroll last week was in excess of $440,000.

There are 11,700 employed at the Santa Monica plant and 3300 at El Segundo.

$1,050,000 ADDED TO PERMIT TOTAL BY CONSOLIDATED

Preparatory to doubling their output and workers' staff, Consolidated Aircraft Co. today was issued a permit authorizing construction of six new manufacturing and assembly buildings, cost of which is estimated at $1,050,000.

Issuance of the building permit swelled the month's permits to $1,600,523 as compared with $451,766 of a year ago and raised the year's total to $2,741,579, more than double last year's figure of $1,039, 54.

The permit issued today provides for construction of six steel and sheet metal buildings, according to Oscar Knecht, city building inspector, plans for all of which were drafted by Architect Edward Cray Taylor. All are to be built under direction of Ellis Wing Taylor, contractor.

The structures contemplated, several of which are now under construction, include one assembly plant, 50 by 125 feet; a manufacturing building, 300 to 720 feet; another 120 by 240 feet; an office building, 50 by 200 feet; a boiler house, 50 by 100 feet, and a material and store building, 30 by 1000 feet.

Work already is under way on two of the structures and will be pushed as rapidly as possible to allow work of construction on a number of new planes, contracts for which have been awarded by the army and navy departments.

It is estimated that with completion of the new buildings the working staff at the plant will be increased from 4100 to more than 7500 men.

TRIB 2-28-40

Cite Need For Trained Aircraft Workers at San Diego Factories

CONTACT FEB. 1940

Personnel Managers of Plane Plants Prepare To Meet Coming Demand

More than 3000 factory workers will have to be added to the payrolls of San Diego aircraft factories during the balance of the year in order to meet the heavy production schedules called for in filling the more than $50,000,000 in plane orders now on hand.

Such is the aircraft employment situation as outlined there recently at a meeting of personnel managers of the Consolidated, Ryan and Solar aircraft factories.

So that Southern California labor may be employed in preference to out-of-state workers, it will be necessary to train hundreds of skilled technicians during the coming months, according to Marvin Marco, employment manager of one of the local plants.

In order that competent, industry-recognized training may be available to those interested in factory employment, the long-established Ryan School of Aeronautics, San Diego, is now organizing special Sheet Metal classes designed specifically to equip local workers for factory employment in the shortest time consistent with proper training.

Complete in scope, the new Ryan sheet metal course offers 200 hours of technical training in blue print reading, metallurgy, layout and patterns, riveting, assembly, forming, drilling, filing and bumping. Lasting five weeks, the training is given eight hours a day, Monday through Friday.

What of the Past—and the Future?

Recently CONTACT asked outstanding figures in the aeronautical industry the following questions:

1 What do you consider the greatest contribution to the progress of Aviation during the year 1939?

2 What is the biggest job confronting Aviation for the year 1940?

On this page appear the replies—a concensus of opinion representing a cross section of the industry—manufacturers, commercial airlines, airports, schools, etc.

Edgar N. Gott
Vice-President Consolidated Aircraft Corporation

San Diego, Calif.

It is the writer's personal opinion that the greatest contribution to progress of Aviation in 1939 was the successful operation by the Navy of its patrol planes on mass flights; and of the new flying boat bases established on both the Atlantic and Pacific oceans.

It is felt that the biggest problem for 1940 will be for the industry to fill the orders on hand without excessive plant expansion, which might later become idle.

CONTACT ——o—— FEB. '40

Pacific Coast Edition
THE WALL STREET JOURNAL

DOW-JONES
ELECTRIC PAGE NEWS PRINTERS

623 CENTRAL BUILDING
LOS ANGELES
PHONE TRINITY 0881

# Press Clipping
FROM
ALBERT F. COUDERC

L-2
L-
Sham S
Stan Ptd
DGS-DGa
Eng-
K
GN-Gh
B
1/17/40

JAN 10 1940

BRITISH TO BUY MORE AIRCRAFT

Purchase of 10,000 Planes in U. S. During Next 18-Month Period Is Planned

Dow Jones News Service

WASHINGTON—British plans for the purchase of approximately 10,000 military airplanes in this country during the next 18 months were placed before United States Government officials recently, it was learned last night.

This figure is based upon British estimates of the amount of foreign help necessary in order to achieve air supremacy over Germany by the middle of 1941, it is understood.

As far as can be determined, it does not take into account the extent of possible French purchases here. In view of the coordination of the procurement agencies of the two Allies, however, it is thought that it will be increasingly difficult to draw a sharp distinction between their respective purchases.

British Output Near 1,000 Monthly

Plans to place orders in the United States for 10,000 planes during 1940 and the first half of 1941 were discussed informally with Washington authorities by a high ranking official of the British Empire who paid a brief visit here several weeks ago, it was learned. Apparently he went away satisfied.

Latest reports current in Washington are that British air production is now in the neighborhood of 1,000 planes a month. A number of new large factories are understood to be practically finished and equipped, and it is reported that when they get into production Great Britain will be equipped to turn out about 2,200 planes a month. Efforts to speed up French air factory schedules have been disappointing to the Allies, and French current production is reported to be still short of 300 a month.

Although accurate estimates, of course, are impossible to obtain, some Government officials believe that the current German air production is at the rate of about 2,000 planes a month. Combined British and French purchases in the United States since before the outbreak of the war are estimated at about 5,000 craft.

In the event of a large-scale German air offensive in the spring, which Prime Minister

Continued on Fifth Page, Column 4

EDNESDAY, JANUARY 1

TO BUY AIRCRAFT

om First Page

r British statesmen have
t is considered almost in-
ign and domestic demands
ustry will be greatly in-
nates of their own needs
are based on the theory
ne plants will not suffer
enemy air raids and that
r will not be substantial.
hington that a violent in-
ropean war in the spring
hoed in increased demands
es War and Navy depart-
ary planes.

tes of current production
aircraft industry show its
ate is approximately 17,000
in officials are understood
ever, by the lag in engine
eported at the rate of only
As far as can be learned,
intention on the part of
e present time to intervene
tion.

tish and French business,
ial quarters, other foreign
larly the small neutrals,
ly larger orders in this
port of the Munitions Control Board gave indications of this trend, and it was officially predicted that future reports would show a continuation in that direction.

little mor
ported a
is a certa
case of s
nies have
ment as
are also
actual m
not inclu
equipmen
directly f
Estima
panies as
compare

*Allison ..		
Bell		
†Beech ...		
Boeing ...		
Brewster .		
Consolidate		
Curtiss-Wri		
‡Douglas .		
Grumman		
Lockheed		
Glenn L.		
North Ame		
Republic		
United Air		
Vultee		
Total	$648,373,876	$155,979,287

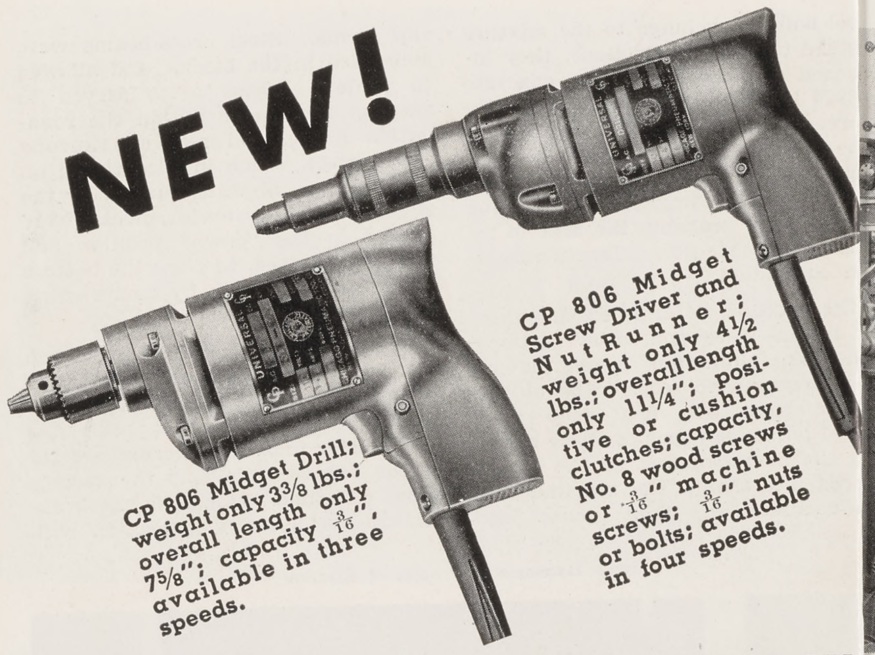
* Wholly owned subsidiary of General Motors. † For fiscal year ended September 30. ‡ For fiscal year ended November 30.

Sales Gain 50% Over 1938

Sales by these 15 companies during 1939 approximated $238,000,000, a gain of 50% over the $158,000,000 reported for 1938.

Earnings, however, did not show as large a gain as might be expected from such a sharp rise in sales volume, the total being estimated at $28,000,000 for the past year as compared with $17,749,456 for 1938. This gain in profits of 58% was distorted somewhat by the large loss experienced by Boeing which made

---



CP 806 Midget Drill; weight only 3⅜ lbs.; overall length only 7⅝"; capacity $\frac{3}{16}$", available in three speeds.

CP 806 Midget Screw Driver and Nut Runner; weight only 4½ lbs.; overall length only 11¼"; positive or cushion clutches; capacity, No. 8 wood screws or $\frac{3}{16}$" machine screws; $\frac{3}{16}$" nuts or bolts; available in four speeds.

DESIGNED for the PRODUCTION LIN

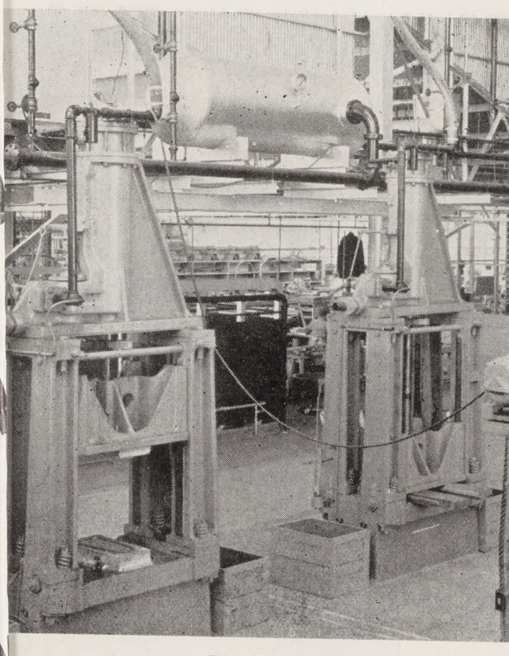
Built to stand up in continuous service . . . with a minimum of maintenance . . . are these latest MIDGET additions to the CP line of Universal Electric Tools

CP 806 Drill for $\frac{3}{16}$" drilling in metal or wood
CP 806SC Screw Driver and Nut Runners for No. 8 wood screws, $\frac{3}{16}$" machine screws and $\frac{3}{16}$" bolts or nuts

For complete information, write for a copy of SP 2005.

CHICAGO PNEUMATIC TOOL COMPAN
General Offices: 6 EAST 44th STREET, NEW YORK, N. Y.
Sales Offices and Service Stations Throughout the Wor

CP UNIVERSAL ELECTRIC TOOL
DRILLS • SCREW DRIVERS • NUT RUNNERS • TAPPERS • GRINDERS • SAND



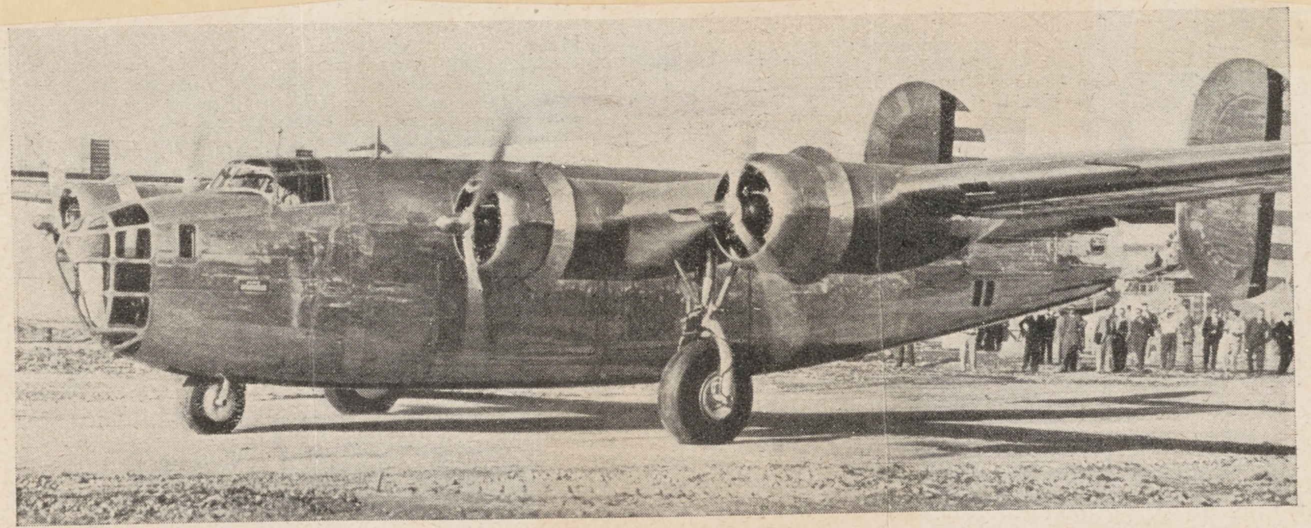
The Completed Drop Hammer Installation

springs to take up recoil, there-
cutting down decay time of the
ng action approximately 60 per

he hammers are of the pneumatic
, operated by compressed air,
lar to the steam-operated drop
ing hammer.

The vibration-isolating mountings have proved very satisfactory. Today it is possible to stand just outside the largest hammer's foundation box while the big Chambersburg is working on a piece of "dural" and feel no vibration. The earthquake has been confined to a teacup.

"OUTWEARS the best Bronze Metal"
years without a drink
ARGUTO OILLESS BEARING CO.
Wayne Junction, Philadelphia, Pa.



FASTEST OF THE BIG BOMBERS is this new Consolidated, the prototype of a batch for the U.S. Army Air Corps. It will be noted that it has a tail turret and that in certain respects, notably in the somewhat ugly design of the tail, it resembles the Model 31 flying boat. It is reported that this new machine "approaches a speed of 335 m.p.h.," presumably at very high altitudes.

FLIGHT Feb. 1, 1940

Consair Steel For Buildings On Way Here

UNION 3/8/40

Fabricated steel for new buildings soon to be constructed at the Consolidated Aircraft Co.'s plant is included in the cargo of the American Hawaiian freighter American due Thursday from Philadelphia.

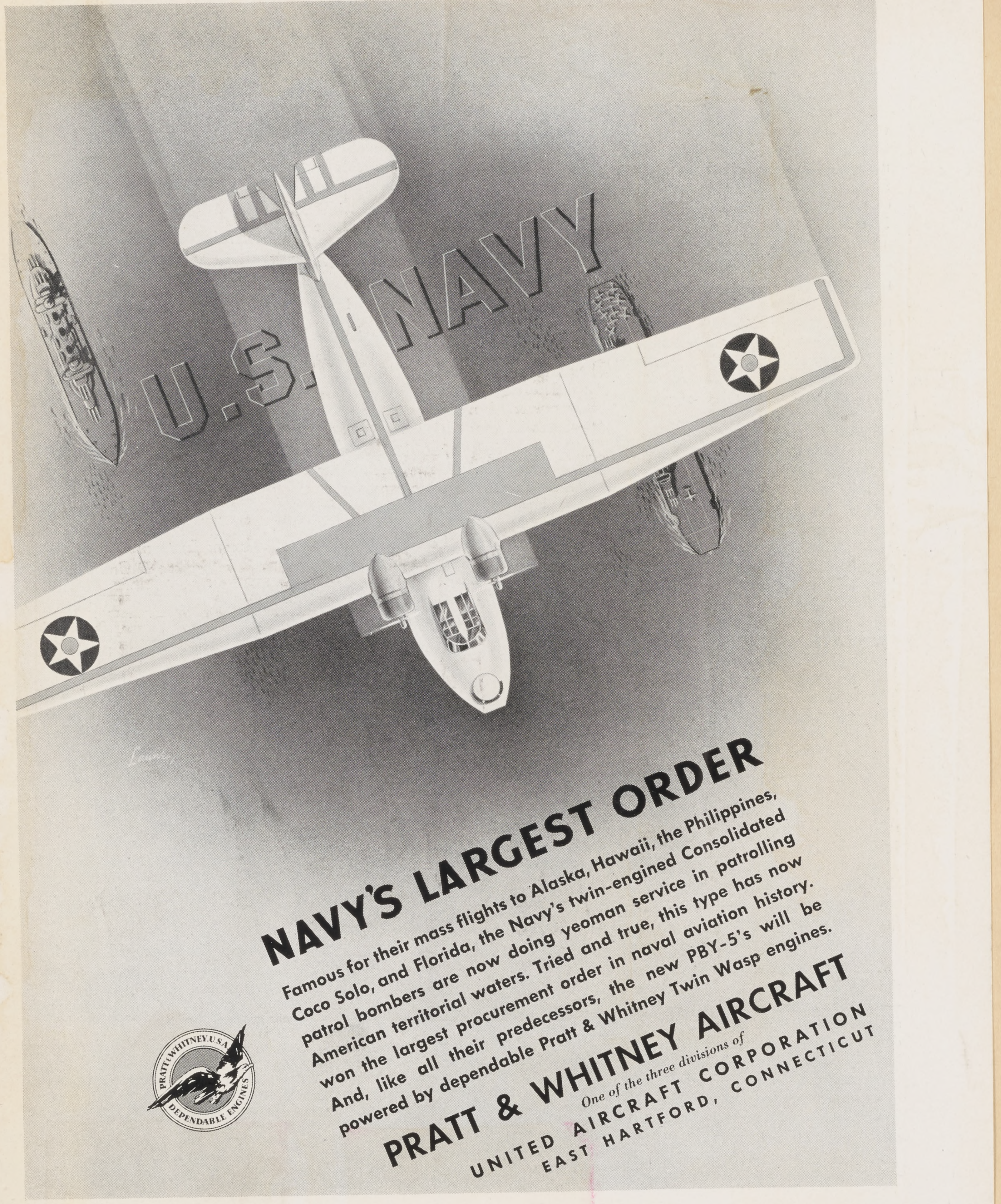
The American is one of a fleet of eight intercoastal vessels to call here in the next three weeks, all of them laden to the plimsoll mark.

Aircraft Firms Seen By Metallurgist

TRIB 3/7/40

Dr. E. H. Dix jr., chief metallurgist of the Aluminum Co. of America, today visited the Consolidated, Ryan and Solar Aircraft factories, conferring with officials at the plants on the latest developments in aluminum, used in the manufacture of planes because of its lightness. Accompanying Dix were M. J. Moffett, southern California district representative; W. C. Lynch, Los Angeles manager, and C. Pyne Frederick, sales manager, Pittsburgh, Pa.

This evening Dix will be honor guest at a dinner at the San Diego hotel, at which Consolidated representatives, T. Claude Ryan, head of the Ryan Co., and Edmund T. Price, Solar head, will attend. Others at the dinner will be Maj. Edwin R. McReynolds, army air corps aircraft factory representative, and Comdr. R. G. Mayer, navy representative. Following the dinner, a closed meeting will be held at the chamber of commerce, at which Dix will show pictures and lecture on the latest aluminum developments.



NAVY'S LARGEST ORDER

Famous for their mass flights to Alaska, Hawaii, the Philippines, Coco Solo, and Florida, the Navy's twin-engined Consolidated patrol bombers are now doing yeoman service in patrolling American territorial waters. Tried and true, this type has now won the largest procurement order in naval aviation history. And, like all their predecessors, the new PBY-5's will be powered by dependable Pratt & Whitney Twin Wasp engines.

PRATT & WHITNEY AIRCRAFT
One of the three divisions of
UNITED AIRCRAFT CORPORATION
EAST HARTFORD, CONNECTICUT

UNION 2-29-40

Consair Gets Permit For $1,050,000 Unit

San Diego's biggest single building permit in almost 15 years was issued yesterday when Consolidated Aircraft Corp., was granted a permit to build their $1,050,000 plant addition.

Recalling big permits of the past, Oscar Knecht, city building inspector, said last night that the permit for building the Civic Center totaled more, but was taken out in two parts. Last one of that size, he recalled, was about 1926 when the San Diego Trust and Savings Bank building was constructed.

The Consolidated permit calls for erection of six steel and sheet metal buildings which will house factory and office space and provide additional store room.

Issuance of the permit brought the year's total for the city to $2,741,579, compared to $1,068,963 for the same period last year.

$1,050,000 ADDED TO PERMIT TOTAL BY CONSOLIDATED

Preparatory to doubling their output and workers' staff, Consolidated Aircraft Co. today was issued a permit authorizing construction of six new manufacturing and assembly buildings, cost of which is estimated at $1,050,000.

Issuance of the building permit swelled the month's permits to $1,600,523 as compared with $451,766 of a year ago and raised the year's total to $2,741,579, more than double last year's figure of $1,039, 54.

The permit issued today provides for construction of six steel and sheet metal buildings, according to Oscar Knecht, city building inspector, plans for all of which were drafted by Architect Edward Cray Taylor. All are to be built under direction of Ellis Wing Taylor, contractor.

The structures contemplated, several of which are now under construction, include one assembly plant, 50 by 125 feet; a manufacturing building, 300 to 720 feet; another 120 by 240 feet; an office building, 50 by 200 feet; a boiler house, 50 by 100 feet, and a material and store building, 30 by 1000 feet.

Work already is under way on two of the structures and will be pushed as rapidly as possible to allow work of construction on a number of new planes, contracts for which have been awarded by the army and navy departments.

It is estimated that with completion of the new buildings the working staff at the plant will be increased from 4100 to more than 7500 men. TRIB 2-28-40

5416 Employed Here In Aircraft Plants

UNION 2-28-40

A total of 5416 men and women are employed at the Consolidated Aircraft Corp., Ryan Aeronautical Co. and Solar Aircraft Co. plants, officials announced yesterday.

Forty-one hundred are employed at Consolidated, 850 at Ryan and 466 at Solar.

Personnel of the Douglas Aircraft Co.'s factories at Santa Monica and El Segundo total 15,000, according to Carl A. Cover, general manager. The Douglas payroll last week was in excess of $440,000.

There are 11,700 employed at the Santa Monica plant and 3300 at El Segundo.

Cite Need For Trained Aircraft Workers at San Diego Factories

CONTACT FEB. 1940

Personnel Managers of Plane Plants Prepare To Meet Coming Demand

More than 3000 factory workers will have to be added to the payrolls of San Diego aircraft factories during the balance of the year in order to meet the heavy production schedules called for in filling the more than $50,000,000 in plane orders now on hand.

Such is the aircraft employment situation as outlined there recently at a meeting of personnel managers of the Consolidated, Ryan and Solar aircraft factories.

So that Southern California labor may be employed in preference to out-of-state workers, it will be necessary to train hundreds of skilled technicians during the coming months, according to Marvin Marco, employment manager of one of the local plants.

In order that competent, industry-recognized training may be available to those interested in factory employment, the long-established Ryan School of Aeronautics, San Diego, is now organizing special Sheet Metal classes designed specifically to equip local workers for factory employment in the shortest time consistent with proper training.

Complete in scope, the new Ryan sheet metal course offers 200 hours of technical training in blue print reading, metallurgy, layout and patterns, riveting, assembly, forming, drilling, filing and bumping. Lasting five weeks, the training is given eight hours a day, Monday through Friday.

What of the Past—and the Future?

Recently CONTACT asked outstanding figures in the aeronautical industry the following questions:

1 What do you consider the greatest contribution to the progress of Aviation during the year 1939?

2 What is the biggest job confronting Aviation for the year 1940?

On this page appear the replies—a concensus of opinion representing a cross section of the industry—manufacturers, commercial airlines, airports, schools, etc.

Edgar N. Gott
Vice-President Consolidated Aircraft Corporation

San Diego, Calif.

It is the writer's personal opinion that the greatest contribution to progress of Aviation in 1939 was the successful operation by the Navy of its patrol planes on mass flights; and of the new flying boat bases established on both the Atlantic and Pacific oceans.

It is felt that the biggest problem for 1940 will be for the industry to fill the orders on hand without excessive plant expansion, which might later become idle.

CONTACT —o— FEB. '40

Pacific Coast Edition
THE WALL STREET JOURNAL

DOW-JONES
ELECTRIC PAGE NEWS PRINTERS

623 CENTRAL BUILDING
LOS ANGELES
PHONE TRINITY 0881

Press Clipping
FROM
ALBERT F. COUDERC

L–2
L–
Sham S
Stan RtS
DGX–DGa
Bark–4
J
K
GN–LJR
B

1/17/40

JAN 10 1940

BRITISH TO BUY MORE AIRCRAFT

Purchase of 10,000 Planes in U. S. During Next 18-Month Period Is Planned

Dow Jones News Service

WASHINGTON—British plans for the purchase of approximately 10,000 military airplanes in this country during the next 18 months were placed before United States Government officials recently, it was learned last night.

This figure is based upon British estimates of the amount of foreign help necessary in order to achieve air supremacy over Germany by the middle of 1941, it is understood.

As far as can be determined, it does not take into account the extent of possible French purchases here. In view of the coordination of the procurement agencies of the two Allies, however, it is thought that it will be increasingly difficult to draw a sharp distinction between their respective purchases.

British Output Near 1,000 Monthly

Plans to place orders in the United States for 10,000 planes during 1940 and the first half of 1941 were discussed informally with Washington authorities by a high ranking official of the British Empire who paid a brief visit here several weeks ago, it was learned. Apparently he went away satisfied.

Latest reports current in Washington are that British air production is now in the neighborhood of 1,000 planes a month. A number of new large factories are understood to be practically finished and equipped, and it is reported that when they get into production Great Britain will be equipped to turn out about 2,200 planes a month. Efforts to speed up French air factory schedules have been disappointing to the Allies, and French current production is reported to be still short of 300 a month.

Although accurate estimates, of course, are impossible to obtain, some Government officials believe that the current German air production is at the rate of about 2,000 planes a month. Combined British and French purchases in the United States since before the outbreak of the war are estimated at about 5,000 craft.

In the event of a large-scale German air offensive in the spring, which Prime Minister

Continued on Fifth Page, Column 4

TO BUY AIRCRAFT

om First Page

r British statesmen have
t is considered almost in-
ign and domestic demands
ustry will be greatly in-
nates of their own needs
are based on the theory
ne plants will not suffer
enemy air raids and that
r will not be substantial.
hington that a violent in-
ropean war in the spring
noed in increased demands
es War and Navy depart-
ary planes.

tes of current production
aircraft industry show its
ate is approximately 17,000
in officials are understood
ever, by the lag in engine
eported at the rate of only
As far as can be learned,
intention on the part of
e present time to intervene
tion.

tish and French business,
ial quarters, other foreign
larly the small neutrals,
ly larger orders in this
port of the Munitions Control Board gave indications of this trend, and it was officially predicted that future reports would show a continuation in that direction.

little mor
ported a
is a certa
case of s
nies have
ment as
are also
actual m
not inclu
equipmen
directly f

Estima
panies as
compare

*Allison
Bell
†Beech
Boeing
Brewster
Consolidate
Curtiss-Wri
‡Douglas
Grumman
Lockheed
Glenn L.
North Ame
Republic
United Air
Vultee

Total $648,373,876 $155,979,287

* Wholly owned subsidiary of General Motors. † For fiscal year ended September 30. ‡ For fiscal year ended November 30.

Sales Gain 50% Over 1938

Sales by these 15 companies during 1939 approximated $238,000,000, a gain of 50% over the $158,000,000 reported for 1938.

Earnings, however, did not show as large a gain as might be expected from such a sharp rise in sales volume, the total being estimated at $28,000,000 for the past year as compared with $17,749,456 for 1938. This gain in profits of 58% was distorted somewhat by the large loss experienced by Boeing which made heavy

---

Class 3 threads
HERE
HERE
18" long — 2" diam.
LOWE
270°
5 16 24

WITH NAMCO CIRCULAR CHASER PRECISION DIES

If you watched this 2⅝" Die chase through 18 inches of SAE 2315 steel on this 2"—8 pitch Elevating Screw to turn up class 3 threads . . . smooth from end to end, piece after piece . . . you'd say "Here is real threading performance."

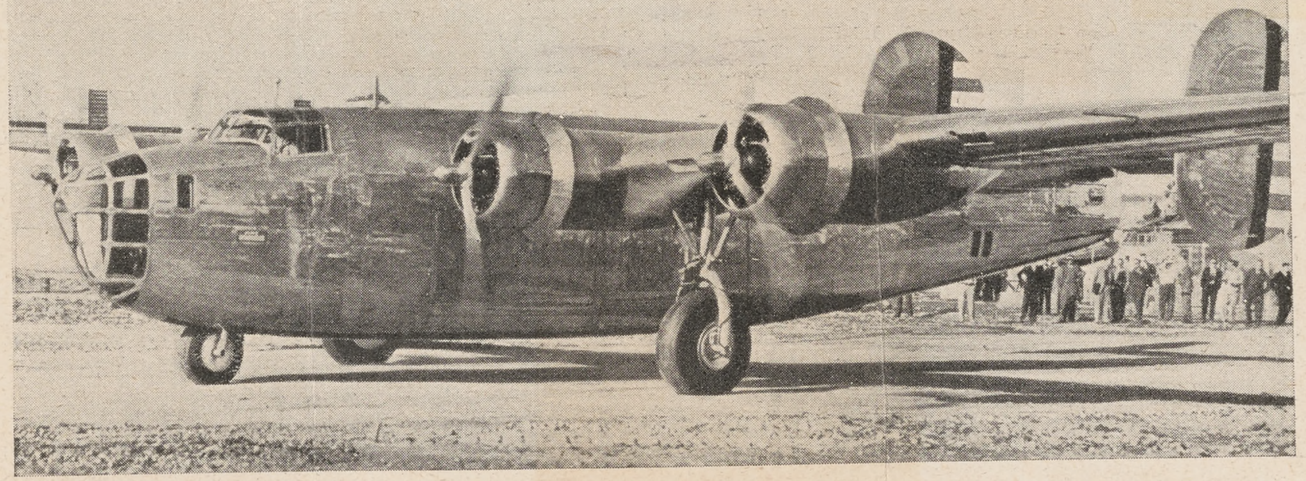
When you examine these new DS Namco die heads for "reasons why," you will find few parts, rugged support at points of strain and wear, gage-like workmanship . . . STAMINA. That's one reason.

But the advantages of Namco CIRCULAR CHASER Dies do not stop at accuracy. They follow through . . . make remarkable *reductions* in *chaser costs*. For example, a single set of chasers on this elevating screw took 184 grinds. And the illustration below *shows* you more about low chaser costs.

Look over your production threading jobs for dubious performance and questionable costs, then ask us to *show* you. Namco Circular Chaser Dies are meeting this challenge every week . . . successfully.

You can Grind and
Circular Chasers to a f
circumference...This
10 TIMES the life of

NATIONAL ACM
170 EAST 131ST STREET • CLEVELAND, O.
ACME-GRIDLEY 4-6 AND 8 SPINDLE BAR AND CHUCKING AUTOMATICS • SINGLE SPINDLE AUTOMATICS • AUTOMATIC THR
AND TAPS • SCREW MACHINE PRODUCTS • THE CHRONOLOG • LIMIT SWITCHES • POSITIVE CENTRIFUGE • CONTRACT MAN



FASTEST OF THE BIG BOMBERS is this new Consolidated, the prototype of a batch for the U.S. Army Air Corps. It will be noted that it has a tail turret and that in certain respects, notably in the somewhat ugly design of the tail, it resembles the Model 31 flying boat. It is reported that this new machine "approaches a speed of 335 m.p.h.," presumably at very high altitudes.

FLIGHT Feb 1, 1940

Consair Steel For Buildings On Way Here

UNION 3/8/40

Fabricated steel for new buildings soon to be constructed at the Consolidated Aircraft Co.'s plant is included in the cargo of the American Hawaiian freighter American due Thursday from Philadelphia.

The American is one of a fleet of eight intercoastal vessels to call here in the next three weeks, all of them laden to the plimsoll mark.

Aircraft Firms Seen By Metallurgist

TRIB 3/7/40

Dr. E. H. Dix jr., chief metallurgist of the Aluminum Co. of America, today visited the Consolidated, Ryan and Solar Aircraft factories, conferring with officials at the plants on the latest developments in aluminum, used in the manufacture of planes because of its lightness. Accompanying Dix were M. J. Moffett, southern California district representative; W. C. Lynch, Los Angeles manager, and C. Pyne Frederick, sales manager, Pittsburgh, Pa.

This evening Dix will be honor guest at a dinner at the San Diego hotel, at which Consolidated representatives, T. Claude Ryan, head of the Ryan Co., and Edmund T. Price, Solar head, will attend. Others at the dinner will be Maj. Edwin R. McReynolds, army air corps aircraft factory representative, and Comdr. R. G. Mayer, navy representative. Following the dinner, a closed meeting will be held at the chamber of commerce, at which Dix will show pictures and lecture on the latest aluminum developments.

CONSOLIDATED AIRCRAFT CORPORATION
SAN DIEGO, CALIFORNIA

MEMO

Date MAR 6 1940

L. C. MOUNCE

To Major Fleet

Consair Backlog 49 Millions; Working 3 Shifts

A backlog of $49,000,000 which will keep the plant busy until the midsummer of 1941 is listed by R. H. Fleet, president of Consolidated Aircraft Corp., in the company's annual report to be made public today.

"Our employes number 4300, we are adding about 100 men a week and are operating three shifts," Fleet reported to stockholders. "Since organization in 1923 we have constructed more than three times as many airplanes with a wing span of 100 feet or over than all other airplane manufacturers combined and are the largest builders of flying boats in the world."

He reported net earnings of $1,104,327 for 1939, equivalent to $1.79 a share on common stock and $3 on preferred. The directors decided against declaring a common stock dividend.

"San Diego Union"
3/6/40
(Back page of Second Section)
lcm.

Thanks
X
3/6/40

need printing or lithographing is
FRYE & SMITH
AVENUE, SAN DIEGO, CALIFORNIA

TRIB 3/6/40

$49,000,000 In Unfilled Consair Orders

The annual report of the Consolidated Aircraft Corp., released today, reveals that the firm has a backlog of unfilled orders totaling $49,000,000, instead of the $40,000,000 backlog previously announced.

Consair officials refused to comment on the $9,000,000 in additional orders, but it was learned authoritatively that they were placed by a foreign nation or nations.

It was explained by a company spokesman that there was nothing secretive about the orders but that,

(Continued on Page 4A, Col. 2)

$49,000,000 Total Of Consair Orders

CONTINUED FROM PAGE ONE

as a matter of policy, Consair officials felt that any announcement of the deal should be made by the customer or customers.

In line with naval and military restrictions, Consolidated refused to specify what kind of planes or how many were covered by the orders or to name the date that they will be delivered.

Adding 100 Weekly

R. H. Fleet, Consair president, in the annual statement said: "Our employes number 4300, we are adding about 100 men a week and are operating in three shifts.

"Since organization in 1923, we have constructed more than three times as many airplanes with a wing span of 100 feet or over as all other airplane manufacturers combined and are the largest builders of flying boats in the world."

Reported were net earnings of $1,104,327 for 1939, equivalent to $1.79 a share on common stock and $3 on preferred. Directors passed a common stock dividend.

TRIB - 3-5-'40

Weihmiller Resigns

Consolidated Aircraft Corp. announces resignation of H. E. Weihmiller as of Feb. 29. Weihmiller, elected a vice president in December, 1937, formerly had charge of Consolidated's Washington office as its eastern representative.

U. S. NAVAL INSTITUTE PROCEEDINGS - JAN - 1940.

SECRETARY'S NOTES

Flag Plane On August 24, 1939, the 4-engined flying boat XPB2Y-1 became the first airplane to be officially recognized as a flagplane of the United States Navy. On that date, Rear Admiral A. B. Cook, commanding the Aircraft Squadron of the Aircraft Scouting Force, by dispatch, removed his flag from the U.S.S. *Memphis* at Seattle, and hoisted it aboard the XPB2Y-1. Thereby was established a precedent in naval history. Never before had such a flag been officially hoisted on an airplane. The huge plane, by formal procedure, thus became the first flagplane ever to fly for the U. S. Navy—a signal honor. It had been flown to Seattle by navy personnel commanded by Commander Andrew Crinkley.

Commander Crinkley and his crew, in October of 1938, flew the XPB2Y-1, while still fitted with experimental apparatus and equipment, on a precedent setting flight completely across the United States. The XPB2Y-1 is a flying boat, yet the flight was made entirely over land, expressing confidence in the smooth functioning of the ship. The flight was nonstop from the waters of San Diego Bay, northward over spectacular mountain terrain via Salt Lake City and thence due east to Anacostia (Washington, D. C.). At this destination, the airplane was personally inspected by President Roosevelt. Flight time 13 hours. Very cold weather, darkness over much of the route, tail winds and a closing in fog at Anacostia marked this outstanding transcontinental flight. The return to San Diego, a few days later, was likewise cross-continent, and nonstop-this time by a southern route and against head winds of considerable magnitude, which were met without difficulty.

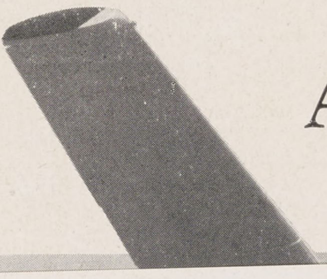
The casual manner in which these flights were accomplished was expressed by Commander Crinkley soon after the ship's return:

> This flight was made in all respects in a routine operation manner and no special consideration or preparation was necessary in its accomplishment. Upon our return to San Diego the crew felt confident that the ship could have been refueled and departed for Honolulu or any other point immediately.

This double spanning of the continent together with the recent honor of becoming the first official flagplane, in retrospect, may, be seen as of striking potentiality. Such a performance could easily have been one for transporting the commanding officers and members of their staff, with lightning speed, to positions thousands of miles away, even though the naval destinations might be separated by a whole continent. An official flagplane thus appears to have in it latent usage of a very wide nature.

Aeronautics (London)
Jan. 1940

AMERICAN MEDLEY



lifferent kinds of gas.

Professor J. B. S. Haldane said a ittle time ago that theoretically it was ınlikely that any new explosive would emerge in this war. David Dale Logan, writing in this book, is more precise. He deals with the use of oxygen and iquid air, both of which have been alleged n the daily papers to form entirely new German explosives.

Nitro-glycerine, he says, which was discovered in 1846, still remains the most powerful high explosive. The large number of new explosives used during the earlier war and others which have appeared since are merely new mixtures of substances which have been used for many years. All the powers at war with the exception of Germany used practically the same types of explosive. During the latter months of the war of 1914-18 the Germans used liquid air very extensively as an explosive for demolition work and for blasting operations for making dug-outs and tunnels. As for the liquid oxygen bombs which the Germans were said to have used in Spain, it will be recalled that the report

results from the detonations of high explosive bombs. Against this there seems to be no protection, and his accounts of the effects are of very great importance. Another writer in this book, Mr. E. M. Cowell, lists the various forms of gas that could be used in bombing and groups them in the order of their toxicity as (1) lacrimators (tear gas), (2) sternutators (nose irritants), (3) vesicants (blistering), (4) lung irritants, (5) paralysants, (6) gases met with accidentally, such as carbon monoxide. Mustard gas, according to this authority, could be spread from the air by low flying machines. The treatments for those who have suffered from gas attack are described in some detail and it is notable that for most of the gases the injuries are not fatal.

This book, although it is so largely concerned with purely medical matters, is one which all those who are interested in the attack possibilities of aerial bombing and aerial gas attack should study most closely. It is probably the most important statement of the possibilities that has yet appeared.

issued by Collins at 2s. This diary consists of 150 pages of informative tables and other matter and, so far as we have been able to check it, it is accurate.

"*Aero Engines*" (*Pitmans*, 3*s*. 6*d*). This is the sixth edition of a work which has already proved very valuable to ground engineers. It is intended for those who are studying to qualify for the Ground Engineer's "D" Licence.

"*Aircraft Identification*" (*The Aeroplane*, 1*s*.). A booklet of 32 pages containing photographs and silhouettes of German and Allied aeroplanes. With the pictures there are brief statements of the facts relating to each type of machine. There has been lately a very widespread demand for aircraft recognition matter and we recommend this booklet on account of its accuracy and excellent layout. It should provide all the necessary information for such people as anti-aircraft gunners and members of the Observer Corps.

Funeral at Arlington

LEWIS A. YANCEY

TRIB 5/3/40

GUBA PILOT DEAD; IN ILL HEALTH SEVERAL MONTHS

Lewis A. Yancey, 44, famous flier, who died Sunday at Yonkers, N. Y., was well-known in San Diego. His most recent air exploit was acting as navigator on the New Guinea-round-the-world flight of the "Guba," Consolidated-built plane owned by Richard Archbold, scientist.

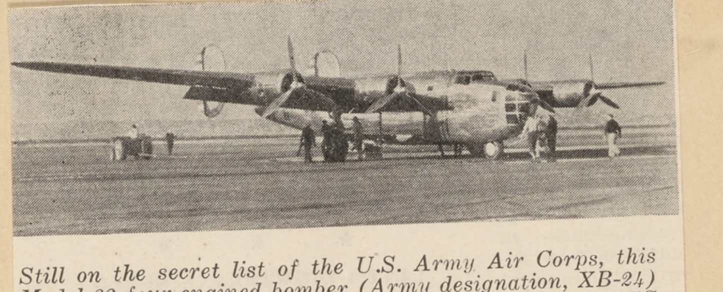
Yancey was a navy flier for 13 years before he made his trans-atlantic flight in 1929 with Roger Q. Williams in their plane, the "Pathfinder," which landed at Littorio airport, Rome, July 10, 1929, after a flight from Old Orchard, Me., via Santander, Spain. For this flight they received Italy's gold medal for aeronautics, presented to them by Gen. Italo Balbo, Italian flier, as 20,000 spectators in Rome watched. Before returning to the United States the two were received in private audience by the pope.

Autogiro Pilot

Three years later Yancey came to San Diego, piloting an autogiro, in which he had flown to Mexico and Cuba, first plane of its kind to visit those countries. He gave several demonstrations with the craft at Lindbergh field, March 20, 1932. In flying from Havana to Merida, Yucatan, Yancey established a new long-distance flight record for autogiros, flying 500 miles. He was said to have been the only pilot ever to loop an autogiro.

Yancey and other members of the crew of the "Guba" brought Archbold's plane to San Diego last July 6 at the end of the flying boat's round-the-world flight.

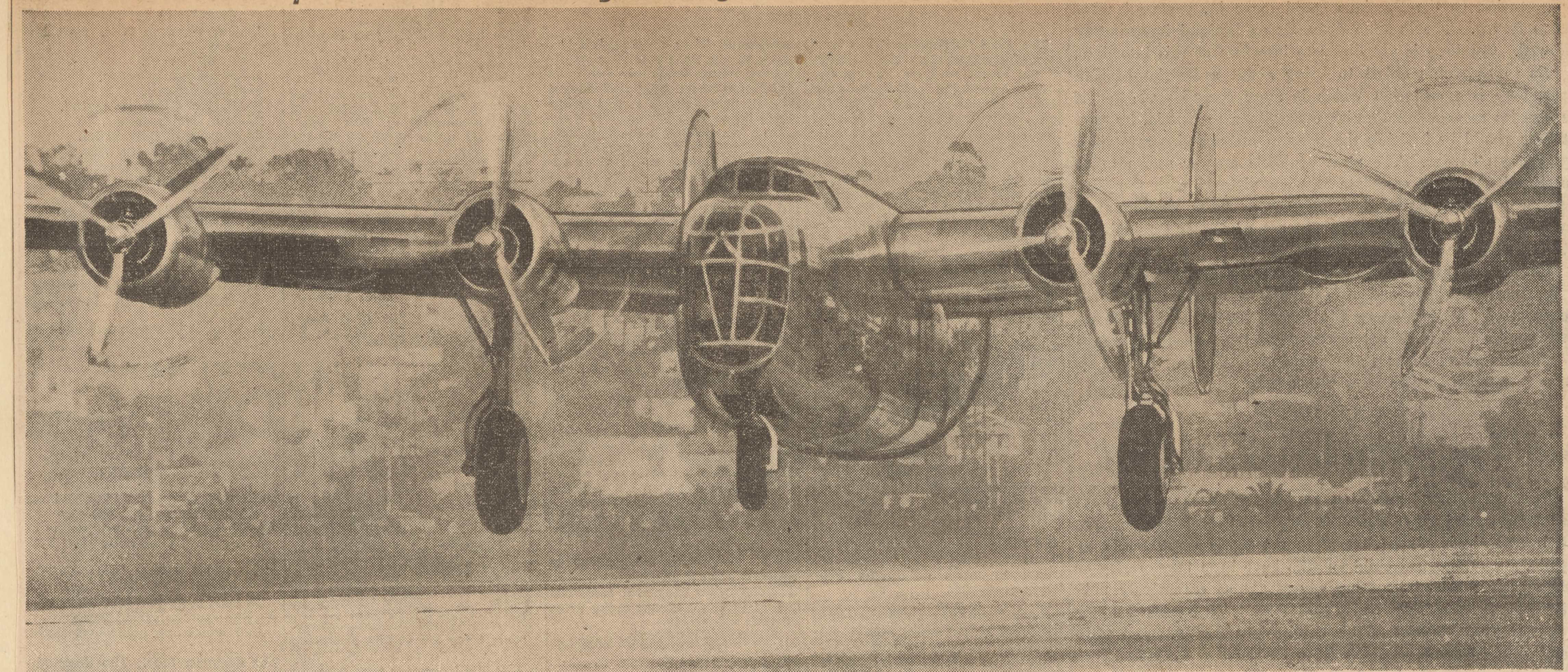
The flier was a native of Chicago. His death, according to The International News Service, was caused by a cerebral hemorrhage. He had been in ill health for several months. Funeral services were set for today at Arlington national cemetery.



Still on the secret list of the U.S. Army Air Corps, this Model 32 four-engined bomber (Army designation, XB-24) is CONSOLIDATED AIRCRAFT CORPORATION'S latest product. Powered by PRATT and WHITNEY 18-cylinder Double Wasp A6-G series engines, each of 1,850 h.p. for take-off, this huge craft has an approximate gross weight of 40,000 lbs., length of 64 feet, span of 110 feet, and height of 19 feet. Its crew numbers from 6 to 9 members. The aircraft is of all-metal construction, has a speed greater than 300 m.p.h., range of 3,000 miles, and bomb-load of four tons. Fifty of these craft were in the order for 1,400 warplanes placed by the Allied Purchasing Mission on May 14. This picture was taken at Lindbergh Field, San Diego (California), as the big fellow was being towed out preparatory to a test-flight. Most people know CONSOLIDATED'S name and reputation in connection with flying-boats, and it comes as quite a piece of news to learn of such a big land-plane emanating from their workshops.

AIRLOG--May 1940

Nose-On View of Army's Newest 'Air Dreadnaught' Taking Off on Test Hop; Craft Built at Consolidated Plant Here



XB-24, the United States army air corp's new bombardment plane built at Consolidated Aircraft Corp., is shown here during initial test flights in this area. The four-motored, high-wing, all metal plane is powered by four Pratt & Whitney 18-cylinder, twin-row radial air-cooled engines, rated at 1200 horsepower each. Weighing approximately 40,000 pounds, the craft has a wing span of 110 feet. It is 64 feet in length and has an overall height of 19 feet. It carries a crew of from six to nine. Speed is estimated at more than 300 miles an hour. The cruising range is approximately 3000 miles and the bomb-carrying capacity is approximately four tons.—(Photo by Harry T. Bishop.)

TRIBUNE 3-9-40

LUCE'S PRESS CLIPPING BUREAU
157 CHAMBERS STREET, NEW YORK
CLIPPING FROM
NEW YORK TIMES
MAR 6 - 1940

AIRCRAFT CONCERN CLEARS $1,104,327

Net Income of Consolidated Company in 1939 Equal to $1.79 a Common Share

WON HUGE NAVY CONTRACT

Order Calls for $20,016,700 of Flying Boats—Backlog of Business $49,000,000

The annual report of the Consolidated Aircraft Corporation for 1939 shows a net profit of $1,104,327, equal to $1.79 a share on 576,160 common shares, after preferred dividends, compared to $1,535,110, or $2.55 a share, earned in 1938.

Products valued at $3,603,240 were delivered and billed, compared to $12,245,067 in 1938. New orders amounting to $42,948,053 were received, and unfilled orders at Dec. 31 were $42,141,694. Deliveries last year were relatively low, according to R. H. Fleet, president, because of the large amount of new aircraft design and development work and tooling for deliveries in 1940 and 1941.

In December, 1939, the company received an order from the United States Navy for $20,016,700 of flying boats, which Mr. Fleet believes is the largest contract for airplanes ever awarded by the government. It will necessitate additions of $2,000,000 in new production facilities.

The backlog of business at the beginning of March of about $49,000,000, Mr. Fleet says, will keep the company busy until midsummer, 1941. Current assets at Dec. 31 were $7,607,620, including $3,080,267 cash, and current liabilities were $3,613,750. Earned surplus totaled $4,009,653.

UTILITY TO REDUCE RATES

An unusual aerial photograph of a left echelon formation of patrol planes. *Official Photo, U. S. Navy*

The Patrol or Flying Boat

There is another and very important aircraft type employed by the Navy, and that is the patrol or flying boat. This type is more widely known to the layman than either the carrier or combatant ship-based aircraft because of the many long distance mass flights it has successfully carried out and because of the commercial versions flying on transoceanic schedules.

These planes possess a high degree of mobility in themselves and are the largest type used by the Navy. They are capable of operating over great distances at sea, of being powerful offensively and defensively, of being self-sustaining to a large de-

(Continued on page 49)

Naval Aviation

(Continued from page 17)

gree, and of independently joining the Fleet at a given time and place, ready to take part in whatever action may be required.

The bases for these flying boats are strategically located, are self-maintaining to act independently or to supplement the Fleet in time of emergency. From these bases the complements of patrol planes are capable of scouting hundreds of miles at sea, carrying heavy bombs to attack any enemy vessel sighted, patrolling the oceans in advance of the Fleet, and patrolling the coastal sea lanes against attack on merchant vessels by enemy submarines and cruisers. The range of these planes and their efficiency may be greatly extended by the employment of surface ships of the tender class. With tenders, the corresponding number of planes, that is, about twenty to a tender, have greatly increased mobility, since the tender can seek sheltered waters and there provide the aircraft with the fuel and services necessary to sustained operations.

NATIONAL AERONAUTICS SEPT. '39

SPERRY INSTRUMENTS

AID SURVEY FOR NEW ATLANTIC SERVICE

CONSOLIDATED AIRCRAFT CORPORATION
SAN DIEGO, CALIFORNIA

MEMO

Date MAR 6 1940

L. C. MOUNCE

To Major Fleet

Consair Backlog 49 Millions; Working 3 Shifts

A backlog of $49,000,000 which will keep the plant busy until the midsummer of 1941 is listed by R. H. Fleet, president of Consolidated Aircraft Corp., in the company's annual report to be made public today.

"Our employes number 4300, we are adding about 100 men a week and are operating three shifts," Fleet reported to stockholders. "Since organization in 1923 we have constructed more than three times as many airplanes with a wing span of 100 feet or over than all other airplane manufacturers combined and are the largest builders of flying boats in the world."

He reported net earnings of $1,104,327 for 1939, equivalent to $1.79 a share on common stock and $3 on preferred. The directors decided against declaring a common stock dividend.

"San Diego Union"
3/6/40
(Back page of Second Section)
lcm.

Thanks
3/6/40

need printing or lithographing is
FRYE & SMITH
AVENUE, SAN DIEGO, CALIFORNIA

$49,000,000 In Unfilled Consair Orders

TRIB 3/6/40

The annual report of the Consolidated Aircraft Corp., released today, reveals that the firm has a backlog of unfilled orders totaling $49,000,000, instead of the $40,000,000 backlog previously announced.

Consair officials refused to comment on the $9,000,000 in additional orders, but it was learned authoritatively that they were placed by a foreign nation or nations.

It was explained by a company spokesman that there was nothing secretive about the orders but that,

(Continued on Page 4A, Col. 2)

$49,000,000 Total Of Consair Orders

CONTINUED FROM PAGE ONE

as a matter of policy, Consair officials felt that any announcement of the deal should be made by the customer or customers.

In line with naval and military restrictions, Consolidated refused to specify what kind of planes or how many were covered by the orders or to name the date that they will be delivered.

Adding 100 Weekly

R. H. Fleet, Consair president, in the annual statement said: "Our employes number 4300, we are adding about 100 men a week and are operating in three shifts.

"Since organization in 1923, we have constructed more than three times as many airplanes with a wing span of 100 feet or over as all other airplane manufacturers combined and are the largest builders of flying boats in the world."

Reported were net earnings of $1,104,327 for 1939, equivalent to $1.79 a share on common stock and $3 on preferred. Directors passed a common stock dividend.

~~TRIB~~ 3-5-'40

Weihmiller Resigns

Consolidated Aircraft Corp. announces resignation of H. E. Weihmiller as of Feb. 29. Weihmiller, elected a vice president in December, 1937, formerly had charge of Consolidated's Washington office as its eastern representative.

U. S. Naval Institute Proceedings - Jan - 1940.

SECRETARY'S NOTES

Flag Plane On August 24, 1939, the 4-engined flying boat XPB2Y-1 became the first airplane to be officially recognized as a flagplane of the United States Navy. On that date, Rear Admiral A. B. Cook, commanding the Aircraft Squadron of the Aircraft Scouting Force, by dispatch, removed his flag from the U.S.S. *Memphis* at Seattle, and hoisted it aboard the XPB2Y-1. Thereby was established a precedent in naval history. Never before had such a flag been officially hoisted on an airplane. The huge plane, by formal procedure, thus became the first flagplane ever to fly for the U. S. Navy—a signal honor. It had been flown to Seattle by navy personnel commanded by Commander Andrew Crinkley.

Commander Crinkley and his crew, in October of 1938, flew the XPB2Y-1, while still fitted with experimental apparatus and equipment, on a precedent setting flight completely across the United States. The XPB2Y-1 is a flying boat, yet the flight was made entirely over land, expressing confidence in the smooth functioning of the ship. The flight was nonstop from the waters of San Diego Bay, northward over spectacular mountain terrain via Salt Lake City and thence due east to Anacostia (Washington, D. C.). At this destination, the airplane was personally inspected by President Roosevelt. Flight time 13 hours. Very cold weather, darkness over much of the route, tail winds and a closing in fog at Anacostia marked this outstanding transcontinental flight. The return to San Diego, a few days later, was likewise cross-continent, and nonstop-this time by a southern route and against head winds of considerable magnitude, which were met without difficulty.

The casual manner in which these flights were accomplished was expressed by Commander Crinkley soon after the ship's return:

> This flight was made in all respects in a routine operation manner and no special consideration or preparation was necessary in its accomplishment. Upon our return to San Diego the crew felt confident that the ship could have been refueled and departed for Honolulu or any other point immediately.

This double spanning of the continent together with the recent honor of becoming the first official flagplane, in retrospect, may, be seen as of striking potentiality. Such a performance could easily have been one for transporting the commanding officers and members of their staff, with lightning speed, to positions thousands of miles away, even though the naval destinations might be separated by a whole continent. An official flagplane thus appears to have in it latent usage of a very wide nature.

Funeral at Arlington

LEWIS A. YANCEY

TRIB 5/3/40

GUBA PILOT DEAD; IN ILL HEALTH SEVERAL MONTHS

Lewis A. Yancey, 44, famous flier, who died Sunday at Yonkers, N. Y., was well-known in San Diego. His most recent air exploit was acting as navigator on the New Guinea-round-the-world flight of the "Guba," Consolidated-built plane owned by Richard Archbold, scientist.

Yancey was a navy flier for 13 years before he made his trans-atlantic flight in 1929 with Roger Q. Williams in their plane, the "Pathfinder," which landed at Littorio airport, Rome, July 10, 1929, after a flight from Old Orchard, Me., via Santander, Spain. For this flight they received Italy's gold medal for aeronautics, presented to them by Gen. Italo Balbo, Italian flier, as 20,000 spectators in Rome watched. Before returning to the United States the two were received in private audience by the pope.

Autogiro Pilot

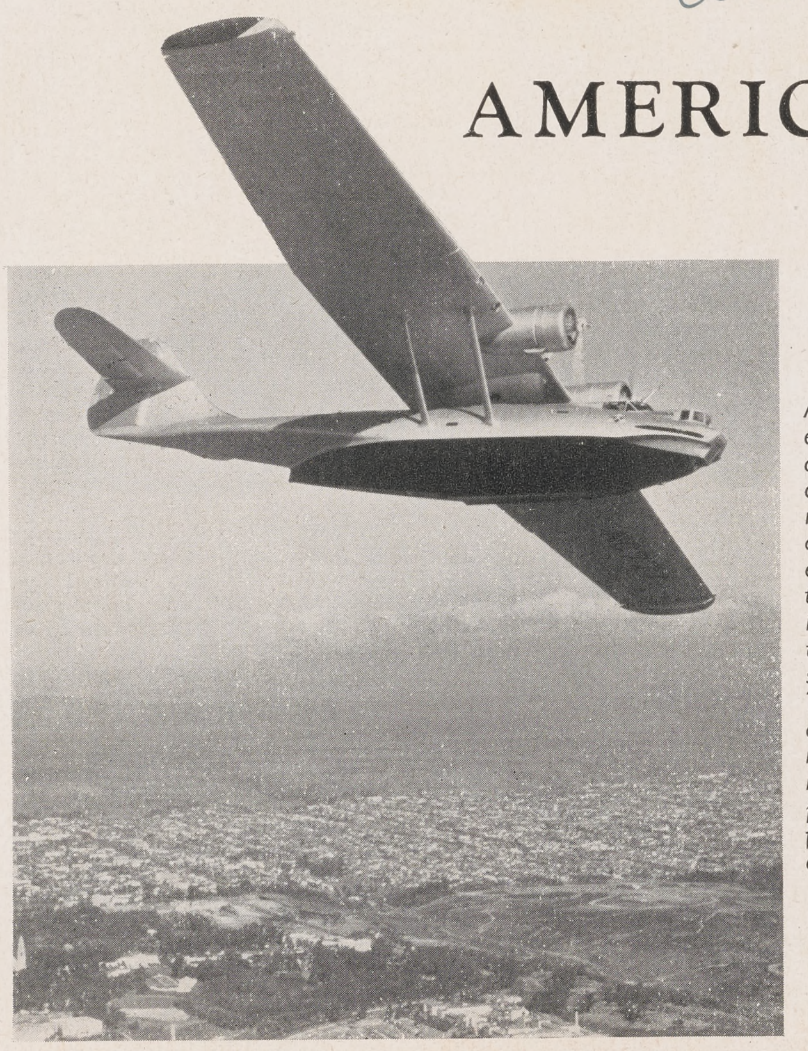
Three years later Yancey came to San Diego, piloting an autogiro, in which he had flown to Mexico and Cuba, first plane of its kind to visit those countries. He gave several demonstrations with the craft at Lindbergh field, March 20, 1932. In flying from Havana to Merida, Yucatan, Yancey established a new long-distance flight record for autogiros, flying 500 miles. He was said to have been the only pilot ever to loop an autogiro.

Yancey and other members of the crew of the "Guba" brought Archbold's plane to San Diego last July 6 at the end of the flying boat's round-the-world flight.

The flier was a native of Chicago. His death, according to The International News Service, was caused by a cerebral hemorrhage. He had been in ill health for several months. Funeral services were set for today at Arlington national cemetery.

Aeronautics (London)
Jan. 1940

AMERICAN MEDLEY



A Consolidated 28. This aeroplane is of duralumin monocoque construction except for the wing trailing edge and the control surfaces. These parts, as in large numbers of modern aeroplanes, are fabric covered metal structures.

★

THE Consolidated Model 28 has made a name for itself by numerous long-distance flights. It will be remembered that Sir Hubert Wilkins flew one over 19,000 miles of the Arctic in search of the lost Russian Trans-polar fliers headed by Levaneffsky.

Among the most noticeable features of these flying boats are the floats which retract in such a manner as to form the wing tips themselves. It is claimed that the floats in their retracted position cause no drag, and actually increase the aspect ratio of the wing. Should the retracting gear fail the floats keep sufficient buoyancy in their retracted position to permit a landing to be made. In the lowered position they serve effectively as airbrakes during the approach for landing.

The whole aircraft is of duralumin monocoque construction except for the wing trailing edge and the control surfaces. These parts are of metal construction and fabric covered.

The hull is divided into five water-tight compartments with water-tight doors, and any one of these compartments may be flooded without the boat's sinking.

The fuel tanks are built integral with the wing, thus giving a large fuel capacity for a low structure weight.

For defence, the Model 28 carries four machine guns—one in the bow, one on each side of the deck behind the wing, and one in the hull bottom just forward of the tail. This is known in America as a tunnel gun.

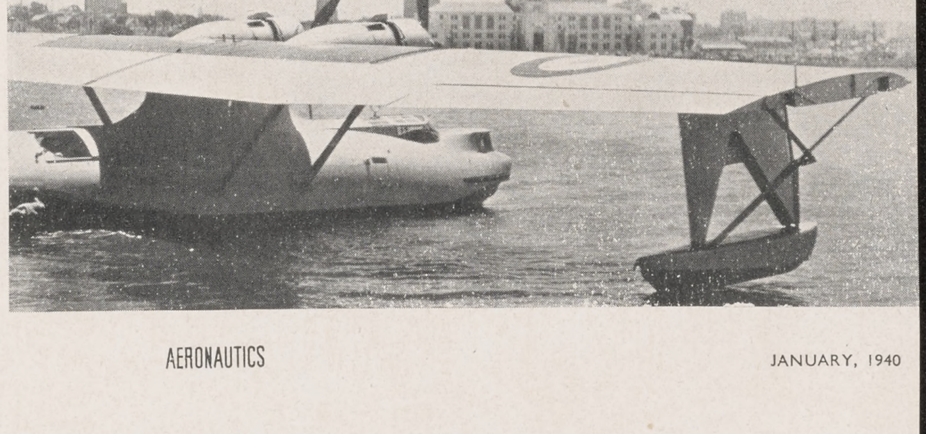
For offensive action bombs or torpedoes may be carried internally in the wing outboard of the engines. The bomb aimer has a station below the bow gunner.

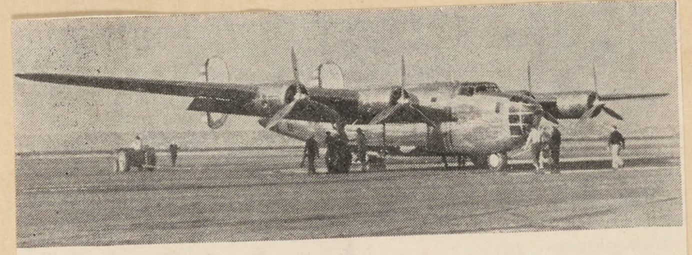
A flight engineer is carried, and only those engine controls which are absolutely necessary for the safety and manœuvrability are located in the pilot's compartment. The remainder are relegated to the flight engineer who occupies a compartment situated approximately between the engines, being separated from the pilot by the radio operator and the navigator. All members of the crew can keep in touch by telephone.

This flying boat is available in several other forms, the most important of which is as a commercial transport machine. For this purpose it can be converted into an amphibian by the addition of a retractable tricycle undercarriage. As a passenger machine it can cruise at a speed of 150 miles an hour using 53 per cent. power. The range varies from 600 miles with 40 passengers to 2,500 with 12 passengers. A crew of four is carried.

At present about 200 of these boats have been built, mainly for military purposes.

This photograph of the Consolidated 28 shows the retractable wing tip floats, and one of the two deck gun positions just aft of the wing. The sliding hatch cover is hinged at the front, so that it can be raised to shield the gunner from the slipstream.

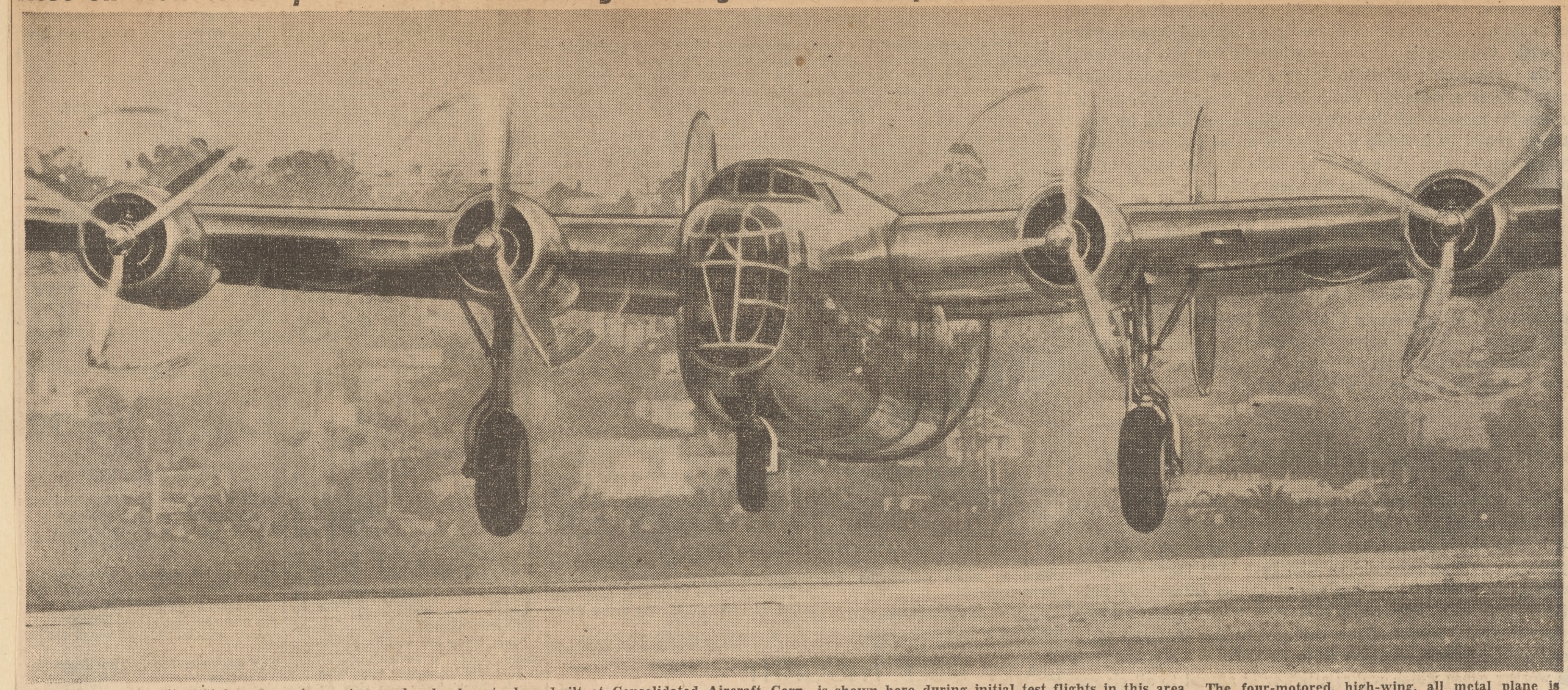




Still on the secret list of the U.S. Army Air Corps, this Model 32 four-engined bomber (Army designation, XB-24) is CONSOLIDATED AIRCRAFT CORPORATION'S latest product. Powered by PRATT and WHITNEY 18-cylinder Double Wasp A6-G series engines, each of 1,850 h.p. for take-off, this huge craft has an approximate gross weight of 40,000 lbs., length of 64 feet, span of 110 feet, and height of 19 feet. Its crew numbers from 6 to 9 members. The aircraft is of all-metal construction, has a speed greater than 300 m.p.h., range of 3,000 miles, and bomb-load of four tons. Fifty of these craft were in the order for 1,400 warplanes placed by the Allied Purchasing Mission on May 14. This picture was taken at Lindbergh Field, San Diego (California), as the big fellow was being towed out preparatory to a test-flight. Most people know CONSOLIDATED'S name and reputation in connection with flying-boats, and it comes as quite a piece of news to learn of such a big land-plane emanating from their workshops.

AIRLOG--May 1940

Nose-On View of Army's Newest 'Air Dreadnaught' Taking Off on Test Hop; Craft Built at Consolidated Plant Here



XB-24, the United States army air corp's new bombardment plane built at Consolidated Aircraft Corp., is shown here during initial test flights in this area. The four-motored, high-wing, all metal plane is powered by four Pratt & Whitney 18-cylinder, twin-row radial air-cooled engines, rated at 1200 horsepower each. Weighing approximately 40,000 pounds, the craft has a wing span of 110 feet. It is 64 feet in length and has an overall height of 19 feet. It carries a crew of from six to nine. Speed is estimated at more than 300 miles an hour. The cruising range is approximately 3000 miles and the bomb-carrying capacity is approximately four tons.—(Photo by Harry T. Bishop.)

TRIBUNE 3-9-40

LUCE'S PRESS CLIPPING BUREAU
157 CHAMBERS STREET, NEW YORK

CLIPPING FROM
NEW YORK TIMES
MAR 6 - 1940

AIRCRAFT CONCERN CLEARS $1,104,327

Net Income of Consolidated Company in 1939 Equal to $1.79 a Common Share

WON HUGE NAVY CONTRACT

Order Calls for $20,016,700 of Flying Boats—Backlog of Business $49,000,000

The annual report of the Consolidated Aircraft Corporation for 1939 shows a net profit of $1,104,327, equal to $1.79 a share on 576,160 common shares, after preferred dividends, compared to $1,535,110, or $2.55 a share, earned in 1938.

Products valued at $3,603,240 were delivered and billed, compared to $12,245,067 in 1938. New orders amounting to $42,948,053 were received, and unfilled orders at Dec. 31 were $42,141,694. Deliveries last year were relatively low, according to R. H. Fleet, president, because of the large amount of new aircraft design and development work and tooling for deliveries in 1940 and 1941.

In December, 1939, the company received an order from the United States Navy for $20,016,700 of flying boats, which Mr. Fleet believes is the largest contract for airplanes ever awarded by the government. It will necessitate additions of $2,000,000 in new production facilities.

The backlog of business at the beginning of March of about $49,000,000, Mr. Fleet says, will keep the company busy until midsummer, 1941. Current assets at Dec. 31 were $7,607,620, including $3,080,267 cash, and current liabilities were $3,613,750. Earned surplus totaled $4,009,653.

UTILITY TO REDUCE RATES

An unusual aerial photograph of a left echelon formation of patrol planes. *Official Photo, U. S. Navy*

The Patrol or Flying Boat

There is another and very important aircraft type employed by the Navy, and that is the patrol or flying boat. This type is more widely known to the layman than either the carrier or combatant ship-based aircraft because of the many long distance mass flights it has successfully carried out and because of the commercial versions flying on transoceanic schedules.

These planes possess a high degree of mobility in themselves and are the largest type used by the Navy. They are capable of operating over great distances at sea, of being powerful offensively and defensively, of being self-sustaining to a large de-

(Continued on page 49)

Naval Aviation

(Continued from page 17)

gree, and of independently joining the Fleet at a given time and place, ready to take part in whatever action may be required.

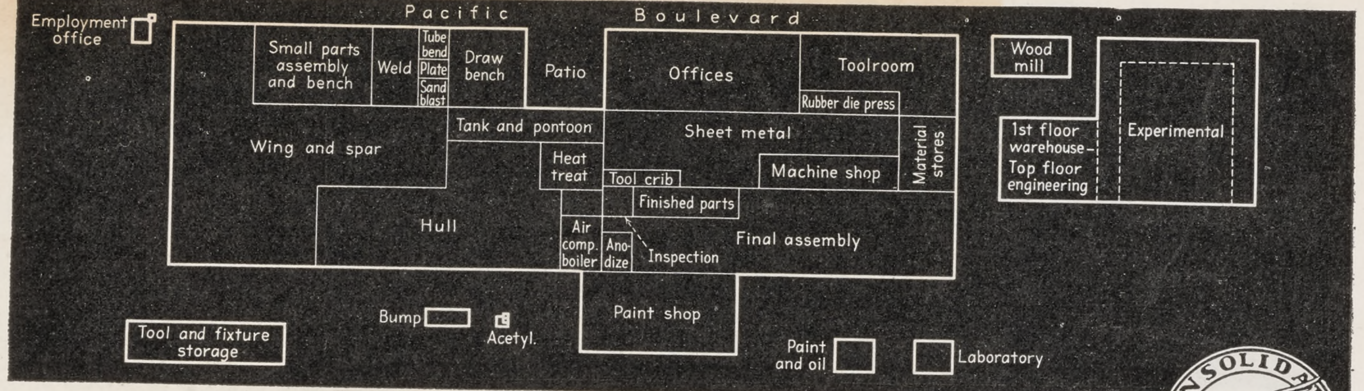
The bases for these flying boats are strategically located, are self-maintaining to act independently or to supplement the Fleet in time of emergency. From these bases the complements of patrol planes are capable of scouting hundreds of miles at sea, carrying heavy bombs to attack any enemy vessel sighted, patrolling the oceans in advance of the Fleet, and patrolling the coastal sea lanes against attack on merchant vessels by enemy submarines and cruisers. The range of these planes and their efficiency may be greatly extended by the employment of surface ships of the tender class. With tenders, the corresponding number of planes, that is, about twenty to a tender, have greatly increased mobility, since the tender can seek sheltered waters and there provide the aircraft with the fuel and services necessary to sustained operations.

NATIONAL AERONAUTICS SEPT. 39

SPERRY INSTRUMENTS

AID SURVEY FOR NEW ATLANTIC SERVICE

NC18997
AE 11



CONSOLIDATED of San Diego

Has a daylight factory built for line production of large aircraft.

By C. F. McReynolds
West Coast Editor, Aviation

LOCATED on Lindbergh Field, San Diego, California, the Consolidated factory has been built from the ground up to handle large aircraft. We might say that the plant has been built "from the water up" as most of the ground on which it stands was reclaimed from San Diego Bay and this filled land has presented certain special problems which had to be solved in building the factory and installing certain heavy machinery. The Consolidated factory is located in the Southern California aircraft industry area which provides unusual facilities for supply of all needed materials and supplies, as well as a favorable reservoir of trained men. The plant is located on Lindbergh Field, with unobstructed access to runways, and to quiet waters for launching and flight testing of flying boats. Supplies may be and are brought in by water, rail, highway, and air, with delivery right at the factory door. Equable weather conditions in the San Diego area have made it practical to build a factory that is "all windows and doors", of relatively light, long span roof construction, and with no major heating problem. In addition, a high percentage of operations are performed in the factory yard, which serves as an integral part of the plant without requiring the expenditure of capital for roofing, heating, etc. Enclosed by a high fence, the yard area is well supplied with electric power outlets, air, water, and other facilities, and is used for a major portion of all final assembly operations. The area under roof at the Consolidated plant is approximately 450,000 sq. ft., with an additional 212,462 sq. ft. in usable yard area. The main factory building extends for 1025 ft. along the east side of Lindbergh Field, and has a width of 300 ft. Construction is of steel frame with saw tooth roof, galvanized iron siding, generous window area, and with almost continuous doors along the field side to permit shifting planes off the production line at any desired point. The east 200 ft. of the factory building has a ceiling clearance of 14 ft., as this area is largely devoted to miscellaneous manufacturing operations, machine shops, and offices. The remaining 100 ft. of factory width serves as the final assembly bay, extends the full length of the building, and has a height of 30 ft. Adjoining the main building at the center of the assembly side is the paint shop, measuring 200 by 100 ft., and also having a ceiling clearance of 30 ft. This permits shifting hulls and other bulky parts out of the assembly line, into the paint shop, and back to assembly without difficulty. An experimental building is located south of the main plant and separated from it by a 50 ft. alleyway. This building, of construction similar to the main building, houses an experimental section measuring 225 by 250 ft. with a 40 ft. ceiling clearance, and a receiving stores section 125 ft. square, with a second floor which carries the engineering department. There are two mezzanine floors extending around three sides of the experimental shop, the fourth being reserved for doors opening on the flying field. The lofting department of engineering occupies a major part of these mezzanine areas. Other Consolidated factory buildings located adjacent to the main plant include the wood mill, tool storage shed, laboratory, and paint storage building.

The modernization program recently completed entailed an expenditure of more than $500,000 for new equipment alone. Although presses and drop hammers represented the major items of expenditure, numerous pieces of equipment were added to the machine shop, including three Brown & Sharpe automatic screw machines, two Cleveland screw machines, a Cincinnati centerless grinder, and a LeBlond gap lathe to swing 50 in. For the drop hammer die foundry two James H. Knapp gas fired tilting type melting furnaces were installed, each with a capacity of 8,300 lbs. of zinc alloy or 12,000 lbs. of lead. To supply power for the new air operated drop hammers a Worthington 20 in. x 12 in. x 14 in. horizontal two stage compressor was installed. Driven by a 200 h.p. electric motor, this compressor has a capacity of 1150 cu. ft. of air compressed to 100 sq. in. per minute. This brings the total air compressor plant to a capacity of 2275 cu. ft. per minute. A stand-by

---

THE AIR-LOG December, 1939.

ministrative staff officer, Flight-Lieutenant N. Mulroney.

No. 1 flying training school, Point Cook: Commanding officer, Wing-Commander J. H. Summers.

No. 2 aircraft depot, Richmond: Commanding officer, Squadron-Leader H. B. Seekamp.

R.A.A.F. Station, Rathmines: Acting station commander, Flight-Lieut. S. A. C. Campbell.

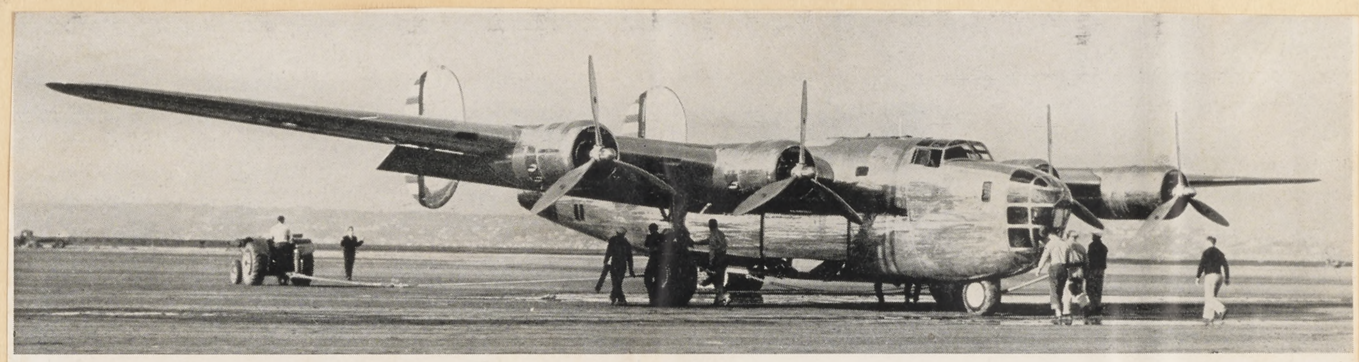
No. 6 Squadron: Commanding officer, Squadron-Leader P. G. Heffernan.

No. 2 Squadron: Commanding officer, Flight-Lieut. I. D. McLachlan.

No. 1 Squadron: Commanding officer, Flight-Lieut. F. W. Thomas.

EQUIPMENT?

It becomes more and more a matter of conjecture as to what new marine aircraft shall fill the moorings at Rathmines and Port Moresby. Though Short "Sunderlands" were ordered some months ago and the first deliveries were supposed to have been made last September (which arrangement was thrown out of gear by the advent of the Hitlerian War) it is not by any means outside the bounds of possibility that, now the arms embargo section of the U.S.A. Neutrality Act has been passed into the discard, we may see some American flying-boats in local waters before we see the Sunderlands. And Consolidated flying-boats are very hot tips. In fact, in places where real fliers talk these things—not unimaginative political cloisterers—a shade of odds is given that the Yanks will have a long lead in representation here in Military flying-boats.

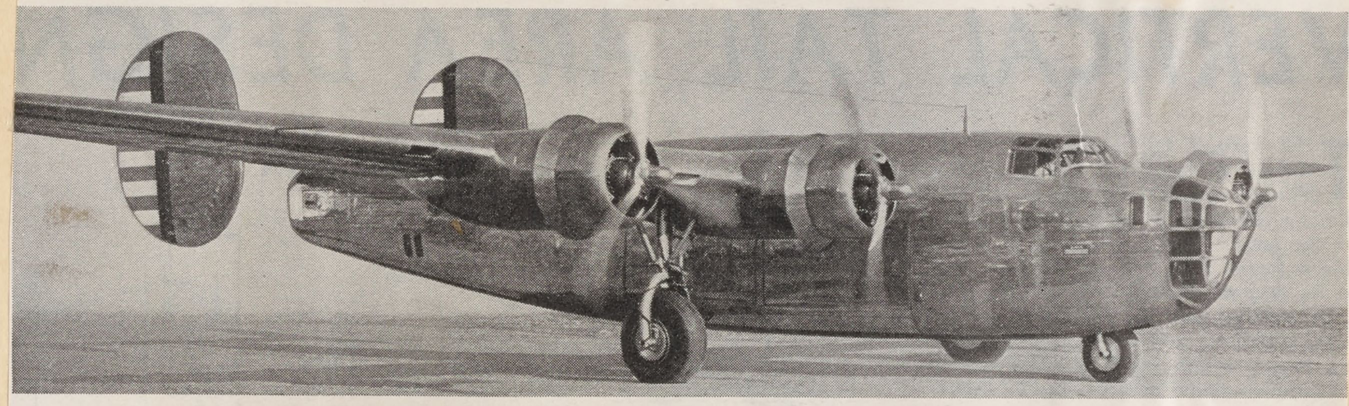


U. S. ARMY AIR CORPS XB-24 FOUR-ENGINED BOMBARDMENT AIRPLANE, BUILT BY CONSOLIDATED AIRCRAFT CORPORATION

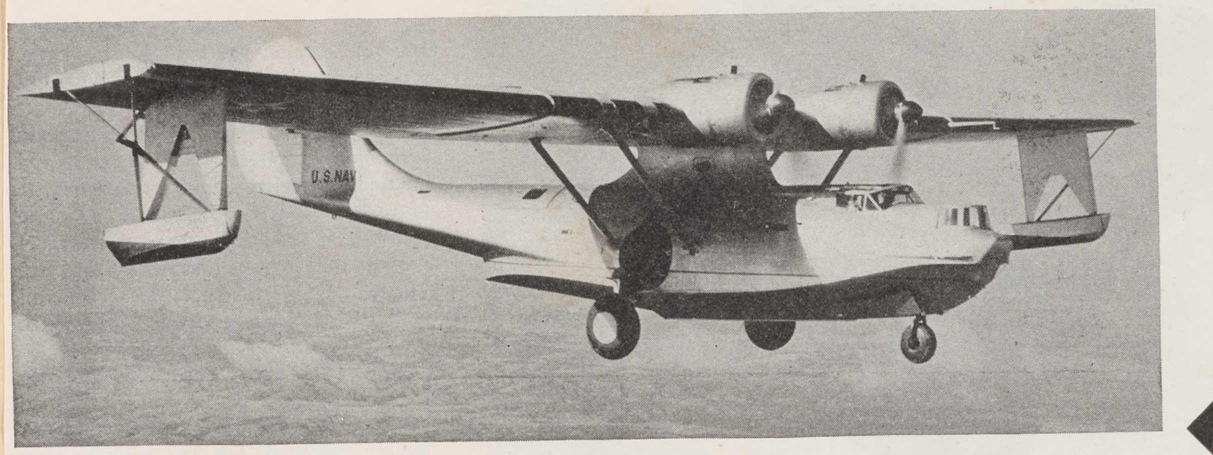
A High-Wing, All-Metal Airplane, Powered by Pratt & Whitney 18-Cylinder Twin-Row Radial Air-Cooled Engines, Each of 1,200 h-p. The Propellers are Hamilton Standard 3-Bladed Hydromatic Constant Speed Types, 12 Feet in Diameter. Gross Weight of Plane is About 40,000 Pounds; Wing Span, 110 Feet; Length of Fuselage, 64 Feet; Overall Height, 19 Feet. Tactical Requirements are for Crew of 6 to 9, Depending upon Mission. Speed More Than 300 m.p.h., Range About 3,000 Miles, Can Carry About Four Tons of Bombs

U.S. Air Services March, 1940

POPULAR AVIATION MAR. '40



Above is first exclusive photograph of four-engined Consolidated B-24 bomber for the U. S. Army Air Corps. The wing is the secret new airfoil first installed on the Consolidated Model 31 flying boat.



Flying Equipment

CONSOLIDATED Amphibian

THE latest achievement of the Consolidated Aircraft Corporation is the building of the world's largest amphibian, the Model 28-5A, or as designated by the Navy, the XPBY-5A. The new amphibian is basically the familiar Model 28 twin engine flying boat, better known by its Navy designation, PBY. The change was accomplished chiefly by the addition of a tricycle landing gear which is fully retractable. The side wheels and supporting mechanism, complete with oleo shock struts, retract into wells in the side of the hull. The nose wheel in the retracted position is completely closed over by automatically operated hatches so that no resistance to planing is encountered. All three wheels are operated by a central hydraulic power drive, which handles all the necessary operations in sequence automatically and both the extension and retraction of the gear is controlled by a single lever. Hydraulic pump power is obtained either from the main power plant or from an auxiliary engine, but hand operation is possible, if necessary.

The landing gear has a number of advantages in addition to the obvious one of greatly extending the scope of utility for the Model 28. For rough water taxiing the extended gear greatly assists in control by serving as a sea anchor. More engine power may be applied for short turns without undue acceleration, and turns on the water may be accomplished with far less skidding. Naturally, all danger of scraping the keel on the ramp is eliminated, and no beaching crew is required, for the ship can climb a ramp or beach under its own power. It may operate from sand beaches with no special ramps or facilities for handling.

Since the side wheels are above water when the ship rises on the step, and since automatic means are provided for expelling water from the closed bow wheel hatch before the plane is in the air, the flying trim remains unaffected. Repairs or routine servicing to the landing gear may be made with a minimum of trouble. The beaching gear lugs of the Model 28 have been retained, so that a standard beaching gear may be attached and the plane run out of water. This lifts the landing gear clear of the ground so that any servicing may be carried out.

AVIATION JAN. '40

NATIONAL WHIRLIGIG TRIB 3/12/40

Partners

American airplane manufacturers, aided by army-navy experts, were responsible for killing the scheme under which the British mission would have bought only three types of American planes. The idea was originally sold to the foreigners by Capt. H. E. Collins, of the treasury procurement department, and Glenn Martin.

Under their plan the British would have concentrated on the purchase of the Curtiss pursuit ship, the Martin light bomber and the Douglas attack bomber. These three companies would have skimmed the cream of foreign orders. Ten rival firms would have been reduced to making parts or accessories, or they would have become subcontractors for the three favored corporations. They would have had to break up their staffs of engineers and experts, and the American airplane industry would have suffered. Moreover, it would have meant a tremendous expansion of the Curtiss, Martin and Douglas plants, and therefore a more violent social, labor and economic dislocation when the boom blew up.

Hard-boiled army and navy men impressed this fact upon Lord Lothian, the British ambassador, and Sir Herbert Self, who has replaced Arthur Purvis as London's chief plane purchaser (Purvis henceforth will have charge of buying industrial materials, not military stuff). Lothian was told that the scheme would antagonize powerful interests here, weaken America's attempt to aid the allies with aviation reinforcement, and he belatedly saw the point.

Consolidated Seeks 450 Craftsmen From Seattle

In an effort to get 450 skilled aircraft workers, Donald Frye, Consolidated Aircraft Corp. personnel director, conferred yesterday with Seattle labor officials, International News service reported.

Consolidated authorities said Frye has been contacting labor unions throughout the U. S. to get skilled help for the new shops soon to be added to the local factory. Three thousand workers are to be added to the payroll between now and July 1. UNION 3/13/40

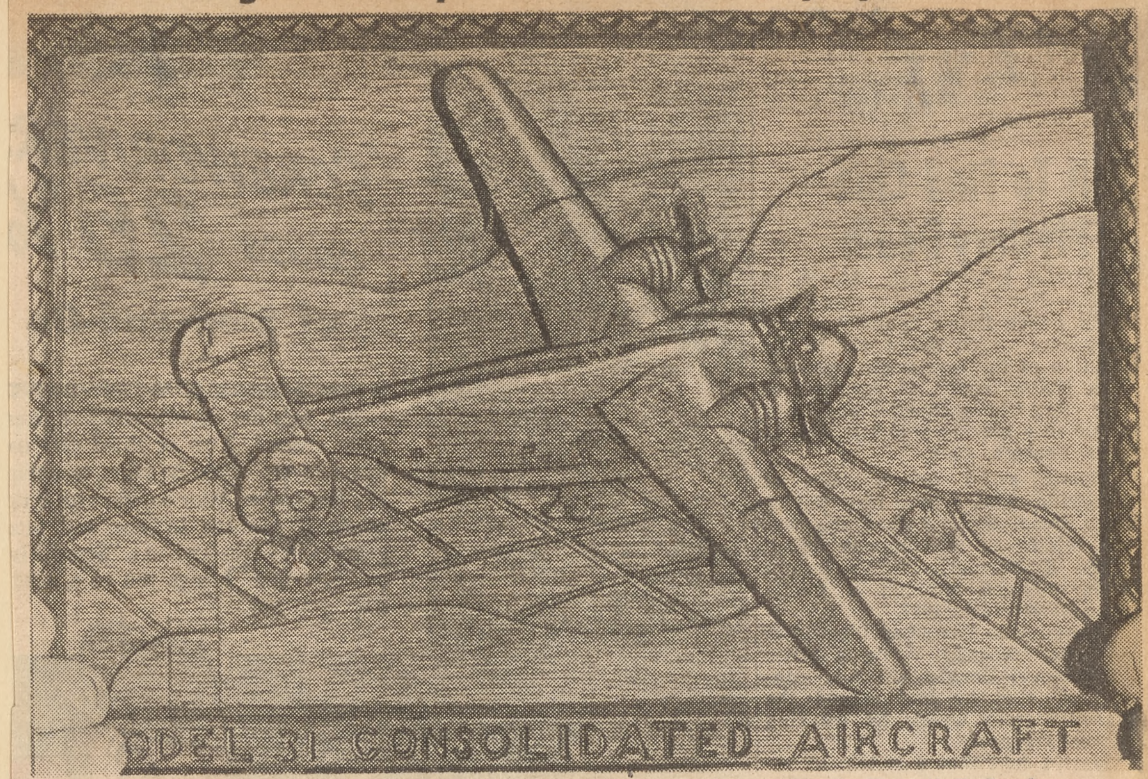
Seeking 450 Men For Consair Plant

Seeking 450 skilled airplane workers for the Consolidated Aircraft Corp., Donald Frye, personnel director, today conferred with Seattle union officials, The International News Service reported. He said the San Diego plant planned to hire 3000 more men by July 1.

TRIB 3/12/40

Wood Carving Hereditary Craft of Consair Employe

TRIB 3/12/40



Carved wood plaque of Consolidated Aircraft Corp.'s plane, Model 31, by Everett E. Jacobson.

WINNING RENOWN THROUGH WORK WITH AIRCRAFT

His great-grandfather was a wood carver in Gothenberg, Sweden. His grandfather, who came to the United States, was a carver and designed for the Pullman Car Co. His father, 13 years ago, won first prize in competition with 1100 contenders from all parts of the world in a display at the Metropolitan Museum of Art.

So, when Everett E. Jacobson, employed in the wood shop at Consolidated Aircraft Corp., became old enough to handle a knife, it was the thing for him to do—become a wood carver. Consolidator, monthly publication at the aircraft plant, devotes part of its "Wood Shop Chips" section, written by J. E. Hodgson, to Jacobson's wood carving ability.

Reproduces Tomb Objects

Jacobson carved designs to be reproduced in the Chrysler building, at New York City, and in the city hall at Denver. From 1931 to 1933 he made replicas of the objects discovered in the tomb of King Tut-Ank-Amen. His work at Consolidated is winning him renown in the aircraft field.

Commenting on the rarity of wood carvings, Hodgson, in his "Wood Shop Chips," says, "Wood carving is probably the oldest known handicraft and as such calls for a high degree of artistry and skill. In Europe, while a considerable amount of hand carving still is being done, in America, due to our high-speed technology it is almost unknown, except as a hobby or on articles designed to individual taste or requirement."

Jacobson's grandfather came to the United States to judge both wood and plaster carvings at the Chicago World's fair of 1893.

PLANE PLANT TO EXPAND

SAN DIEGO—A $1,050,000 permit to expand the Consolidated Aircraft Corp. plant to almost twice its present size was issued here by the city building's inspector's office.

Total cost of the new development, including equipment, is expected to approximate $2,000,000, plant officials have estimated.

It will involve the largest private construction activity here in many years.

Meanwhile, employment continued to soar at the factory, where giant Army and Navy bombers are being manufactured in a $40,000,000 backlog.

Of the 5400 aircraft workers on local payrolls, 4100 are employed by Consolidated.

Ryan Aeronautical Co. has 850 men and Solar Aircraft Co. 450

Today's issuance more than doubles the amount of building permits for a similar period in 1939.

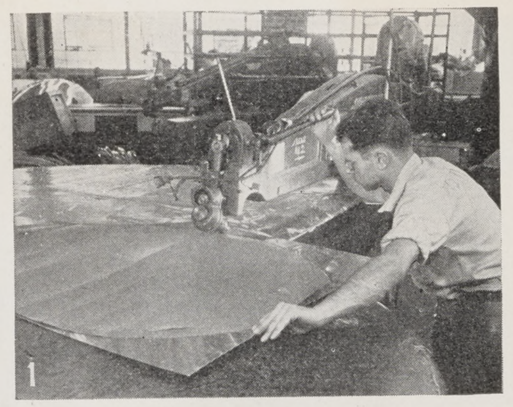
AIRCRAFT NEWS 3/7/40

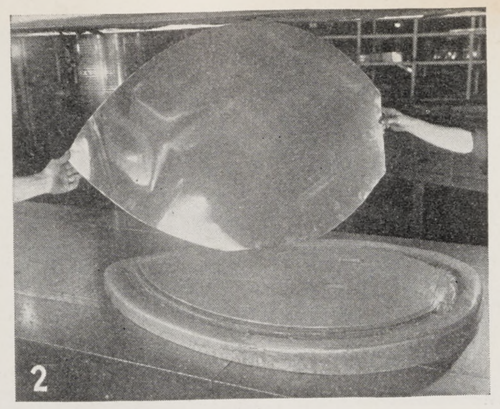
AIRCRAFT NEWS 3/7/40

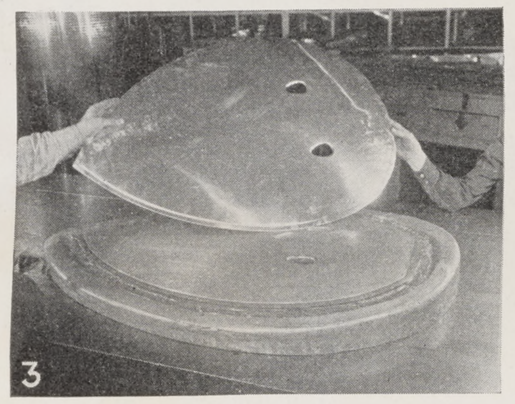
Aircraft Corp. Backlog Soars

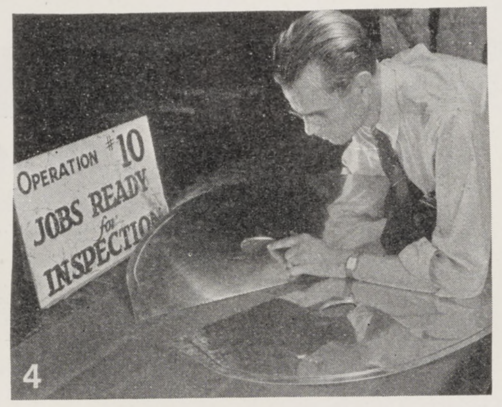
Consolidated Aircraft Corp. of San Diego, in releasing its annual report disclosed that the backlog of unfilled orders had reached an all-time peak of $49,000,000, a volume sufficient to keep the plant busy until midsummer of 1941.

This represents an increase in the backlog of nearly $8,000,000 since the first of this year, the unfilled orders at the close of 1939 having been $42,141,694. The company stated that during the past few months it had received contracts from foreign customers for a released version of the PBY ship, a two-engine long-range navy patrol bomber.


1


2


3



4

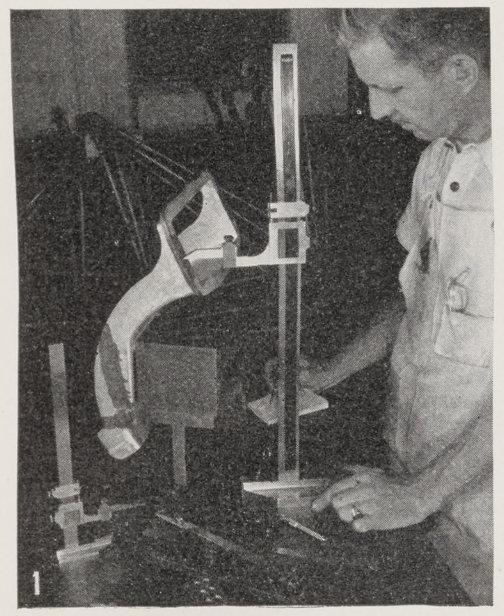
Picture series above:

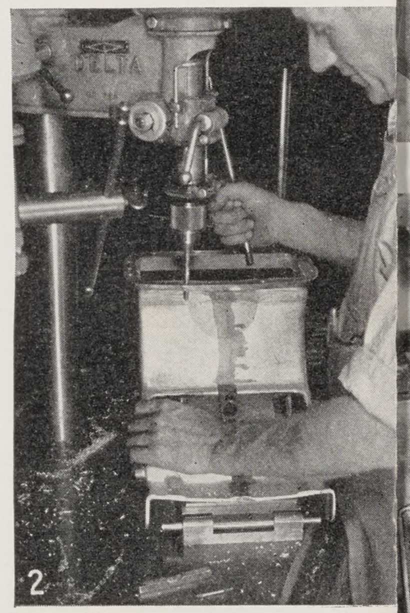
1. Here is the rotary shear again, being used to profile a flat sheet blank of fairly regular shape from a rectangular piece of sheet stock for the DC-3. This work can be performed quite rapidly as the blank is to be formed and so does not have to be cut with great precision.

2. Now we see the blank and its hydro press die with which it is to be both formed and sheared to exact size. Shearing is done by pressing with the rubber pad against a sharp-edged portion of the die. Results are surprisingly uniform and satisfactory. This process is patented by the Douglas Aircraft Company. One of the world's largest hydro presses is used for this work.

3. Here is the formed part as lifted from the die. Note that the two small holes have been both flanged and sheared.

4. Here's the inspector again—checking the shear work done by the hydro press.


1


2

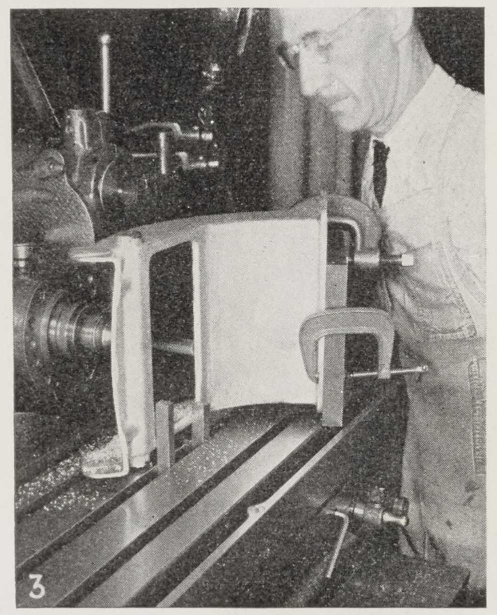
Picture series at right:

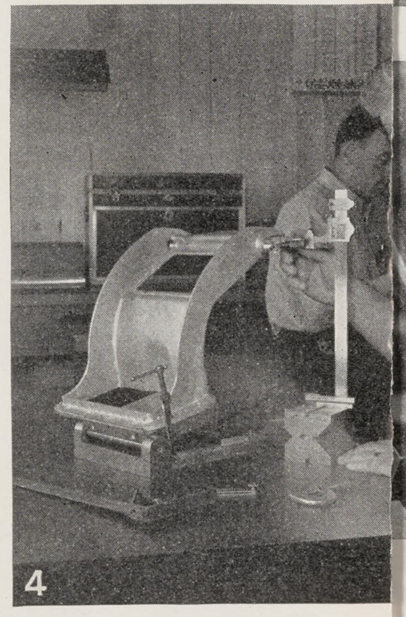
1. Machine manufacturing processes on a carburetor air elbow base used on a military airplane. Layout, preparatory to machining, must be made to hold flange hole tolerances to within plus or minus five-thousandths of an inch. (El Segundo Division.)

2. Drilling and reaming close tolerance holes is a precision operation performed in a vertical drill press.

3. Milling the base for a tight fit on the carburetor. Sides of shaft holes are milled for operating clearance.

4. Inspection. Note the care with which final dimensions are checked.


3


4

---

g is largely the means of fabrication for today's large aircraft. s, guns and hydraulic yokes are employed.

atic tube bending machines are now coming into use. In the Consolidated twin engined flying boat, approximately 900 bing is employed.

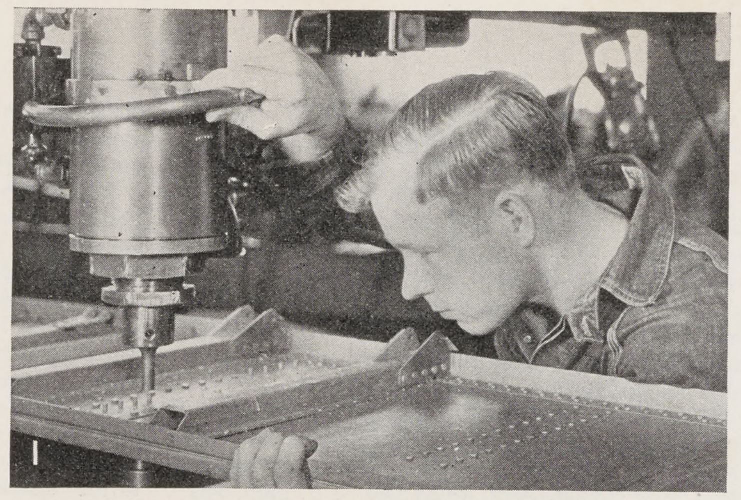
end of the cable stretching machine with a capacity up to Designed and built by Consolidated Aircraft for pre-stretch- ntrol cables.

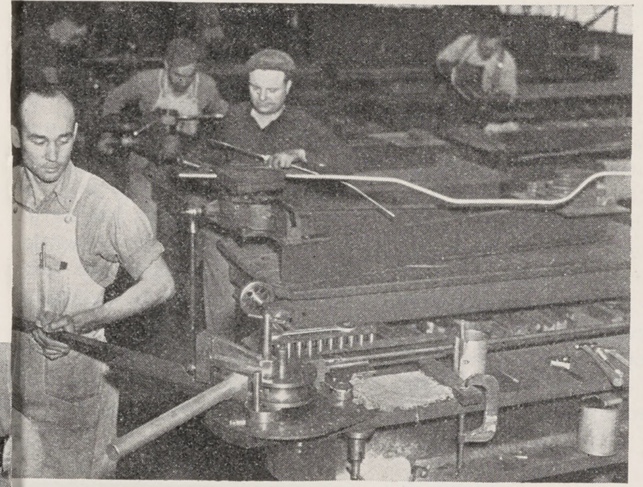
potfacing a fitting through use of a drilling fixture.

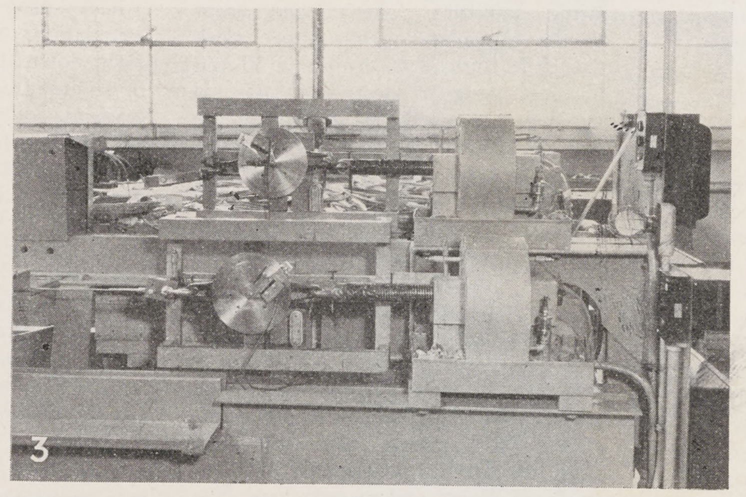
itude of small machined parts are made for use in the air- ere cable terminals are being milled in a special fixture.

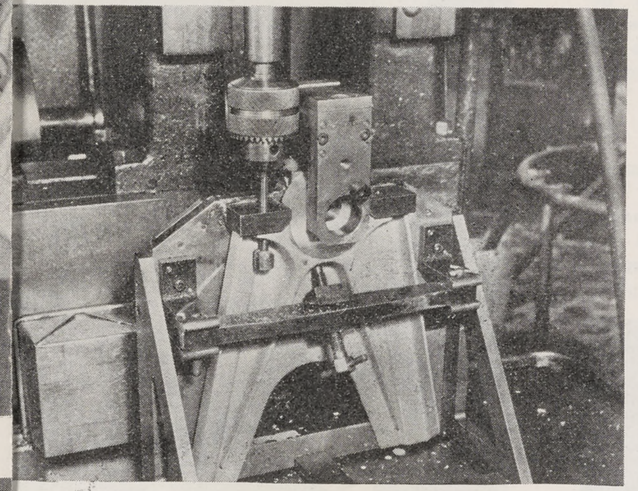
orking of dural parts increases their strength. Thin sections, urvatures, bring problems not encountered elsewhere.

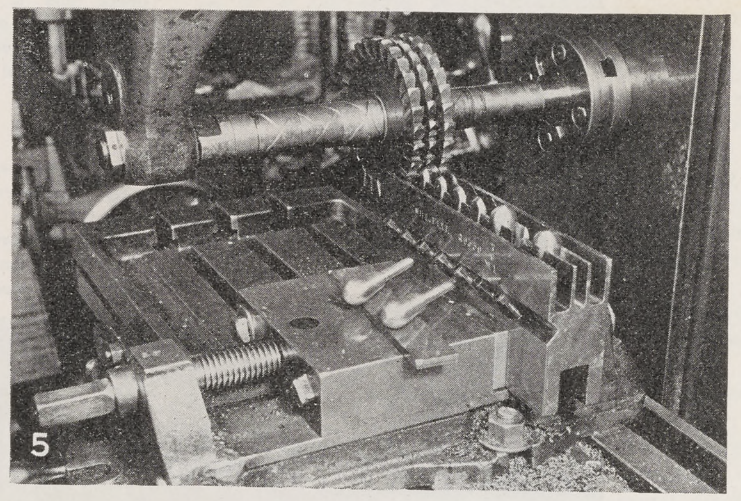
of many sizes and shapes to the tune of a million per week rned out by these two rivet making machines.

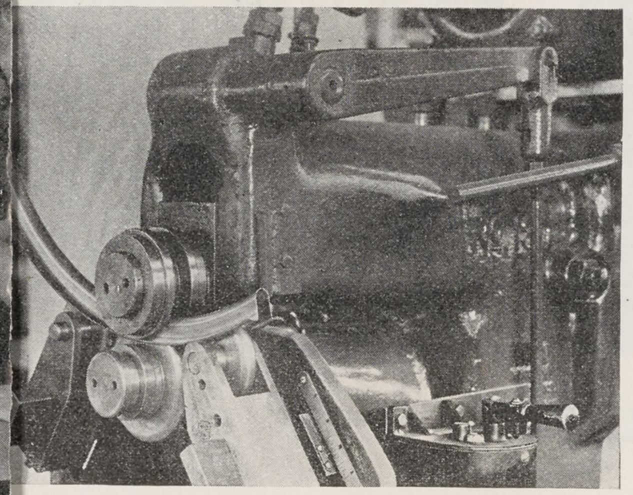

1

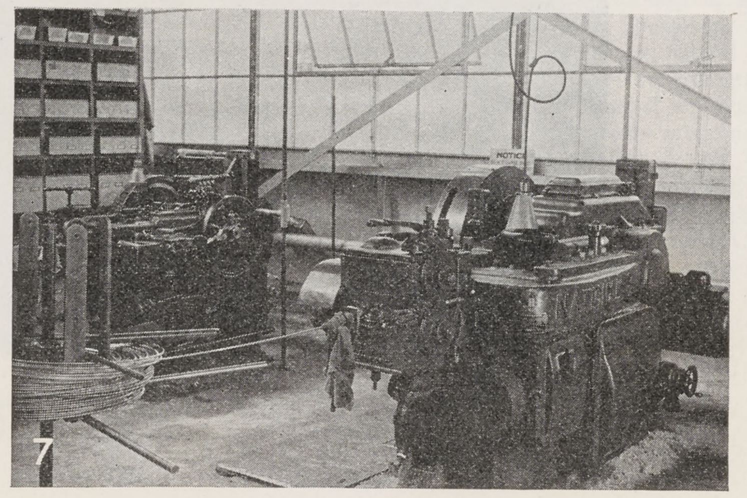



3




5




7

THE AIR-LOG December, 1939.

ministrative staff officer, Flight-Lieutenant N. Mulroney.

No. 1 flying training school, Point Cook: Commanding officer, Wing-Commander J. H. Summers.

No. 2 aircraft depot, Richmond: Commanding officer, Squadron-Leader H. B. Seekamp.

R.A.A.F. Station, Rathmines: Acting station commander, Flight-Lieut. S. A. C. Campbell.

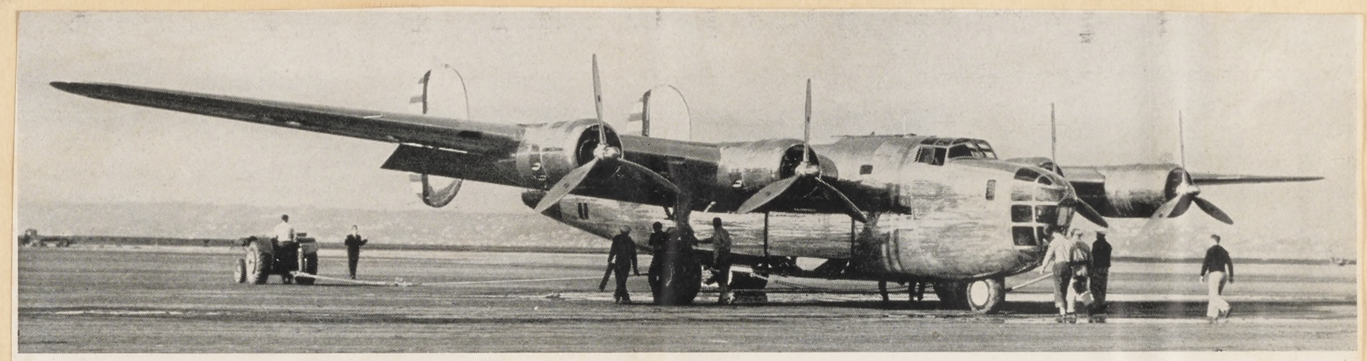
No. 6 Squadron: Commanding officer, Squadron-Leader P. G. Heffernan.

No. 2 Squadron: Commanding officer, Flight-Lieut. I. D. McLachlan.

No. 1 Squadron: Commanding officer, Flight-Lieut. F. W. Thomas.

EQUIPMENT?

It becomes more and more a matter of conjecture as to what new marine aircraft shall fill the moorings at Rathmines and Port Moresby. Though Short "Sunderlands" were ordered some months ago and the first deliveries were supposed to have been made last September (which arrangement was thrown out of gear by the advent of the Hitlerian War) it is not by any means outside the bounds of possibility that, now the arms embargo section of the U.S.A. Neutrality Act has been passed into the discard, we may see some American flying-boats in local waters before we see the Sunderlands. And Consolidated flying-boats are very hot tips. In fact, in places where real fliers talk these things—not unimaginative political cloisterers—a shade of odds is given that the Yanks will have a long lead in representation here in Military flying-boats.

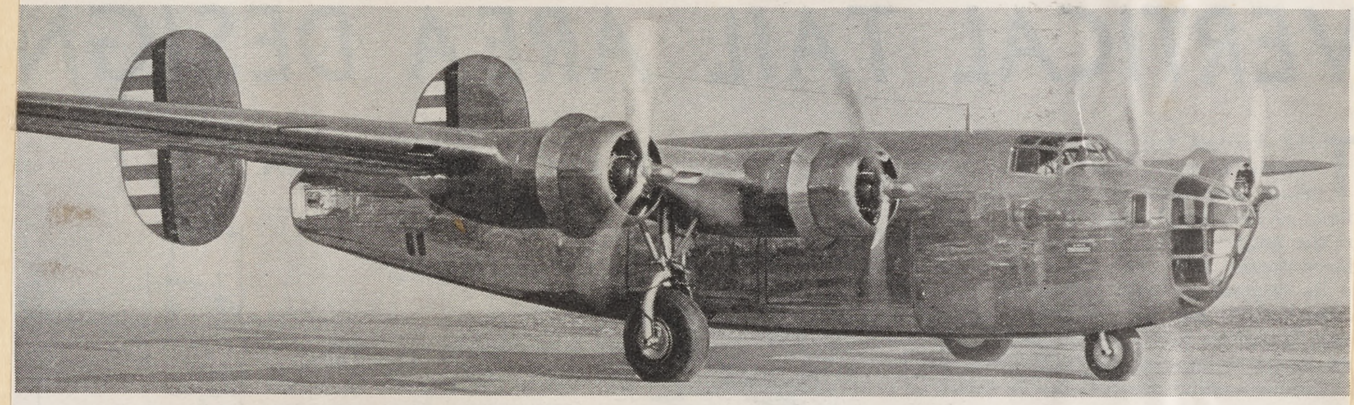


U. S. ARMY AIR CORPS XB-24 FOUR-ENGINED BOMBARDMENT AIRPLANE, BUILT BY CONSOLIDATED AIRCRAFT CORPORATION

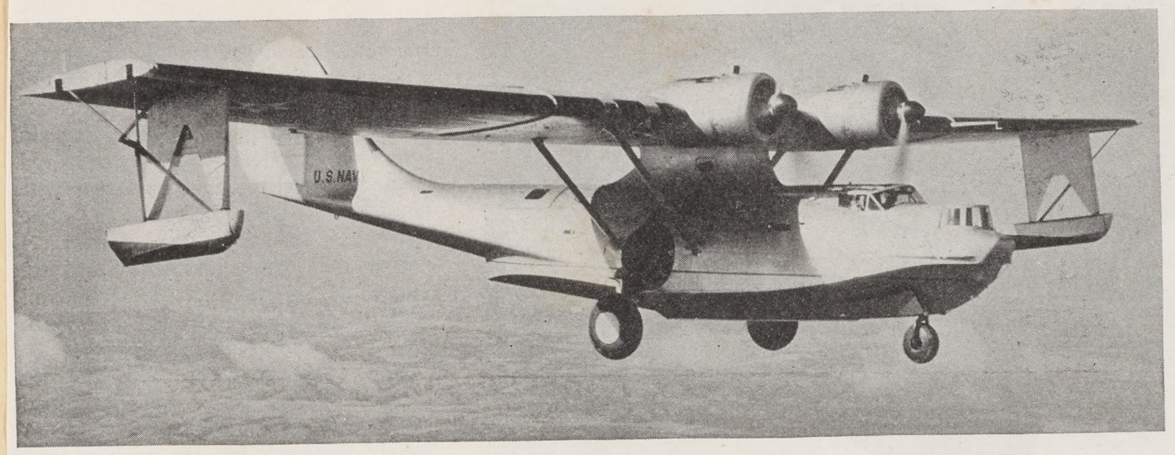
A High-Wing, All-Metal Airplane, Powered by Pratt & Whitney 18-Cylinder Twin-Row Radial Air-Cooled Engines, Each of 1,200 h-p. The Propellers are Hamilton Standard 3-Bladed Hydromatic Constant Speed Types, 12 Feet in Diameter. Gross Weight of Plane is About 40,000 Pounds; Wing Span, 110 Feet; Length of Fuselage, 64 Feet; Overall Height, 19 Feet. Tactical Requirements are for Crew of 6 to 9, Depending upon Mission. Speed More Than 300 m.p.h., Range About 3,000 Miles, Can Carry About Four Tons of Bombs

U.S. Air Services March, 1940

POPULAR AVIATION MAR. '40



Above is first exclusive photograph of four-engined Consolidated B-24 bomber for the U. S. Army Air Corps. The wing is the secret new airfoil first installed on the Consolidated Model 31 flying boat.



Flying Equipment

CONSOLIDATED Amphibian

THE latest achievement of the Consolidated Aircraft Corporation is the building of the world's largest amphibian, the Model 28-5A, or as designated by the Navy, the XPBY-5A. The new amphibian is basically the familiar Model 28 twin engine flying boat, better known by its Navy designation, PBY. The change was accomplished chiefly by the addition of a tricycle landing gear which is fully retractable. The side wheels and supporting mechanism, complete with oleo shock struts, retract into wells in the side of the hull. The nose wheel in the retracted position is completely closed over by automatically operated hatches so that no resistance to planing is encountered. All three wheels are operated by a central hydraulic power drive, which handles all the necessary operations in sequence automatically and both the extension and retraction of the gear is controlled by a single lever. Hydraulic pump power is obtained either from the main power plant or from an auxiliary engine, but hand operation is possible, if necessary.

The landing gear has a number of advantages in addition to the obvious one of greatly extending the scope of utility for the Model 28. For rough water taxiing the extended gear greatly assists in control by serving as a sea anchor. More engine power may be applied for short turns without undue acceleration, and turns on the water may be accomplished with far less skidding. Naturally, all danger of scraping the keel on the ramp is eliminated, and no beaching crew is required, for the ship can climb a ramp or beach under its own power. It may operate from sand beaches with no special ramps or facilities for handling.

Since the side wheels are above water when the ship rises on the step, and since automatic means are provided for expelling water from the closed bow wheel hatch before the plane is in the air, the flying trim remains unaffected. Repairs or routine servicing to the landing gear may be made with a minimum of trouble. The beaching gear lugs of the Model 28 have been retained, so that a standard beaching gear may be attached and the plane run out of water. This lifts the landing gear clear of the ground so that any servicing may be carried out.

AVIATION JAN. '40

Partners

NATIONAL WHIRLIGIG TRIB 3/12/40

American airplane manufacturers, aided by army-navy experts, were responsible for killing the scheme under which the British mission would have bought only three types of American planes. The idea was originally sold to the foreigners by Capt. H. E. Collins, of the treasury procurement department, and Glenn Martin.

Under their plan the British would have concentrated on the purchase of the Curtiss pursuit ship, the Martin light bomber and the Douglas attack bomber. These three companies would have skimmed the cream of foreign orders. Ten rival firms would have been reduced to making parts or accessories, or they would have become subcontractors for the three favored corporations. They would have had to break up their staffs of engineers and experts, and the American airplane industry would have suffered. Moreover, it would have meant a tremendous expansion of the Curtiss, Martin and Douglas plants, and therefore a more violent social, labor and economic dislocation when the boom blew up.

Hard-boiled army and navy men impressed this fact upon Lord Lothian, the British ambassador, and Sir Herbert Self, who has replaced Arthur Purvis as London's chief plane purchaser (Purvis henceforth will have charge of buying industrial materials, not military stuff). Lothian was told that the scheme would antagonize powerful interests here, weaken America's attempt to aid the allies with aviation reinforcement, and he belatedly saw the point.

Consolidated Seeks 450 Craftsmen From Seattle

In an effort to get 450 skilled aircraft workers, Donald Frye, Consolidated Aircraft Corp. personnel director, conferred yesterday with Seattle labor officials, International News service reported.

Consolidated authorities said Frye has been contacting labor unions throughout the U. S. to get skilled help for the new shops soon to be added to the local factory. Three thousand workers are to be added to the payroll between now and July 1. UNION 3/13/40

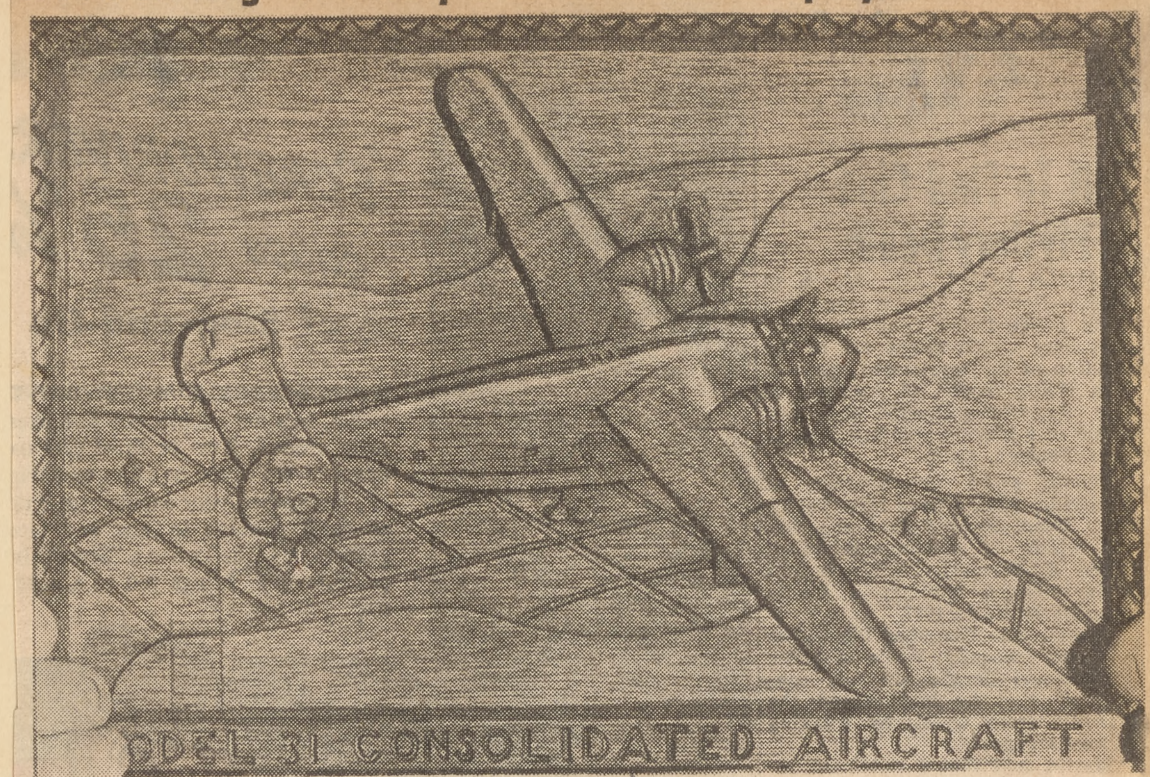
Seeking 450 Men For Consair Plant

Seeking 450 skilled airplane workers for the Consolidated Aircraft Corp., Donald Frye, personnel director, today conferred with Seattle union officials, The International News Service reported. He said the San Diego plant planned to hire 3000 more men by July 1.

TRIB 3/12/40

Wood Carving Hereditary Craft of Consair Employe

TRIB 3/12/40



Carved wood plaque of Consolidated Aircraft Corp.'s plane, Model 31, by Everett E. Jacobson.

WINNING RENOWN THROUGH WORK WITH AIRCRAFT

His great-grandfather was a wood carver in Gothenberg, Sweden. His grandfather, who came to the United States, was a carver and designed for the Pullman Car Co. His father, 13 years ago, won first prize in competition with 1100 contenders from all parts of the world in a display at the Metropolitan Museum of Art.

So, when Everett E. Jacobson, employed in the wood shop at Consolidated Aircraft Corp., became old enough to handle a knife, it was the thing for him to do—become a wood carver. Consolidator, monthly publication at the aircraft plant, devotes part of its "Wood Shop Chips" section, written by J. E. Hodgson, to Jacobson's wood carving ability.

Reproduces Tomb Objects

Jacobson carved designs to be reproduced in the Chrysler building, at New York City, and in the city hall at Denver. From 1931 to 1933 he made replicas of the objects discovered in the tomb of King Tut-Ank-Amen. His work at Consolidated is winning him renown in the aircraft field.

Commenting on the rarity of wood carvings, Hodgson, in his "Wood Shop Chips," says, "Wood carving is probably the oldest known handicraft and as such calls for a high degree of artistry and skill. In Europe, while a considerable amount of hand carving still is being done, in America, due to our high-speed technology it is almost unknown, except as a hobby or on articles designed to individual taste or requirement."

Jacobson's grandfather came to the United States to judge both wood and plaster carvings at the Chicago World's fair of 1893.

PLANE PLANT TO EXPAND

SAN DIEGO—A $1,050,000 permit to expand the Consolidated Aircraft Corp. plant to almost twice its present size was issued here by the city building's inspector's office.

Total cost of the new development, including equipment, is expected to approximate $2,000,000, plant officials have estimated.

It will involve the largest private construction activity here in many years.

Meanwhile, employment continued to soar at the factory, where giant Army and Navy bombers are being manufactured in a $40,000,000 backlog.

Of the 5400 aircraft workers on local payrolls, 4100 are employed by Consolidated.

Ryan Aeronautical Co. has 850 men and Solar Aircraft Co. 450

Today's issuance more than doubles the amount of building permits for a similar period in 1939.

AIRCRAFT NEWS 3/7/40

AIRCRAFT NEWS 3/7/40

Aircraft Corp. Backlog Soars

Consolidated Aircraft Corp. of San Diego, in releasing its annual report disclosed that the backlog of unfilled orders had reached an all-time peak of $49,000,000, a volume sufficient to keep the plant busy until midsummer of 1941.

This represents an increase in the backlog of nearly $8,000,000 since the first of this year, the unfilled orders at the close of 1939 having been $42,141,694. The company stated that during the past few months it had received contracts from foreign customers for a released version of the PBY ship, a two-engine long-range navy patrol bomber.

system is provided to supply Butane gas to the boilers, heat treat equipment, and furnaces in emergency.

A new salt bath furnace was installed in the heat treat department, with a capacity to heat treat 2000 lbs. of aluminum alloy parts per hour in a salt pot 21 ft. long and requiring approximately 18,000 lbs. of potassium nitrate and the same amount of sodium nitrate for its initial charge.

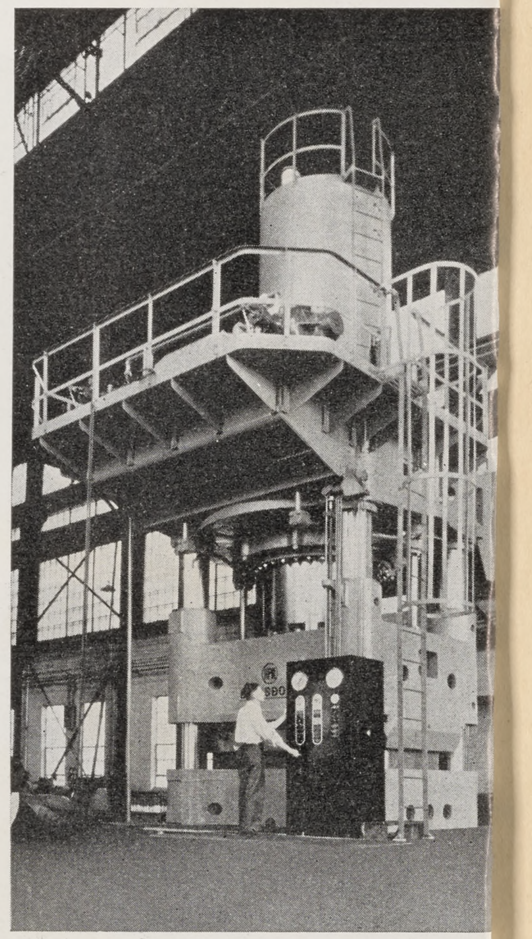
Additional facilities provided in the paint shop include a huge paint booth for hull finishing. Measuring 30 ft. long, 20 ft. wide, and 18 ft. high, this booth has complete lighting and ventilating facilities. Two open front booths for miscellaneous spray work are 10 ft. high, 8 ft. deep, and 30 and 65 feet long respectively. Air is pumped through the paint shop at the rate of 203,000 cu. ft. per minute by means of nine exhaust fans requiring 62½ motor horsepower.

Major new equipment item, and the center of greatest interest in connection with the modernization program, is the battery of presses and drop hammers installed. This includes a 4500 ton Birdsboro hydraulic press, a 1000 ton Hamilton double crank punch press, four Chambersburg air operated drop hammers, and four new rope lift type drop hammers of Consolidated design and manufacture. The Birdsboro-HPM press has a 48 in. working stroke, a platen area 140 by 118 in., a total weight of 610,000 lbs. and a foundation weight of 225,000 lbs. The air operated drop hammers vary in size from 101,000 pounds gross weight down to 33,000 lbs. The big hammer has a stroke of 72 in. and platen area 48 by 96 in. It can accommodate punches, or dies, up to 50,000 lbs. in weight. The foundation weight, for the inertia block alone, amounts to 415,000 lbs.

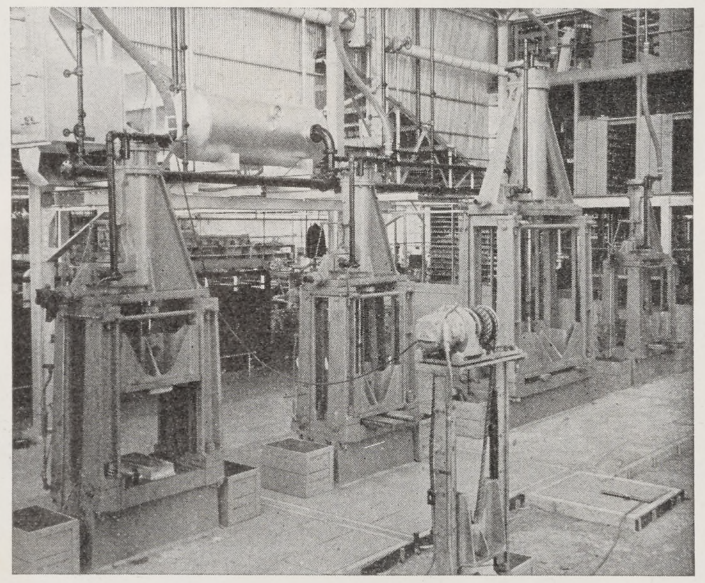
Installation of these drop hammers occasioned unusual engineering difficulties due to the filled ground on which the plant is built, which we referred to earlier. Since the hammers were to be installed in the center of the main factory and quite close to the offices, it was considered desirable to minimize if not eliminate the pounding action usually associated with operation of drop hammers. Also, due to the unsatisfactory bearing qualities of the sub-soil, it was feared that such a heavy drop hammer would pound its foundation, no matter how massive, right down through the floor and out of sight. Load bearing and vibration transmission problems were solved simultaneously by provision of an ingenious "earthquake proof" mounting. Steel piles of "H" section were first driven 60 ft. into the sub-soil. As the roof clearance was only 30 ft. it was necessary to drive these piles in increments, welding on short sections as the work proceeded. A heavy concrete foundation "box" was constructed on top of these pilings, with the top of the box open and flush with the factory floor. Inside the
inertia block was constructed
pended from steel beams flo
Korfund coil steel springs s
on the foundation box. The d
mer, mounted on this inerti
transmits its shock to the b
sulting in a maximum deflecti
steel springs of about ½ in., a
nating all shock to the main
tion box or the building prop

Aircraft jigs and fixtures
ways represented a special
Quantities have rarely justi
velopment of permanent jig
durable steel fixtures and
blocks. But wood jig parts,
satisfactory for assembly o
planes, have not been satisfac
production in quantities of
more, due to cracking,
swelling, wear, etc. Consolid
solved this problem by meltin
aluminum alloy scrap and c
into standard shapes and sizes
for use in jig and fixture work
very large jig parts are nee
location of wing to fuselage
single member can be con
cast in the alloy metal. Th
is relatively easy to machine

(*Turn to page 102*)



This Birdsboro — HPM press has a 48 in. working stroke, a platen area 140 x 118 in. and a total weight of 610,000 lb.



These new penumatic drop hammers are mounted on inertia blocks supported on coil springs and specially driven steel piles.

Consolidated

(*Continued from page 46*)

with the net result that at little more than the cost of wood parts the production line is fitted with metal fixtures and jig parts that are every bit as satisfactory as steel for the limited runs produced on them.

As metal has supplanted other materials in airplane construction the machine shop has become the heart of aircraft production. At Consolidated 85 per cent of all machine work is performed in the company's own machine shops. Tool room and production machine shop work more or less interchangeably, the tool room shifting over to production machine work as tooling is completed for a major manufacturing run on a single model. So important is the elimination of lost time between design and delivery that production of a new type is usually started through the machine shop simultaneously with tool and fixture orders that go to the tool shop. As special fixtures and jigs become available they are placed in the production line, but production does not wait on them.

Tool room equipment ranges in size and character from the huge Cleveland planer with 30-ft. bed to the Societe Genevoise (Swiss) jig borer used on precision jig work. Most blanking dies are made on the DoAll Metalmaster from ⅛ in. crucible steel sheet, with a hardened punch ⅛th in. thick, at a cost one-third that of the conventional blanking die. It is economical to make such dies for production runs as small as thirty parts. Other special tool room equipment includes a Pratt & Whitney surface grinder, a Fosdick Radial for large jig and fixture work, and the usual battery of lathes, mills, shapers, etc.

Sheet metal shop equipment includes a Cincinnati brake with a 10 ft. throat, which may be extended to 15 ft. by end brackets used in connection with light alloy work; and a Cincinnati shear with a 14 ft. throat, used for trimming and external profiling of large sheet metal blanks. A battery of Niagara punch presses handles a multitude of blanking, forming, drawing, joggling, notching, perforating, nipping, dimpling, crimping, slotting, and burnishing operations, and even some small shear work. In order to get maximum use of the punch presses an ingenious system of dies has been developed, including spring die sets, magnetic die holders, notching and slotting dies held in special die sets, and a fascinating technique in handling joggling dies. Joggling, offsetting, or crimping, is of special importance in joggling or off-setting plate, sheet, or extruded or drawn sections in order properly to assemble certain complex fittings in an aircraft structure. A clever system of joggle dies, using a sliding shoe and return springs, serves to convert the vertical motion of the punch press into a desired transverse and angular motion to achieve the various degrees of joggle required.

---

ministrative staff officer, Flight-Lieutenant N. Mulroney.

No. 1 flying training school, Point Cook: Commanding officer, Wing-Commander J. H. Summers.

No. 2 aircraft depot, Richmond: Commanding officer, Squadron-Leader H. B. Seekamp.

R.A.A.F. Station, Rathmines: Acting station commander, Flight-Lieut. S. A. C. Campbell.

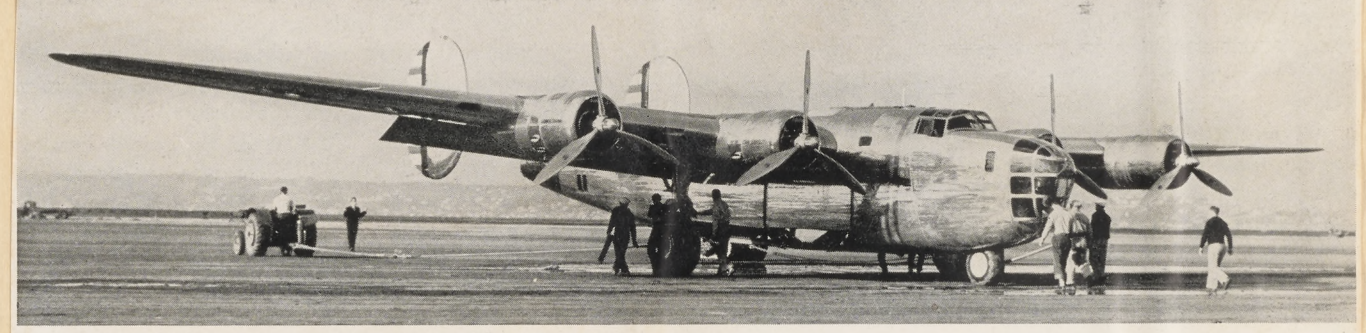
No. 6 Squadron: Commanding officer, Squadron-Leader P. G. Heffernan.

No. 2 Squadron: Commanding officer, Flight-Lieut. I. D. McLachlan.

No. 1 Squadron: Commanding officer, Flight-Lieut. F. W. Thomas.

EQUIPMENT?

It becomes more and more a matter of conjecture as to what new marine aircraft shall fill the moorings at Rathmines and Port Moresby. Though Short "Sunderlands" were ordered some months ago and the first deliveries were supposed to have been made last September (which arrangement was thrown out of gear by the advent of the Hitlerian War) it is not by any means outside the bounds of possibility that, now the arms embargo section of the U.S.A. Neutrality Act has been passed into the discard, we may see some American flying-boats in local waters before we see the Sunderlands. And Consolidated flying-boats are very hot tips. In fact, in places where real fliers talk these things—not unimaginative political cloisterers—a shade of odds is given that the Yanks will have a long lead in representation here in Military flying-boats.

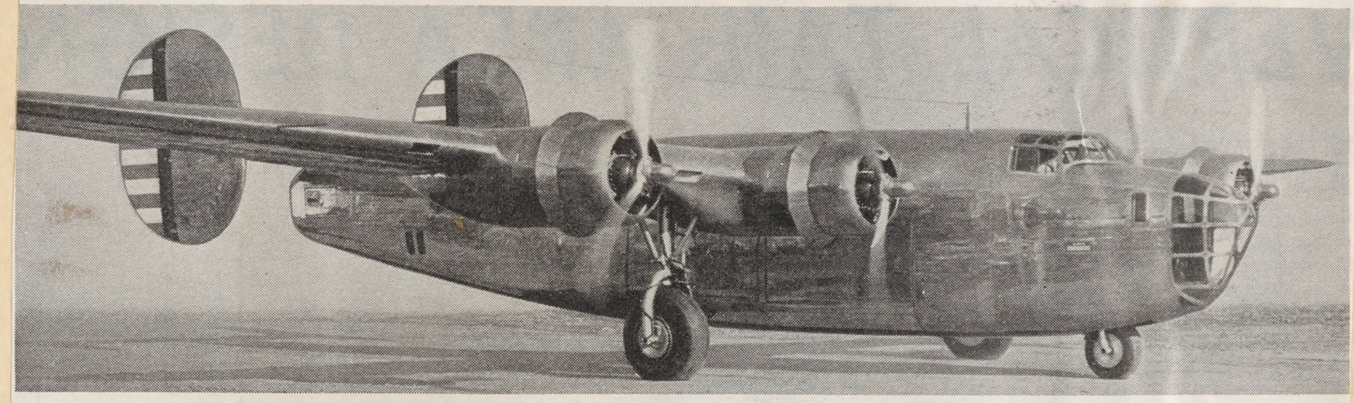


U. S. ARMY AIR CORPS XB-24 FOUR-ENGINED BOMBARDMENT AIRPLANE, BUILT BY CONSOLIDATED AIRCRAFT CORPORATION

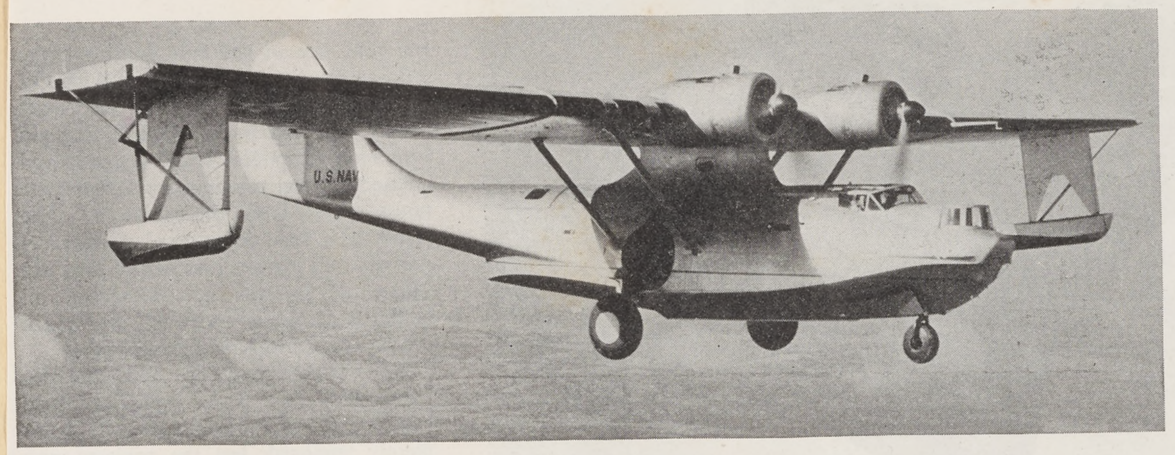
A High-Wing, All-Metal Airplane, Powered by Pratt & Whitney 18-Cylinder Twin-Row Radial Air-Cooled Engines, Each of 1,200 h-p. The Propellers are Hamilton Standard 3-Bladed Hydromatic Constant Speed Types, 12 Feet in Diameter. Gross Weight of Plane is About 40,000 Pounds; Wing Span, 110 Feet; Length of Fuselage, 64 Feet; Overall Height, 19 Feet. Tactical Requirements are for Crew of 6 to 9, Depending upon Mission. Speed More Than 300 m.p.h., Range About 3,000 Miles, Can Carry About Four Tons of Bombs

U.S. Air Services March, 1940

POPULAR AVIATION MAR. '40



Above is first exclusive photograph of four-engined Consolidated B-24 bomber for the U. S. Army Air Corps. The wing is the secret new airfoil first installed on the Consolidated Model 31 flying boat.



Flying Equipment

CONSOLIDATED Amphibian

THE latest achievement of the Consolidated Aircraft Corporation is the building of the world's largest amphibian, the Model 28-5A, or as designated by the Navy, the XPBY-5A. The new amphibian is basically the familiar Model 28 twin engine flying boat, better known by its Navy designation, PBY. The change was accomplished chiefly by the addition of a tricycle landing gear which is fully retractable. The side wheels and supporting mechanism, complete with oleo shock struts, retract into wells in the side of the hull. The nose wheel in the retracted position is completely closed over by automatically operated hatches so that no resistance to planing is encountered. All three wheels are operated by a central hydraulic power drive, which handles all the necessary operations in sequence automatically and both the extension and retraction of the gear is controlled by a single lever. Hydraulic pump power is obtained either from the main power plant or from an auxiliary engine, but hand operation is possible, if necessary.

The landing gear has a number of advantages in addition to the obvious one of greatly extending the scope of utility for the Model 28. For rough water taxiing the extended gear greatly assists in control by serving as a sea anchor. More engine power may be applied for short turns without undue acceleration, and turns on the water may be accomplished with far less skidding. Naturally, all danger of scraping the keel on the ramp is eliminated, and no beaching crew is required, for the ship can climb a ramp or beach under its own power. It may operate from sand beaches with no special ramps or facilities for handling.

Since the side wheels are above water when the ship rises on the step, and since automatic means are provided for expelling water from the closed bow wheel hatch before the plane is in the air, the flying trim remains unaffected. Repairs or routine servicing to the landing gear may be made with a minimum of trouble. The beaching gear lugs of the Model 28 have been retained, so that a standard beaching gear may be attached and the plane run out of water. This lifts the landing gear clear of the ground so that any servicing may be carried out.

AVIATION JAN. '40

NATIONAL WHIRLIGIG
TRIB 3/12/40

Partners

American airplane manufacturers, aided by army-navy experts, were responsible for killing the scheme under which the British mission would have bought only three types of American planes. The idea was originally sold to the foreigners by Capt. H. E. Collins, of the treasury procurement department, and Glenn Martin.

Under their plan the British would have concentrated on the purchase of the Curtiss pursuit ship, the Martin light bomber and the Douglas attack bomber. These three companies would have skimmed the cream of foreign orders. Ten rival firms would have been reduced to making parts or accessories, or they would have become subcontractors for the three favored corporations. They would have had to break up their staffs of engineers and experts, and the American airplane industry would have suffered. Moreover, it would have meant a tremendous expansion of the Curtiss, Martin and Douglas plants, and therefore a more violent social, labor and economic dislocation when the boom blew up.

Hard-boiled army and navy men impressed this fact upon Lord Lothian, the British ambassador, and Sir Herbert Self, who has replaced Arthur Purvis as London's chief plane purchaser (Purvis henceforth will have charge of buying industrial materials, not military stuff). Lothian was told that the scheme would antagonize powerful interests here, weaken America's attempt to aid the allies with aviation reinforcement, and he belatedly saw the point.

Consolidated Seeks 450 Craftsmen From Seattle

In an effort to get 450 skilled aircraft workers, Donald Frye, Consolidated Aircraft Corp. personnel director, conferred yesterday with Seattle labor officials, International News service reported.

Consolidated authorities said Frye has been contacting labor unions throughout the U. S. to get skilled help for the new shops soon to be added to the local factory. Three thousand workers are to be added to the payroll between now and July 1.

UNION 3/13/40

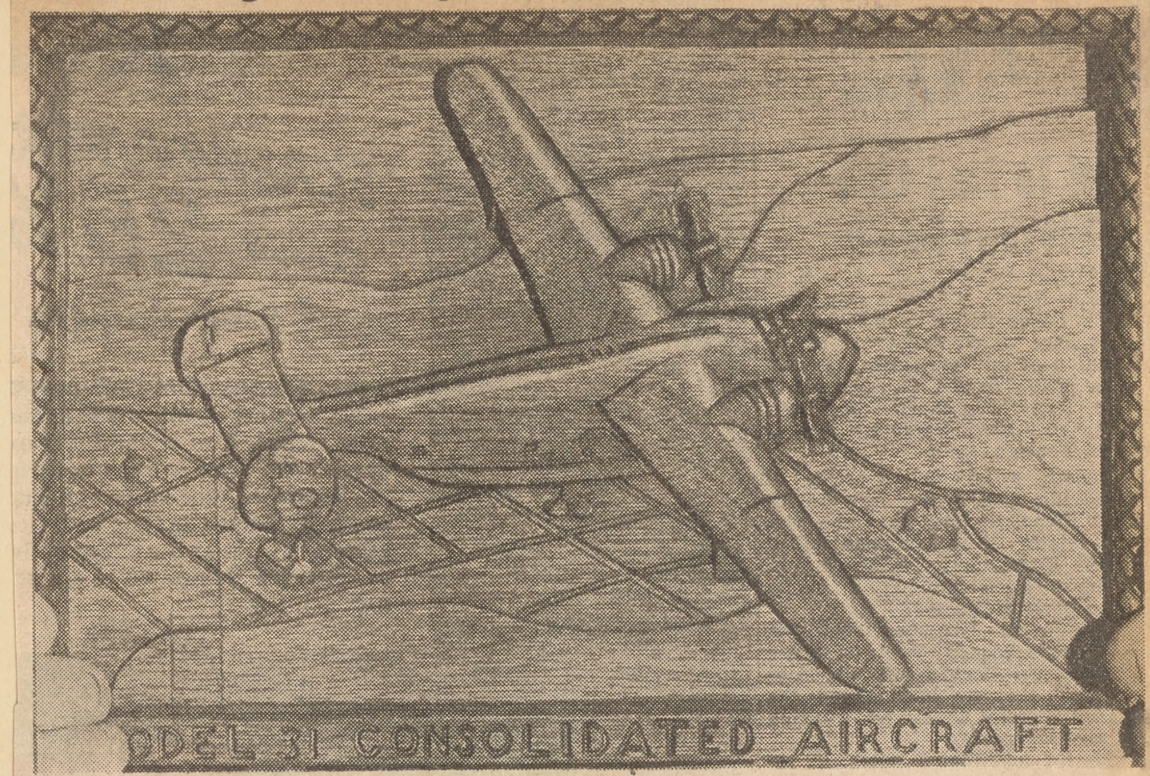
Seeking 450 Men For Consair Plant

Seeking 450 skilled airplane workers for the Consolidated Aircraft Corp., Donald Frye, personnel director, today conferred with Seattle union officials, The International News Service reported. He said the San Diego plant planned to hire 3000 more men by July 1.

TRIB 3/12/40

Wood Carving Hereditary Craft of Consair Employe

TRIB 3/12/40



Carved wood plaque of Consolidated Aircraft Corp.'s plane, Model 31, by Everett E. Jacobson.

WINNING RENOWN THROUGH WORK WITH AIRCRAFT

His great-grandfather was a wood carver in Gothenberg, Sweden. His grandfather, who came to the United States, was a carver and designed for the Pullman Car Co. His father, 13 years ago, won first prize in competition with 1100 contenders from all parts of the world in a display at the Metropolitan Museum of Art.

So, when Everett E. Jacobson, employed in the wood shop at Consolidated Aircraft Corp., became old enough to handle a knife, it was the thing for him to do—become a wood carver. Consolidator, monthly publication at the aircraft plant, devotes part of its "Wood Shop Chips" section, written by J. E. Hodgson, to Jacobson's wood carving ability.

Reproduces Tomb Objects

Jacobson carved designs to be reproduced in the Chrysler building, at New York City, and in the city hall at Denver. From 1931 to 1933 he made replicas of the objects discovered in the tomb of King Tut-Ank-Amen. His work at Consolidated is winning him renown in the aircraft field.

Commenting on the rarity of wood carvings, Hodgson, in his "Wood Shop Chips," says, "Wood carving is probably the oldest known handicraft and as such calls for a high degree of artistry and skill. In Europe, while a considerable amount of hand carving still is being done, in America, due to our high-speed technology it is almost unknown, except as a hobby or on articles designed to individual taste or requirement."

Jacobson's grandfather came to the United States to judge both wood and plaster carvings at the Chicago World's fair of 1893.

PLANE PLANT TO EXPAND

SAN DIEGO—A $1,050,000 permit to expand the Consolidated Aircraft Corp. plant to almost twice its present size was issued here by the city building's inspector's office.

Total cost of the new development, including equipment, is expected to approximate $2,000,000, plant officials have estimated.

It will involve the largest private construction activity here in many years.

Meanwhile, employment continued to soar at the factory, where giant Army and Navy bombers are being manufactured in a $40,000,000 backlog.

Of the 5400 aircraft workers on local payrolls, 4100 are employed by Consolidated.

Ryan Aeronautical Co. has 850 men and Solar Aircraft Co. 450

Today's issuance more than doubles the amount of building permits for a similar period in 1939.

AIRCRAFT NEWS 3/7/40

AIRCRAFT NEWS 3/7/40

Aircraft Corp. Backlog Soars

Consolidated Aircraft Corp. of San Diego, in releasing its annual report disclosed that the backlog of unfilled orders had reached an all-time peak of $49,000,000, a volume sufficient to keep the plant busy until midsummer of 1941.

This represents an increase in the backlog of nearly $8,000,000 since the first of this year, the unfilled orders at the close of 1939 having been $42,141,694. The company stated that during the past few months it had received contracts from foreign customers for a released version of the PBY ship, a two-engine long-range navy patrol bomber.

Remarkable BOAT

By
HARold KEEN

The U. S. Navy has about 225 PBY's and is expected to order more in the form of the latest PBY-5

THE world's most remarkable flying boat is an American product—the creation of an American concern's inventive genius, engineering skill and manufacturing efficiency. Snow and ice fields of the Arctic, the uncharted airways over the Indian Ocean, the peaks and plains of America, and the brooding majesty of a mountain-imprisoned lake 11,500 feet above the sea in an equatorial wilderness have known this rugged lord of the skies.

Little more than four years have elapsed since the Consolidated PBY-type seaplane emerged from the experimental stage and stood acceptable to the United States Navy. In that period, its utility as a scouting instrument has been so dramatically demonstrated that this country now can be said to possess a chain of outposts along a defense frontier 2,000 miles from its own shores or those of any of its possessions.

Outposts in the ocean? Yes, they're out there and none the less effective because they don't *seem* to exist. For, if the time comes that they must be occupied, whole fleets of PBY's will hover above the outermost line of defense to spot the enemy and will range the trackless thousands of square miles to the rear, back toward the visible bases on land.

These 13-ton craft won't have to be sent out merely to locate and then run for cover. With giant bombs or torpedoes secured to the 104-foot wing, they can deliver mighty deadly wallops. Well aware of the versatility, the reliable performance and the longevity of the PBY, the Navy has in operation more than 200 and before this is published will have ordered a substantial increase to this long-range sky armada. The PBY, after a thorough, extensive trial, has been adopted as the keystone of American aerial intelligence, to which is entrusted the obtaining of information on hostile Fleet movements long before enemy warships could be seen from American waterfronts. With U. S. naval strategy essentially that of engaging the enemy many miles from our territory, the role of the PBY has become a vital one, indeed.

Non-stop mass flights across great oceans and between far-distant bases have been made to appear so simple by the Navy's present-day patrol bombers that it is difficult to realize the first of such feats was accomplished only six years ago. In January, 1934, half a dozen P2Y's, sesquiplane predecessors of the PBY, commanded by Lieut.-Comm. Knefler McGinnis, took off from San Francisco harbor in an event of epochal importance. They were headed for Pearl Harbor, Hawaii—an unprecedented attempt which was authorized only after the Navy had probed completely the planes' long-range capabilities. Material failure could prove fatal. No stopping-off points existed between San Francisco and Hawaii. Faith in the P2Y's was rewarded and a new era in Naval aviation launched when the intrepid flyers landed at Pearl Harbor 24 hours, 56 minutes later, without mishap or untoward incident. The big flying boat had come of age. The P2Y now was in demand, not only here but abroad. They were sold to Colombia, Argentina and even one to Japan.

I. M. Laddon

H. L. Mandolf

S. D. Planes Released For Sale to Allies; Hint 9 Million Order

TRIB 3-14-40

By HAROLD OSBORNE

The drone of bombers over riddled Poland, which led to declaration of war by the allies, echoed at San Diego today with an announcement by Consolidated Aircraft Corp. officials confirming Washington, D. C., reports that Consolidated PBY-type planes have been released for the allies use. The "blitzkrieg" of last September has resulted in "substantial orders from abroad" being received by Consolidated, it was reported.

First official word that Consolidated planes were contemplated for sale to certain European powers came in a United Press dispatch quoting Rear Adm. John H. Towers, chief of the navy

(Continued on Page 4A, Col. 3)

Release S. D. Planes For Sale to Allies

CONTINUED FROM PAGE ONE

bureau of aeronautics, as saying that "four types of navy planes have been or will be released to the allies by the joint army-navy aeronautical board." He said they were the Vought FB2U and the twin-engined Consolidated PBY flying boats, the Brewster fighter, and Grumman monoplane fighter, all of which have been stripped of secret equipment, such as bomb sights.

Silent on Details

A Consolidated spokesman confirmed the statement that the firm here has received from the government a release for export sale of the PBY planes, and said "we are well along in the early stages of construction." He declined to announce the number of planes being built, for what nation they were consigned, or the price of the contract, which is believed to be nearly $9,000,000.

The "guess" on the contract price for the foreign order is based on the annual report of Consolidated, released last week, which revealed the firm has a backlog of unfilled orders totaling $49,000,000, instead of the $40,000,000 previously announced. While Consair officials refused to comment on the $9,000,000, authoritative sources said it involved orders by a foreign nation or nations.

Flight Records Set

The PBY-type planes are those used by the American navy as patrol bombers, and have established many group distance flight records, notably from San Diego to Panama and Hawaii, and from Hawaii to the Philippines. Soon after delivery of the first plane of the PBY series a few years ago it established a new international distance record of 3443 miles in a flight from Coco Solo, C. Z., to Alameda. Subsequent refinements have extended the range beyond 4000 miles, and in 1937-38 alone the navy made three "routine delivery flights" of 42 PBY planes from here to Hawaii, a distance of more than 2500 miles, and two "routine deliveries" of 26 planes from here to Coco Solo, 3000 miles. Last year the planes flew from San Diego to the Caribbean sea for United States fleet exercises.

The PBY's are the world's longest-range two-engine flying boats, and their speed exceeds 200 miles an hour. One PBY, the Guba, owned by Richard Archbold, aerial scientist, flew around the world after being used 10 months in New Guinea scientific exploration operations. A commercial PBY was flown by Sir Hubert Wilkins over 19,000 miles of Arctic wastes under the most adverse weather conditions, in search of the lost Russian transpolar fliers headed by Sigismund Leavaneffsky. Ability of the planes to "take it" were demonstrated in special single-engine take-off tests, which proved it was possible for a PBY to take off with only one engine with sufficient fuel to continue flying a distance of more than 1300 miles. Consolidated officials said it is believed this feat is unequalled in flying boat history.

Effect of the allied order for the planes, coming after $40,000,000 in American army and navy planes had been placed with Consolidated, is reflected in increased employment. Maj. R. H. Fleet, Consair head, said in the annual report that 4300 are working at the plant in three shifts, and that approximately 100 men a week are being added.

PBY statistics show a maximum range of 4200 miles, a service ceiling of more than 29,000 feet, the ability to climb to 15,000 feet in 13.4 minutes, and full speed at 12,000 feet, 194 miles an hour.

Steel Arrives For Consair's New Buildings

UNION 3-15-40

By HOWARD MORIN

Laden to the plimsoll mark with steel for the Consolidated Aircraft Co.'s new buildings, canned goods and general merchandise for other Pacific coast ports, American-Hawaiian line steamer American will dock at the B st. pier tonight from Baltimore and Philadelphia. The fabricated steel is but part of shipments arriving by rail and water from Pennsylvania steel mills for Consolidated's expansion building program.

The Quaker line will have two intercoastal steamers in port over the week-end. Westbound, the San Rafael is due tomorrow from eastern ports with 350 tons local cargo. The Peter Kerr is to berth at B st. pier Sunday to load 350 tons kelp meal, canned goods and beans for eastern markets.

UNION 3-15-40

Foundations Laid For Navy Buildings

Consolidated Aircraft Co. officials announced yesterday that foundations for the group of new buildings, which will virtually double capacity of the plant, have been completed.

Construction of the addition to the experimental building has started, and steel rapidly is being delivered for the other structures. All of the new structures will be in use by June 1.

Officials said that authority has been received from the government to export the company's PBY-type planes, of which a number already has been sold to foreign governments.

ROMEIKE & CURTICE LTD.
The Press Clipping Bureau
Consolidated 35 Shoe Lane Air
LONDON, E.C.4
Telephone: Central 2781

EXTRACT FROM
FLIGHT
The First Aero Weekly in the World
EVERY THURSDAY 6d.
Flight Publishing Co. Ltd.
Dorset House, Stamford Street, London, S.E.1

DATE 29 FEB 1940

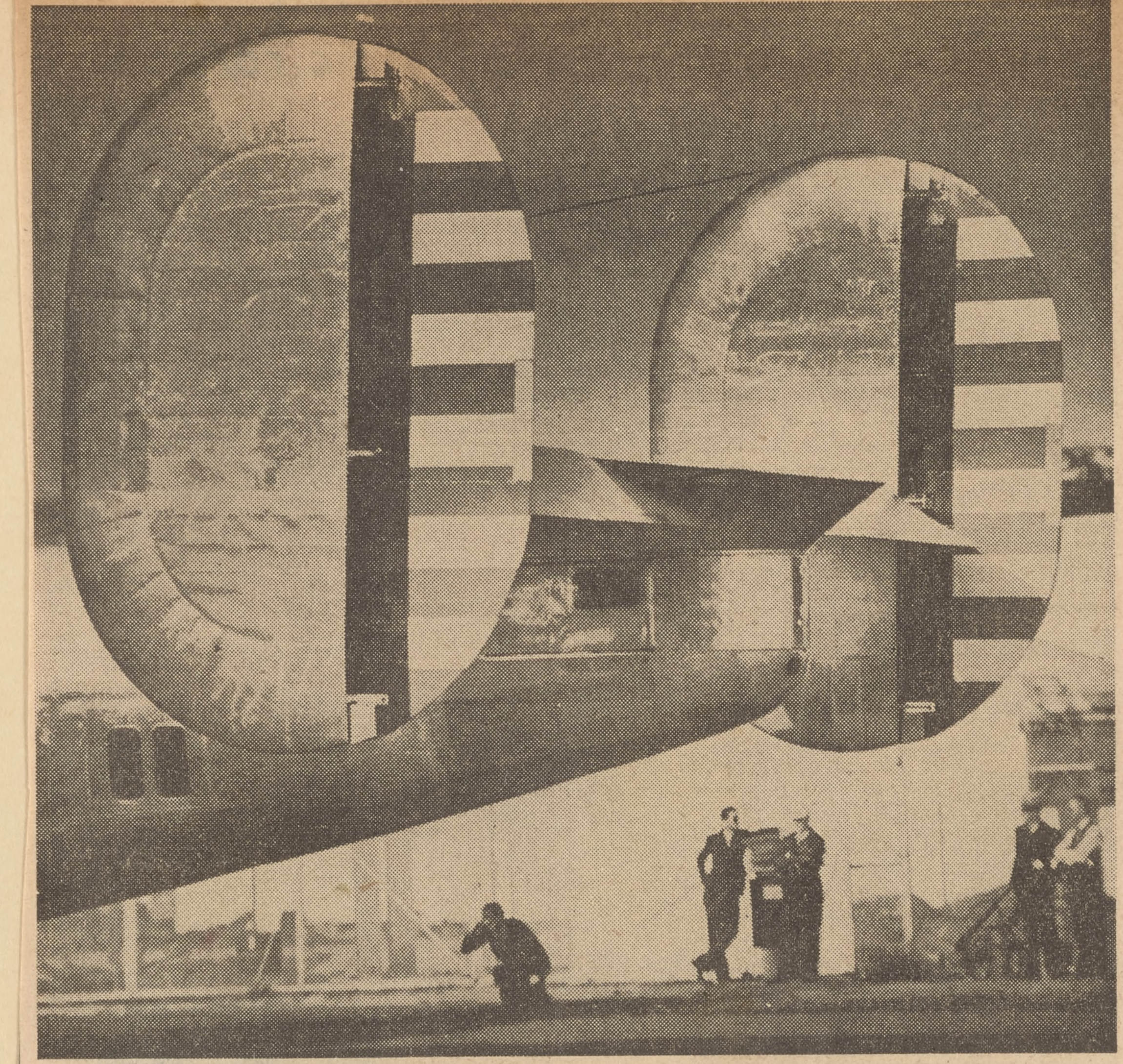
Consolidated Factory Expansion

ANNOUNCEMENT was made by the Navy Department on December 20 that the Consolidated Aircraft Corporation had been awarded a contract for $20,016,699. This is the largest single order for aeroplanes ever placed by the United States Government, and it increased the backlog of Consolidated to over $40,000,000. With work on other contracts occupying most of the production capacity, the new record order has made it necessary for the company to add new plant facilities to meet the deliveries required by the contract.

The building expansion will aggregate approximately 396,000 sq. ft., or an increase in the present area of 87 per cent. The largest single area to be roofed is the new final assembly building measuring 360 feet by 720 feet. This has a clear span of 120 feet and a clearance from floor to roof truss bottoms of 36 feet. In addition to the buildings, all factory yard areas will be paved with asphaltic concrete. These areas, due to the mild southern Californian climate, can be used virtually the entire year round for final assembly operations.

MAMMOTH ARMY WARBIRD DWARFS HUMANS

UNION 3-17-40



The huge size of the Consolidated-built new army bomber XB-24 is shown by the height of the two rudders. The plane, soon to be flown to Dayton, O., for final army tests, weighs 24 tons, carries a crew of nine and can fly 3000 miles with four tons of bombs.

* * *

THREE S. D. AIRCRAFT PLANTS MAY BE FORCED TO EXPAND

Business Volume Biggest in History; Foreign Orders Boost Local Backlogs

By HOWARD MORIN

San Diego's aircraft manufacturers, working at top speed on orders exceeding $50,000,000, may have to continue their expansion program.

The three Lindbergh field plants, Consolidated, Ryan and Solar, whose total personnel by midsummer will exceed 9000, will be will be vitally affected by the action of the British and French governments in purchasing nearly a billion dollars' worth of new American warplanes.

ORDERS MAY DOUBLE

Consolidated Aircraft Corp., whose backlog of foreign and domestic orders is the largest in the company's history, is negotiating with the British and French purchasing commission, authorities said. Consolidated's current foreign orders for $9,000,000 in planes and spare parts is expected to be doubled or tripled as a result of negotiations under way.

The Ryan and Solar plants probably will be called upon to manufacture special equipment for the 8000 planes which the French and British are planning to have built in American aircraft factories.

HUGE BAGKLOG

The American aircraft industry consists of 45 plane and 13 engine manufacturing plants. Of these 23 plane and nine engine plants are working on military orders. According to the aeronautical chamber of commerce, their current backlog totals $500,000,000.

Despite the tremendous expansion program which has resulted in doubling the facilities of San Diego's aircraft factories, American plane plants occupy a relatively unimportant place in the nation's industrial structure. Sixty thousand persons are on aircraft shop payrolls compared to 600,000 on automotive plant and related industry payrolls.

Since President Roosevelt proclaimed a state of "limited national emergency," the secrecy that has surrounded the aircraft manufacturing industry is equaled only by that of shipyards building new warships for the navy. Few industries have as many government-imposed restrictions. The factories are honeycombed with military and navy inspectors and government agents. Yet no other industry is so fearful of the results of over-expansion, a fear that has dictated extreme caution in adding to its backlog.

SET FOR SLUMP

Local aircraft manufacturers are keenly alive to the fact there will be a slump at the end of the war, but they are taking extraordinary precautions to avoid major lay-offs when this time comes. They are attuned primarily to the growing needs of American aviation, military, navy and commercial, and only in a limited way to foreign markets. They say emphatically that the three local plants are not "war babies." In fact they are anything but that. They were operating on a substantial basis long

(Continued on Page 2-A, Col. 3)

Business Volume May Force Plane Plant Expansion

(Continued from Page 1)

before the allies and Germany went to war.

To legislation establishing airlines which buy from aircraft and aircraft engine makers, and to millions of dollars in orders from the American armed forces over a long period is attributed the present prosperity of the industry, and particularly the three local plants.

EXPANSION PRE-ARRANGED

Lindbergh field plane manufacturers explain that long before orders from foreign governments began to pour in after the war started, plans had been perfected for plant expansion. Leases for additional tidelands to meet increased building programs were sought and obtained from the harbor department. The need for additional shop and assembly space became apparent when Americans, in constantly increasing numbers, began taking to the air.

A striking example of this is the official government announcement that commercial and military planes worth $40,000,000 are produced each month from American factories. By mid-June it is estimated the monthly productions will be valued at $55,000,000.

On domestic commercial and on foreign commercial and military orders, profits of manufacturers are limited to 12 percent under the Vinson-Trammell act when dealing with the U. S. government, and only by their shrewdness when doing business with foreign buyers. Nevertheless the government maintains an effective check on foreign shipments by permitting only certain types to be exported.

FUTURE CONSIDERED

Because the prosperity of the industry depends fundamentally on decisions of many governmental agencies and congressional appropriations, most manufacturers are extremely chary of expanding their plants unless they are reasonably sure of future orders that are not dependent primarily on continuation of the European war.

In line with this policy San Diego's aircraft factories are exceedingly fortunate, as less than $10,000,000 of the total $50,000,000 backlog is for foreign contracted planes.

Less than 15 years ago San Diego's aircraft industry was confined to manufacturing and flying operations of one company.

Today the industry's payroll runs into millions of dollars annually and planes are produced that literally traverse the world's skyways. Backlogs are building up. And there is every indication they will continue, officials say, for transportation by air is getting safer, swifter and more exhilarating with every new model produced by American engineers.

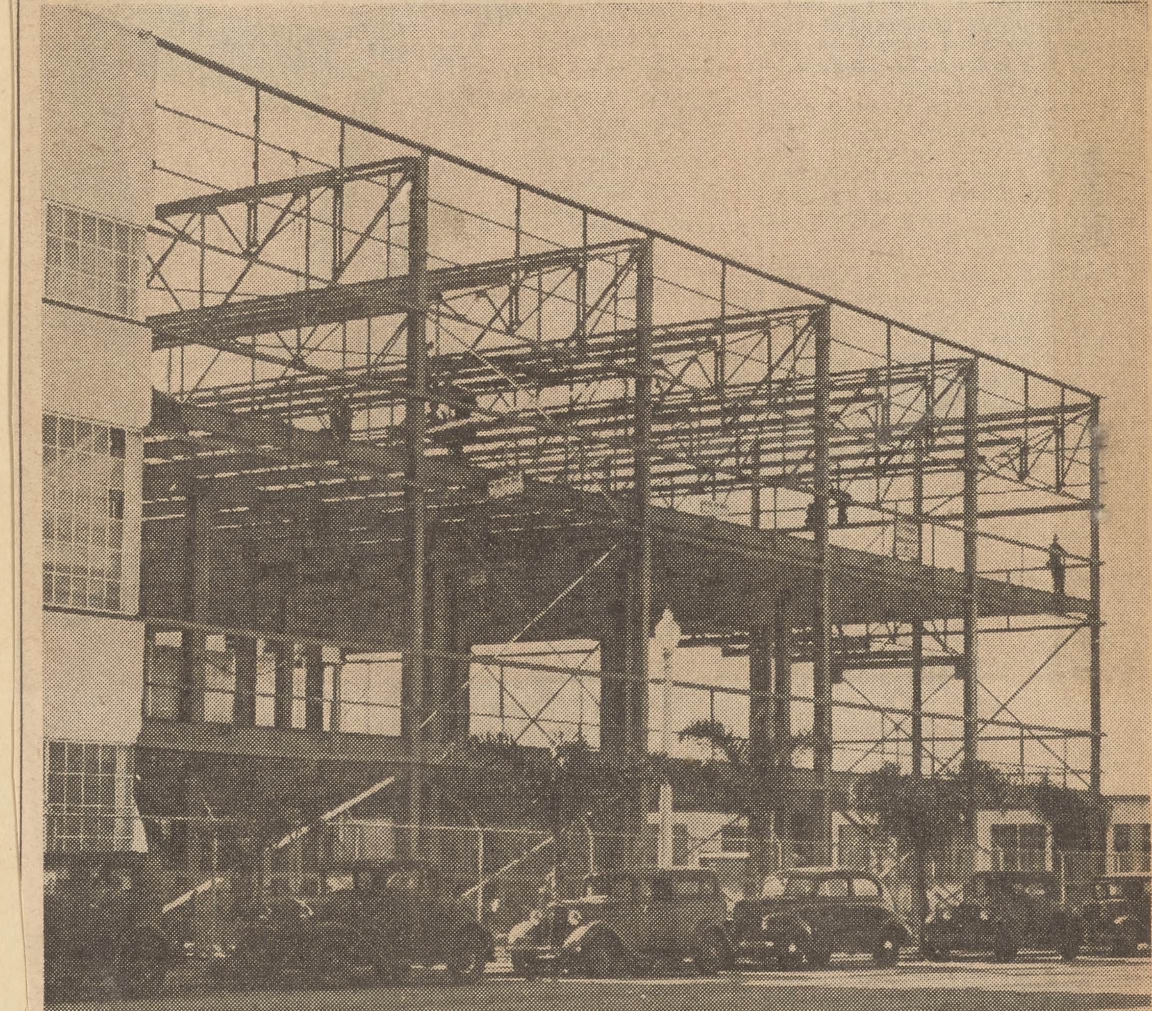
UNION 3-17-40

GROUP DISCUSSES NEEDS OF CONSERVATION CORPS

Educators, industrialists and CCC officials at an educational conference here included (seated, left to right) William P. Mayer, outdoors relief superintendent; Mrs. Ada York Allen, county schools superintendent; Harry Webster, CCC soliciting aid; (standing, left to right) Dean A. G. Peterson, State college; Dayton E. Jones, state superintendent, CCC selecting; John Waller, district education adviser; J. H. Waterbury, assistant personnel superintendent, Consolidated Aircraft Corp., and Raymond H. Hinkel, work relief superintendent.

Consair's Experimental Building Rapidly Taking Form

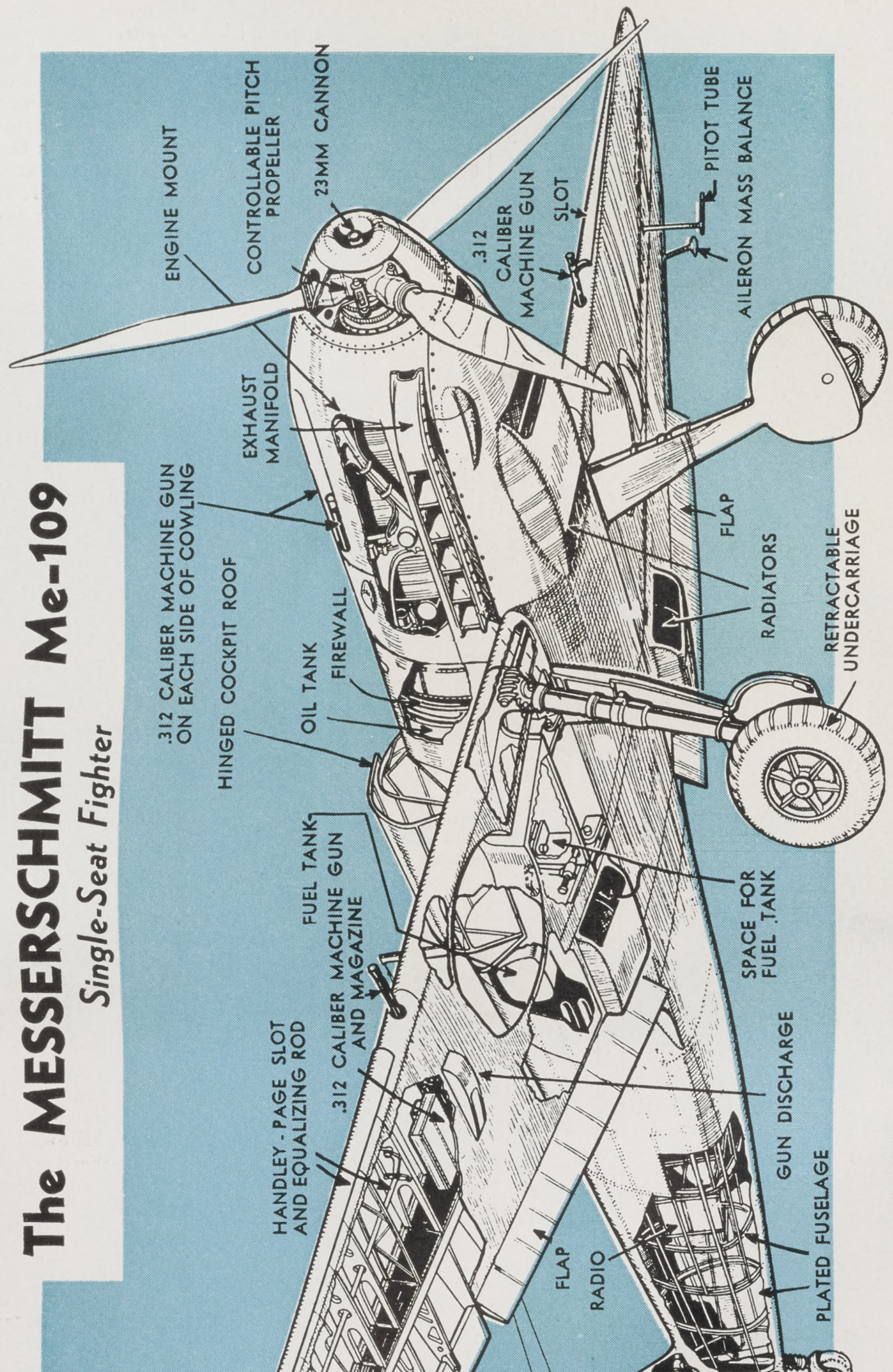
TRIB 3-16-40



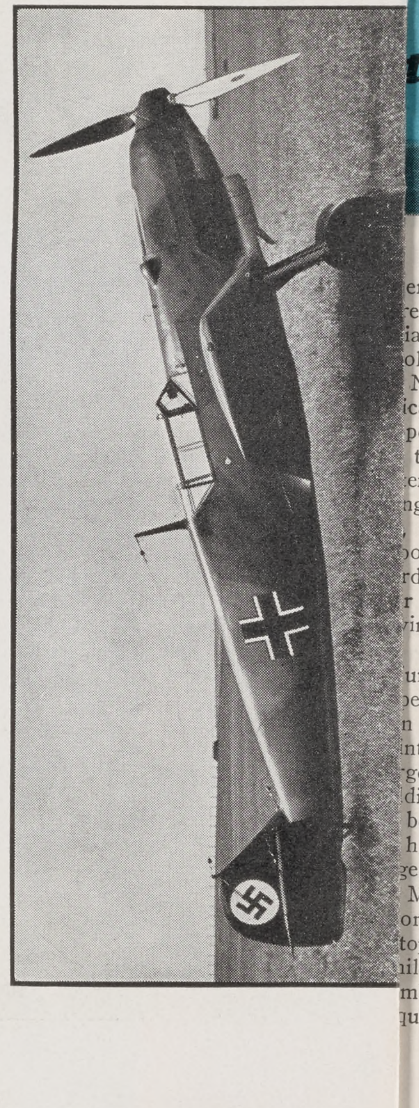
Steel framework of the addition to Consolidated Aircraft Corp.'s experimental building on Pacific highway, is rising rapidly as the firm pushes its expansion program occasioned by new army, navy and foreign orders. In addition to the framework shown here, foundations have been completed for a group of new buildings at the plant. Forty-eight tons of steel for the buildings arrived here last night aboard the American-Hawaiian intercoastal freighter American.

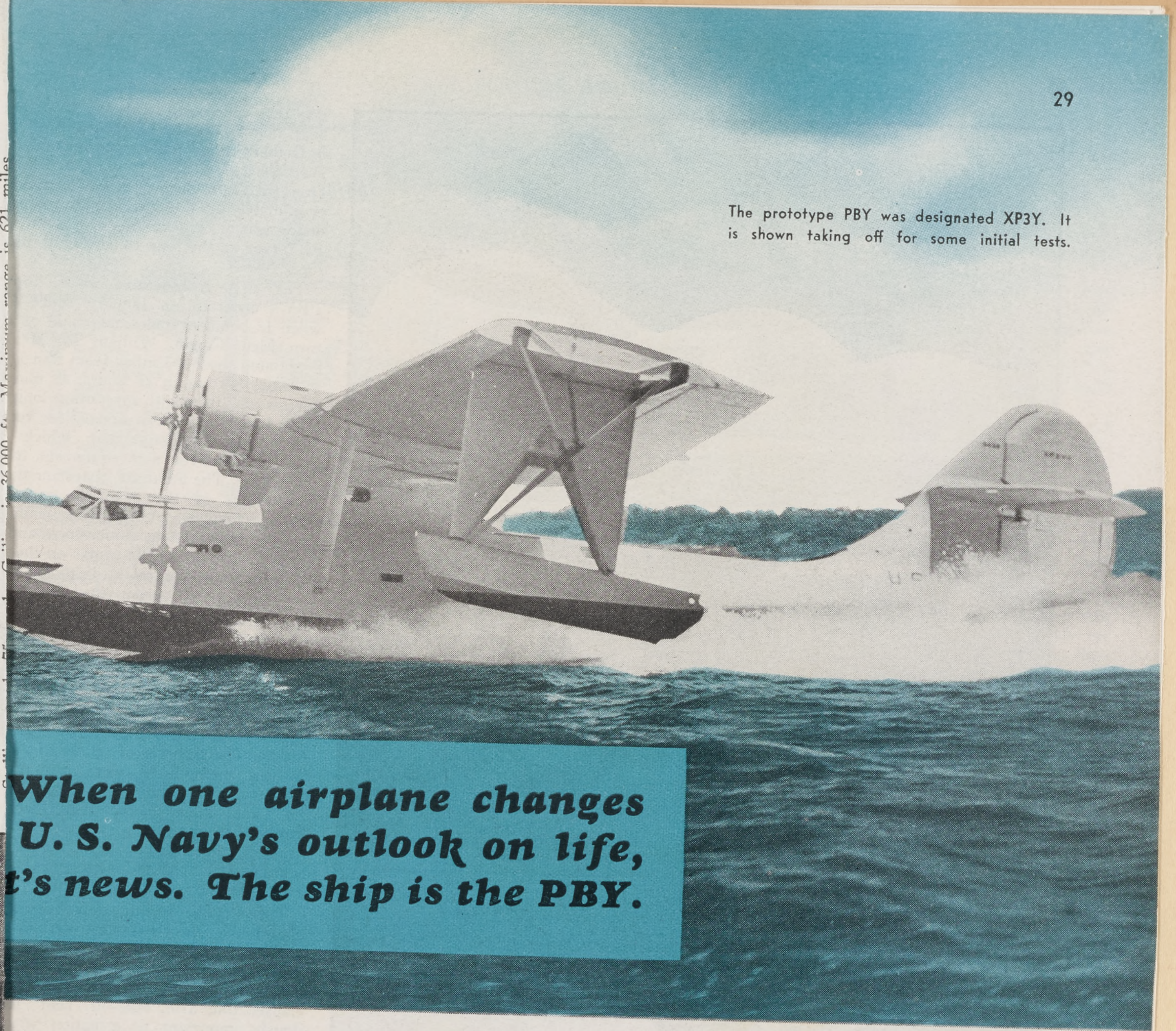
The MESSERSCHMITT Me-109

Single-Seat Fighter



THE fighting plane on this page is to the current war what the deadly Fokker D-7 was to World War I. However, the Messerschmitt Me-109, for all its notoriety, has not achieved for the Germans the same degree of success scored by the Fokker. Yet, the Messerschmitt is a deadly foe that British and French airmen have reason to fear. The cutaway drawing above is reprinted through the courtesy of *The Aeroplane*, famed British aviation publication. It is the most detailed drawing of this much-discussed German fighter ever published. This drawing is of the latest version of the Me-109, powered with an 1,150 h.p. Daimler-Benz engine. A 23 mm. (.906 in.) cannon fires through the hub of the controllable-pitch propeller. Other armament consists of four machine guns. With the exception of fabric-covered control surfaces, the Me-109 is built entirely of metal. Wing span is 32 ft. 6 in., length 32 ft. The landing gear retracts outward. Handley Page slots and slotted flaps are standard. Empty weight is 4,180 lbs., loaded weight is 5,520 lbs. Full radio and oxygen equipment is included. Top speed at 12,300 ft. is 354 m.p.h. Cruising speed (62½ per cent power) is 298 m.p.h.





The prototype PBY was designated XP3Y. It is shown taking off for some initial tests.

When one airplane changes U. S. Navy's outlook on life, t's news. The ship is the PBY.

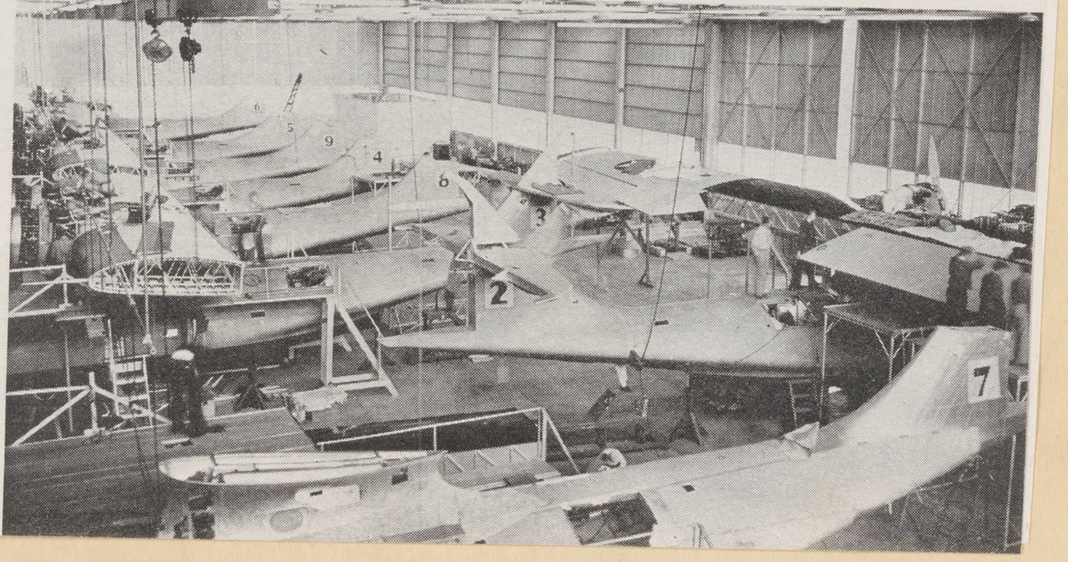
the outstanding characteristics of
eries were merged with unique new
es in engineering of the PBY. An
ian-born engineer, Henry Ikarus
olf—he is a graduate of the Aus-
Naval Academy and now a loyal
ican citizen—conceived the important
pearing pontoon" which helped in-
the efficiency of the PBY's to such
ent they became comparable in load
ng and cruising speed to the much
, four-engined transoceanic clippers.
ontoons were designed to retract
rd and form the wing tip of the
r in flight, thus reducing drag and
ing the effective aspect ratio of the

urther contribution to the PBY's
erformance characteristics was the
n of the fuel tanks, which were
ntegrally with the wing, allowing
ge gasoline capacity at a minimum
ditional structure weight which
be entailed by separate tanks. The
hull, thus, is available for crew,
gers and cargo.
Model 28—Consolidated's designa-
or the PBY—has exceeded 190
top speed, has a maximum range of
iles, a service ceiling of 29,200 feet,
mb to 15,000 feet in 13.4 minutes
uires less than a minute for full-load take-off. Russell Rogers, chief pilot of Richard Archbold's airboat "Guba"—a commercial version of the PBY—who is considered one of the world's greatest large airboat aviators, has been known to lift his craft off the water in 20 seconds.

Full cantilever tail and stressed skin monoplane wing were innovations in a seaplane of this size when introduced, with resounding success, by the PBY.

Approximately 225 of these high-performance craft, at about $150,000 each, have been delivered to the Navy. Since acceptance of the PBY in 1936, its achievements have amazed the world—not primarily because of the distance or duration of flights, but because of the never-failing dependability of the planes, the lack of incident that characterized each new lengthy journey and the ease with which vast areas of land, as well as water, were spanned. Forerunner of all these flights

Below is the Consolidated company's production line. Eight PBY's are shown.



S. D. Planes Released For Sale to Allies; Hint 9 Million Order

TRIB 3-14-40

By HAROLD OSBORNE

The drone of bombers over riddled Poland, which led to declaration of war by the allies, echoed at San Diego today with an announcement by Consolidated Aircraft Corp. officials confirming Washington, D. C., reports that Consolidated PBY-type planes have been released for the allies use. The "blitzkrieg" of last September has resulted in "substantial orders from abroad" being received by Consolidated, it was reported.

First official word that Consolidated planes were contemplated for sale to certain European powers came in a United Press dispatch quoting Rear Adm. John H. Towers, chief of the navy

(Continued on Page 4A, Col. 3)

Release S. D. Planes For Sale to Allies

CONTINUED FROM PAGE ONE

bureau of aeronautics, as saying that "four types of navy planes have been or will be released to the allies by the joint army-navy aeronautical board." He said they were the Vought FB2U and the twin-engined Consolidated PBY flying boats, the Brewster fighter, and Grumman monoplane fighter, all of which have been stripped of secret equipment, such as bomb sights.

Silent on Details

A Consolidated spokesman confirmed the statement that the firm here has received from the government a release for export sale of the PBY planes, and said "we are well along in the early stages of construction." He declined to announce the number of planes being built, for what nation they were consigned, or the price of the contract, which is believed to be nearly $9,000,000.

The "guess" on the contract price for the foreign order is based on the annual report of Consolidated, released last week, which revealed the firm has a backlog of unfilled orders totaling $49,000,000, instead of the $40,000,000 previously announced. While Consair officials refused to comment on the $9,000,000, authoritative sources said it involved orders by a foreign nation or nations.

Flight Records Set

The PBY-type planes are those used by the American navy as patrol bombers, and have established many group distance flight records, notably from San Diego to Panama and Hawaii, and from Hawaii to the Philippines. Soon after delivery of the first plane of the PBY series a few years ago it established a new international distance record of 3443 miles in a flight from Coco Solo, C. Z., to Alameda. Subsequent refinements have extended the range beyond 4000 miles, and in 1937-38 alone the navy made three "routine delivery flights" of 42 PBY planes from here to Hawaii, a distance of more than 2500 miles, and two "routine deliveries" of 26 planes from here to Coco Solo, 3000 miles. Last year the planes flew from San Diego to the Caribbean sea for United States fleet exercises.

The PBY's are the world's longest-range two-engine flying boats, and their speed exceeds 200 miles an hour. One PBY, the Guba, owned by Richard Archbold, aerial scientist, flew around the world after being used 10 months in New Guinea scientific exploration operations. A commercial PBY was flown by Sir Hubert Wilkins over 19,000 miles of Arctic wastes under the most adverse weather conditions, in search of the lost Russian transpolar fliers headed by Sigismund Leavaneffsky. Ability of the planes to "take it" were demonstrated in special single-engine take-off tests, which proved it was possible for a PBY to take off with only one engine with sufficient fuel to continue flying a distance of more than 1300 miles. Consolidated officials said it is believed this feat is unequalled in flying boat history.

Effect of the allied order for the planes, coming after $40,000,000 in American army and navy planes had been placed with Consolidated, is reflected in increased employment. Maj. R. H. Fleet, Consair head, said in the annual report that 4300 are working at the plant in three shifts, and that approximately 100 men a week are being added.

PBY statistics show a maximum range of 4200 miles, a service ceiling of more than 29,000 feet, the ability to climb to 15,000 feet in 13.4 minutes, and full speed at 12,000 feet, 194 miles an hour.

Steel Arrives For Consair's New Buildings

UNION 3-15-40

By HOWARD MORIN

Laden to the plimsoll mark with steel for the Consolidated Aircraft Co.'s new buildings, canned goods and general merchandise for other Pacific coast ports, American-Hawaiian line steamer American will dock at the B st. pier tonight from Baltimore and Philadelphia. The fabricated steel is but part of shipments arriving by rail and water from Pennsylvania steel mills for Consolidated's expansion building program.

The Quaker line will have two intercoastal steamers in port over the week-end. Westbound, the San Rafael is due tomorrow from eastern ports with 350 tons local cargo. The Peter Kerr is to berth at B st. pier Sunday to load 350 tons kelp meal, canned goods and beans for eastern markets.

UNION 3-15-40

Foundations Laid For Navy Buildings

Consolidated Aircraft Co. officials announced yesterday that foundations for the group of new buildings, which will virtually double capacity of the plant, have been completed.

Construction of the addition to the experimental building has started, and steel rapidly is being delivered for the other structures. All of the new structures will be in use by June 1.

Officials said that authority has been received from the government to export the company's PBY-type planes, of which a number already has been sold to foreign governments.

ROMEIKE & CURTICE LTD.
The Press Clipping Bureau
35 Shoe Lane
LONDON, E.C.4
Telephone: Central 2781

Consolidated Air

EXTRACT FROM
FLIGHT
The First Aero Weekly in the World
EVERY THURSDAY 6d.
Flight Publishing Co. Ltd.
Dorset House, Stamford Street, London, S.E.1

DATE 29 FEB 1940

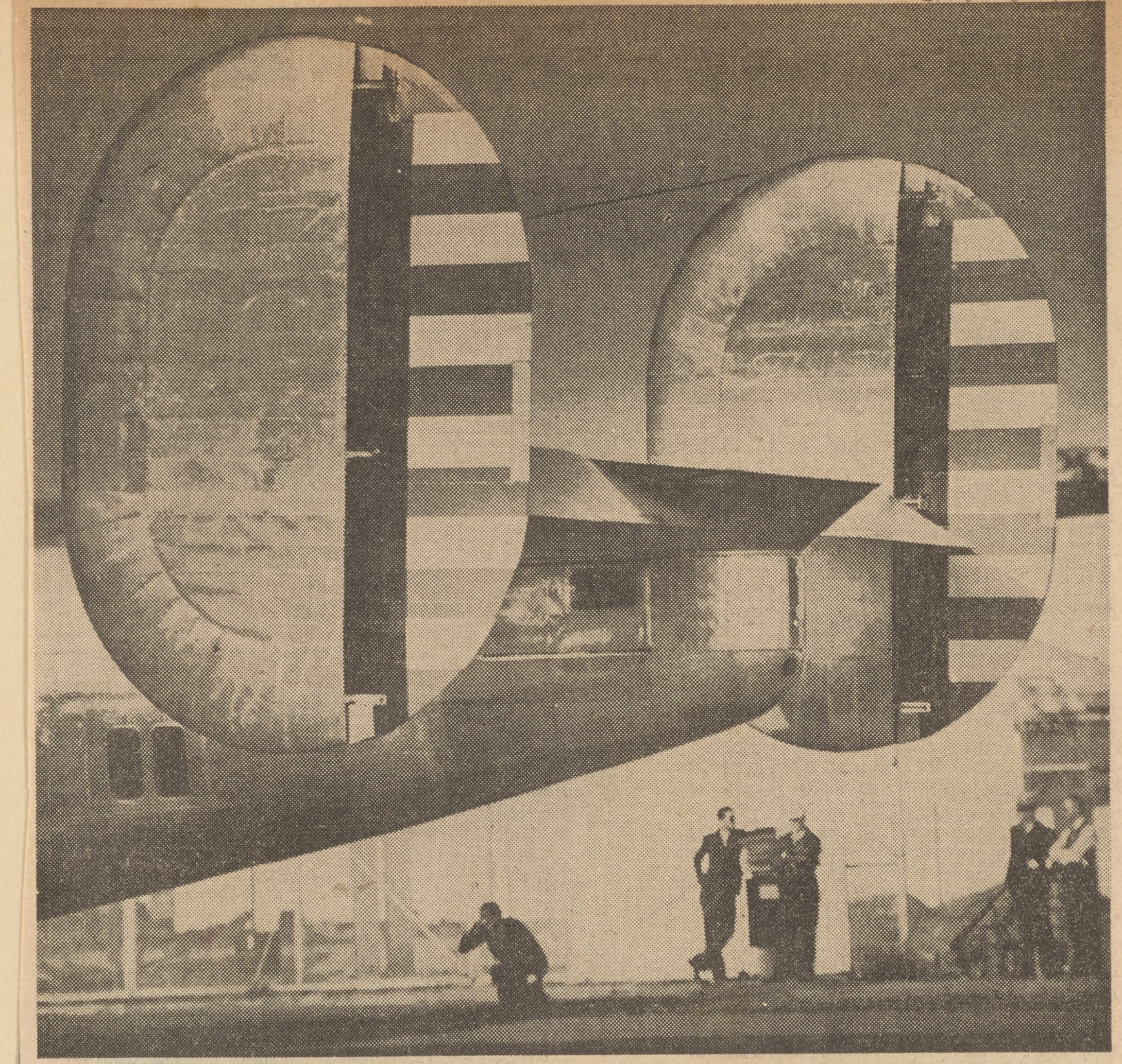
Consolidated Factory Expansion

ANNOUNCEMENT was made by the Navy Department on December 20 that the Consolidated Aircraft Corporation had been awarded a contract for $20,016,699. This is the largest single order for aeroplanes ever placed by the United States Government, and it increased the backlog of Consolidated to over $40,000,000. With work on other contracts occupying most of the production capacity, the new record order has made it necessary for the company to add new plant facilities to meet the deliveries required by the contract.

The building expansion will aggregate approximately 396,000 sq. ft., or an increase in the present area of 87 per cent. The largest single area to be roofed is the new final assembly building measuring 360 feet by 720 feet. This has a clear span of 120 feet and a clearance from floor to roof truss bottoms of 36 feet. In addition to the buildings, all factory yard areas will be paved with asphaltic concrete. These areas, due to the mild southern Californian climate, can be used virtually the entire year round for final assembly operations.

MAMMOTH ARMY WARBIRD DWARFS HUMANS

UNION 3-17-40



The huge size of the Consolidated-built new army bomber XB-24 is shown by the height of the two rudders. The plane, soon to be flown to Dayton, O., for final army tests, weighs 24 tons, carries a crew of nine and can fly 3000 miles with four tons of bombs.

* * *

THREE S. D. AIRCRAFT PLANTS MAY BE FORCED TO EXPAND

Business Volume Biggest in History; Foreign Orders Boost Local Backlogs

By HOWARD MORIN

San Diego's aircraft manufacturers, working at top speed on orders exceeding $50,000,000, may have to continue their expansion program.

The three Lindbergh field plants, Consolidated, Ryan and Solar, whose total personnel by midsummer will exceed 9000, will be will be vitally affected by the action of the British and French governments in purchasing nearly a billion dollars' worth of new American warplanes.

ORDERS MAY DOUBLE

Consolidated Aircraft Corp., whose backlog of foreign and domestic orders is the largest in the company's history, is negotiating with the British and French purchasing commission, authorities said. Consolidated's current foreign orders for $9,000,000 in planes and spare parts is expected to be doubled or tripled as a result of negotiations under way.

The Ryan and Solar plants probably will be called upon to manufacture special equipment for the 8000 planes which the French and British are planning to have built in American aircraft factories.

HUGE BAGKLOG

The American aircraft industry consists of 45 plane and 13 engine manufacturing plants. Of these 23 plane and nine engine plants are working on military orders. According to the aeronautical chamber of commerce, their current backlog totals $500,000,000.

Despite the tremendous expansion program which has resulted in doubling the facilities of San Diego's aircraft factories, American plane plants occupy a relatively unimportant place in the nation's industrial structure. Sixty thousand persons are on aircraft shop payrolls compared to 600,000 on automotive plant and related industry payrolls.

Since President Roosevelt proclaimed a state of "limited national emergency," the secrecy that has surrounded the aircraft manufacturing industry is equaled only by that of shipyards building new warships for the navy. Few industries have as many government-imposed restrictions. The factories are honeycombed with military and navy inspectors and government agents. Yet no other industry is so fearful of the results of over-expansion, a fear that has dictated extreme caution in adding to its backlog.

SET FOR SLUMP

Local aircraft manufacturers are keenly alive to the fact there will be a slump at the end of the war, but they are taking extraordinary precautions to avoid major lay-offs when this time comes. They are attuned primarily to the growing needs of American aviation, military, navy and commercial, and only in a limited way to foreign markets. They say emphatically that the three local plants are not "war babies." In fact they are anything but that. They were operating on a substantial basis long

(Continued on Page 2-A, Col. 3)

Business Volume May Force Plane Plant Expansion

(Continued from Page 1)

before the allies and Germany went to war.

To legislation establishing airlines which buy from aircraft and aircraft engine makers, and to millions of dollars in orders from the American armed forces over a long period is attributed the present prosperity of the industry, and particularly the three local plants.

EXPANSION PRE-ARRANGED

Lindbergh field plane manufacturers explain that long before orders from foreign governments began to pour in after the war started, plans had been perfected for plant expansion. Leases for additional tidelands to meet increased building programs were sought and obtained from the harbor department. The need for additional shop and assembly space became apparent when Americans, in constantly increasing numbers, began taking to the air.

A striking example of this is the official government announcement that commercial and military planes worth $40,000,000 are produced each month from American factories. By mid-June it is estimated the monthly productions will be valued at $55,000,000.

On domestic commercial and on foreign commercial and military orders, profits of manufacturers are limited to 12 percent under the Vinson-Trammell act when dealing with the U. S. government, and only by their shrewdness when doing business with foreign buyers. Nevertheless the government maintains an effective check on foreign shipments by permitting only certain types to be exported.

FUTURE CONSIDERED

Because the prosperity of the industry depends fundamentally on decisions of many governmental agencies and congressional appropriations, most manufacturers are extremely chary of expanding their plants unless they are reasonably sure of future orders that are not dependent primarily on continuation of the European war.

In line with this policy San Diego's aircraft factories are exceedingly fortunate, as less than $10,000,000 of the total $50,000,000 backlog is for foreign contracted planes.

Less than 15 years ago San Diego's aircraft industry was confined to manufacturing and flying operations of one company.

Today the industry's payroll runs into millions of dollars annually and planes are produced that literally traverse the world's skyways. Backlogs are building up. And there is every indication they will continue, officials say, for transportation by air is getting safer, swifter and more exhilarating with every new model produced by American engineers.

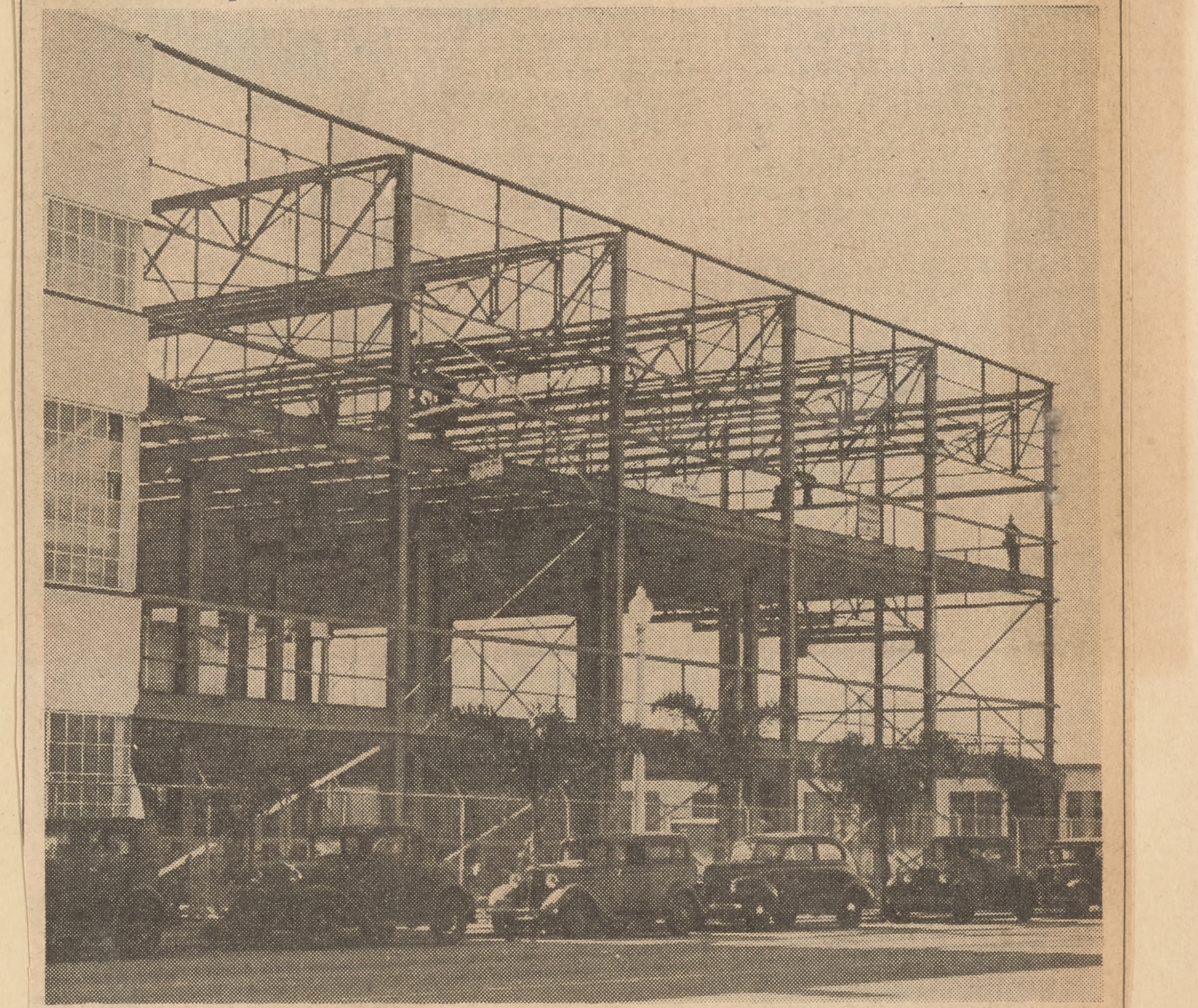
UNION 3-17-40

GROUP DISCUSSES NEEDS OF CONSERVATION CORPS

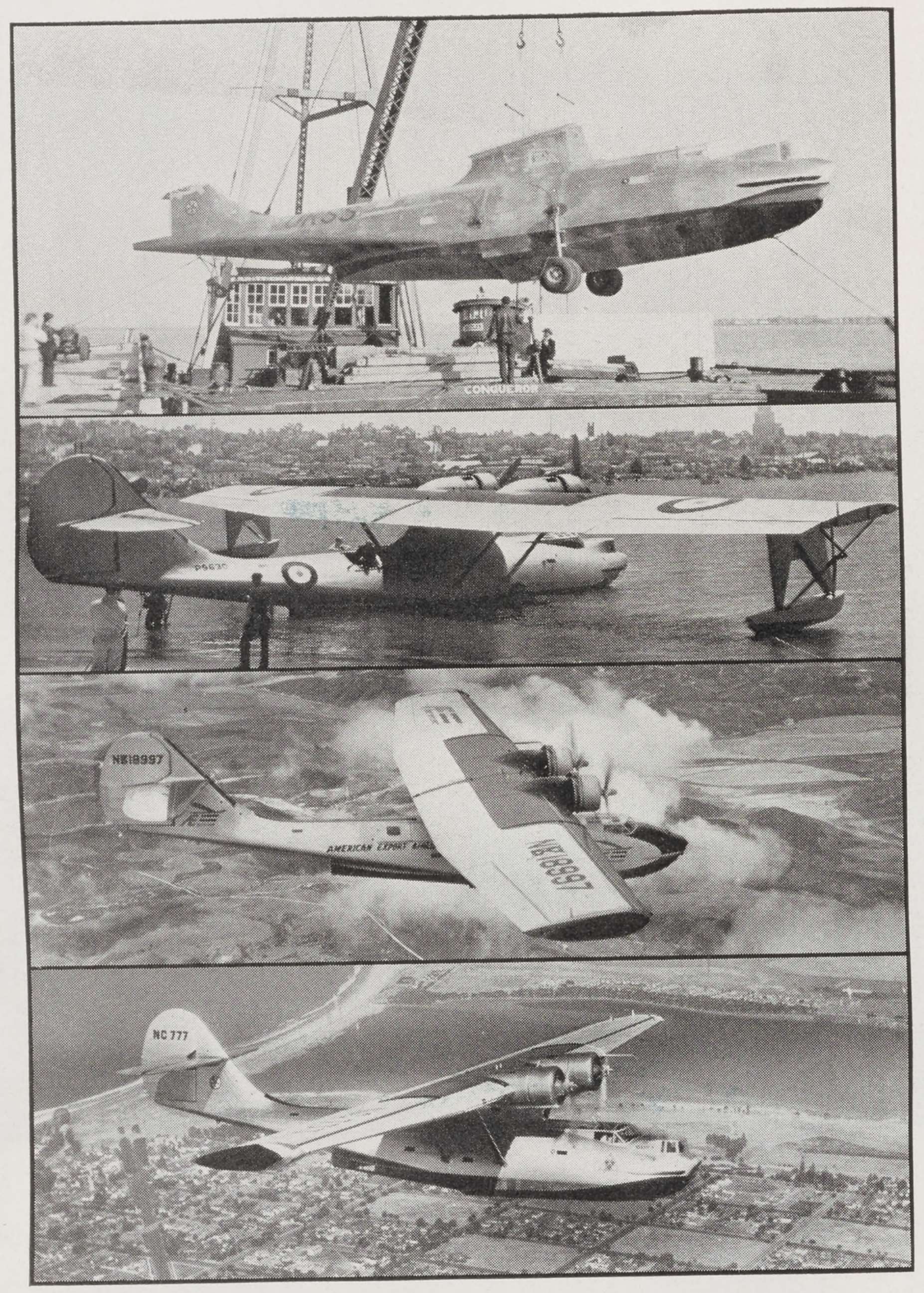
Educators, industrialists and CCC officials at an educational conference here included (seated, left to right) William P. Mayer, outdoors relief superintendent; Mrs. Ada York Allen, county schools superintendent; Harry Webster, CCC soliciting aid; (standing, left to right) Dean A. G. Peterson, State college; Dayton E. Jones, state superintendent, CCC selecting; John Waller, district education adviser; J. H. Waterbury, assistant personnel superintendent, Consolidated Aircraft Corp., and Raymond H. Hinkel, work relief superintendent.

Consair's Experimental Building Rapidly Taking Form

TRIB 3-16-40

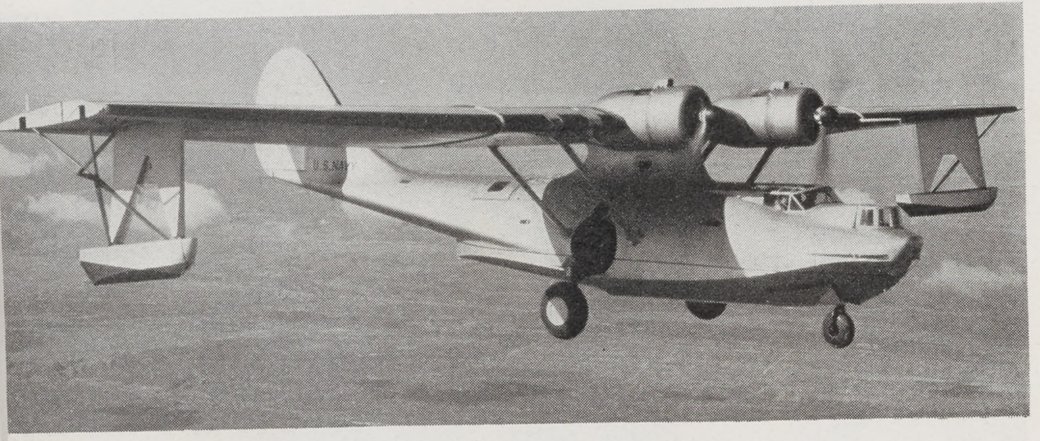


Steel framework of the addition to Consolidated Aircraft Corp.'s experimental building on Pacific highway, is rising rapidly as the firm pushes its expansion program occasioned by new army, navy and foreign orders. In addition to the framework shown here, foundations have been completed for a group of new buildings at the plant. Forty-eight tons of steel for the buildings arrived here last night aboard the American-Hawaiian intercoastal freighter American.



PBY's have made names for themselves other than in the U. S. Navy. Reading from top to bottom above are: ship sold to Russia being loaded aboard freighter; PBY bought by British as forerunner of a large order; commercial version used by American Export Airlines for transatlantic survey flights; Richard Archbold's famous "Guba".

Latest version of the PBY is this tricycle-geared amphibian now being tested exhaustively by the Navy. Designated PBY-5, it is identical to original boat except for the landing gear.



was that which still holds the U. S. fl
boat non-stop distance record—the j
in October, 1935, of the experimental P
prototype, then known as the XP3
from the Canal Zone to San Francisco,
proximately 3,500 miles. Hardly more
dence was needed to establish firmly
PBY-type as the long-range "eyes" of
Fleet.

The first transoceanic mass hop
PBY's occurred on January 28-29,
when 12 bombers under command of
turn Lieut.-Comm. William M. Mc
negotiated the 2,553 miles from San D
to Pearl Harbor in 21 hours, 48 min
In this and the many succeeding long
tance jumps, the Navy stressed the ro
nature of the assignment, which
merely to deliver new equipment to
other base. The admirals, characterist
unconscious of the dramatic appea
such spectacular ventures, never coul
derstand why movie cameramen an
porters cluttered up the ramps on the
these giant mechanical birds took of

Repetition has robbed the process
adventuresome flavor, but by the
token has illustrated the efficiency pe
Uncle Sam's equipment and aviators.
another, perhaps more significant, fa
been illustrated by the many PBY
flights from San Diego to Hawai
Canal Zone, the Pacific Northwes
Alaska. The transfer of scores of ai
by this method—48 were sent i
maneuver from their San Diego b
the Canal Zone in the 1939 Flee
games—has shown that all vital li
American defense can be equipped,
hours or less, with the telescopic vis
quired for successful naval action.

The PBY's, having only recent
placed the Navy's fastest destroy
the first scouting line, can be shifted
one base to another, as needed,
large groups, at short notice and i
elapsed time after take-off. That's t
dously important to a nation wit
flung frontiers, with valuable areas
the north (Alaska and the A
Islands), far to the south (the
Zone), far to the west (Hawaii a
Philippines), and a long distance
east (Puerto Rico, Cuba and the
Islands) from the major airboat
trations. Only within the past few
has this high mobility been employ
der conditions of national emergenc
the United States extending its
areas as result of the European
squadron of 14 PBY bombers, n
based in Pearl Harbor, were secr
dered to the Philippines. No Unite
warplane had ever flown across th
national date line, west bound,
that time (September, 1939). T
commanded by Lieut.-Comm. S
Hache, clicked off the miles in
fashion, utilizing the Pacific
stones at Wake Island, Midway
and Guam—following a route blaz
commercial enterprise, Pan Ameri
ways.

Should an enemy fleet threaten
waii require immediate stationing
large numbers of patrol bombe
could be flown from San Diego
far less than 20 hours. Only 16 h

(*Continued on page* 80)

PLANE FUNDAMENTALS FOR FLYER'S LICENSE
5 VOLUMES IN (1)
1. AIRPLANES
50 Questions, 50 answers, 103 illustrations in detail.
2. ENGINES
56 Questions, 56 answers, 66 illustrations in detail.
3. NAVIGATION
50 Questions, 50 answers, 57 illustrations in detail.
4. METEOROLOGY
50 Questions, 50 answers, 36 illustrations in detail.
5. CIVIL AIR REGULATIONS (Latest) AIR TRAFFIC RULES
176 Questions, 176 answers. 7 illustrations in detail.
382 questions and answers!
A complete text for every pilot seeking higher rating.
PLANE FUNDAMENTALS FOR FLYER'S LICENSE
Government Requirements Fully Covered
269 Illustrations
NEW SECOND EDITION. Approved by more than 10,000 pilots.
VALUE $5.00!
NOW $1.50
MAIL COUPON NOW TO:
POWER PUBLISHING CO., DEP'T P
40 Clinton St., Newark, N. J.
Sir: Forward me......copies of PLANE FUNDAMENTALS FOR FLYER'S LICENSE.
I am enclosing money order ☐ Check ☐
I will pay postman on delivery ☐ (*Plus few cents C.O.D. charge*
Name ....
Address ....
City .... State..........

LOOK! World's Smallest Portable Radio
Size only 3¾"x5¾"x4" and WEIGHS ONLY 2 LBS. complete with batteries—self contained loop—NO AERIAL—NO GROUND! Dynamic speaker, Transformer A.F. stage & multi-purpose tubes—hi gain type. Can actually be carried in your coat pocket! Receives local and semidistant stations. Strong, neat, waterproof airplane cloth covered case. The first REALLY portable radio that won't break your arm to carry it! Costs little to operate—uses cheap flashlight batteries! Just the thing for picnics, bedrooms, offices, games, etc. OPERATES WHILE WALKING—ANYWHERE!
SEND ONLY $1.00 (currency, M.O., Check) and pay postman $8.95 plus postage on arrival. Sent absolutely complete ready to play the moment you get it! LESS WEIGHT, cost, size and upkeep—highest value! Order your midget today! GUARANTEED!
MIDGET RADIO CO. Dept. PA-3 KEARNEY, NEBR.

DO YOU WANT A JOB IN AVIATION?
IF YOU DO, the Luscombe School of Aeronautics can train you to take advantage of the better paid positions in the aircraft industry.
By obtaining the proper foundation for your future career at Luscombe, you are assured of the logical advancement that comes as a result of thorough and modern preparation. WRITE FOR DETAILS IMMEDIATELY and let us explain how we can put YOU in aviation. A free copy of "Opportunity in Aviation" and our School Paper, the "Luscombe Highlight" will be mailed to you.
Next Class Starts April 1, 1940
Featuring a ONE YEAR GOVERNMENT APPROVED COURSE leading to an A.&E. License or to Specialization in Factory Production of Modern Airplanes.
OVER 90% OF OUR GRADUATES PLACED
West Trenton New Jersey
LUSCOMBE SCHOOL OF AERONAUTICS
Division of Luscombe Airplane Corp.

Remarkable Boat

(*Continued from page* 30)

minutes (the present record) was required by 15 PBY's led by the same Lieutenant-Commander LaHache last June. And Coco Solo, 3,087 miles away, has been reached from San Diego in only 22 hours, 20 minutes, by a 14-plane squadron. These feats by no means exhaust the admirable potentialities of the PBY-type.

Fletcher Pratt, the eminent Naval expert, is authority for the astounding, virtually unbelievable revelation that a PBY, in the 1939 Caribbean maneuvers, remained in the air *three days continuously,* traveling 15,000 miles as it kept on the tail of the "enemy" fleet. Just how this was accomplished has not been disclosed, officially or unofficially, as the PBY's 1,700-gallon gasoline capacity allows a non-stop range of only 4,200 miles. Were extra tanks installed in the hull? Was the working crew reduced to save weight? The Navy has not confirmed this sensational report, but if any element of truth exists in it, startling are the possibilities of day-and-night scouting thousands of miles from the United States.

Meanwhile, a private citizen—the wealthy Standard Oil heir, Richard Archbold—and the flight crew of his $250,000 "Guba", showed the Navy what terrific punishment its patrol planes will take under the most severe flying conditions conceivable and in widely varying climes. Archbold and his chief pilot, Russ Rogers, were the first to fly non-stop across the United States in a seaplane. This was done in the "Guba" on June 24-25, 1937—from San Diego to New York, 2,700 miles, in 17 hours, 3 minutes. And, to prove this could be made as much a routine as the Navy's ocean hops, Archbold did it again the following December—San Diego to Miami, 2,300 miles, in 14 hours, 10 minutes. He did it still a third time, again to Miami, on Feb. 26, 1938, in the creditable time of 12 hours, 35 minutes.

After due consideration of these performances, the Navy decided they were not mere stunts and had tremendous tactical value. They sent one of their own ships across—not quite as far, but nevertheless on a transcontinental trip, from San Diego to Pensacola. This has been done several times since with individual PBY's, the Navy having yet to risk a mass flight of seaplanes across the nation.

Aviation experts will tell you this is not as hazardous as it appears at first. There are plenty of sufficiently large water bodies to accommodate a PBY in an emergency during a transcontinental crossing. These water bodies, they will assure you, are closer together than emergency landing fields capable of harboring today's giant transports or Army bombers.

All this was done by Mr. Archbold in the same "Guba". There have been two "Gubas" (the name is native Papuan for "Sudden Storm"), with the first one purchased by the Russian government for Sir Hubert Wilkins shortly after the initial cross-country trip to New York in 1937. In this craft and with the Archbold flight crew, Wilkins searched for the Russian ace, Levanevsky, and his lost shipmates in the polar regions north of Latitude 80. The manner in which this airboat performed again found keen interest among Navy officials. Nineteen thousand miles were covered in flights of tremendous non-stop distances. To the 1,700 gallons of gas contained in the wings were added a large quantity in drums carried within the hull. This, in addition to the bulky supplies and equipment and the heavy drag of ice coatings on wings and tail surfaces, at times put the boat to tests possibly more severe than any ever administered under normal operating conditions.

A startling sample of the PBY-type's versatility was again afforded by Archbold, in the second "Guba", acquired after he disposed of Number One to the Soviet Union. This ship, perhaps the most famous privately-owned airplane in the world, has an amazing record of "firsts" to its credit. In its use as a transport for an American Museum of Natural History expedition in Netherlands New Guinea, and as a survey ship for a new commercial route planned by the Australian government, it accomplished the following:

1. First to fly from Guam to Netherlands New Guinea, 1,900 miles.
2. First to operate from a lake 11,500 feet above sea level (Lake Habbema in Netherlands New Guinea), where dozens of landings and take-offs were made in rarefied air that deprived the two 1,000 h.p. Pratt & Whitney engines of almost half their power.
3. First airboat to span the Australian continent non-stop, 2,200 miles from Sydney to Port Hedland.
4. First airboat to cross the Indian Ocean, 5,400 miles from Port Hedland to Mombasa, Africa, on a survey flight for the Australian government to demonstrate feasibility of a new commercial air route.

(*Continued on page* 82)

S. D. Planes Released For Sale to Allies; Hint 9 Million Order

TRIB 3-14-40

By HAROLD OSBORNE

The drone of bombers over riddled Poland, which led to declaration of war by the allies, echoed at San Diego today with an announcement by Consolidated Aircraft Corp. officials confirming Washington, D. C., reports that Consolidated PBY-type planes have been released for the allies use. The "blitzkrieg" of last September has resulted in "substantial orders from abroad" being received by Consolidated, it was reported.

First official word that Consolidated planes were contemplated for sale to certain European powers came in a United Press dispatch quoting Rear Adm. John H. Towers, chief of the navy

(Continued on Page 4A, Col. 3)

Release S. D. Planes For Sale to Allies

CONTINUED FROM PAGE ONE

bureau of aeronautics, as saying that "four types of navy planes have been or will be released to the allies by the joint army-navy aeronautical board." He said they were the Vought FB2U and the twin-engined Consolidated PBY flying boats, the Brewster fighter, and Grumman monoplane fighter, all of which have been stripped of secret equipment, such as bomb sights.

Silent on Details

A Consolidated spokesman confirmed the statement that the firm here has received from the government a release for export sale of the PBY planes, and said "we are well along in the early stages of construction." He declined to announce the number of planes being built, for what nation they were consigned, or the price of the contract, which is believed to be nearly $9,000,000.

The "guess" on the contract price for the foreign order is based on the annual report of Consolidated, released last week, which revealed the firm has a backlog of unfilled orders totaling $49,000,000, instead of the $40,000,000 previously announced. While Consair officials refused to comment on the $9,000,000, authoritative sources said it involved orders by a foreign nation or nations.

Flight Records Set

The PBY-type planes are those used by the American navy as patrol bombers, and have established many group distance flight records, notably from San Diego to Panama and Hawaii, and from Hawaii to the Philippines. Soon after delivery of the first plane of the PBY series a few years ago it established a new international distance record of 3443 miles in a flight from Coco Solo, C. Z., to Alameda. Subsequent refinements have extended the range beyond 4000 miles, and in 1937-38 alone the navy made three "routine delivery flights" of 42 PBY planes from here to Hawaii, a distance of more than 2500 miles, and two "routine deliveries" of 26 planes from here to Coco Solo, 3000 miles. Last year the planes flew from San Diego to the Caribbean sea for United States fleet exercises.

The PBY's are the world's longest-range two-engine flying boats, and their speed exceeds 200 miles an hour. One PBY, the Guba, owned by Richard Archbold, aerial scientist, flew around the world after being used 10 months in New Guinea scientific exploration operations. A commercial PBY was flown by Sir Hubert Wilkins over 19,000 miles of Arctic wastes under the most adverse weather conditions, in search of the lost Russian transpolar fliers headed by Sigismund Leavaneffsky. Ability of the planes to "take it" were demonstrated in special single-engine take-off tests, which proved it was possible for a PBY to take off with only one engine with sufficient fuel to continue flying a distance of more than 1300 miles. Consolidated officials said it is believed this feat is unequalled in flying boat history.

Effect of the allied order for the planes, coming after $40,000,000 in American army and navy planes had been placed with Consolidated, is reflected in increased employment. Maj. R. H. Fleet, Consair head, said in the annual report that 4300 are working at the plant in three shifts, and that approximately 100 men a week are being added.

PBY statistics show a maximum range of 4200 miles, a service ceiling of more than 29,000 feet, the ability to climb to 15,000 feet in 13.4 minutes, and full speed at 12,000 feet, 194 miles an hour.

Steel Arrives For Consair's New Buildings

UNION 3-15-40

By HOWARD MORIN

Laden to the plimsoll mark with steel for the Consolidated Aircraft Co.'s new buildings, canned goods and general merchandise for other Pacific coast ports, American-Hawaiian line steamer American will dock at the B st. pier tonight from Baltimore and Philadelphia. The fabricated steel is but part of shipments arriving by rail and water from Pennsylvania steel mills for Consolidated's expansion building program.

The Quaker line will have two intercoastal steamers in port over the week-end. Westbound, the San Rafael is due tomorrow from eastern ports with 350 tons local cargo. The Peter Kerr is to berth at B st. pier Sunday to load 350 tons kelp meal, canned goods and beans for eastern markets.

UNION 3-15-40

Foundations Laid For Navy Buildings

Consolidated Aircraft Co. officials announced yesterday that foundations for the group of new buildings, which will virtually double capacity of the plant, have been completed.

Construction of the addition to the experimental building has started, and steel rapidly is being delivered for the other structures. All of the new structures will be in use by June 1.

Officials said that authority has been received from the government to export the company's PBY-type planes, of which a number already has been sold to foreign governments.

ROMEIKE & CURTICE LTD.
The Press Clipping Bureau
35 Shoe Lane
LONDON, E.C.4
Telephone: Central 2781

Consolidated Air

EXTRACT FROM
FLIGHT
The First Aero Weekly in the World
EVERY THURSDAY 6d.
Flight Publishing Co. Ltd.
Dorset House, Stamford Street, London, S.E.1

DATE 29 FEB 1940

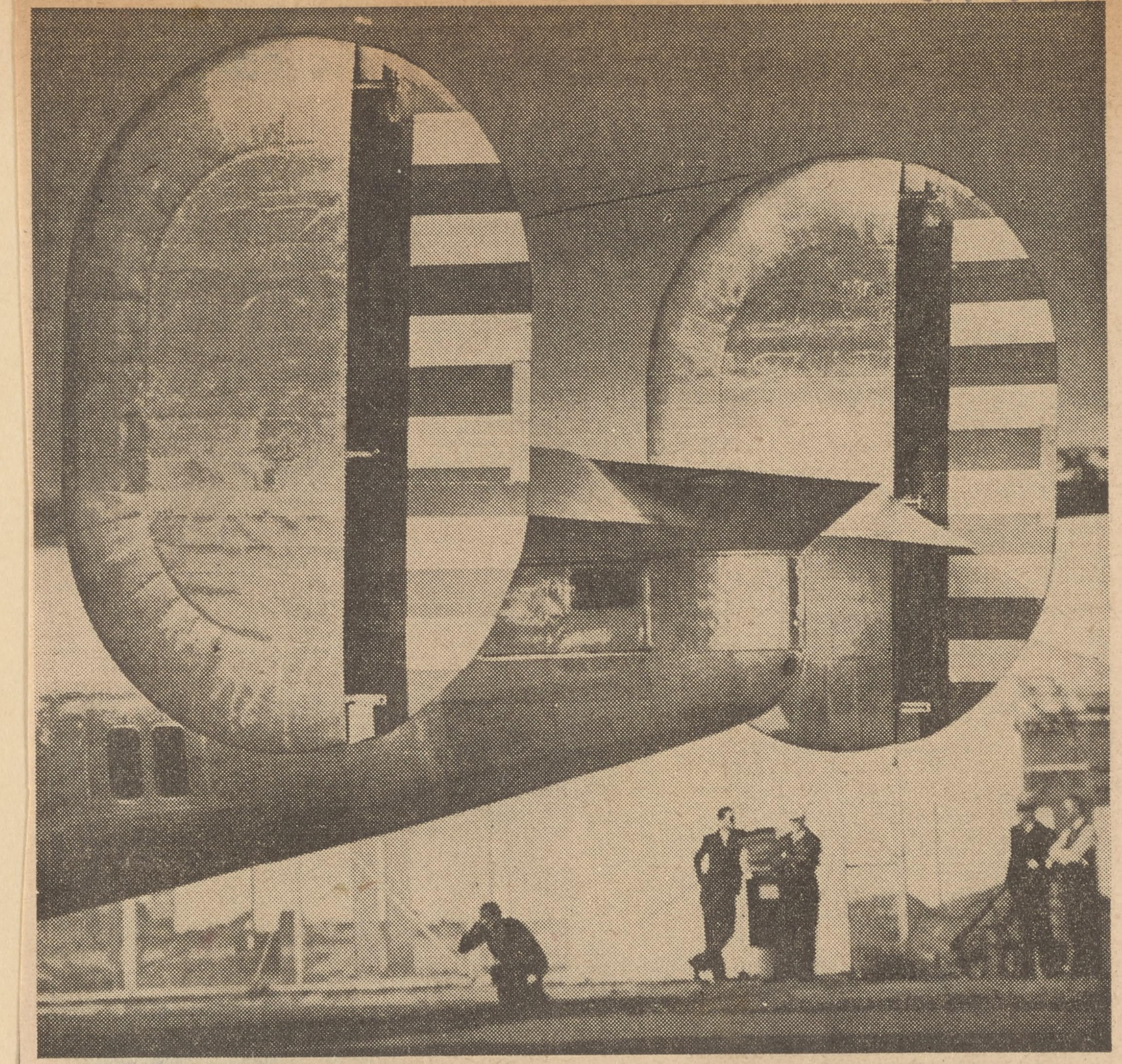
Consolidated Factory Expansion

ANNOUNCEMENT was made by the Navy Department on December 20 that the Consolidated Aircraft Corporation had been awarded a contract for $20,016,699. This is the largest single order for aeroplanes ever placed by the United States Government, and it increased the backlog of Consolidated to over $40,000,000. With work on other contracts occupying most of the production capacity, the new record order has made it necessary for the company to add new plant facilities to meet the deliveries required by the contract.

The building expansion will aggregate approximately 396,000 sq. ft., or an increase in the present area of 87 per cent. The largest single area to be roofed is the new final assembly building measuring 360 feet by 720 feet. This has a clear span of 120 feet and a clearance from floor to roof truss bottoms of 36 feet. In addition to the buildings, all factory yard areas will be paved with asphaltic concrete. These areas, due to the mild southern Californian climate, can be used virtually the entire year round for final assembly operations.

MAMMOTH ARMY WARBIRD DWARFS HUMANS

UNION 3-17-40



The huge size of the Consolidated-built new army bomber XB-24 is shown by the height of the two rudders. The plane, soon to be flown to Dayton, O., for final army tests, weighs 24 tons, carries a crew of nine and can fly 3000 miles with four tons of bombs.

* * *

THREE S. D. AIRCRAFT PLANTS MAY BE FORCED TO EXPAND

Business Volume Biggest in History; Foreign Orders Boost Local Backlogs

By HOWARD MORIN

San Diego's aircraft manufacturers, working at top speed on orders exceeding $50,000,000, may have to continue their expansion program.

The three Lindbergh field plants, Consolidated, Ryan and Solar, whose total personnel by midsummer will exceed 9000, will be will be vitally affected by the action of the British and French governments in purchasing nearly a billion dollars' worth of new American warplanes.

ORDERS MAY DOUBLE

Consolidated Aircraft Corp., whose backlog of foreign and domestic orders is the largest in the company's history, is negotiating with the British and French purchasing commission, authorities said. Consolidated's current foreign orders for $9,000,000 in planes and spare parts is expected to be doubled or tripled as a result of negotiations under way.

The Ryan and Solar plants probably will be called upon to manufacture special equipment for the 8000 planes which the French and British are planning to have built in American aircraft factories.

HUGE BAGKLOG

The American aircraft industry consists of 45 plane and 13 engine manufacturing plants. Of these 23 plane and nine engine plants are working on military orders. According to the aeronautical chamber of commerce, their current backlog totals $500,000,000.

Despite the tremendous expansion program which has resulted in doubling the facilities of San Diego's aircraft factories, American plane plants occupy a relatively unimportant place in the nation's industrial structure. Sixty thousand persons are on aircraft shop payrolls compared to 600,000 on automotive plant and related industry payrolls.

Since President Roosevelt proclaimed a state of "limited national emergency," the secrecy that has surrounded the aircraft manufacturing industry is equaled only by that of shipyards building new warships for the navy. Few industries have as many government-imposed restrictions. The factories are honeycombed with military and navy inspectors and government agents. Yet no other industry is so fearful of the results of over-expansion, a fear that has dictated extreme caution in adding to its backlog.

SET FOR SLUMP

Local aircraft manufacturers are keenly alive to the fact there will be a slump at the end of the war, but they are taking extraordinary precautions to avoid major lay-offs when this time comes. They are attuned primarily to the growing needs of American aviation, military, navy and commercial, and only in a limited way to foreign markets. They say emphatically that the three local plants are not "war babies." In fact they are anything but that. They were operating on a substantial basis long

(Continued on Page 2-A, Col. 3)

Business Volume May Force Plane Plant Expansion

(Continued from Page 1)

before the allies and Germany went to war.

To legislation establishing airlines which buy from aircraft and aircraft engine makers, and to millions of dollars in orders from the American armed forces over a long period is attributed the present prosperity of the industry, and particularly the three local plants.

EXPANSION PRE-ARRANGED

Lindbergh field plane manufacturers explain that long before orders from foreign governments began to pour in after the war started, plans had been perfected for plant expansion. Leases for additional tidelands to meet increased building programs were sought and obtained from the harbor department. The need for additional shop and assembly space became apparent when Americans, in constantly increasing numbers, began taking to the air.

A striking example of this is the official government announcement that commercial and military planes worth $40,000,000 are produced each month from American factories. By mid-June it is estimated the monthly productions will be valued at $55,000,000.

On domestic commercial and on foreign commercial and military orders, profits of manufacturers are limited to 12 percent under the Vinson-Trammell act when dealing with the U. S. government, and only by their shrewdness when doing business with foreign buyers. Nevertheless the government maintains an effective check on foreign shipments by permitting only certain types to be exported.

FUTURE CONSIDERED

Because the prosperity of the industry depends fundamentally on decisions of many governmental agencies and congressional appropriations, most manufacturers are extremely chary of expanding their plants unless they are reasonably sure of future orders that are not dependent primarily on continuation of the European war.

In line with this policy San Diego's aircraft factories are exceedingly fortunate, as less than $10,000,000 of the total $50,000,000 backlog is for foreign contracted planes.

Less than 15 years ago San Diego's aircraft industry was confined to manufacturing and flying operations of one company.

Today the industry's payroll runs into millions of dollars annually and planes are produced that literally traverse the world's skyways. Backlogs are building up. And there is every indication they will continue, officials say, for transportation by air is getting safer, swifter and more exhilarating with every new model produced by American engineers.

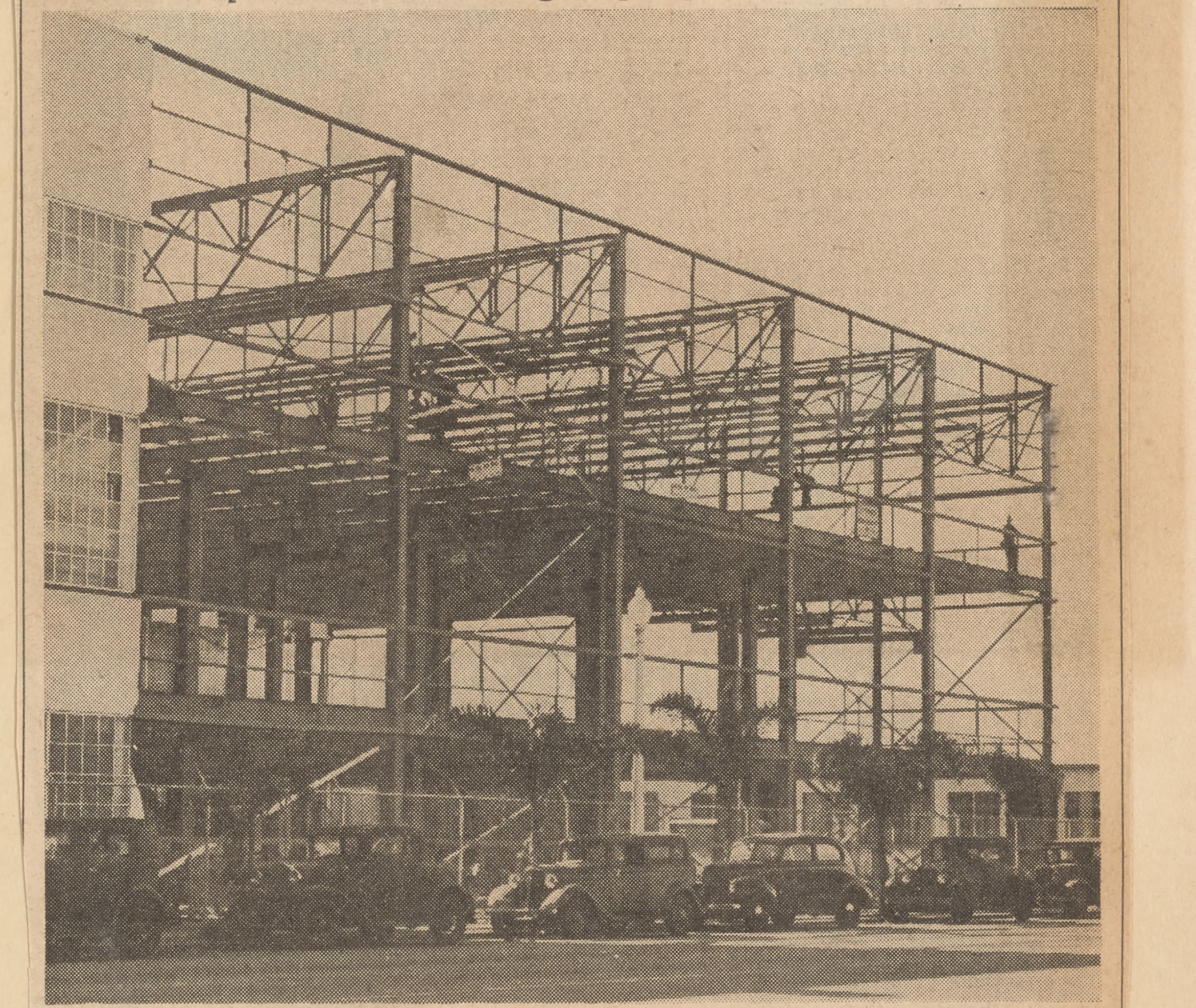
UNION 3-17-40

GROUP DISCUSSES NEEDS OF CONSERVATION CORPS

Educators, industrialists and CCC officials at an educational conference here included (seated, left to right) William P. Mayer, outdoors relief superintendent; Mrs. Ada York Allen, county schools superintendent; Harry Webster, CCC soliciting aid; (standing, left to right) Dean A. G. Peterson, State college; Dayton E. Jones, state superintendent, CCC selecting; John Waller, district education adviser; J. H. Waterbury, assistant personnel superintendent, Consolidated Aircraft Corp., and Raymond H. Hinkel, work relief superintendent.

Consair's Experimental Building Rapidly Taking Form

TRIB 3-16-40



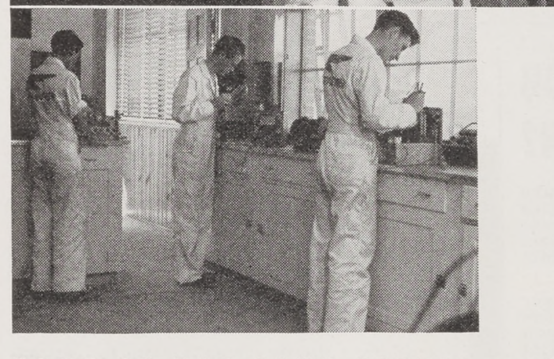
Steel framework of the addition to Consolidated Aircraft Corp.'s experimental building on Pacific highway, is rising rapidly as the firm pushes its expansion program occasioned by new army, navy and foreign orders. In addition to the framework shown here, foundations have been completed for a group of new buildings at the plant. Forty-eight tons of steel for the buildings arrived here last night aboard the American-Hawaiian intercoastal freighter American.

in Aviation Radio

Spartan GRADUATES ARE IN THE Air AND ON THE Ground

AMONG graduates of Spartan Courses in Radio Engineering and Operation, Walter P. Hottel is now radio operator for American Air Lines; Charles S. Feast, radio engineer with Aeronautical Radio, Long Island, New York; with the Glenn L. Martin Company as radio electricians are Stanley L. Rankin, Paul L. Wilmes and Forrest Whitham; Herbert J. Smith is radio operator at The Bureau of Air Commerce weather station at Saltillo, Texas; Vernon Hull, Postal Telegraph manager at Xenia, Ohio; John Crisford, Mid-Continent Air Lines radio operator at Kansas City.

SPARTAN TRAINING has enabled these young men to step into positions of responsibility with companies outstanding in the Aviation Industry—training that companies such as these recognize. SPARTAN TRAINING will give YOU the opportunity for a fine position at good pay—the tools of experience that will be the full measure of your success.



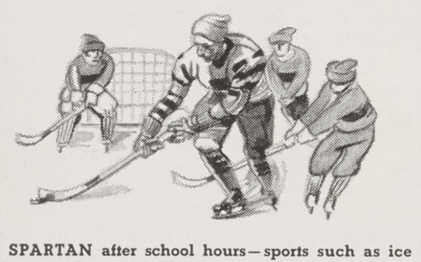
HOME OF THE DAWN PATROL

SPARTAN

APPROVED BY THE CIVIL AERONAUTICS AUTHORITY AND U. S. ARMY AIR CORPS FOR INSTRUCTION BOTH FLIGHT AND MECHANICS.

Spartan SCHOOL OF AERONAUTICS

DIVISION OF SPARTAN AIRCRAFT COMPANY



At SPARTAN after school hours—sports such as ice hockey at the Tulsa Coliseum between big league teams and every form of social activity is at your disposal.

Address: SPARTAN SCHOOL OF AERONAUTICS, Dept. PA-3, Tulsa, Oklahoma. Capt. Maxwell W. Balfour, Director

Send me a copy of the NEW 1940 Catalog and Supplement describing in detail SPARTAN Flying, Mechanical and Radio Courses. Tuition and detailed living expenses.

Name________ Age____

Address________

City & State________

Any Previous Flying Experience?________

Previous Education________

CHECK BELOW BRANCH OF AERONAUTICS YOU ARE MOST INTERESTED IN

☐ FLYING
☐ ENGINEERING
☐ MECHANICAL
☐ RADIO-INSTRUMENT
☐ EXECUTIVE-MANAGEMENT

MICHIGAN AVENUE

WHERE CHICAGO Lives

● The pulse of the city — Michigan Avenue. Chicago works and plays to the tune of its rhythmic hum. In the most convenient location on this famous thoroughfare, Hotel Auditorium provides spacious pleasant rooms, excellent service and superb cuisine, at reasonable rates.

WITH BATH FROM $2.50 WITHOUT BATH FROM $1.50

Hotel AUDITORIUM

MICHIGAN AT CONGRESS GEO. H. MINK, Manager

AERO FIRE PREVENTION

It is proper and wise that airplane fire risks be faced squarely, their causes studied and precautions taken to minimize them. The Aero Insurance Underwriters have made a careful study of air safety, particularly relating to fire and fire hazards. Jerome Lederer, Chief Engineer of the Aero Insurance Underwriters, brings the findings of their study to the readers of POPULAR AVIATION. Don't miss this informative article in the

APRIL ISSUE

POPULAR AVIATION

ON SALE MARCH 10

(*Continued from page* 80)

5. First to fly from the west coast of Africa to the Virgin Islands, making it holder of the world's record for non-stop over-water flying, 3,300 miles on this jump.

6. First airboat to circumnavigate the globe the longest way—25,000 miles—with San Diego as the starting and ending point.

When Russ Rogers and company returned to San Diego last July they stepped out of the "Guba" and into another Model 28, with markings of the British Royal Air Force on its wing and hull. In this they demonstrated to the United States Navy another stunning possibility—easily accomplished flights of bombers across the Atlantic between Europe and the North American continent. They took the PBY replica, which the English government bought for experimental purposes with a view to possible large-scale production, from San Diego to Buffalo, N. Y., then to Botwood, Newfoundland, and finally directly across to Felixstowe, marine aircraft experimental establishment of the Royal Air Force on the North Sea.

That gave the Navy experts plenty of food for thought, not only as to the ability of the PBY. A horde of bombers flying in the opposite direction could no longer be considered as pure fancy. There is irony in the sale of a PBY to England. Glowering at Great Britain from the other side of the diplomatic fence is Russia which also boasts not only a PBY but a complete set of plans and tools for the mass production of these airboats. In 1937, Consolidated sent a corps of 10 engineers to Taganrog, Russia, on the Sea of Azov, where the technique of American manufacturing was introduced at a huge plant. Preceding the technicians were a complete PBY, parts for another and the design and tools. The enigmatic Russians claimed the ships were to be used for commercial, cargo-carrying purposes. Yes, it was all done with the consent of the U. S. Navy, whose strategists are well aware of the fact that Alaska is not too comfortably distant from Siberia.

The Atlantic was transversed half a dozen times last summer by another Model 28, purchased by American Export Airlines for survey flights preparatory to establishing a regular service.

American aviation knows no more glorious chapter than the military and commercial saga of the PBY-type flying boat. And from it greater developments have sprung. There is the mighty four-engined XPB2Y-1, several of which are under construction for the Navy, and the experimental twin-motored (2,000 h.p. Wright *Cyclones* each, the largest ever installed in a plane) Model 31, said to be the fastest and longest-range airboat in the world.

But engineers are looking beyond these, to the other side of the horizon, where the flying wing is awaiting practical application. As for the airplane of tomorrow, based on proved principles of design and construction, the PBY's chief engineer, I. M. Laddon, has this to say:

"It will carry up to 300 passengers with baggage, mail and baggage, or mail and express and have a range sufficient to cross any ocean or continent with a safe reserve of fuel. Flying at well over 300 m.p.h. in the stratosphere where ideal conditions for smooth, fast flight exist, the passenger will find a modern expression of the fundamental urge to travel, in keeping with an age of speed."

END

It Takes Headlines

(*Continued from page* 53)

tion announced some ground schools in the Wisconsin vocational schools, the W.C.A.C. wrote the district NYA supervisor offering corps members as volunteer speakers and equipment for part time use. That also got publicity and it was a worthy public service.

When the Community Chest drive starts let your organization offer a couple of planes to fly signs over the city. Organize a speakers bureau and let the various civic clubs know that the emminent attorney, Joe Doakes, is a member of the Whoosis Aviation club and he'll be glad to talk free at one of their noon luncheons. Send your speakers before high school and grade school assemblies, to Boy Scout and Girl Scout meetings, down to the Y.M.C.A. You'll be amazed how gladly they will be received.

If possible, get an unusual twist on your normal activities. That makes for news. For example, the W.C.A.C. planned a navigation race from Milwaukee to Kohler, Wis., back to West Bend, Wis., and then into the Curtiss-Wright airport at Milwaukee. Normally that would have been worth maybe two paragraphs in the newspapers—one to announce the race was to be held, another telling the winners. Some wise member of the corps remembered the state and nation was wrought up over the dual Thanksgivings; one on November 23 for FDR, the other on November 30 for the Republican governors.

So the group announced a Turkey Day race to be held the Sunday before Thanksgiving the First with turkeys, geese, ducks and chickens (all donated) for prizes and got themselves a couple of good feature stories.

At the annual hobby show in Milwaukee's huge auditorium, the same organization carted a small plane from an airport through the downtown streets, set it up along with other things as an exhibit and kept someone on duty to explain controls, struts and whatnot to the thousands who saw the hobby show.

The possibilities for legitimate publicity for your aviation organization are bounded only by your imagination and the worthwhileness of your activities. But remember—only *good* publicity is news.

END

Government Sailplane

THE first sailplane ever to be ordered directly by the U. S. Government recently was delivered to a Government soaring school project at Cassidy Lake, Michigan. The sailplane was completed 19 days after the order was received, although the order itself called for 30-day delivery. The ship was built by the Bowlus Sailplane Company, San Fernando, Cal.

S. D. Planes Released For Sale to Allies; Hint 9 Million Order

TRIB 3-14-40

By HAROLD OSBORNE

The drone of bombers over riddled Poland, which led to declaration of war by the allies, echoed at San Diego today with an announcement by Consolidated Aircraft Corp. officials confirming Washington, D. C., reports that Consolidated PBY-type planes have been released for the allies use. The "blitzkrieg" of last September has resulted in "substantial orders from abroad" being received by Consolidated, it was reported.

First official word that Consolidated planes were contemplated for sale to certain European powers came in a United Press dispatch quoting Rear Adm. John H. Towers, chief of the navy

(Continued on Page 4A, Col. 3)

Release S. D. Planes For Sale to Allies

CONTINUED FROM PAGE ONE

bureau of aeronautics, as saying that "four types of navy planes have been or will be released to the allies by the joint army-navy aeronautical board." He said they were the Vought FB2U and the twin-engined Consolidated PBY flying boats, the Brewster fighter, and Grumman monoplane fighter, all of which have been stripped of secret equipment, such as bomb sights.

Silent on Details

A Consolidated spokesman confirmed the statement that the firm here has received from the government a release for export sale of the PBY planes, and said "we are well along in the early stages of construction." He declined to announce the number of planes being built, for what nation they were consigned, or the price of the contract, which is believed to be nearly $9,000,000.

The "guess" on the contract price for the foreign order is based on the annual report of Consolidated, released last week, which revealed the firm has a backlog of unfilled orders totaling $49,000,000, instead of the $40,000,000 previously announced. While Consair officials refused to comment on the $9,000,000, authoritative sources said it involved orders by a foreign nation or nations.

Flight Records Set

The PBY-type planes are those used by the American navy as patrol bombers, and have established many group distance flight records, notably from San Diego to Panama and Hawaii, and from Hawaii to the Philippines. Soon after delivery of the first plane of the PBY series a few years ago it established a new international distance record of 3443 miles in a flight from Coco Solo, C. Z., to Alameda. Subsequent refinements have extended the range beyond 4000 miles, and in 1937-38 alone the navy made three "routine delivery flights" of 42 PBY planes from here to Hawaii, a distance of more than 2500 miles, and two "routine deliveries" of 26 planes from here to Coco Solo, 3000 miles. Last year the planes flew from San Diego to the Caribbean sea for United States fleet exercises.

The PBY's are the world's longest-range two-engine flying boats, and their speed exceeds 200 miles an hour. One PBY, the Guba, owned by Richard Archbold, aerial scientist, flew around the world after being used 10 months in New Guinea scientific exploration operations. A commercial PBY was flown by Sir Hubert Wilkins over 19,000 miles of Arctic wastes under the most adverse weather conditions, in search of the lost Russian transpolar fliers headed by Sigismund Leavaneffsky. Ability of the planes to "take it" were demonstrated in special single-engine take-off tests, which proved it was possible for a PBY to take off with only one engine with sufficient fuel to continue flying a distance of more than 1300 miles. Consolidated officials said it is believed this feat is unequalled in flying boat history.

Effect of the allied order for the planes, coming after $40,000,000 in American army and navy planes had been placed with Consolidated, is reflected in increased employment. Maj. R. H. Fleet, Consair head, said in the annual report that 4300 are working at the plant in three shifts, and that approximately 100 men a week are being added.

PBY statistics show a maximum range of 4200 miles, a service ceiling of more than 29,000 feet, the ability to climb to 15,000 feet in 13.4 minutes, and full speed at 12,000 feet, 194 miles an hour.

Steel Arrives For Consair's New Buildings

UNION 3-15-40

By HOWARD MORIN

Laden to the plimsoll mark with steel for the Consolidated Aircraft Co.'s new buildings, canned goods and general merchandise for other Pacific coast ports, American-Hawaiian line steamer American will dock at the B st. pier tonight from Baltimore and Philadelphia. The fabricated steel is but part of shipments arriving by rail and water from Pennsylvania steel mills for Consolidated's expansion building program.

The Quaker line will have two intercoastal steamers in port over the week-end. Westbound, the San Rafael is due tomorrow from eastern ports with 350 tons local cargo. The Peter Kerr is to berth at B st. pier Sunday to load 350 tons kelp meal, canned goods and beans for eastern markets.

UNION 3-15-40

Foundations Laid For Navy Buildings

Consolidated Aircraft Co. officials announced yesterday that foundations for the group of new buildings, which will virtually double capacity of the plant, have been completed.

Construction of the addition to the experimental building has started, and steel rapidly is being delivered for the other structures. All of the new structures will be in use by June 1.

Officials said that authority has been received from the government to export the company's PBY-type planes, of which a number already has been sold to foreign governments.

ROMEIKE & CURTICE LTD.
The Press Clipping Bureau
35 Shoe Lane
LONDON, E.C.4
Telephone: Central 2781

Consolidated Air

EXTRACT FROM

FLIGHT
The First Aero Weekly in the World
EVERY THURSDAY 6d.
Flight Publishing Co. Ltd.
Dorset House, Stamford Street, London, S.E.1

DATE 29 FEB 1940

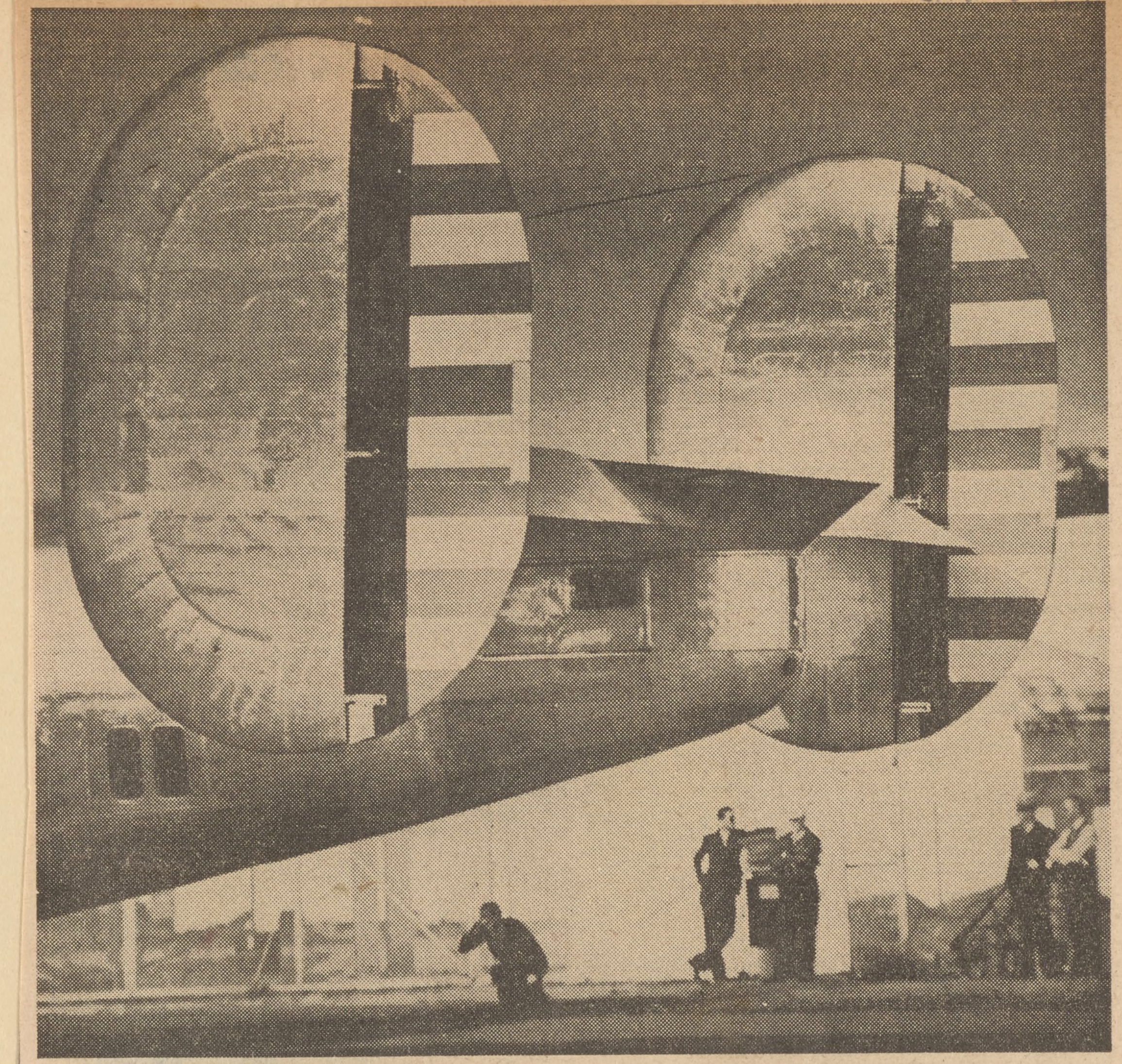
Consolidated Factory Expansion

ANNOUNCEMENT was made by the Navy Department on December 20 that the Consolidated Aircraft Corporation had been awarded a contract for $20,016,699. This is the largest single order for aeroplanes ever placed by the United States Government, and it increased the backlog of Consolidated to over $40,000,000. With work on other contracts occupying most of the production capacity, the new record order has made it necessary for the company to add new plant facilities to meet the deliveries required by the contract.

The building expansion will aggregate approximately 396,000 sq. ft., or an increase in the present area of 87 per cent. The largest single area to be roofed is the new final assembly building measuring 360 feet by 720 feet. This has a clear span of 120 feet and a clearance from floor to roof truss bottoms of 36 feet. In addition to the buildings, all factory yard areas will be paved with asphaltic concrete. These areas, due to the mild southern Californian climate, can be used virtually the entire year round for final assembly operations.

MAMMOTH ARMY WARBIRD DWARFS HUMANS

UNION 3-17-40



The huge size of the Consolidated-built new army bomber XB-24 is shown by the height of the two rudders. The plane, soon to be flown to Dayton, O., for final army tests, weighs 24 tons, carries a crew of nine and can fly 3000 miles with four tons of bombs.

* * *

THREE S. D. AIRCRAFT PLANTS MAY BE FORCED TO EXPAND

Business Volume Biggest in History; Foreign Orders Boost Local Backlogs

By HOWARD MORIN

San Diego's aircraft manufacturers, working at top speed on orders exceeding $50,000,000, may have to continue their expansion program.

The three Lindbergh field plants, Consolidated, Ryan and Solar, whose total personnel by midsummer will exceed 9000, will be will be vitally affected by the action of the British and French governments in purchasing nearly a billion dollars' worth of new American warplanes.

ORDERS MAY DOUBLE

Consolidated Aircraft Corp., whose backlog of foreign and domestic orders is the largest in the company's history, is negotiating with the British and French purchasing commission, authorities said. Consolidated's current foreign orders for $9,000,000 in planes and spare parts is expected to be doubled or tripled as a result of negotiations under way.

The Ryan and Solar plants probably will be called upon to manufacture special equipment for the 8000 planes which the French and British are planning to have built in American aircraft factories.

HUGE BAGKLOG

The American aircraft industry consists of 45 plane and 13 engine manufacturing plants. Of these 23 plane and nine engine plants are working on military orders. According to the aeronautical chamber of commerce, their current backlog totals $500,000,000.

Despite the tremendous expansion program which has resulted in doubling the facilities of San Diego's aircraft factories, American plane plants occupy a relatively unimportant place in the nation's industrial structure. Sixty thousand persons are on aircraft shop payrolls compared to 600,000 on automotive plant and related industry payrolls.

Since President Roosevelt proclaimed a state of "limited national emergency," the secrecy that has surrounded the aircraft manufacturing industry is equaled only by that of shipyards building new warships for the navy. Few industries have as many government-imposed restrictions. The factories are honeycombed with military and navy inspectors and government agents. Yet no other industry is so fearful of the results of over-expansion, a fear that has dictated extreme caution in adding to its backlog.

SET FOR SLUMP

Local aircraft manufacturers are keenly alive to the fact there will be a slump at the end of the war, but they are taking extraordinary precautions to avoid major lay-offs when this time comes. They are attuned primarily to the growing needs of American aviation, military, navy and commercial, and only in a limited way to foreign markets. They say emphatically that the three local plants are not "war babies." In fact they are anything but that. They were operating on a substantial basis long

(Continued on Page 2-A, Col. 3)

Business Volume May Force Plane Plant Expansion

(Continued from Page 1)

before the allies and Germany went to war.

To legislation establishing airlines which buy from aircraft and aircraft engine makers, and to millions of dollars in orders from the American armed forces over a long period is attributed the present prosperity of the industry, and particularly the three local plants.

EXPANSION PRE-ARRANGED

Lindbergh field plane manufacturers explain that long before orders from foreign governments began to pour in after the war started, plans had been perfected for plant expansion. Leases for additional tidelands to meet increased building programs were sought and obtained from the harbor department. The need for additional shop and assembly space became apparent when Americans, in constantly increasing numbers, began taking to the air.

A striking example of this is the official government announcement that commercial and military planes worth $40,000,000 are produced each month from American factories. By mid-June it is estimated the monthly productions will be valued at $55,000,000.

On domestic commercial and on foreign commercial and military orders, profits of manufacturers are limited to 12 percent under the Vinson-Trammell act when dealing with the U. S. government, and only by their shrewdness when doing business with foreign buyers. Nevertheless the government maintains an effective check on foreign shipments by permitting only certain types to be exported.

FUTURE CONSIDERED

Because the prosperity of the industry depends fundamentally on decisions of many governmental agencies and congressional appropriations, most manufacturers are extremely chary of expanding their plants unless they are reasonably sure of future orders that are not dependent primarily on continuation of the European war.

In line with this policy San Diego's aircraft factories are exceedingly fortunate, as less than $10,000,000 of the total $50,000,000 backlog is for foreign contracted planes.

Less than 15 years ago San Diego's aircraft industry was confined to manufacturing and flying operations of one company.

Today the industry's payroll runs into millions of dollars annually and planes are produced that literally traverse the world's skyways. Backlogs are building up. And there is every indication they will continue, officials say, for transportation by air is getting safer, swifter and more exhilarating with every new model produced by American engineers.

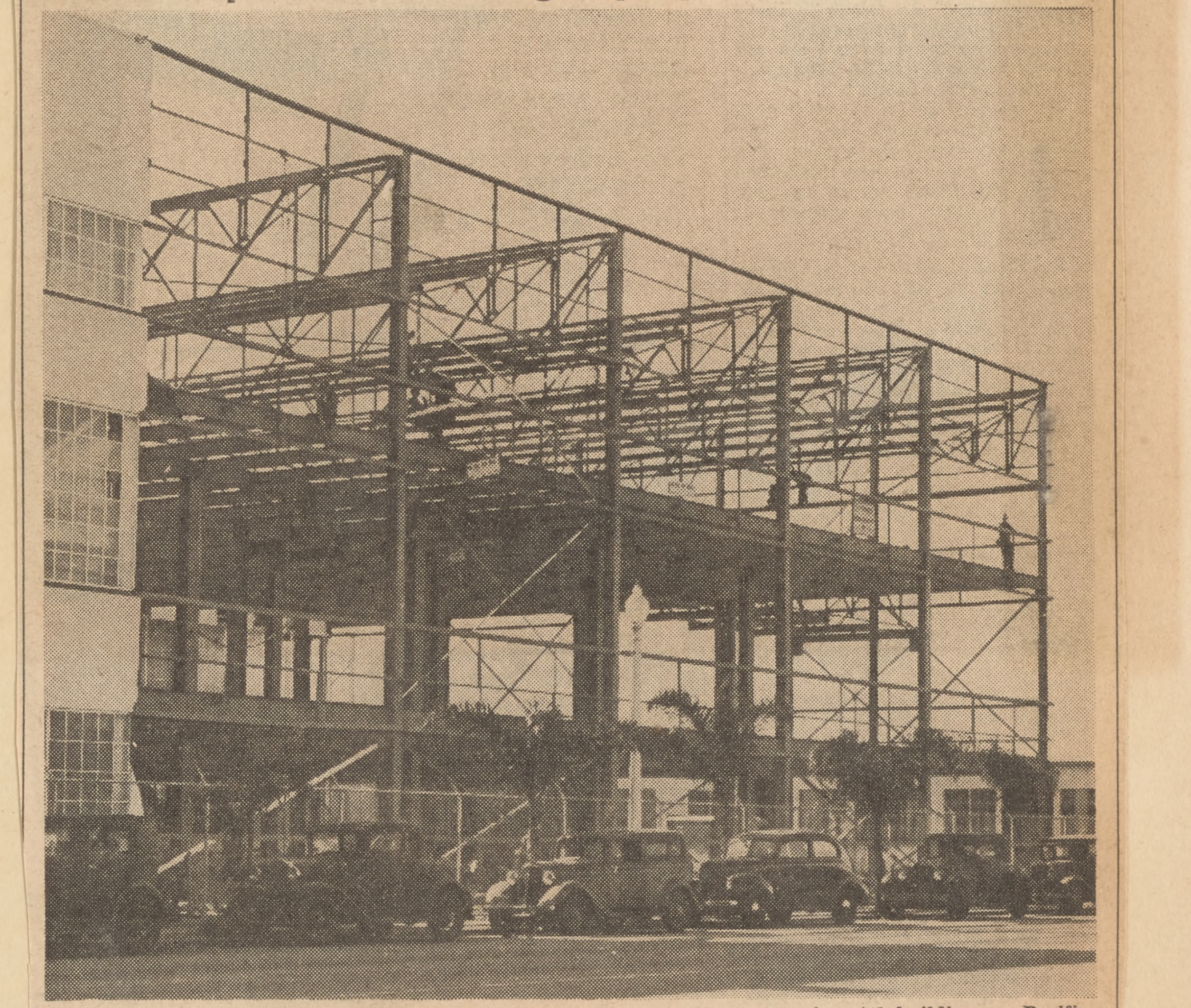
UNION
3-17-40

GROUP DISCUSSES NEEDS OF CONSERVATION CORPS

Educators, industrialists and CCC officials at an educational conference here included (seated, left to right) William P. Mayer, outdoors relief superintendent; Mrs. Ada York Allen, county schools superintendent; Harry Webster, CCC soliciting aid; (standing, left to right) Dean A. G. Peterson, State college; Dayton E. Jones, state superintendent, CCC selecting; John Waller, district education adviser; J. H. Waterbury, assistant personnel superintendent, Consolidated Aircraft Corp., and Raymond H. Hinkel, work relief superintendent.

Consair's Experimental Building Rapidly Taking Form

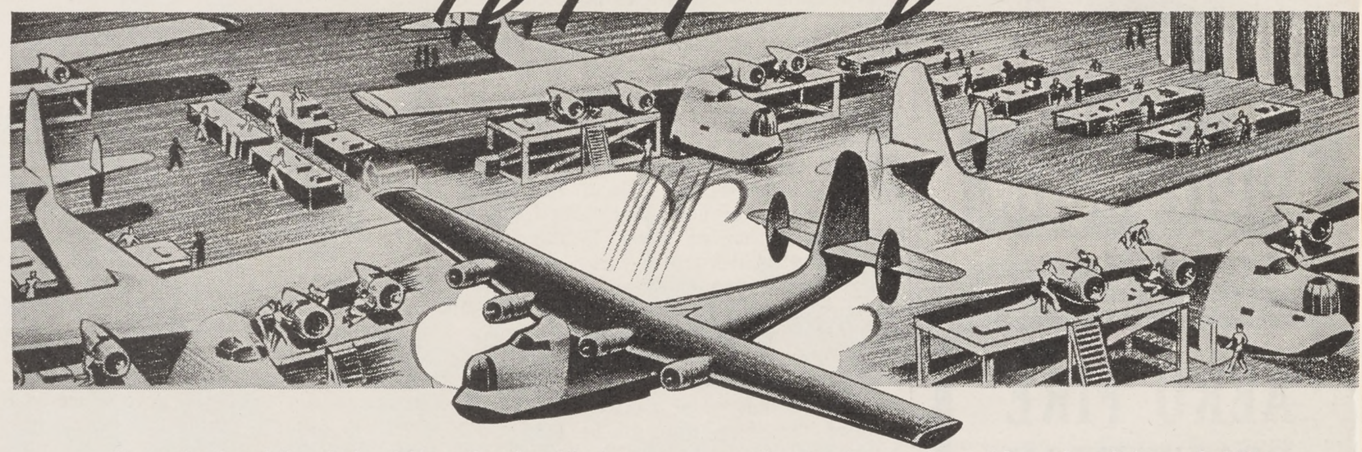
TRIB
3-16-40



Steel framework of the addition to Consolidated Aircraft Corp.'s experimental building on Pacific highway, is rising rapidly as the firm pushes its expansion program occasioned by new army, navy and-foreign orders. In addition to the framework shown here, foundations have been completed for a group of new buildings at the plant. Forty-eight tons of steel for the buildings arrived here last night aboard the American-Hawaiian intercoastal freighter American.

How would YOU like to be with these fellows

—Now building flying boats for Uncle Sam



No wonder these fellows had such big smiles when this picture was taken. The very next day they reported for work with a famous builder of huge flying boats and other great aircraft for the Army, Navy, and airlines.

Wouldn't YOU be happy over such a top-notch start on an Aviation career . . . to step right into aircraft production scenes like those you see pictured here . . . to have the privilege of helping build some of the world's largest and finest aircraft . . . to know you had entered a line of work where progress depends only on yourself?

Like these fellows, you could also take pride in a choice of training that won you a start in Aviation . . . training that would continue to give you the confidence, knowledge, and ability to push steadily ahead.

That is the brand of training you get at Aero ITI . . . training so practical, so thorough, so closely paralleling actual aviation industry duties, that Aero ITI men are *sought-for*. Over 700 of this school's graduates have entered Aviation in the last year alone . . . proof that the industry *wants* Aero ITI-trained men.

At Aero ITI you can train for aircraft production, aircraft maintenance, or aeronautical engineering. For details, send the coupon NOW.

A COURSE TO MEET YOUR NEEDS
. . . send this coupon for full information

AERO INDUSTRIES TECHNICAL INSTITUTE
5255 West San Fernando Road, Los Angeles, California

Please send information on Aviation careers and Aero ITI training to fit my needs and circumstances. I am interested in the following branch of Aviation:

☐ Aircraft Mechanics; ☐ Aeronautical Engineering; ☐ Undecided, please send more information.

Name________ Age____

Address________

City________ State________ a-27-pa

AERO INDUSTRIES TECHNICAL INSTITUTE
5255 West San Fernando Road, Los Angeles, California

Five Courses In
Aircraft Mechanics and Aeronautical Engineering
Offering U. S. Civil Aeronautics Authority Approved
12 Months Aircraft Mechanics Training

EXECUTIVE BOARD

C. A. VAN DUSEN	JOHN K. NORTHROP	ROBERT E. GROSS
Vice-Pres., Consolidated Aircraft Corporation	President, Northrop Aircraft, Inc.	President, Lockheed Aircraft Corporation

---

S. D. Planes Released For Sale to Allies; Hint 9 Million Order

TRIB 3-14-40

By HAROLD OSBORNE

The drone of bombers over riddled Poland, which led to declaration of war by the allies, echoed at San Diego today with an announcement by Consolidated Aircraft Corp. officials confirming Washington, D. C., reports that Consolidated PBY-type planes have been released for the allies use. The "blitzkrieg" of last September has resulted in "substantial orders from abroad" being received by Consolidated, it was reported.

First official word that Consolidated planes were contemplated for sale to certain European powers came in a United Press dispatch quoting Rear Adm. John H. Towers, chief of the navy

(Continued on Page 4A, Col. 3)

Release S. D. Planes For Sale to Allies

CONTINUED FROM PAGE ONE

bureau of aeronautics, as saying that "four types of navy planes have been or will be released to the allies by the joint army-navy aeronautical board." He said they were the Vought FB2U and the twin-engined Consolidated PBY flying boats, the Brewster fighter, and Grumman monoplane fighter, all of which have been stripped of secret equipment, such as bomb sights.

Silent on Details

A Consolidated spokesman confirmed the statement that the firm here has received from the government a release for export sale of the PBY planes, and said "we are well along in the early stages of construction." He declined to announce the number of planes being built, for what nation they were consigned, or the price of the contract, which is believed to be nearly $9,000,000.

The "guess" on the contract price for the foreign order is based on the annual report of Consolidated, released last week, which revealed the firm has a backlog of unfilled orders totaling $49,000,000, instead of the $40,000,000 previously announced. While Consair officials refused to comment on the $9,000,000, authoritative sources said it involved orders by a foreign nation or nations.

Flight Records Set

The PBY-type planes are those used by the American navy as patrol bombers, and have established many group distance flight records, notably from San Diego to Panama and Hawaii, and from Hawaii to the Philippines. Soon after delivery of the first plane of the PBY series a few years ago it established a new international distance record of 3443 miles in a flight from Coco Solo, C. Z., to Alameda. Subsequent refinements have extended the range beyond 4000 miles, and in 1937-38 alone the navy made three "routine delivery flights" of 42 PBY planes from here to Hawaii, a distance of more than 2500 miles, and two "routine deliveries" of 26 planes from here to Coco Solo, 3000 miles. Last year the planes flew from San Diego to the Caribbean sea for United States fleet exercises.

The PBY's are the world's longest-range two-engine flying boats, and their speed exceeds 200 miles an hour. One PBY, the Guba, owned by Richard Archbold, aerial scientist, flew around the world after being used 10 months in New Guinea scientific exploration operations. A commercial PBY was flown by Sir Hubert Wilkins over 19,000 miles of Arctic wastes under the most adverse weather conditions, in search of the lost Russian transpolar fliers headed by Sigismund Leavaneffsky. Ability of the planes to "take it" were demonstrated in special single-engine take-off tests, which proved it was possible for a PBY to take off with only one engine with sufficient fuel to continue flying a distance of more than 1300 miles. Consolidated officials said it is believed this feat is unequalled in flying boat history.

Effect of the allied order for the planes, coming after $40,000,000 in American army and navy planes had been placed with Consolidated, is reflected in increased employment. Maj. R. H. Fleet, Consair head, said in the annual report that 4300 are working at the plant in three shifts, and that approximately 100 men a week are being added.

PBY statistics show a maximum range of 4200 miles, a service ceiling of more than 29,000 feet, the ability to climb to 15,000 feet in 13.4 minutes, and full speed at 12,000 feet, 194 miles an hour.

Steel Arrives For Consair's New Buildings

UNION 3-15-40

By HOWARD MORIN

Laden to the plimsoll mark with steel for the Consolidated Aircraft Co.'s new buildings, canned goods and general merchandise for other Pacific coast ports, American-Hawaiian line steamer American will dock at the B st. pier tonight from Baltimore and Philadelphia. The fabricated steel is but part of shipments arriving by rail and water from Pennsylvania steel mills for Consolidated's expansion building program.

The Quaker line will have two intercoastal steamers in port over the week-end. Westbound, the San Rafael is due tomorrow from eastern ports with 350 tons local cargo. The Peter Kerr is to berth at B st. pier Sunday to load 350 tons kelp meal, canned goods and beans for eastern markets.

UNION 3-15-40

Foundations Laid For Navy Buildings

Consolidated Aircraft Co. officials announced yesterday that foundations for the group of new buildings, which will virtually double capacity of the plant, have been completed.

Construction of the addition to the experimental building has started, and steel rapidly is being delivered for the other structures. All of the new structures will be in use by June 1.

Officials said that authority has been received from the government to export the company's PBY-type planes, of which a number already has been sold to foreign governments.

ROMEIKE & CURTICE LTD.
The Press Clipping Bureau
35 Shoe Lane
LONDON, E.C.4
Telephone: Central 2781

Consolidated Acd

EXTRACT FROM
FLIGHT
The First Aero Weekly in the World
EVERY THURSDAY 6d.
Flight Publishing Co. Ltd.
Dorset House, Stamford Street, London, S.E.1

DATE 29 FEB 1940

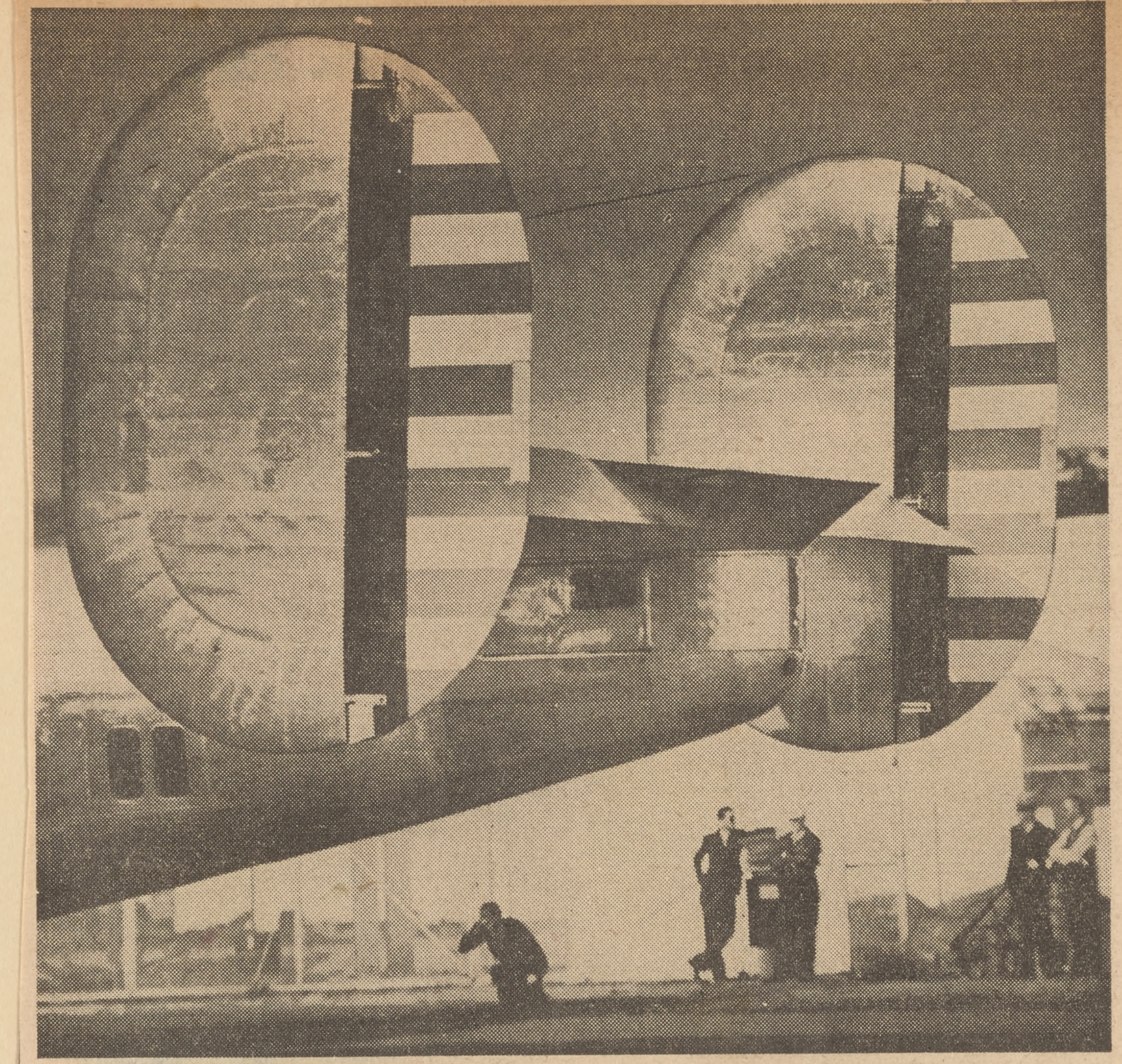
Consolidated Factory Expansion

ANNOUNCEMENT was made by the Navy Department on December 20 that the Consolidated Aircraft Corporation had been awarded a contract for $20,016,699. This is the largest single order for aeroplanes ever placed by the United States Government, and it increased the backlog of Consolidated to over $40,000,000. With work on other contracts occupying most of the production capacity, the new record order has made it necessary for the company to add new plant facilities to meet the deliveries required by the contract.

The building expansion will aggregate approximately 396,000 sq. ft., or an increase in the present area of 87 per cent. The largest single area to be roofed is the new final assembly building measuring 360 feet by 720 feet. This has a clear span of 120 feet and a clearance from floor to roof truss bottoms of 36 feet. In addition to the buildings, all factory yard areas will be paved with asphaltic concrete. These areas, due to the mild southern Californian climate, can be used virtually the entire year round for final assembly operations.

MAMMOTH ARMY WARBIRD DWARFS HUMANS

UNION 3-17-40



The huge size of the Consolidated-built new army bomber XB-24 is shown by the height of the two rudders. The plane, soon to be flown to Dayton, O., for final army tests, weighs 24 tons, carries a crew of nine and can fly 3000 miles with four tons of bombs.

* * *

THREE S. D. AIRCRAFT PLANTS MAY BE FORCED TO EXPAND

Business Volume Biggest in History; Foreign Orders Boost Local Backlogs

By HOWARD MORIN

San Diego's aircraft manufacturers, working at top speed on orders exceeding $50,000,000, may have to continue their expansion program.

The three Lindbergh field plants, Consolidated, Ryan and Solar, whose total personnel by midsummer will exceed 9000, will be will be vitally affected by the action of the British and French governments in purchasing nearly a billion dollars' worth of new American warplanes.

ORDERS MAY DOUBLE

Consolidated Aircraft Corp., whose backlog of foreign and domestic orders is the largest in the company's history, is negotiating with the British and French purchasing commission, authorities said. Consolidated's current foreign orders for $9,000,000 in planes and spare parts is expected to be doubled or tripled as a result of negotiations under way.

The Ryan and Solar plants probably will be called upon to manufacture special equipment for the 8000 planes which the French and British are planning to have built in American aircraft factories.

HUGE BAGKLOG

The American aircraft industry consists of 45 plane and 13 engine manufacturing plants. Of these 23 plane and nine engine plants are working on military orders. According to the aeronautical chamber of commerce, their current backlog totals $500,000,000.

Despite the tremendous expansion program which has resulted in doubling the facilities of San Diego's aircraft factories, American plane plants occupy a relatively unimportant place in the nation's industrial structure. Sixty thousand persons are on aircraft shop payrolls compared to 600,000 on automotive plant and related industry payrolls.

Since President Roosevelt proclaimed a state of "limited national emergency," the secrecy that has surrounded the aircraft manufacturing industry is equaled only by that of shipyards building new warships for the navy. Few industries have as many government-imposed restrictions. The factories are honeycombed with military and navy inspectors and government agents. Yet no other industry is so fearful of the results of over-expansion, a fear that has dictated extreme caution in adding to its backlog.

SET FOR SLUMP

Local aircraft manufacturers are keenly alive to the fact there will be a slump at the end of the war, but they are taking extraordinary precautions to avoid major lay-offs when this time comes. They are attuned primarily to the growing needs of American aviation, military, navy and commercial, and only in a limited way to foreign markets. They say emphatically that the three local plants are not "war babies." In fact they are anything but that. They were operating on a substantial basis long

(Continued on Page 2-A, Col. 3)

Business Volume May Force Plane Plant Expansion

(Continued from Page 1)

before the allies and Germany went to war.

To legislation establishing airlines which buy from aircraft and aircraft engine makers, and to millions of dollars in orders from the American armed forces over a long period is attributed the present prosperity of the industry, and particularly the three local plants.

EXPANSION PRE-ARRANGED

Lindbergh field plane manufacturers explain that long before orders from foreign governments began to pour in after the war started, plans had been perfected for plant expansion. Leases for additional tidelands to meet increased building programs were sought and obtained from the harbor department. The need for additional shop and assembly space became apparent when Americans, in constantly increasing numbers, began taking to the air.

A striking example of this is the official government announcement that commercial and military planes worth $40,000,000 are produced each month from American factories. By mid-June it is estimated the monthly productions will be valued at $55,000,000.

On domestic commercial and on foreign commercial and military orders, profits of manufacturers are limited to 12 percent under the Vinson-Trammell act when dealing with the U. S. government, and only by their shrewdness when doing business with foreign buyers. Nevertheless the government maintains an effective check on foreign shipments by permitting only certain types to be exported.

FUTURE CONSIDERED

Because the prosperity of the industry depends fundamentally on decisions of many governmental agencies and congressional appropriations, most manufacturers are extremely chary of expanding their plants unless they are reasonably sure of future orders that are not dependent primarily on continuation of the European war.

In line with this policy San Diego's aircraft factories are exceedingly fortunate, as less than $10,000,000 of the total $50,000,000 backlog is for foreign contracted planes.

Less than 15 years ago San Diego's aircraft industry was confined to manufacturing and flying operations of one company.

Today the industry's payroll runs into millions of dollars annually and planes are produced that literally traverse the world's skyways. Backlogs are building up. And there is every indication they will continue, officials say, for transportation by air is getting safer, swifter and more exhilarating with every new model produced by American engineers.

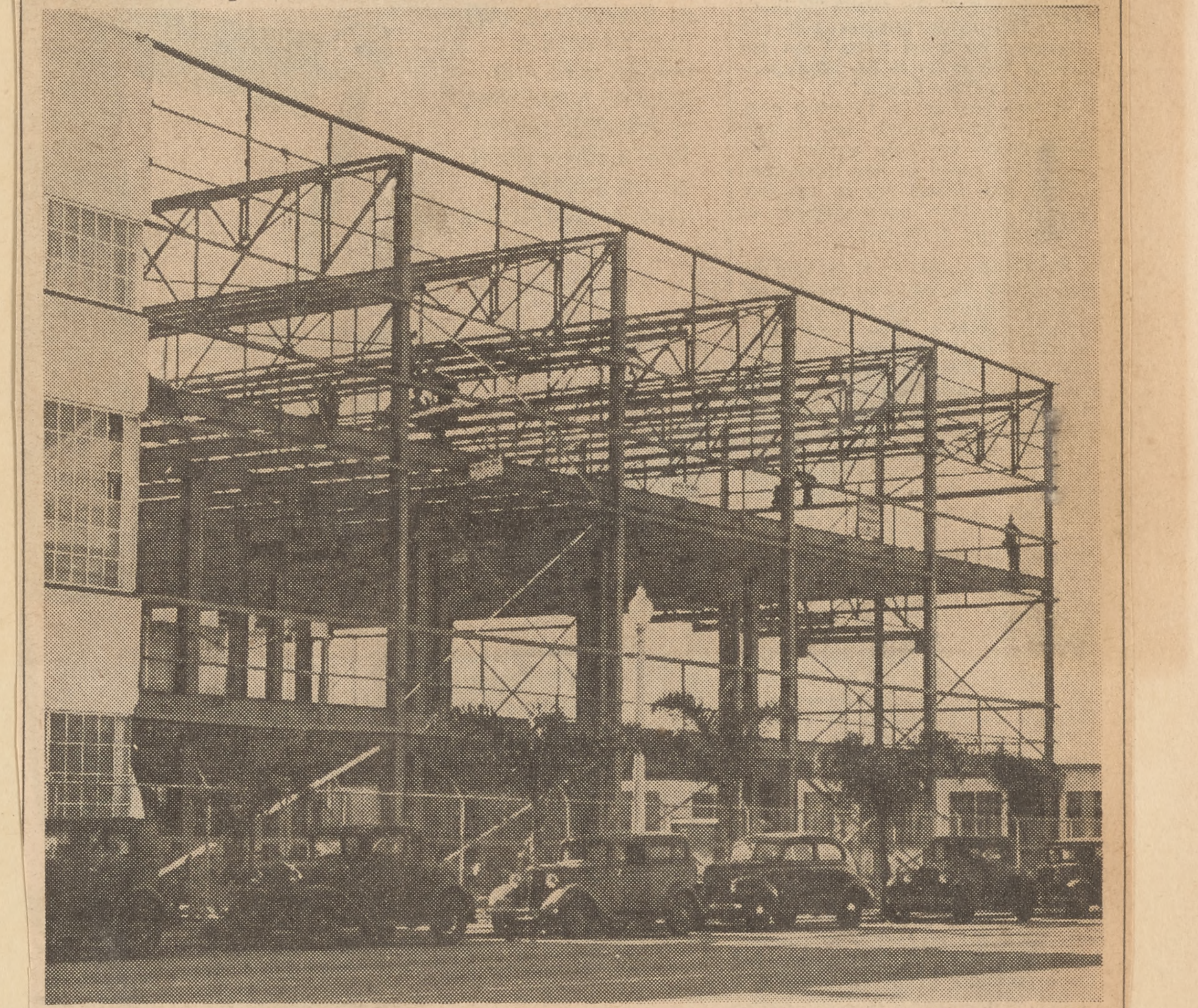
UNION
3-17-40

GROUP DISCUSSES NEEDS OF CONSERVATION CORPS

Educators, industrialists and CCC officials at an educational conference here included (seated, left to right) William P. Mayer, outdoors relief superintendent; Mrs. Ada York Allen, county schools superintendent; Harry Webster, CCC soliciting aid; (standing, left to right) Dean A. G. Peterson, State college; Dayton E. Jones, state superintendent, CCC selecting; John Waller, district education adviser; J. H. Waterbury, assistant personnel superintendent, Consolidated Aircraft Corp., and Raymond H. Hinkel, work relief superintendent.

Consair's Experimental Building Rapidly Taking Form

TRIB
3-16-40



Steel framework of the addition to Consolidated Aircraft Corp.'s experimental building on Pacific highway, is rising rapidly as the firm pushes its expansion program occasioned by new army, navy and foreign orders. In addition to the framework shown here, foundations have been completed for a group of new buildings at the plant. Forty-eight tons of steel for the buildings arrived here last night aboard the American-Hawaiian intercoastal freighter American.

C.A. TIMES 3/6/40

FINANC

Aircraft Corp. Backlog Soars

Consolidated Orders at $49,000,000 Set All-Time High Mark

Consolidated Aircraft Corp. of San Diego, in releasing its annual report yesterday disclosed that the backlog of unfilled orders had reached an all-time peak of $49,000,000, a volume sufficient to keep the plant busy until midsummer of 1941.

This represents an increase in the backlog of nearly $8,000,000 since the first of this year, the unfilled orders at the close of 1939 having been $42,141,694. The company stated that during the past few months it had received contracts from foreign customers for a released version of the PBY ship, a two-engine long-range navy patrol bomber.

PROFITS SHOWN

Net profits for the year ended Dec. 31, last, totaled $1,104,327 after all charges including provision for Federal income taxes, equal after preferred dividend requirements to $1.79 a share on the 576,160 shares of common stock outstanding, exclusive of Treasury shares. This compares with net profits of $1,535,110, or $2.55 a share on common stock in the preceding year.

Net sales last year totaled $3,603,239.93 compared with $12,245,068 in 1938. The company's profits last year were more than 30 per cent of net sales compared with 12.5 per cent in 1938 and 10.1 per cent for the entire period since 1924.

COSTS LOWER

Costs and expenses applicable to products sold totaled $2,239,126 compared with $10,422,747 in 1938, leaving profits from operations of $1,364,113 against $1,822,321. The company follows the policy of not taking profits on contracts unless substantially completed.

Commenting on the low level of deliveries last year R. H. Fleet, president of the company, said this was due to the large amount of new aircraft design and development work, together with production work in tooling and making detail parts and assemblies for airplanes for delivery during 1940 and 1941.

TAX AGREEMENT

Coincidentally with the execution of the contract with the United States Navy for $20,016,700 of flying boats, the company obtained a closing agreement with the government covering the method of amortizing the cost of added facilities, both for income-tax and profit-limitation purposes.

Because of the construction program, totaling approximately

Turn to page 26, Column 6

Aircraft Corp. Backlog Soars

Continued from 24th Page

$2,000,000, to handle the large backlog and desire of avoiding if possible the issuance of new stock, directors decided against declaring a dividend on common stock in order to retain the funds in the business.

The balance sheet as of Dec. 31, last, shows current assets of $7,607,619 including cash of $3,080,266 and inventories of $4,244,660 compared with current liabilities of $3,613,749. A year earlier current assets were $5,225,715, including cash of $3,586,478, and inventories of $1,134,964 compared with current liabilities of $1,554,491.

The company's employees now number approximately 4300, about 100 men a week are being added, and three shifts are being operated.

Since organization in 1924 the company has delivered a total of $55,030,960 of planes, including $32,684,268 for the Navy, $12,241,269 for the Army and $10,105,423 for all others.

VISITOR LADENED WITH LEIS

TRIB 3/19/40

When Mrs. C. A. Van Dusen, wife of the vice president of Consolidated Aircraft company, met her son in Honolulu, C. A. Van Dusen III, she was covered almost completely with beautiful flower leis. Ens. Van Dusen is flying planes for the navy in Honolulu. Mrs. Van Dusen will leave Honolulu Friday.

CONSAIR PLACES ORDER

UNION 3/19/40

LOS ANGELES, March 19 (A.P.)—Ted Lynn, president of Aircraft Accessories Corp., today announced receipt of orders from Consolidated Aircraft Corp. and Lockheed Aircraft Corp., aggregating $140,000 for hydraulic equipment for use on present production models.

KANSAS CITY TIMES 3/9/40

1,000 SEE MOVIE AT AIRPORT.

Construction and Test Flight of Navy Plane Is Shown.

A crowd estimated at slightl more than 1,000 persons went to th plant of the Missouri Aviation Institute at the Municipal Air termina last night to see a sound motio picture depicting the constructio and test flight of a navy flying boa

The picture was supplied by th Consolidated Aircraft corporatio of San Diego, Calif. Students at th institute, representatives of the Ci Aeronautics authority and guest comprised the unexpectedly larg audience.

AVIATION, *March, 1940*

High Wing Bomber

The Army's new Consolidated bombardment plane, XB-24, has just made its initial flight at Lindbergh Field, San Diego. It is powered with four Pratt & Whitney 18-cylinder twin-row radial engines rated at 1200 h.p. each. Propellers are Hamilton Standard three-blade hydromatic constant speed, 12 feet in diameter.

The XB-24 is a high-wing type, all metal construction, full cantilever high aspect ratio, with tractor nacelles mounted flush to the upper surface of the center section. Fowler type flaps extend inboard from the ailerons.

AVIATION 3/40

REPORT CARD

Of Air School

With thousands of new men needed for Southern California aircraft factories, the aviation schools of that section have been hard pressed to provide enough skilled men. Every school and factory has cooperated to make the expansion process as orderly as possible. At Lockheed an extensive employee training program is in full swing. In San Diego, where Consolidated Aircraft Corporation is currently doubling its factory facilities and both Solar and Ryan are hiring steadily, the vocational schools of the city have taken a hand in the training program, offering six-week courses designed to teach aircraft shop fundamentals to 2000 young men by July 1st. Ryan School of Aeronautics has expanded its course to include a six-week mechanic course, and has inaugurated a number of new training programs, including a course for parachute riggers.

Consolidated Expands

AV. 3/40

Last December Consolidated Aircraft was sitting pretty, with a $20,000,000 backlog that promised to use the full capacity of the five-year old 25-acre plant at San Diego. Then, at one blow, the biggest single aircraft order ever placed by the government doubled Consolidated's backlog and threw a real production problem on their hands.

Now comes the announcement of an 87% increase in factory space to provide the needed capacity. An additional 64 acres have been leased or optioned, and 400,000 sq. ft. will be roofed. New facilities will include final assembly, final finish, paint shop and wood mill, and experimental, maintenance, and office space. Extra assembly space is also to be provided by paving yard areas, since well-known California climate permits outdoor work most of the year.

Under a closing agreement with the Treasury, part of the cost of expansion is to be charged against the government order.

New Consolidated

AVIATION 3/40

An official Army Air Corps release covering the new Consolidated XB-24 four-engine landplane bomber gives the plane a gross weight of 40,000 lbs., wing span 110 ft., length 64 ft., over-all height 19 ft., and with accomodations for a crew of six to nine men, depending on mission.

Performance estimates include a top speed of more than 300 miles per hour, range of approximately 3,000 miles, and bomb load capacity of about four tons. The plane is powered by four Pratt & Whitney 18-cylinder twin-row engines of 1200 h.p. each, and is propelled by Hamilton Standard 3-blade hydromatic constant speed propellers of 12 ft. diameter.

The wing is of the Davis airfoil type, with high aspect ratio and high mid-wing mounting on the fuselage. Construction is all-metal throughout, of stressed-skin design, with fabric covered control surfaces. Landing gear is of tricycle type, retractable. Fowler type trailing edge flaps extend the length of the wing inboard of the ailerons. Large bomb doors open in the belly and generous hatches and turrets are provided in nose, top, sides and rear of the fuselage.

New Big Order For Solar Aircraft

TRIB 3/20/40

Solar Aircraft Co.'s backlog of business has been upped substantially by a $150,000 order from the Glenn L. Martin Co., Baltimore, one of the world's largest airplane manufacturers. The order is for manifolds, tail pipes and preheaters of the latest type developed by Solar, and will be installed in military planes for the United States air corps.

Edmund T. Price, president, said the Martin order, and the $180,000 order recently placed by Consolidated Aircraft Corp., are the two largest in Solar's history. Both carry options for considerably increased quantities, which the company expects will be exercised during the year.

AIRCRAFT NEWS

Thursday, March 21, 1940

Navy Bombers Fly Over Equator

HONOLULU—Six Navy patrol-bombers landed safely at Canton Island, south of the Equator, after a mass flight of nearly 2000 miles from Honolulu, naval officers disclosed Friday.

The landing was the first arrival of American naval planes at the mid-Pacific aviation base jointly controlled by England and the United States. The trip also marked the first flight across the Equator in the Pacific by United States warplanes. The unpublicized journey was a forerunner of the flight of a full squadron of planes some time before June from the Pearl Harbor naval base here to Manila.

AIRCRAFT NEWS 3/21/40

PAGE THREE

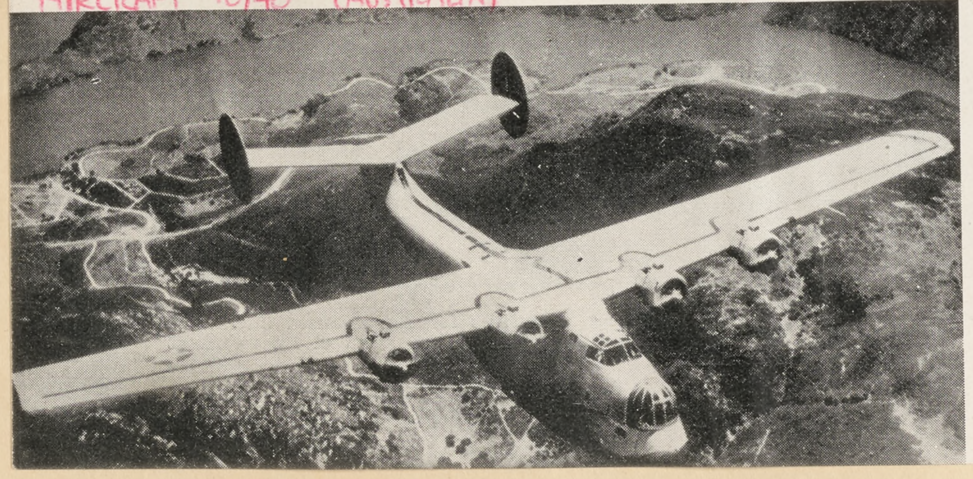
Consolidated Gets Plane Export Permit

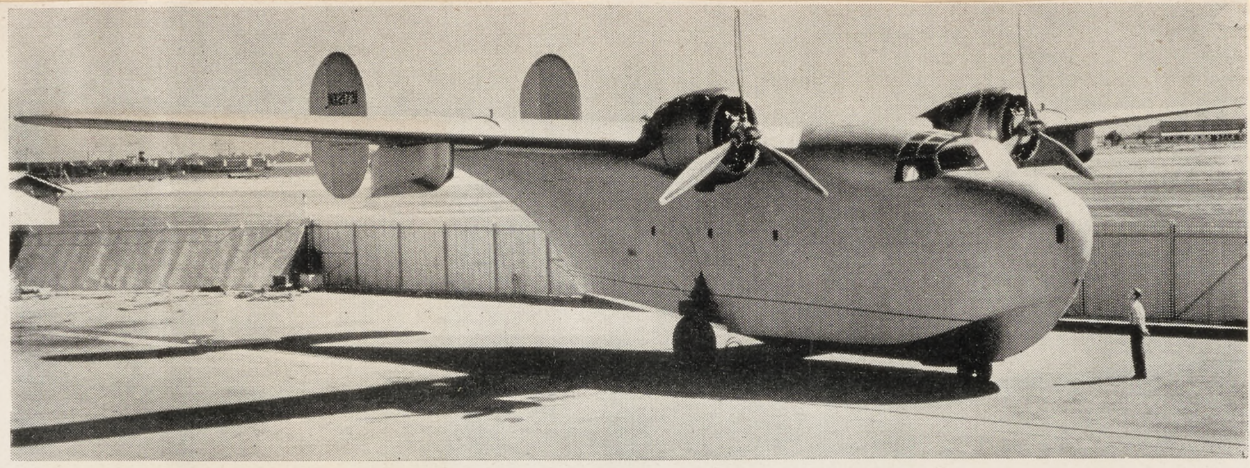
SAN DIEGO. — Consolidated Aircraft Corp. announced this week that a release had been received from the government for export sale of patrol bombing planes for Allied use.

The company declined to announce the number of planes being built, for what nation they were consigned or the price of the contract, but stated "we are well along in the early stages of construction."

NAVY BOMBER. — The latest Consolidated carried 49,000 pounds in bombs and torpedoes during recent tests. A range of 4000 miles is available.

AIRCRAFT 10/40 (AUSTRALIA)

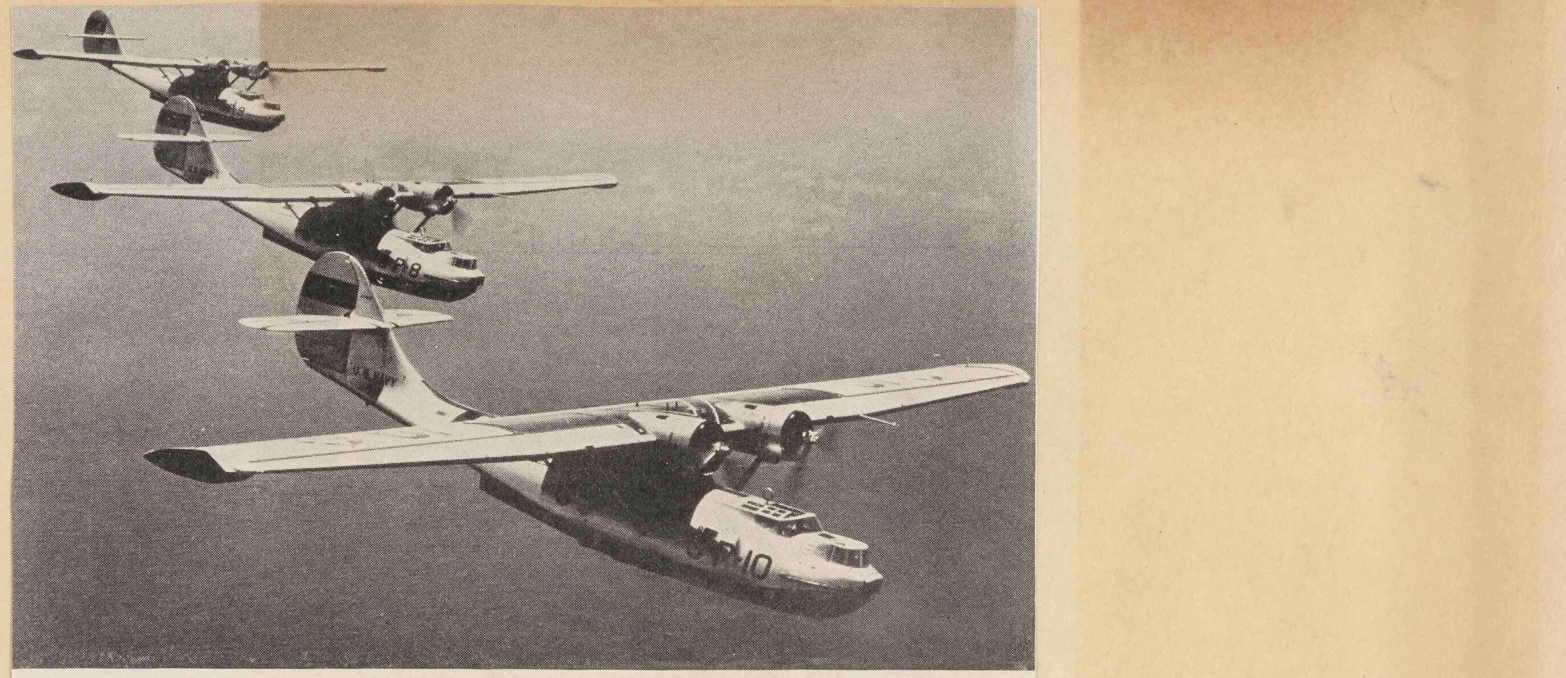




Is this all true ?

THE CONSOLIDATED AIRCRAFT CO'S newest product is easily the most remarkable flying boat ever built. With an all-up weight of 50,000 lb., it is the biggest boat ever powered with two engines, but these are the new Duplex Cyclones, giving 2000 horsepower for take-off. It is reported that top speed is 275 miles an hour, and range 10,000 miles. Outstanding features are the great depth of hull, the sudden sweep-up from the deep section to the tail, and the small size of the wing. Wing loading must be very high, but Fowler flaps keep the landing speed within bounds. Accommodation is provided for 52 day passengers, 28 sleepers; for Atlantic services, 28. The new boat was built as a private venture without official support of any kind, and the company states that design and construction took only 10 months, an almost incredible figure. It seems certain that the U.S. Navy will seize the opportunity of ordering a few squadrons.

AIRCRAFT (AUSTRALIA) 10/40



Part of a patrol plane squadron en route to Coco Solo from San Diego

AERO DIGEST FEB. 1940

FAMOUS FLYING BOAT FOR SALE!

CONSOLIDATED PBY 2 "GUBA"

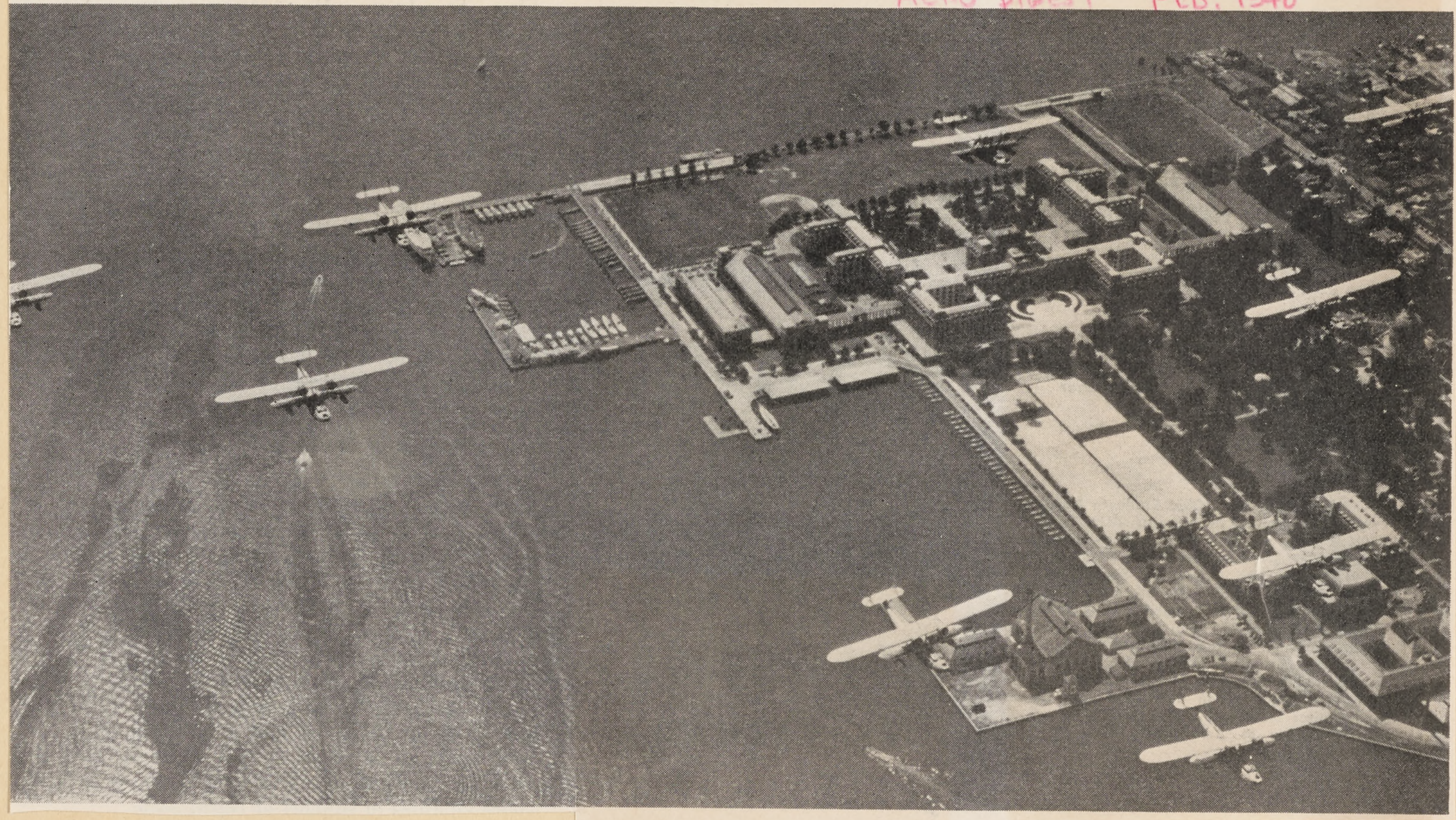
Built to U. S. Navy specifications. In A-1 condition throughout. Since crossing Australia, Africa, the Atlantic, Pacific and Indian Oceans, the ship has been completely overhauled by the factory.

Cruising range, 4000 miles. Maximum speed, 190 m.p.h. Two 900 h.p. Pratt & Whitney Twin Wasp engines. Automatic pilot. Complete radio equipment, including homing devices and direction finders. Separate 110 volt motor generators. 2 spare motors and many extra accessories. Further details on application. Circle 6-7560.

O. J. WHITNEY, INC. 9 Rockefeller Plaza
New York, N. Y.

AERO DIGEST FEB. 1940

AERO DIGEST FEB. 1940



Squadron VP-14 in formation with P2Y2 boats over the Naval Academy, Annapolis

---

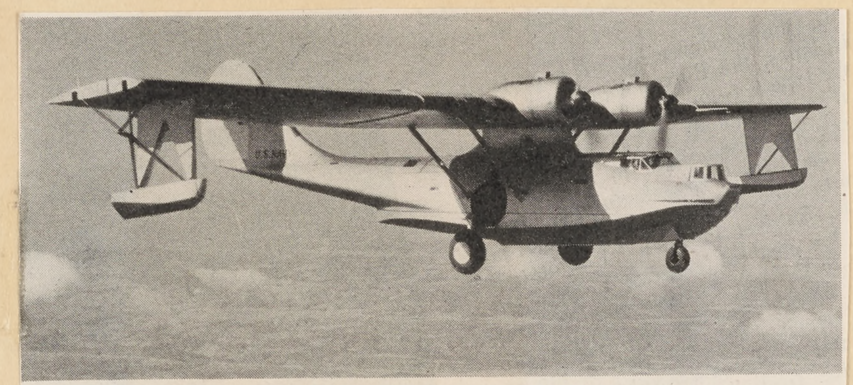
Consolidated Aircraft Allowed Charge-Offs

Consolidated Aircraft Corp. has negotiated a closing agreement with the Treasury Department under which the company will be allowed to charge off as an indirect factory expense the cost of tools used during the period of contract performance. The company, which recently was awarded a $20,016,699 contract for Navy patrol bombers, will also be permitted to charge off the depreciated cost, less salvage value, of buildings which must be demolished to carry out the contract, while costs involved in the razing also are deductible.

While the Treasury Department has stated that deductions under closing agreements with manufacturers do not represent a form of tax concession, Consolidated will have the advantage of knowing in advance what allowances will be permitted in the way of depreciation and obsolescence on plant and equipment for tax purposes and in calculating allowable profit under the Vinson-Trammel Act as amended during the last session of Congress by the National Defense Act. This closing agreement negotiated with Consolidated Aircraft is the second to be announced by the Treasury Department, and the first involving the aviation industry.

FEBRUARY 1940

AERO DIGEST

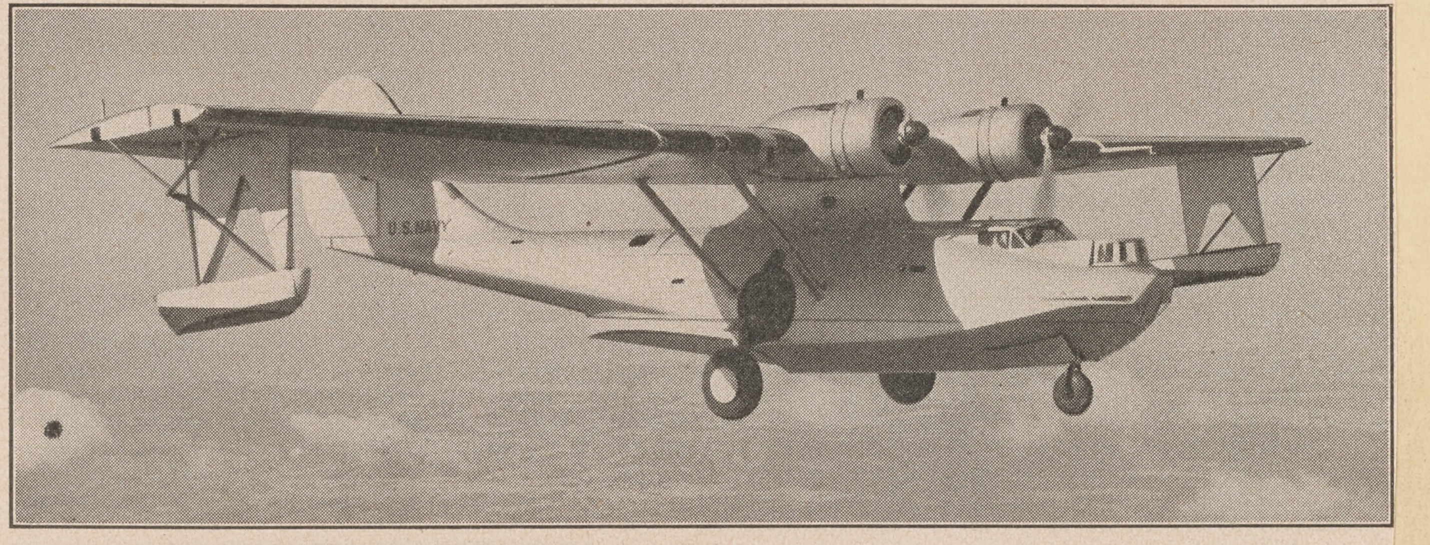


Consolidated XPBY-5A amphibian patrol bomber in flight

AERO DIGEST FEB 1940

---

128 THE MECCANO MAGAZINE MARCH 1940



Consolidated Model 28-5A, the largest amphibian aircraft in the world. Photograph reproduced by courtesy of Consolidated Aircraft Corporation, U.S.A.

Air) Consolidated Air

e Ltd

Lane.

ON.

SS

W

FEB 1940

the Norwegian Govern-

matter in their duty as a

Government felt that the

ship was such that they

hat the Altmark should be

L.A. TIMES 3/6/40

FINANC

Aircraft Corp. Backlog Soars

Consolidated Orders at $49,000,000 Set All-Time High Mark

Consolidated Aircraft Corp. of San Diego, in releasing its annual report yesterday disclosed that the backlog of unfilled orders had reached an all-time peak of $49,000,000, a volume sufficient to keep the plant busy until midsummer of 1941.

This represents an increase in the backlog of nearly $8,000,000 since the first of this year, the unfilled orders at the close of 1939 having been $42,141,694. The company stated that during the past few months it had received contracts from foreign customers for a released version of the PBY ship, a two-engine long-range navy patrol bomber.

PROFITS SHOWN

Net profits for the year ended Dec. 31, last, totaled $1,104,327 after all charges including provision for Federal income taxes, equal after preferred dividend requirements to $1.79 a share on the 576,160 shares of common stock outstanding, exclusive of Treasury shares. This compares with net profits of $1,535,110, or $2.55 a share on common stock in the preceding year.

Net sales last year totaled $3,603,239.93 compared with $12,245,068 in 1938. The company's profits last year were more than 30 per cent of net sales compared with 12.5 per cent in 1938 and 10.1 per cent for the entire period since 1924.

COSTS LOWER

Costs and expenses applicable to products sold totaled $2,239,126 compared with $10,422,747 in 1938, leaving profits from operations of $1,364,113 against $1,822,321. The company follows the policy of not taking profits on contracts unless substantially completed.

Commenting on the low level of deliveries last year R. H. Fleet, president of the company, said this was due to the large amount of new aircraft design and development work, together with production work in tooling and making detail parts and assemblies for airplanes for delivery during 1940 and 1941.

TAX AGREEMENT

Coincidentally with the execution of the contract with the United States Navy for $20,016,700 of flying boats, the company obtained a closing agreement with the government covering the method of amortizing the cost of added facilities, both for income-tax and profit-limitation purposes.

Because of the construction program, totaling approximately

Turn to page 26, Column 6

Aircraft Corp. Backlog Soars

Continued from 24th Page

$2,000,000, to handle the large backlog and desire of avoiding if possible the issuance of new stock, directors decided against declaring a dividend on common stock in order to retain the funds in the business.

The balance sheet as of Dec. 31, last, shows current assets of $7,607,619 including cash of $3,080,266 and inventories of $4,244,660 compared with current liabilities of $3,613,749. A year earlier current assets were $5,225,715, including cash of $3,586,478, and inventories of $1,134,964 compared with current liabilities of $1,554,491.

The company's employees now number approximately 4300, about 100 men a week are being added, and three shifts are being operated.

Since organization in 1924 the company has delivered a total of $55,030,960 of planes, including $32,684,268 for the Navy, $12,241,269 for the Army and $10,105,423 for all others.

VISITOR LADENED WITH LEIS

TRIB 3/19/40

When Mrs. C. A. Van Dusen, wife of the vice president of Consolidated Aircraft company, met her son in Honolulu, C. A. Van Dusen III, she was covered almost completely with beautiful flower leis. Ens. Van Dusen is flying planes for the navy in Honolulu. Mrs. Van Dusen will leave Honolulu Friday.

UNION 3/19/40

CONSAIR PLACES ORDER

LOS ANGELES, March 19 (A.P.)—Ted Lynn, president of Aircraft Accessories Corp., today announced receipt of orders from Consolidated Aircraft Corp. and Lockheed Aircraft Corp., aggregating $140,000 for hydraulic equipment for use on present production models.

KANSAS CITY TIMES 3/9/40

1,000 SEE MOVIE AT AIRPORT

Construction and Test Flight of Navy Plane Is Shown.

A crowd estimated at slightly more than 1,000 persons went to the plant of the Missouri Aviation Institute at the Municipal Air termina last night to see a sound motio picture depicting the constructio and test flight of a navy flying boat

The picture was supplied by th Consolidated Aircraft corporatio of San Diego, Calif. Students at th institute, representatives of the Civ Aeronautics authority and guest comprised the unexpectedly larg audience.

AVIATION, *March, 1940*

High Wing Bomber

The Army's new Consolidated bombardment plane, XB-24, has just made its initial flight at Lindbergh Field, San Diego. It is powered with four Pratt & Whitney 18-cylinder twin-row radial engines rated at 1200 h.p. each. Propellers are Hamilton Standard three-blade hydromatic constant speed, 12 feet in diameter.

The XB-24 is a high-wing type, all metal construction, full cantilever high aspect ratio, with tractor nacelles mounted flush to the upper surface of the center section. Fowler type flaps extend inboard from the ailerons.

AVIATION 3/40

REPORT CARD

Of Air School

With thousands of new men needed for Southern California aircraft factories, the aviation schools of that section have been hard pressed to provide enough skilled men. Every school and factory has cooperated to make the expansion process as orderly as possible. At Lockheed an extensive employee training program is in full swing. In San Diego, where Consolidated Aircraft Corporation is currently doubling its factory facilities and both Solar and Ryan are hiring steadily, the vocational schools of the city have taken a hand in the training program, offering six-week courses designed to teach aircraft shop fundamentals to 2000 young men by July 1st. Ryan School of Aeronautics has expanded its course to include a six-week mechanic course, and has inaugurated a number of new training programs, including a course for parachute riggers.

Consolidated Expands

Av. 3/40

Last December Consolidated Aircraft was sitting pretty, with a $20,000,000 backlog that promised to use the full capacity of the five-year old 25-acre plant at San Diego. Then, at one blow, the biggest single aircraft order ever placed by the government doubled Consolidated's backlog and threw a real production problem on their hands.

Now comes the announcement of an 87% increase in factory space to provide the needed capacity. An additional 64 acres have been leased or optioned, and 400,000 sq. ft. will be roofed. New facilities will include final assembly, final finish, paint shop and wood mill, and experimental, maintenance, and office space. Extra assembly space is also to be provided by paving yard areas, since well-known California climate permits outdoor work most of the year.

Under a closing agreement with the Treasury, part of the cost of expansion is to be charged against the government order.

New Consolidated

AVIATION 3/40

An official Army Air Corps release covering the new Consolidated XB-24 four-engine landplane bomber gives the plane a gross weight of 40,000 lbs., wing span 110 ft., length 64 ft., over-all height 19 ft., and with accomodations for a crew of six to nine men, depending on mission.

Performance estimates include a top speed of more than 300 miles per hour, range of approximately 3,000 miles, and bomb load capacity of about four tons. The plane is powered by four Pratt & Whitney 18-cylinder twin-row engines of 1200 h.p. each, and is propelled by Hamilton Standard 3-blade hydromatic constant speed propellers of 12 ft. diameter.

The wing is of the Davis airfoil type, with high aspect ratio and high mid-wing mounting on the fuselage. Construction is all-metal throughout, of stressed-skin design, with fabric covered control surfaces. Landing gear is of tricycle type, retractable. Fowler type trailing edge flaps extend the length of the wing inboard of the ailerons. Large bomb doors open in the belly and generous hatches and turrets are provided in nose, top, sides and rear of the fuselage.

TRIB 3/20/40

New Big Order For Solar Aircraft

Solar Aircraft Co.'s backlog of business has been upped substantially by a $150,000 order from the Glenn L. Martin Co., Baltimore, one of the world's largest airplane manufacturers. The order is for manifolds, tail pipes and preheaters of the latest type developed by Solar, and will be installed in military planes for the United States air corps.

Edmund T. Price, president, said the Martin order, and the $180,000 order recently placed by Consolidated Aircraft Corp., are the two largest in Solar's history. Both carry options for considerably increased quantities, which the company expects will be exercised during the year.

AIRCRAFT NEWS

Thursday, March 21, 1940

Navy Bombers Fly Over Equator

HONOLULU—Six Navy patrol-bombers landed safely at Canton Island, south of the Equator, after a mass flight of nearly 2000 miles from Honolulu, naval officers disclosed Friday.

The landing was the first arrival of American naval planes at the mid-Pacific aviation base jointly controlled by England and the United States. The trip also marked the first flight across the Equator in the Pacific by United States warplanes. The unpublicized journey was a forerunner of the flight of a full squadron of planes some time before June from the Pearl Harbor naval base here to Manila.

AIRCRAFT NEWS 3/21/40

PAGE THREE

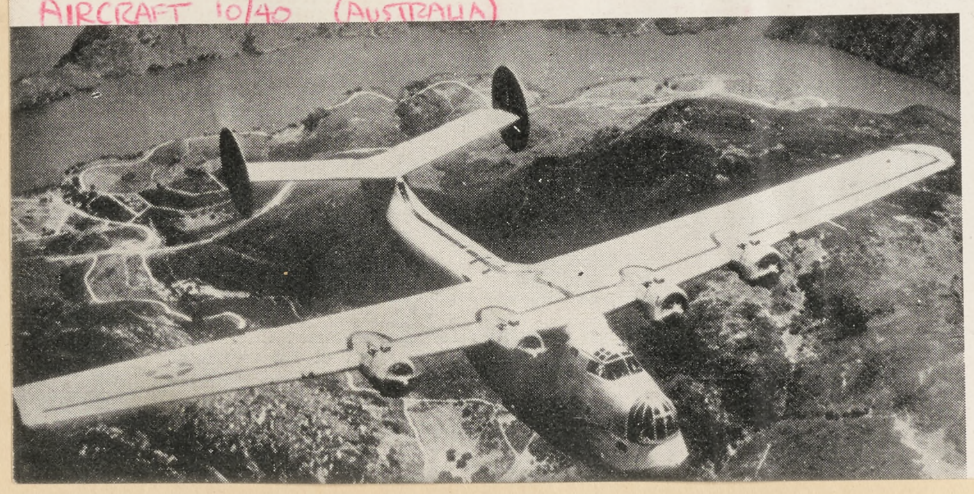
Consolidated Gets Plane Export Permit

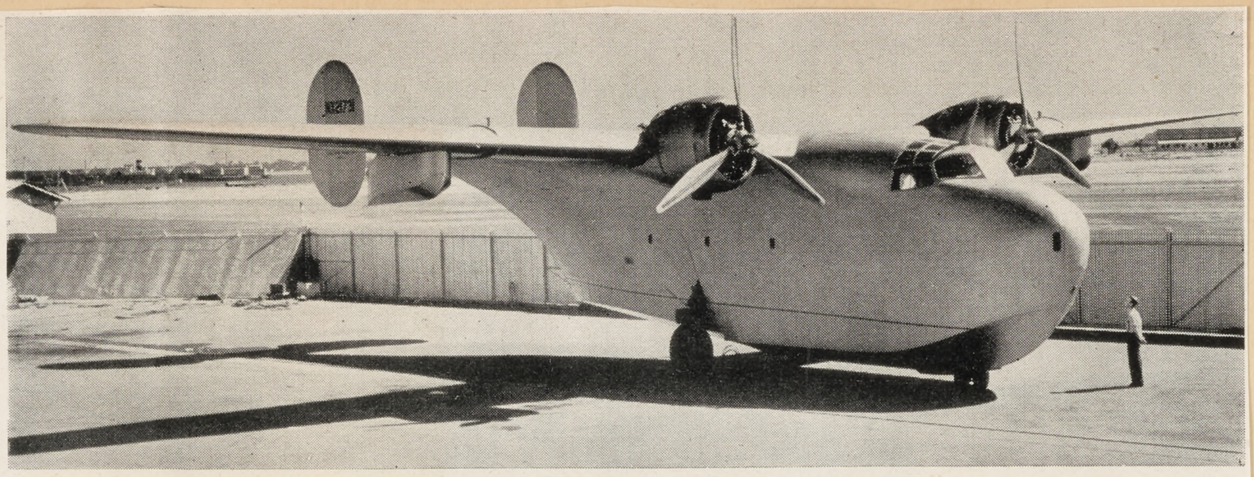
SAN DIEGO. — Consolidated Aircraft Corp. announced this week that a release had been received from the government for export sale of patrol bombing planes for Allied use.

The company declined to announce the number of planes being built, for what nation they were consigned or the price of the contract, but stated "we are well along in the early stages of construction."

NAVY BOMBER. — The latest Consolidated carried 49,000 pounds in bombs and torpedoes during recent tests. A range of 4000 miles is available.

AIRCRAFT 10/40 (AUSTRALIA)

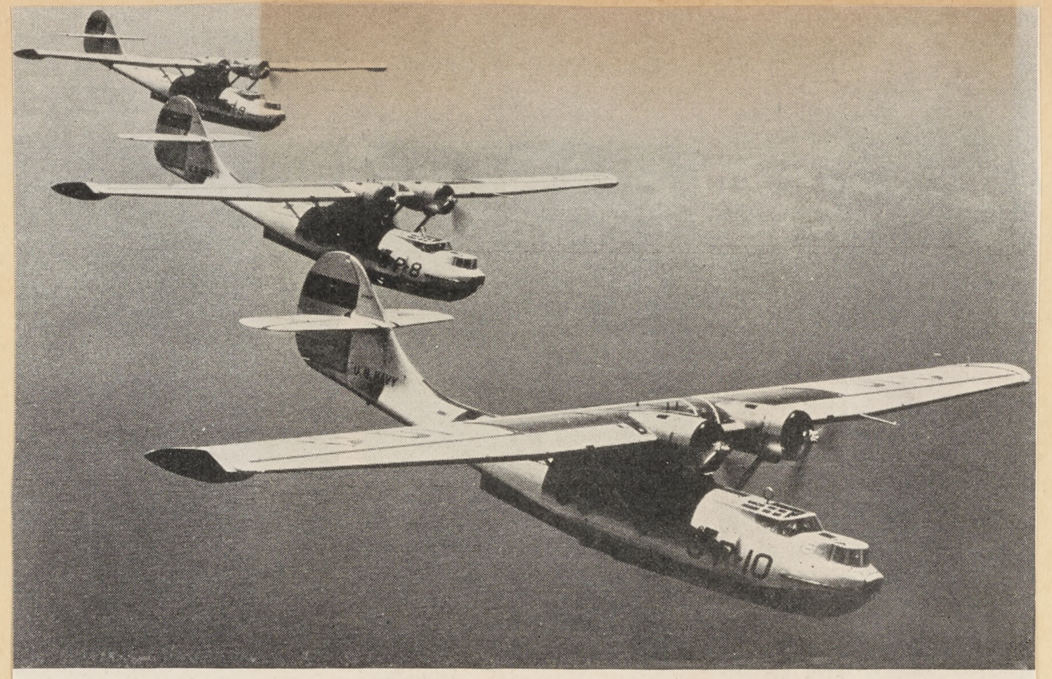




Is this all true ?

THE CONSOLIDATED AIRCRAFT CO'S newest product is easily the most remarkable flying boat ever built. With an all-up weight of 50,000 lb., it is the biggest boat ever powered with two engines, but these are the new Duplex Cyclones, giving 2000 horsepower for take-off. It is reported that top speed is 275 miles an hour, and range 10,000 miles. Outstanding features are the great depth of hull, the sudden sweep-up from the deep section to the tail, and the small size of the wing. Wing loading must be very high, but Fowler flaps keep the landing speed within bounds. Accommodation is provided for 52 day passengers, 28 sleepers; for Atlantic services, 28. The new boat was built as a private venture without official support of any kind, and the company states that design and construction took only 10 months, an almost incredible figure. It seems certain that the U.S. Navy will seize the opportunity of ordering a few squadrons.

AIRCRAFT (AUSTRALIA) 10/40



Part of a patrol plane squadron en route to Coco Solo from San Diego

AERO DIGEST FEB. 1940

FAMOUS FLYING BOAT FOR SALE!

CONSOLIDATED PBY 2 "GUBA"

Built to U. S. Navy specifications. In A-1 condition throughout. Since crossing Australia, Africa, the Atlantic, Pacific and Indian Oceans, the ship has been completely overhauled by the factory.

Cruising range, 4000 miles. Maximum speed, 190 m.p.h. Two 900 h.p. Pratt & Whitney Twin Wasp engines. Automatic pilot. Complete radio equipment, including homing devices and direction finders. Separate 110 volt motor generators. 2 spare motors and many extra accessories. Further details on application. Circle 6-7560.

O. J. WHITNEY, INC.

9 Rockefeller Plaza
New York, N. Y.

AERO DIGEST FEB. 1940

Consolidated Aircraft Allowed Charge-Offs

Consolidated Aircraft Corp. has negotiated a closing agreement with the Treasury Department under which the company will be allowed to charge off as an indirect factory expense the cost of tools used during the period of contract performance. The company, which recently was awarded a $20,016,699 contract for Navy patrol bombers, will also be permitted to charge off the depreciated cost, less salvage value, of buildings which must be demolished to carry out the contract, while costs involved in the razing also are deductible.

While the Treasury Department has stated that deductions under closing agreements with manufacturers do not represent a form of tax concession, Consolidated will have the advantage of knowing in advance what allowances will be permitted in the way of depreciation and obsolescence on plant and equipment for tax purposes and in calculating allowable profit under the Vinson-Trammel Act as amended during the last session of Congress by the National Defense Act. This closing agreement negotiated with Consolidated Aircraft is the second to be announced by the Treasury Department, and the first involving the aviation industry.

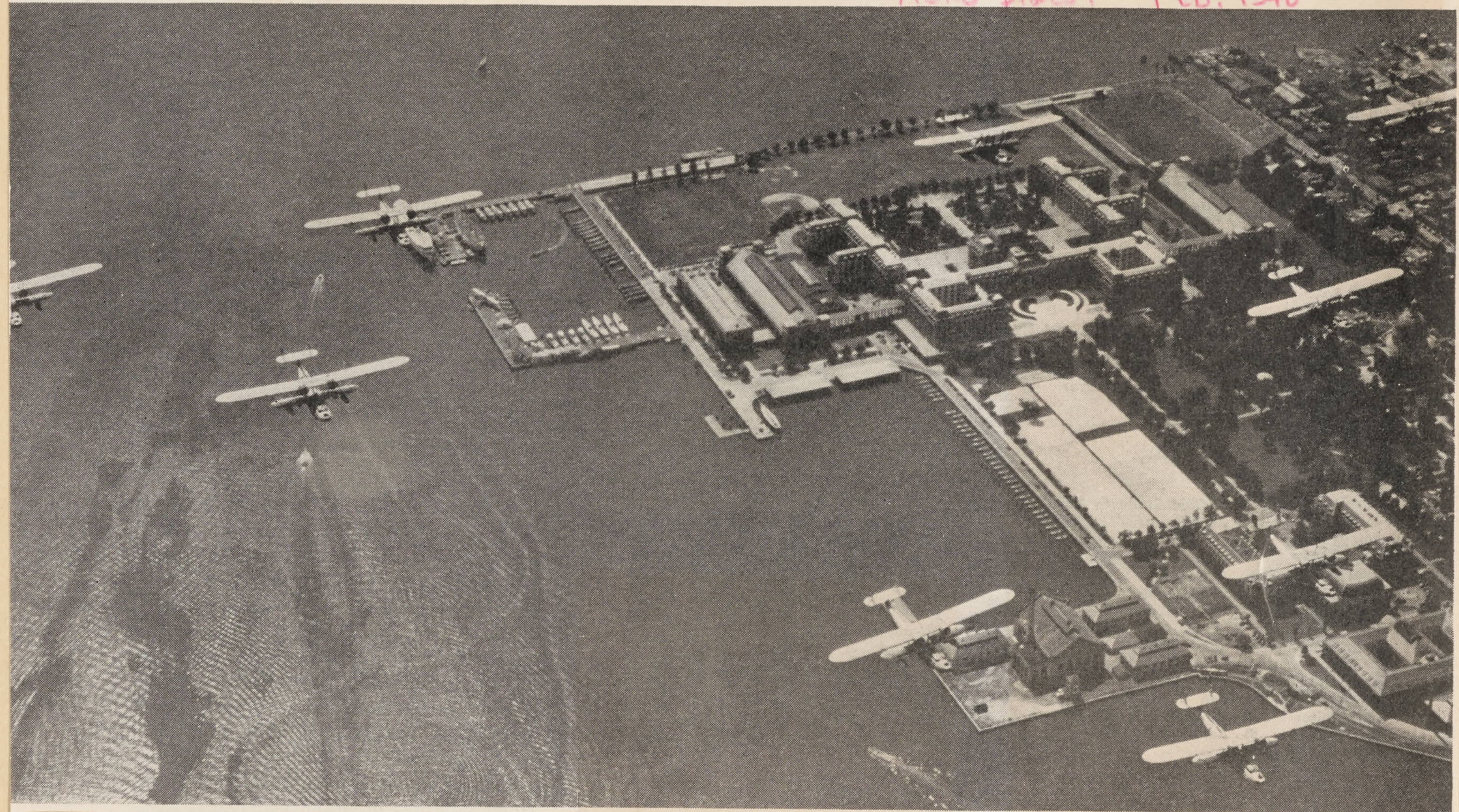
FEBRUARY 1940

AERO DIGEST

Consolidated XPBY-5A amphibian patrol bomber in flight

AERO DIGEST FEB 1940

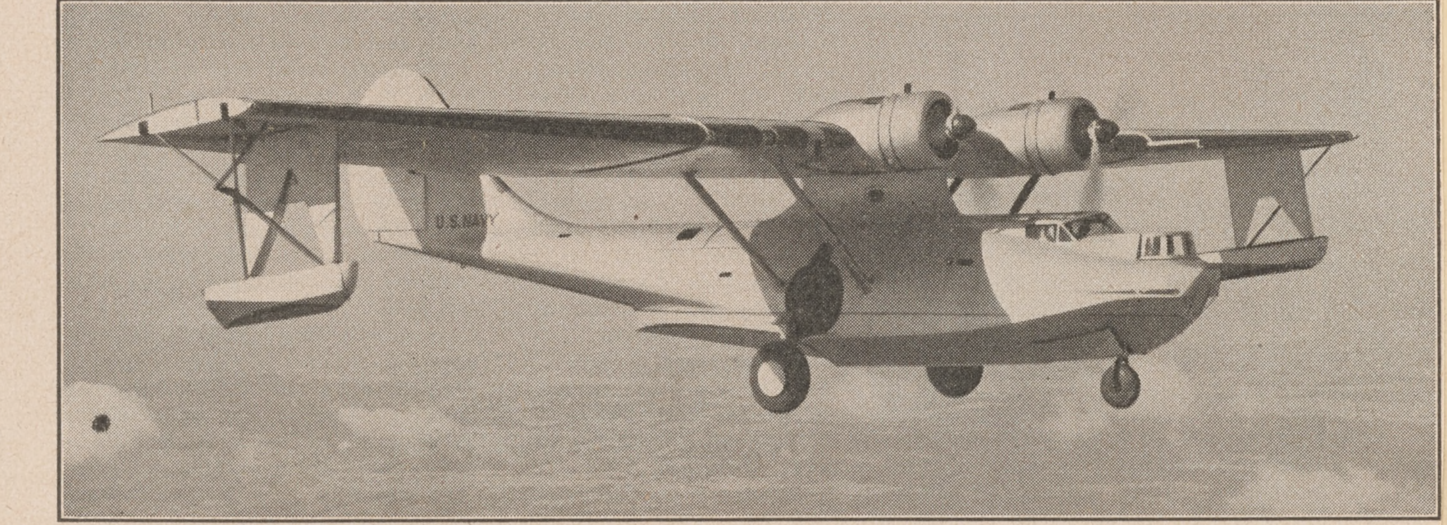
AERO DIGEST FEB. 1940



Squadron VP-14 in formation with P2Y2 boats over the Naval Academy, Annapolis

---

128 THE MECCANO MAGAZINE MARCH 1940



Consolidated Model 28-5A, the largest amphibian aircraft in the world. Photograph reproduced by courtesy of Consolidated Aircraft Corporation, U.S.A.

---

air) Consolidated Air

Romeike & Curtice Ltd
Telephone CENTRAL 2781 (2 Lines.)
R&C
35. Shoe Lane. LONDON. E.C.4.

EXTRACT FROM
SCOTTISH DAILY EXPRESS
196, Albion Street, Glasgow

19 FEB 1940

£8,000,000 AIR ORDER FOR U.S. COMPANY

Daily Express Air Reporter

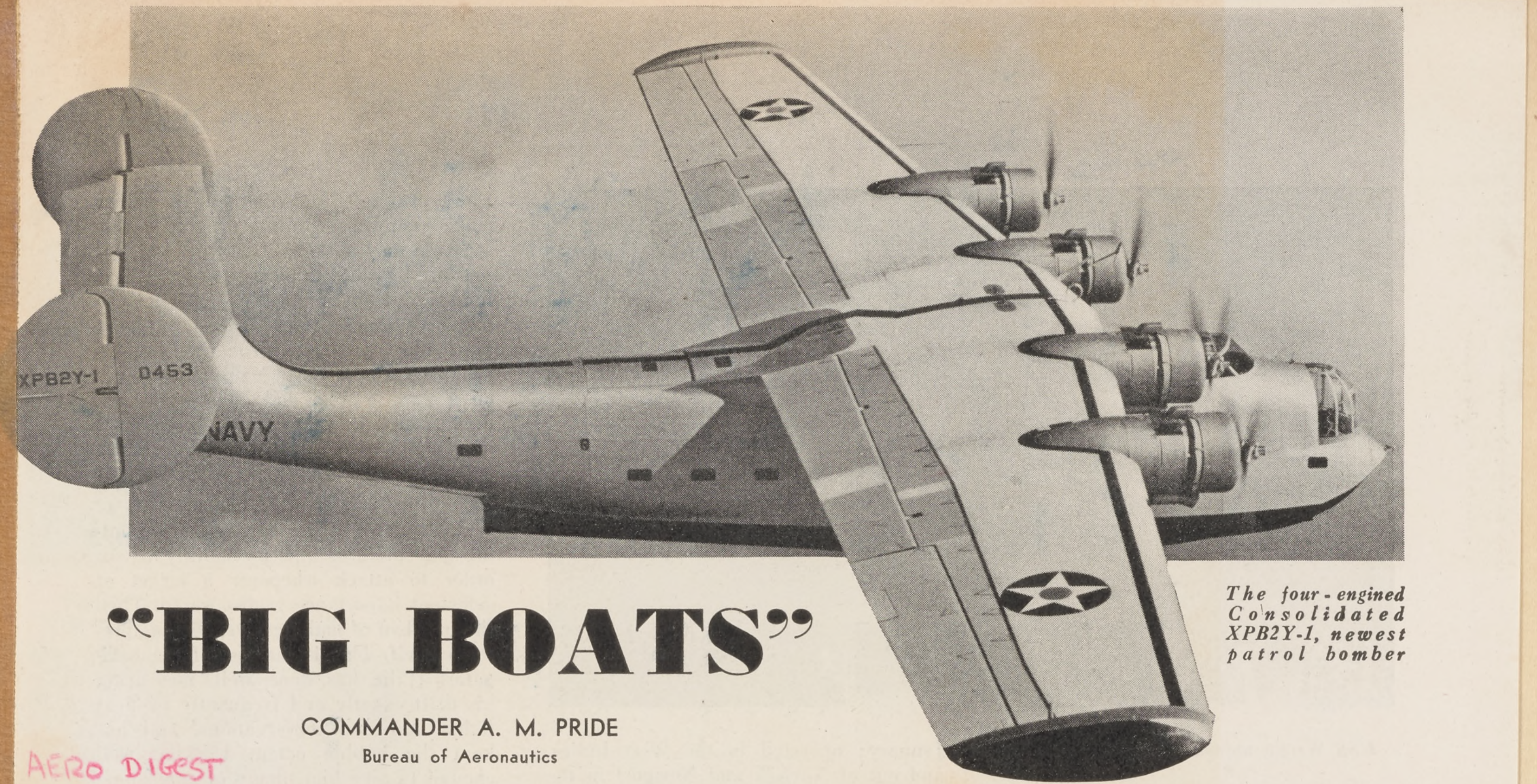
AN American aircraft company which has already supplied to the RAF one of its newest type of long - range reconnaissance flying boats has more than £8,000,000 worth of aircraft orders on hand.

How much of this enormous sum represents British repeat orders is a close secret, but I understand that £4,000,000 is constituted by the biggest single aircraft order ever placed by the U.S. government.

The aircraft company is the Consolidated Aircraft Corporation of California.

Just before war broke out a Consolidated PBY flying-boat flew the Atlantic to join the RAF on trial. The flying-boat covered the 2,500 miles from Newfoundland to Felixstowe in about 15 hours.

As a result of its £8,000,000 worth of orders, the Consolidated Corporation is doublin gthe area of its factory space from 32 to 64 acres.



The four-engined Consolidated XPB2Y-1, newest patrol bomber

"BIG BOATS"

COMMANDER A. M. PRIDE

Bureau of Aeronautics

AERO DIGEST
FEB. 1940

● In the early days of naval aviation there were F-boats, H-boats and "Big Boats." F-boats were little frail flying boats with Curtiss OX engines; H-boats were larger, had a Liberty engine and were the ultimate vehicles for most of our World War crop of Naval Aviators. But for the favored and the skillful, there were the two-engined "Big Boats"—H-12's with the long flat-bottomed tails; the handy H-16's with their multiplicity of cables and struts, and their counterparts, the F5L's. Only a few H-12's were built, but a great many H-16's and F5L's went into service both here and abroad and for several years after the War they comprised the principal equipment of the scouting air squadrons attached to the Fleet.

As today, the "Big Boats" went with the Fleet into its problem areas and back to the home ports between major problems. The 60-hour periods between overhauls of the Libertys were no help in keeping up with the battleships and many were the engines which had to be changed while planes were secured to the fan-tail of a mine-sweep or beached on a sheltered strand. Even so, the cruises went ahead, year after year, and by the time most of the Libertys had been used up and every hard landing was smashing in the bottom of a hull which had dried out in too-long storage, it was realized that something had to be done to carry on the work of the large seaplane after the last F5L had done its service.

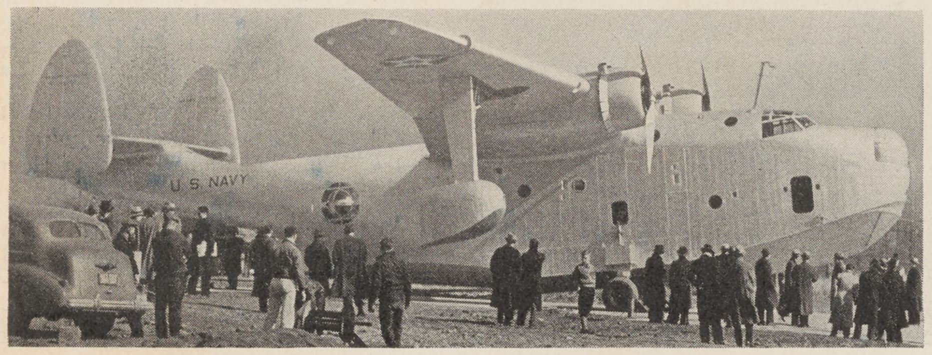
COMDR. A. M. PRIDE: Enrolled in Naval Reserve from civilian life (1917). Aviation Assignments—England and France (1918); Chatham Air Station and Carlstrom Field, Arcadia (1919-'20); USS Arizona, Hampton Roads Air Station, Mitchell Field (1920-'21); USS Langley (1921-'24); postgraduate instruction in aeronautical engineering at Naval Academy and MIT (1924-'25); USS Saratoga and Lexington (1926-'29); Hampton Roads Naval Air Station (1929-'32); VF Squadron 3-B aboard USS Langley (1932-'34); In charge Flight Test Section, Anacostia Naval Air Station (1932-'36); Bureau of Aeronautics (1936-'37); Air Officer, USS Wright (1937-'38); Staff, Patrol Wing One (1938-'39); Aeronautical Board, Bureau of Aeronautics (June 1939 to date).

New construction involved features of metal structures and radial air-cooled engines, but the old angular hull lines and sponsons were retained. Wings of the new boats advanced from the multiple bay trusses, used thicker and more efficient sections and improved the cleanliness of the whole plane. The absence of the "Dutch landscape" effect provided on the top of the hulls by an assortment of windmills to drive various accessories was not regretted.

From the metal counterparts of H-16's and F5L's, the type passed through the biplane stages common to other types of the period, but with little improvement, except such as might be incident to improved power plants. Then came the Hall PH-1 with no gasoline in the hull, no sponsons and a pay-load to gross weight ratio which made its predecessors out-of-date. This product appeared at about the time Martin and Consolidated planes were making it look as though the biplane, as a patrol plane type, would soon be gone. It was not long before the Consolidated PY Series were edging into the picture to the exclusion of everything else. This family abandoned the lower wings, used cantilever wings and retracting wing-tip floats, and brought refinements exemplified by the various versions of the PBY.

The "B" (for "bomber") was included with the "P" and the "Y" while the first of the current models was undergoing trials and it became apparent that this craft could do some effective bombing if such were required. Successive production schedules have placed in service the PBY-1, -2, -3 and -4, and the XPBY-5

The Martin XPBM-1 patrol bomber, a twin-engined, gull wing monoplane



Manchester Daily Express

19 FEB 1940

U.S. flew "sample" to R.A.F.

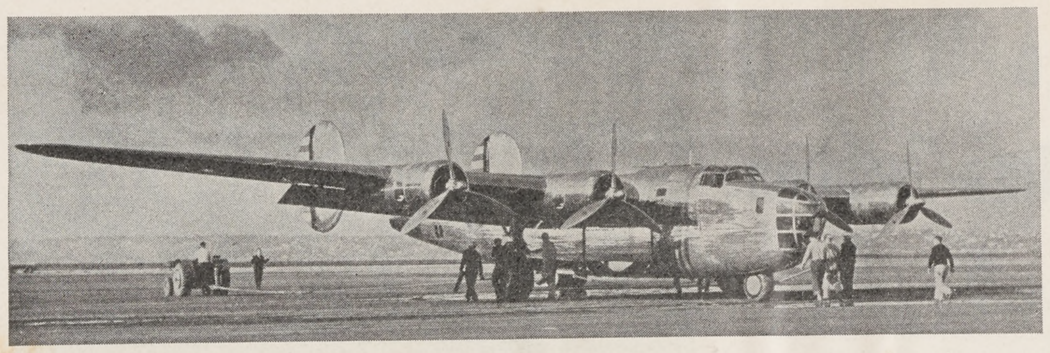
Daily Express Air Reporter

THE Consolidated Aircraft Corporation of California, which has already supplied to the R.A.F. one of its newest type of long-range reconnaissance flying-boats, has more than £8,000,000 worth of aircraft orders on hand.

How much of this represents British repeat orders is a secret. Just before war broke out a Consolidated P.B.Y. flying-boat flew the Atlantic to join the R.A.F. on trial.

The corporation is doubling the area of its factory space at San Diego from 32 to 64 acres.

WESTERN FLYING MARCH 1940



First officially released photograph of the Consolidated B-24 four-engined bomber built for the U. S. Army Air Corps. Note that the huge ship incorporates the new Davis "mystery" wing and tricycle landing gear.

DETAILS ON NEW CONSOLIDATED BOMBER RELEASED BY AIR CORPS

THE **U. S. Army Air Corps'** new bombardment airplane, technically known as the XB-24, recently made test flights at Lindbergh Field, San Diego, California.

Built by the **Consolidated Aircraft Corp.,** it is a four-motored bomber of high wing, all-metal construction. The wing is a full cantilever type of high aspect ratio with four tractor engine nacelles mounted flush to the upper surface of the center section. Fowler type flaps extend inboard of ailerons.

Power is furnished by four Pratt & Whitney 18-cylinder twin-row radial air-cooled engines rated at 1200 h.p. each. The propellers are Hamilton Standard three-bladed hydromatic constant speed types, 12 ft. in diameter.

The approximate gross weight of the airplane is 40,000 lb.; wing span, 110 ft.; length of fuselage, 64 ft.; and over-all height, 19 ft. Tactical requirements are for a crew of from six to nine persons, depending upon the mission to be performed.

Control surfaces are fabric-covered and fully counter-weighted. A full cantilever horizontal stabilizer has twin fins and rudders mounted at the tips. The all-metal stressed skin fuselage is equipped with hatches and windows in the nose, tail, turtledeck, back, and bottom. The landing gear is of tricycle type with single wheel forward. This retracts into the fuselage. The rear or main landing wheels retract into wing wells.

This airplane, from preliminary examinations, gives evidence of living up to the advancements in aerodynamic and performance characteristics predicted. These include a speed of over 300 miles per hour, a range of approximately 3000 miles, and a bomb carrying capacity of approximately four tons.

MARCH 1940

Western Flying

CONSAIR STARTS EXPANSION WORK

CONSOLIDATED Aircraft Corp., San Diego, has embarked upon a factory expansion program which will increase the present area of the plant by 87 per cent at a cost of more than $2,000,000.

Seven new steel frame buildings will be erected at an expense of $1,200,000 and in excess of $800,000 will be expended for new production equipment. Bids have already been called for the construction work. By late 1940 Consolidated's factory will embrace 1,500,000 square feet and employ at least 7000 men on Army and Navy contracts which form the bulk of Consair's $43,000,000 backlog.

The original factory buildings are less than five years old. The large experimental building, the photo, physical and chemical laboratory, paint storage and tool buildings are just over three years old. Prior to the expansion program Consolidated had 24.7 acres of land on **Lindbergh Field** under lease and 7.6 acres under option. New leases and options now cover an area of 64 acres.

In addition to new buildings, all factory yard areas will be paved and used for outdoor assembly and maintenance areas.

Orders for which the plant is being enlarged are the Navy contract of $20,016,699 for long range patrol bombers and the Army Air Corps contract of $11,365,000 for a fleet of the new B-24 bombers.

NEWS REVIEW, *February* 1, 1940

CONSOLIDATED FLYING BOAT
Floats form its wingtips

at 300 m.p.h., it is a stubby low-winged monoplane armed with four machine-guns.

¶ Fitted with the same type of blunt radial engine, the Curtiss Hawk has an equivalent speed, a range of 1,210 miles and a ceiling of 31,800 ft. Latest models incorporate armour-plating behind and underneath the closed-in pilot's cabin.

¶ To swell the fleet of British flyingboats used by the Coastal Command for submarine spotting and convoy work, Britain has ordered substantial numbers of all-metal Consolidated machines. Two engines mounted on streamlined superstructures above the wing give the plane a top speed of over 200 m.p.h. and can lift it to 29,700 ft. Range is estimated at 4,000 miles. During flight the Consolidated's floats are retracted to form wing tips.

Strategical and Tactical Employment of Naval Aircraft

COMMANDER M. B. GARDNER
Office of the Chief of Naval Operations

COMDR. M. B. GARDNER: Graduate Naval Academy ('18). Before taking flight training served with Destroyer Force in France, and on USS Jarvis, Biddle and McFarland. Aviation assignments—Pensacola Naval Air Station for flight training (1922); Air, Bat. Force (1922-'24); Pensacola Naval Air Station (1924-'26); Air Corps Advanced Flying School (1926-'27); Fighting Squadron 5, USS Lexington (1927-'29); Anacostia Naval Air Station (1929-'31); Fighting Squadron 6, USS Saratoga (1931-'33); Staff, Aircraft Battle Force (1933-'34); Pensacola Naval Air Station (1934-'36); USS Saratoga (1936-'37); USS Ranger (1937-'38); Office Chief of Naval Operations (June 1938 to date).

● There is no need to touch here on the adequacy or inadequacy of the Naval air arm. Suffice it to say that it is reasonably well-balanced by types and, with the realization in the near future of present plans, will be satisfactorily located geographically. Our concern here is with the most profitable employment, both strategically and tactically, of these instruments of war.

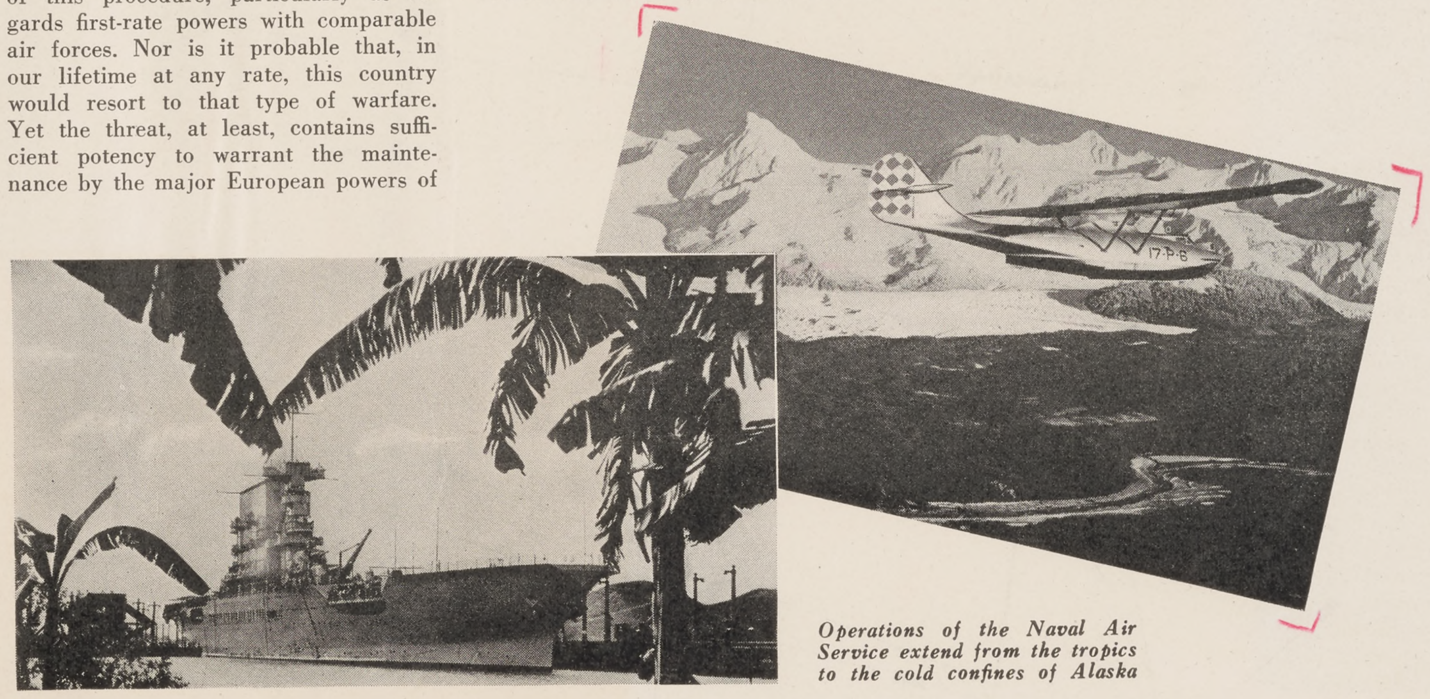
Clausewitz says, "War is only a continuation of political intercourse in a new form." It follows that war, so begun, will continue so long as the civil will to fight or resist by arms continues on both sides—and only so long. It has been axiomatic that this civil will to resist may not be broken until vital parts of the enemy's armed forces have been destroyed or contained. In those nations within easy bomber range of each other, the development of the airplane may have modified this conception, in that by this instrument of war civil populations may be attacked directly. There has not yet, however, been conclusive evidence of the effectiveness of this procedure, particularly as regards first-rate powers with comparable air forces. Nor is it probable that, in our lifetime at any rate, this country would resort to that type of warfare. Yet the threat, at least, contains sufficient potency to warrant the maintenance by the major European powers of large air forces which are independent of their armies and navies and are in addition to the aircraft necessary to complement those arms.

This country is so fortunately located that, so far as can be foreseen, no such methods of warfare could be used against us successfully. Thus we are relieved of the necessity of maintaining a third arm and our Naval aviation has been developed as part and parcel of the Naval team. To this country, that conception of air effort in the early development of the airplane has been a tower of strength. It follows that when we speak of strategy in connection with Naval aircraft, is is indistinguishable from the Naval strategy of which it is a part.

The terms "strategy" and "tactics" are somewhat elastic. The latter often derives from the former insidiously, such that it is difficult sometimes to draw a definite line between the two. In order that we may be on common ground in this respect, some definitions are in order. Webster defines strategy as "The science or art of projecting and directing great military movements," and tactics as "The art of handling troops or ships in battle or in the immediate presence of the enemy."

In a military sense, strategy involves the broader plan of action and takes into consideration such factors as the geography of the theatre of operation, disposition of forces, relative points of strength and weakness, and the enemy's probable courses of action. There is grand strategy and minor strategy; the former applying to the concept of the war as a whole and the latter to that of its phases or component operations. We are interested particularly in grand strategy.

Strategically, the defensive value of aircraft increases directly as the distance between the hostile nations. Not only is this basic consideration particularly adapted to our military policy, but it conditions every aspect of our Naval aviation. The United States is fortunate in being flanked by two broad oceans. Yet, while these oceans form our greatest element of security, they are also the highways whence portends any



Operations of the Naval Air Service extend from the tropics to the cold confines of Alaska

AERO DIGEST

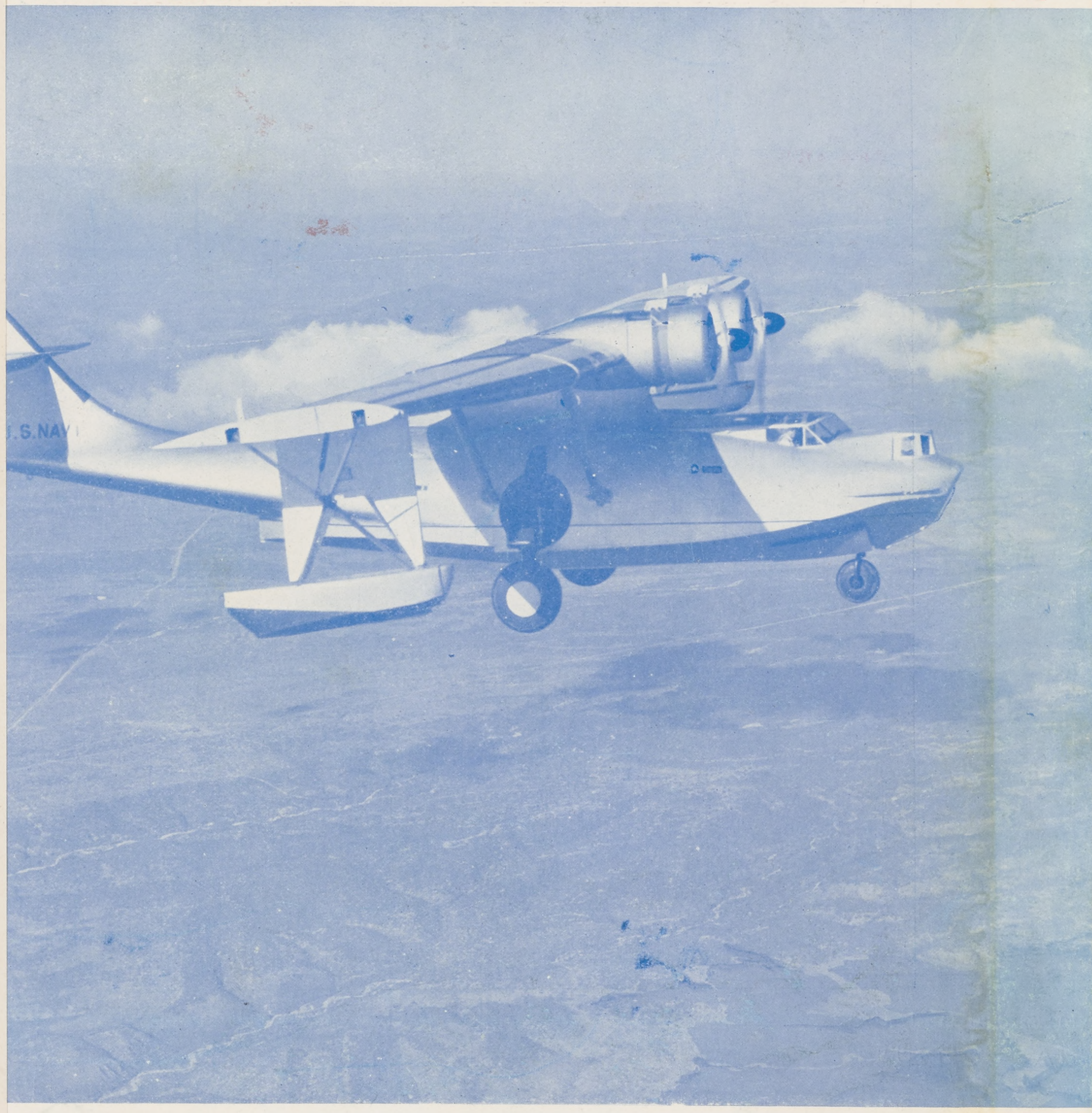
V. Davidson

REVISTA
ARGENTINA
DE AERONAUTICA

Primer Organo Hispano Americano de Aviación

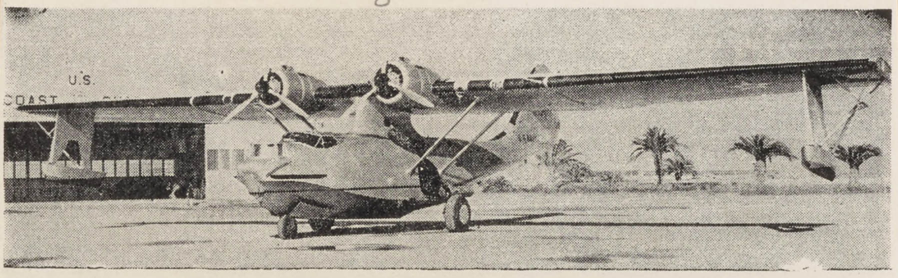
E 1939 - ENERO 1940

50 Cts.



Carátula: El anfibio Consolidated modelo 28-5A, denominado XPBY-5A por la Marina de los Estados Unidos de Norte América.

U.S. Coast Guard - Oct. 1940



LATEST IN AMPHIBIANS

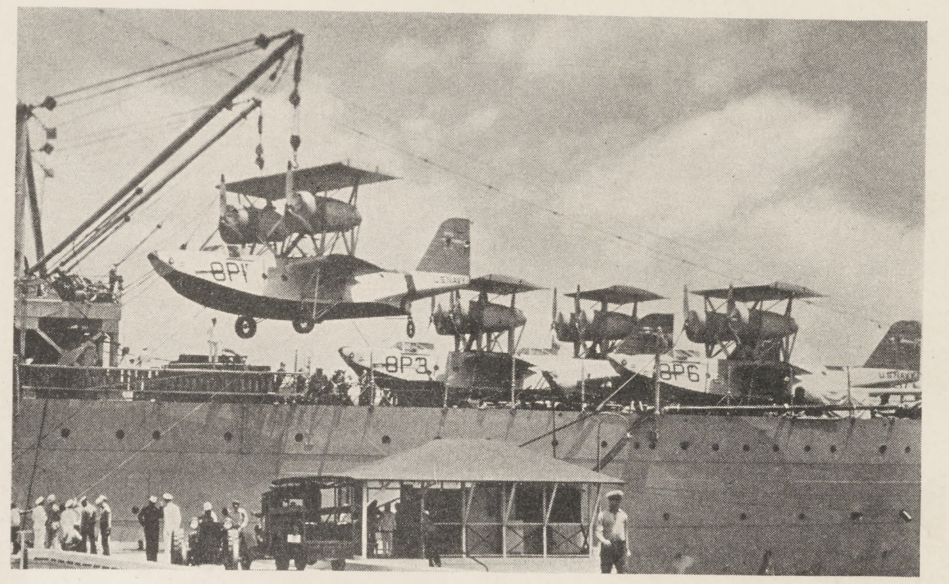
This is the spectacular new amphibian being currently produced by the Consolidated Aircraft Corporation, San Diego, Calif., and known as Model 28-5A (designated by the Navy as XPBY-5A). This amphibian offers many aeronautical features which are the subject of careful study by Coast Guard aviation experts. Note the tricycle landing gear and the wing-tip pontoons which become extended parts of the wing when in flight.

On Page 10 of our September issue appeared the above picture. The descriptive lines accompanying pictures of the Consolidated Model 28-5A Amphibian and the GUBA flying boat were run together in a manner that confused some of the basic qualities of these two planes.

Consolidated Model 28-5A, pictured above, is a military-naval true amphibian. This plane is a product of the Consolidated Aircraft Corporation, San Diego, Calif.

The GUBA, as every aircraftsman knows, is Richard Archbold's private flying boat, most certainly not an amphibian.

We regret the error.



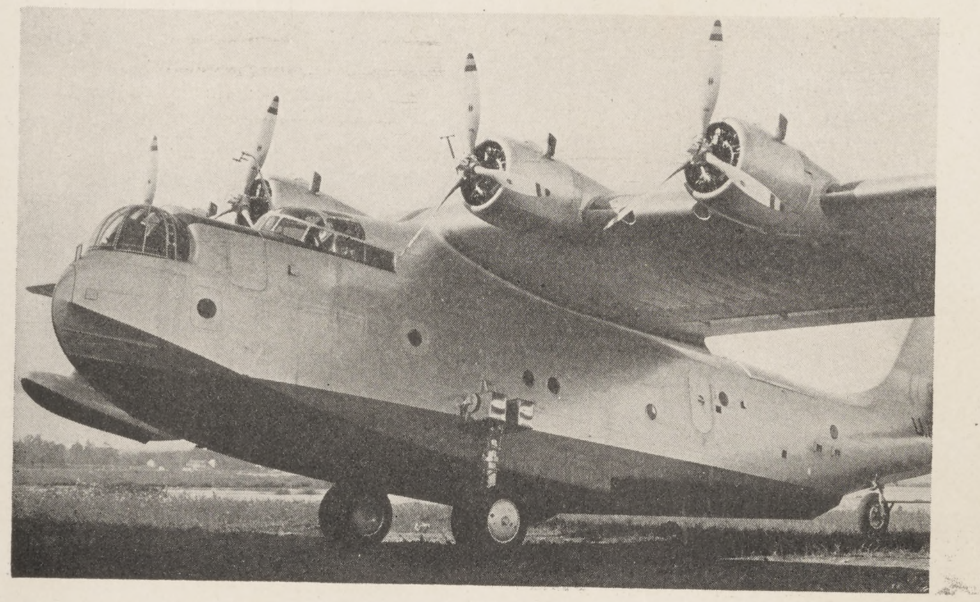
USS Wright *unloading patrol bombers*

amphibian is now undergoing flight tests.

Flying-boat squadrons are grouped in "wings" which are units of the Fleet. Each wing has a normal strength of four 12-plane squadrons and has a home port in the fashion of the ships of the Fleet. In order that it may work away from the home port, tenders are assigned to (and identified with) each wing and the combination of planes and tenders provides a mobile and complete organization.

In peace time, each wing must operate at a distance from its home port during fairly extended periods and the idea of mobility is emphasized. As an instance, last year, Patrol Wing One left its home port, San Diego, in June; spent the summer in the Puget Sound area and in Alaska; returned to San Diego for gunnery exercises and servicing in the autumn; departed for Panama early in January; operated in the West Indies, and out of Norfolk and Newport in the spring and returned to San Diego *via* Guantanamo, Panama and the Gulf of Fonseca in the latter part of May. There was no doubt about the mobility of that outfit, and the others, having home ports in Seattle, Norfolk, Coco Solo and Pearl Harbor, are maintained on the same basis. At present, Patrol Wing Five (home port Norfolk), has its squadrons working out of various ports from San Juan to Newport on Neutrality Patrol, and another wing has one of its squadrons and a tender operating out of Manila. This dispersion of squadrons and tenders to form self-sustaining units in far-flung areas was accomplished without delay. It was simply another move such as occurs to the "big boat" personnel and equipment during every Fleet problem.

Vought-Sikorsky four-engined patrol bomber



A Real Job in Navigation

Insofar as possible, squadrons are operated as tactical units. Scouting flights consume most of the flying time during Fleet exercises and the twelve planes make a convenient unit to which a sizable sea area may be assigned for search and patrol. By the time a squadron has fanned out on a scouting line several hundreds miles at sea, it may not look much like a squadron formation, but the squadron commander keeps his planes on a precise line, and exactly abreast, even though they are miles out of sight of each other. At such times, radio silence is maintained, so exact navigation is required.

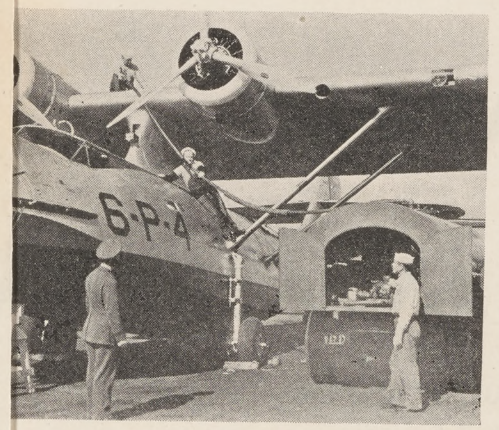
In the later stages of any such scouting job there is the probability of an order to attack whenever a target of sufficient importance is discovered. Then the problem of making a rendezvous presents itself. This is the test of the navigator. If he has done well, measuring his drift exactly and frequently by float lights and drift observations, and has kept the bubble octant working well enough to give him plenty of confirming lines of position, perhaps crossed by radio bearings on any shore stations within range, he is fortunate. But, overcast may have prevented celestial observations, extended fog areas may have prevented drift observations, unusual atmospheric conditions may have obstructed radio bearings, and it is rare, indeed, that the navigator of a "big boat" can be dead sure of exactly where he is. Fortunately, it is almost as rare for a plane to miss its rendezvous, and this is certainly due to the elaborate precautions which are taken to avoid missing any opportunity to check the dead-reckoning. Failure to make a rendezvous is one error which man can make that can never be covered up.

When the rendezvous is made, the squadron commander deploys his planes for the attack. If there has been opportunity for the wing to concentrate, he falls into his assigned position, according to his wing commander's doctrine, and it is simple for the navigators from that point on. They continue to check their positions and courses and keep an eye out for the shortest route to a harbor if trouble should develop.

In other than the skipper's plane, the pilot who is off-duty usually navigates while the "duty" pilot watches the instruments and sees that the automatic pilot stays on the job. The plane captain, or "off-duty" radio operator, or mechanic usually slips into the other pilot-seat just to keep the duty pilot company.

At all times, one radioman must be at the equipment, and a mechanic must be in the "saddle" watching the power plant indicators.

As with all bluejackets, their thoughts run largely to food when they are not engrossed in their duties and the furnishing of "big boats" with cooking equipment has uncovered some surprisingly



Fueling the flying boats from a fuel truck, and from a tender (below)

proficient culinary experts. Each plane has a two-burner electric stove and each plane crew seems to include at least one enthusiast who delights in operating it.

When landings have to be made, the difficulties are of seamanship rather than airmanship. Taxying into the wind is easy if the chop does not drench the windshield, obscure vision and give the pilots a shower. Taxying across the wind is something else again, and if the cross-wind is strong it frequently requires fully throttling one motor, while the other is wide open.

If a buoy is to be made, one of the crew has to "take it" from the nose of the boat with a boat hook. He takes a turn with a light line as soon as he can, snubbing the buoy up close to the plane and then secures the riding pendant and "preventer." Despite much ingenuity, the perfect mooring arrangement for flying boats has not yet been devised and the wire cable and fittings with which the planes are equipped are paralleled with slack lines to prevent the plane from drifting down on its leeward neighbor if the riding pendant fails.

When the planes have been secured at their buoys, with covers on the cockpit enclosures and engines, and the watch stationed on board, the boat from the tender takes the crew to the ship.

Take-off Technique

Take-off technique in "big-boats" has changed with the years and with increased horsepower and improved hull lines. Thanks to extensive model basin experiments, and take-off trim investigations by the NACA, as well as plenty of experimenting by the service test and squadron pilots, it has been well established that the modern "big boats" do best when they have their control adjustments set at a predetermined point according to the position of the center of gravity and are then "flown" out of the water, with no violent "rocking." It used to be that a sharp "pull-back" was the customary maneuver to "unstick," but this seems to defeat its purpose as often as it helps. While judicious "pull-back" can still make a doubtful take-off certain, a similar movement at the wrong moment can ruin the chances of getting off.

Landing technique hasn't changed much except for a greater emphasis on "power-on" landings. The idea is to get down to the low speed while maintaining the plane in its best attitude for striking the water. "Power-on" is the safest way to land on a glassy surface, through a fog, or at night and much practice to perfect the technique is required of each pilot ordered to flying boats.

Handling flying boats in the air presents nothing peculiar which is not experienced in other types of similar size.

Communications, internal and external, are necessarily elaborate due to separation of stations through the plane and because of development of the flying-boat's potentialities as a source of information to other fleet units. Interphones serve for internal communications and headphones are worn habitually by all hands on watch.

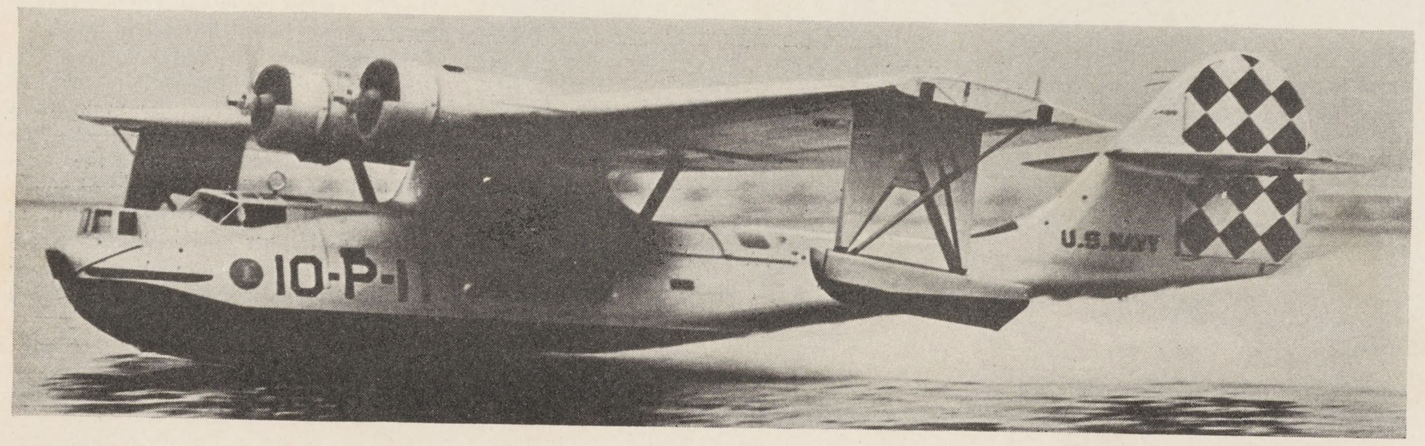
As the plane is seldom operating independently, at least two, and sometimes more, external communications channels must be maintained. This calls for an elaboration of radio equipment found in no other service type. In common with surface vessel practice, distress frequencies are guarded, as are weather and military frequencies. In addition, radio-bearings must be obtained whenever available or required by the pilot or navigator.

As suggested previously, it is customary to turn over straight-away piloting to the automatic pilot and relieve the human pilots of as much of that work as possible. This plan has a real military value in that it enables the pilots to observe more of the ocean and air above it than if they had to give almost exclusive attention to steering the course, and flying the plane. And when it is considered that the most important reason for having "big-boats" is to have something to take pairs of eyes to where they can scan vast areas of the sea and the spaces above the sea, it is realized that these eyes must have little else to do.

It is difficult to predict where the increasing demands on the "big boat" will lead design. The tendency in "big boat" characteristics is toward 4-engined planes or toward increased performance in twin-engined types using the higher powered engines now coming into the picture. Consolidated has received a Navy contract for some of the 4-engined type. More endurance, and better living accommodations, with increased military loads, point to increasing sizes, but operational difficulties react against increasing size and weight. A large plane over a given area of the sea is not, necessarily, any more effective as an observation post than is a smaller plane. Furthermore, if the small plane

(Continued on page 164)

Consolidated PBY-1 patrol bomber "on the step" during its take-off run



Manchester Daily Express

19 FEB 1940

U.S. flew "sample" to R.A.F.

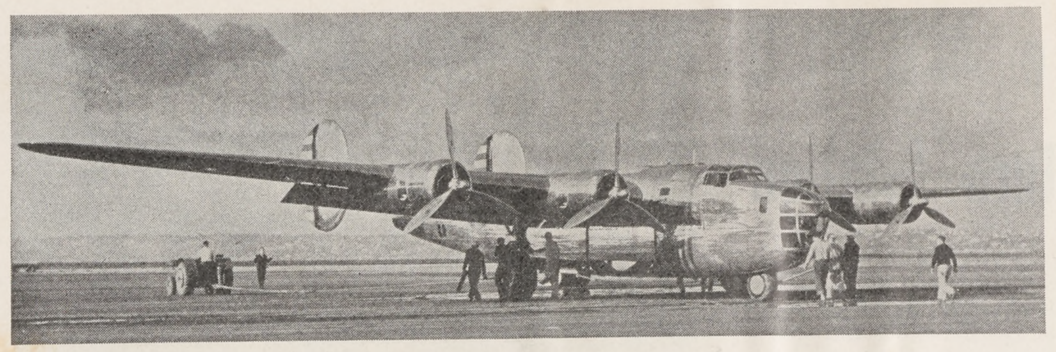
Daily Express Air Reporter

THE Consolidated Aircraft Corporation of California, which has already supplied to the R.A.F. one of its newest type of long-range reconnaissance flying-boats, has more than £8,000,000 worth of aircraft orders on hand.

How much of this represents British repeat orders is a secret. Just before war broke out a Consolidated P.B.Y. flying-boat flew the Atlantic to join the R.A.F. on trial.

The corporation is doubling the area of its factory space at San Diego from 32 to 64 acres.

WESTERN FLYING MARCH 1940



First officially released photograph of the Consolidated B-24 four-engined bomber built for the U. S. Army Air Corps. Note that the huge ship incorporates the new Davis "mystery" wing and tricycle landing gear.

DETAILS ON NEW CONSOLIDATED BOMBER RELEASED BY AIR CORPS

THE **U. S. Army Air Corps'** new bombardment airplane, technically known as the XB-24, recently made test flights at Lindbergh Field, San Diego, California.

Built by the **Consolidated Aircraft Corp.,** it is a four-motored bomber of high wing, all-metal construction. The wing is a full cantilever type of high aspect ratio with four tractor engine nacelles mounted flush to the upper surface of the center section. Fowler type flaps extend inboard of ailerons.

Power is furnished by four Pratt & Whitney 18-cylinder twin-row radial air-cooled engines rated at 1200 h.p. each. The propellers are Hamilton Standard three-bladed hydromatic constant speed types, 12 ft. in diameter.

The approximate gross weight of the airplane is 40,000 lb.; wing span, 110 ft.; length of fuselage, 64 ft.; and over-all height, 19 ft. Tactical requirements are for a crew of from six to nine persons, depending upon the mission to be performed.

Control surfaces are fabric-covered and fully counter-weighted. A full cantilever horizontal stabilizer has twin fins and rudders mounted at the tips. The all-metal stressed skin fuselage is equipped with hatches and windows in the nose, tail, turtledeck, back, and bottom. The landing gear is of tricycle type with single wheel forward. This retracts into the fuselage. The rear or main landing wheels retract into wing wells.

This airplane, from preliminary examinations, gives evidence of living up to the advancements in aerodynamic and performance characteristics predicted. These include a speed of over 300 miles per hour, a range of approximately 3000 miles, and a bomb carrying capacity of approximately four tons.

MARCH 1940

Western Flying

CONSAIR STARTS EXPANSION WORK

CONSOLIDATED Aircraft Corp., San Diego, has embarked upon a factory expansion program which will increase the present area of the plant by 87 per cent at a cost of more than $2,000,000.

Seven new steel frame buildings will be erected at an expense of $1,200,000 and in excess of $800,000 will be expended for new production equipment. Bids have already been called for the construction work. By late 1940 Consolidated's factory will embrace 1,500,000 square feet and employ at least 7000 men on Army and Navy contracts which form the bulk of Consair's $43,000,000 backlog.

The original factory buildings are less than five years old. The large experimental building, the photo, physical and chemical laboratory, paint storage and tool buildings are just over three years old. Prior to the expansion program Consolidated had 24.7 acres of land on **Lindbergh Field** under lease and 7.6 acres under option. New leases and options now cover an area of 64 acres.

In addition to new buildings, all factory yard areas will be paved and used for outdoor assembly and maintenance areas.

Orders for which the plant is being enlarged are the Navy contract of $20,016,699 for long range patrol bombers and the Army Air Corps contract of $11,365,000 for a fleet of the new B-24 bombers.

NEWS REVIEW, *February* 1, 1940

CONSOLIDATED FLYING BOAT
Floats form its wingtips

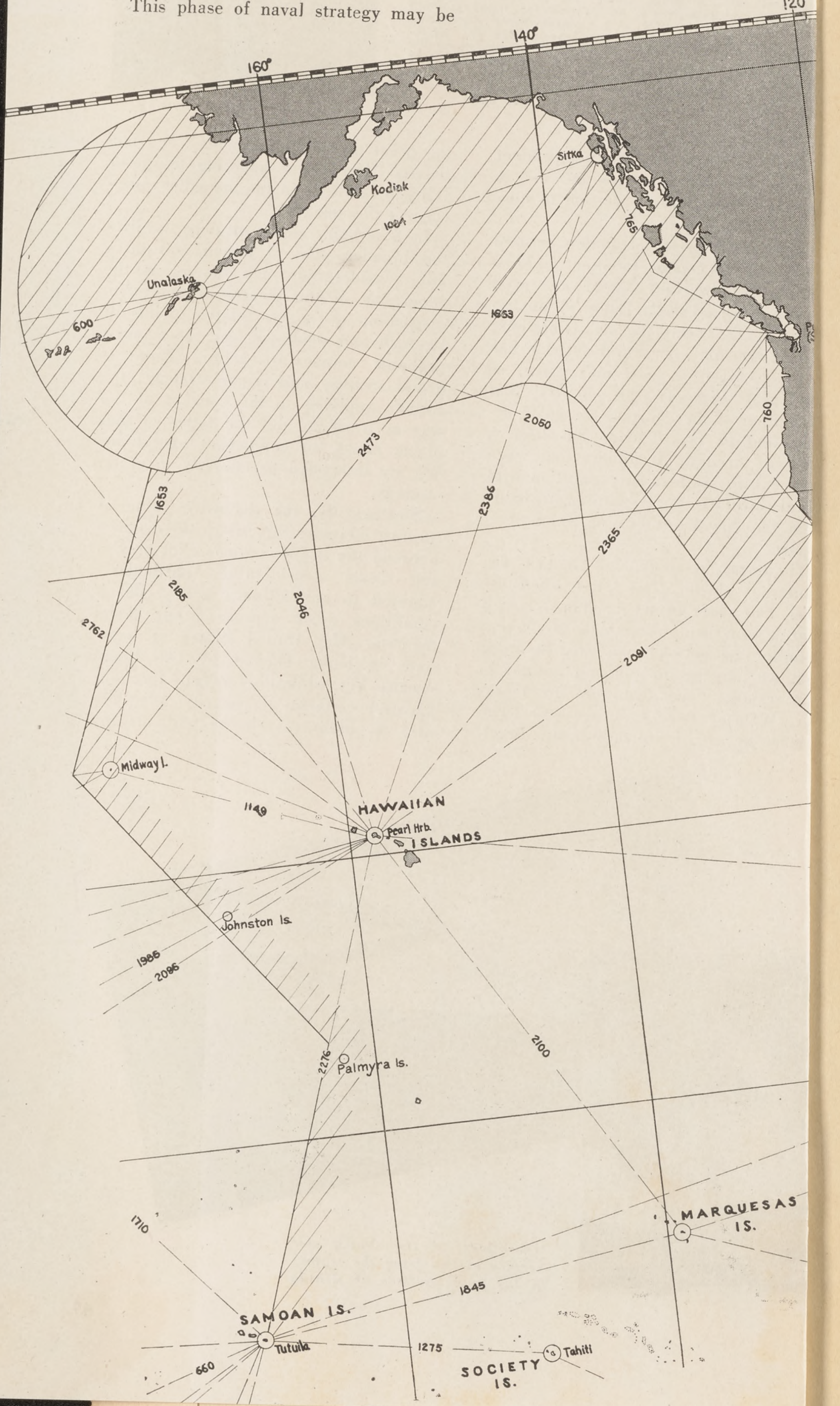
at 300 m.p.h., it is a stubby low-winged monoplane armed with four machine-guns.

¶ Fitted with the same type of blunt radial engine, the Curtiss Hawk has an equivalent speed, a range of 1,210 miles and a ceiling of 31,800 ft. Latest models incorporate armour-plating behind and underneath the closed-in pilot's cabin.

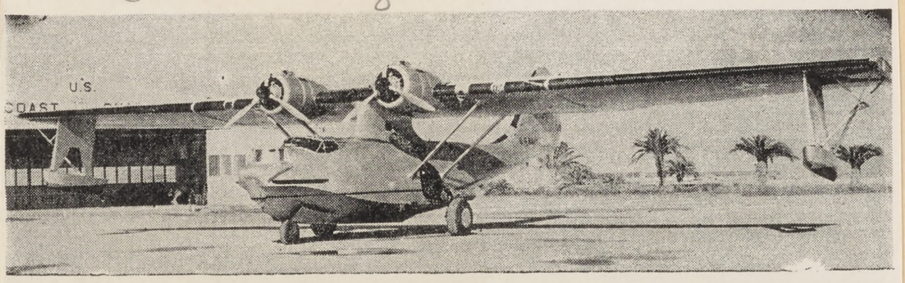
¶ To swell the fleet of British flyingboats used by the Coastal Command for submarine spotting and convoy work, Britain has ordered substantial numbers of all-metal Consolidated machines. Two engines mounted on streamlined superstructures above the wing give the plane a top speed of over 200 m.p.h. and can lift it to 29,700 ft. Range is estimated at 4,000 miles. During flight the Consolidated's floats are retracted to form wing tips.

threat to that security from without. Security thus depends on control of vital and critical sea areas and that control, in turn, depends on full information of enemy activity in those areas and the power to counteract it. These two requirements form the basis for the strategical employment of naval aircraft—the ability to obtain information quickly and with comparative security, and the power to strike with the utmost flexibility.

This phase of naval strategy may be called the defensive. It is important while no war was ever won by the sumption of the defensive as the total of military effort, many have b lost through relative neglect of this v factor. The basis of all military or na strategy is geography. Let us exam our geographic situation and how it conditioned the strategical disposition aircraft.


120°
140°
160°
Sitka
Kodiak
1084
765
Unalaska
600
1653
2050
760
2473
2386
2365
1653
2185
2046
2762
2091
Midway I.
1149
HAWAIIAN
Pearl Hrb.
ISLANDS
Johnston Is.
1986
2086
2100
2276
Palmyra Is.
1710
MARQUESAS IS.
1845
SAMOAN IS.
Tutuila
660
1275
SOCIETY IS.
Tahiti

U. S. Coast Guard - Oct. 1940



LATEST IN AMPHIBIANS

This is the spectacular new amphibian being currently produced by the Consolidated Aircraft Corporation, San Diego, Calif., and known as Model 28-5A (designated by the Navy as XPBY-5A). This amphibian offers many aeronautical features which are the subject of careful study by Coast Guard aviation experts. Note the tricycle landing gear and the wing-tip pontoons which become extended parts of the wing when in flight.

On Page 10 of our September issue appeared the above picture. The descriptive lines accompanying pictures of the Consolidated Model 28-5A Amphibian and the GUBA flying boat were run together in a manner that confused some of the basic qualities of these two planes.

Consolidated Model 28-5A, pictured above, is a military-naval true amphibian. This plane is a product of the Consolidated Aircraft Corporation, San Diego, Calif.

The GUBA, as every aircraftsman knows, is Richard Archbold's private flying boat, most certainly not an amphibian.

We regret the error.

N. V. Davidson

AVIA

REVISTA ARGENTINA DE AERONAUTICA

Primer Organo Hispano Americano de Aviación

DICIEMBRE 1939 - ENERO 1940

50 Cts.

MAR 25 1940

Carátula: El anfibio Consolidated modelo 28-5A, denominado XPBY-5A por la Marina de los Estados Unidos de Norte América.

NAVAL AVIATORS FOR NAVAL AVIATION

CAPTAIN GEORGE D. MURRAY, U. S. Navy
Head, Personnel Div., Bureau of Aeronautics

CAPT. GEORGE D. MURRAY: Graduate Naval Academy ('11). Naval assignments—USS Virginia and USS Ammen (1911-'15). Aviation assignments—Naval Air Station, Pensacola, for flight instruction (1915); Aeronautical Inspector, Naval Material Boston (1916-'17); Executive Officer, Naval Air Station, Norfolk (1918); Commanding Officer, Naval Air Station, Anacostia, (1918-'19); Executive Officer, Naval Air Station, San Diego, (1919-'21); Aircraft Battle Fleet, aboard USS Aroostook as Squadron Commander, VO-3, (1921-'22); Naval Aircraft Factory, (1922-'23); Squadron Commander, Torpedo Squadron 20, Asiatic Fleet (1923-'25); Naval Academy, flying duty, (1925); Bureau of Aeronautics (1925-'27); Aide to Commander-in-Chief, Battle Fleet (1927-'28); Executive Officer, USS Wright (1929); Naval Attache, London (1930-'33); Air Officer, USS Saratoga (1933-'35); Naval Air Station, Pensacola, (1935-'37); Executive Officer, USS Saratoga, (1937-'38); Commanding Officer, USS Langley (1938-'39); Bureau of Aeronautics (June 1939 to date).

● There is no longer any reason why a college man in good physical condition and interested in aviation should hesitate in reaching his decision to learn to fly the *Navy Way*.

Several avenues into Naval Aviation are now open to young men. There are three groups of aviators—Naval Aviators of the line of the Navy, Naval Aviators of the Reserve Force, and Naval Aviation Pilots from the enlisted ranks of the Navy. All take the same flight training at Pensacola, and, upon completion of training, are graduated into one of the groups mentioned above, depending on the source from which they entered.

This article will discuss first, the process by which a college man between the ages of 20 and 27 can, in a comparatively short time, get into the cockpit of a Navy plane and participate in the U. S. Navy's far-flung aircraft operations. This is a process in which outside influence and connections are not required and are not considered. Each applicant for training in the naval aviation reserve is his own sponsor, and the only qualifications he needs are citizenship, a good physique, good character, and at least two years of college training.

How can this training be obtained? A letter to the Commanding Officer of the nearest Naval Reserve Aviation Base will promptly bring an application blank and detailed information about the requirements. These bases are located at Squantum (Boston), Mass.; Glenview (Chicago), Ill.; Grosse Ile (Detroit), Mich.; Long Beach, Calif.; Opa Locka (Miami), Fla.; Minneapolis, Minn.; Floyd Bennett Field, Brooklyn, N. Y.; Oakland, Calif.; Kansas City, Kans.; Philadelphia, Pa.; Seattle, Wash.; Robertson (St. Louis), Mo.; and Anacostia, D. C. A letter may also be addressed to the Commandant, Naval Air Station, Pensacola, Fla.

After submitting an application, the applicant is requested to appear for his physical examination. This examination may be conducted at the nearest Naval Reserve Aviation Base, or in case sufficient applicants live in a section remote from any base, their locality will be visited by the examining board, to make it convenient for all. The physical examination is conducted by Naval flight surgeons and the candidate incurs no expenses except those of travelling to the point at which the examination is held.

Many inquiries have been received concerning the relation of the Civil Aeronautics Authority flight training program to Navy flight training. The Navy Department has a real interest in this CAA program because it will develop a potential supply of trained pilots which will be a genuine asset in the event of a national emergency. For this reason the Navy Department is following the progress of the CAA flight training of young college men and anticipates that many of them will apply for entry in the Naval Reserve and upon completion of naval flight training will qualify as Naval

AFTERNOON WING
DUTY OFFICER
DATE
CHECKS
FORMATIONS

Students in Squadron 2 at Pensacola check their operations board

---

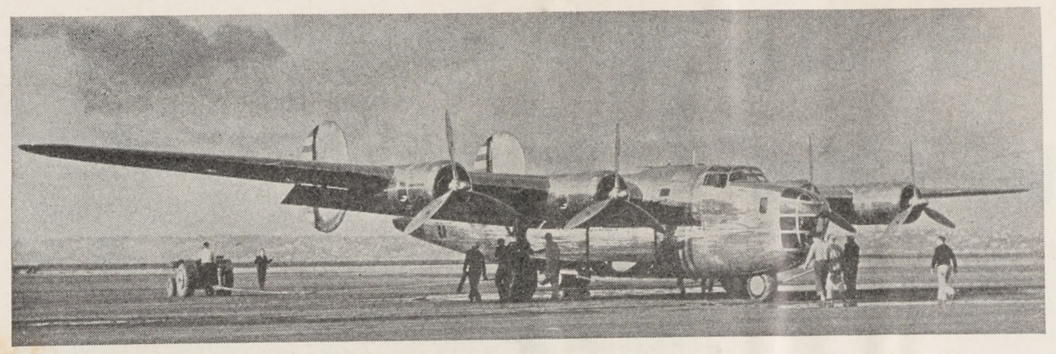
"BIG BOATS"

(Continued from page 43)

can get there as quickly, and remain as long, it may be at an advantage in that the facilities which made it and maintain it and can make and maintain more units. However, the 250 or more PBY's now in service will be used for some time, and "big boat" operation will be the same, fundamentally, as it was with the H-16's—primarily scouting, and when opportunity dictates, bombing.

The large plane is more effective than its smaller counterpart if it carries more bombs to the same point, but, again, it is a more prominent and, frequently, less maneuverable target, and more small units might furnish a better set-up. New designs seem to indicate larger units, though, and the only safe prediction seems to be that, at least, "big boats" will remain "big" in the eyes of the pilots of other naval types, and that they are here to stay.

WESTERN FLYING MARCH 1940



First officially released photograph of the Consolidated B-24 four-engined bomber built for the U. S. Army Air Corps. Note that the huge ship incorporates the new Davis "mystery" wing and tricycle landing gear.

DETAILS ON NEW CONSOLIDATED BOMBER RELEASED BY AIR CORPS

THE **U. S. Army Air Corps'** new bombardment airplane, technically known as the XB-24, recently made test flights at Lindbergh Field, San Diego, California.

Built by the **Consolidated Aircraft Corp.,** it is a four-motored bomber of high wing, all-metal construction. The wing is a full cantilever type of high aspect ratio with four tractor engine nacelles mounted flush to the upper surface of the center section. Fowler type flaps extend inboard of ailerons.

Power is furnished by four Pratt & Whitney 18-cylinder twin-row radial air-cooled engines rated at 1200 h.p. each. The propellers are Hamilton Standard three-bladed hydromatic constant speed types, 12 ft. in diameter.

The approximate gross weight of the airplane is 40,000 lb.; wing span, 110 ft.; length of fuselage, 64 ft.; and over-all height, 19 ft. Tactical requirements are for a crew of from six to nine persons, depending upon the mission to be performed.

Control surfaces are fabric-covered and fully counter-weighted. A full cantilever horizontal stabilizer has twin fins and rudders mounted at the tips. The all-metal stressed skin fuselage is equipped with hatches and windows in the nose, tail, turtledeck, back, and bottom. The landing gear is of tricycle type with single wheel forward. This retracts into the fuselage. The rear or main landing wheels retract into wing wells.

This airplane, from preliminary examinations, gives evidence of living up to the advancements in aerodynamic and performance characteristics predicted. These include a speed of over 300 miles per hour, a range of approximately 3000 miles, and a bomb carrying capacity of approximately four tons.

MARCH 1940

Western Flying

CONSAIR STARTS EXPANSION WORK

CONSOLIDATED **Aircraft Corp.,** San Diego, has embarked upon a factory expansion program which will increase the present area of the plant by 87 per cent at a cost of more than $2,000,000.

Seven new steel frame buildings will be erected at an expense of $1,200,000 and in excess of $800,000 will be expended for new production equipment. Bids have already been called for the construction work. By late 1940 Consolidated's factory will embrace 1,500,000 square feet and employ at least 7000 men on Army and Navy contracts which form the bulk of Consair's $43,000,000 backlog.

The original factory buildings are less than five years old. The large experimental building, the photo, physical and chemical laboratory, paint storage and tool buildings are just over three years old. Prior to the expansion program Consolidated had 24.7 acres of land on **Lindbergh Field** under lease and 7.6 acres under option. New leases and options now cover an area of 64 acres.

In addition to new buildings, all factory yard areas will be paved and used for outdoor assembly and maintenance areas.

Orders for which the plant is being enlarged are the Navy contract of $20,016,699 for long range patrol bombers and the Army Air Corps contract of $11,365,000 for a fleet of the new B-24 bombers.

Manchester Dly Express

19 FEB 1940

U.S. flew "sample" to R.A.F.

Daily Express Air Reporter

THE Consolidated Aircraft Corporation of California, which has already supplied to the R.A.F. one of its newest type of long-range reconnaissance flying-boats, has more than £8,000,000 worth of aircraft orders on hand.

How much of this represents British repeat orders is a secret. Just before war broke out a Consolidated P.B.Y. flying-boat flew the Atlantic to join the R.A.F. on trial.

The corporation is doubling the area of its factory space at San Diego from 32 to 64 acres.

NEWS REVIEW, *February 1, 1940*

CONSOLIDATED FLYING BOAT
Floats form its wingtips

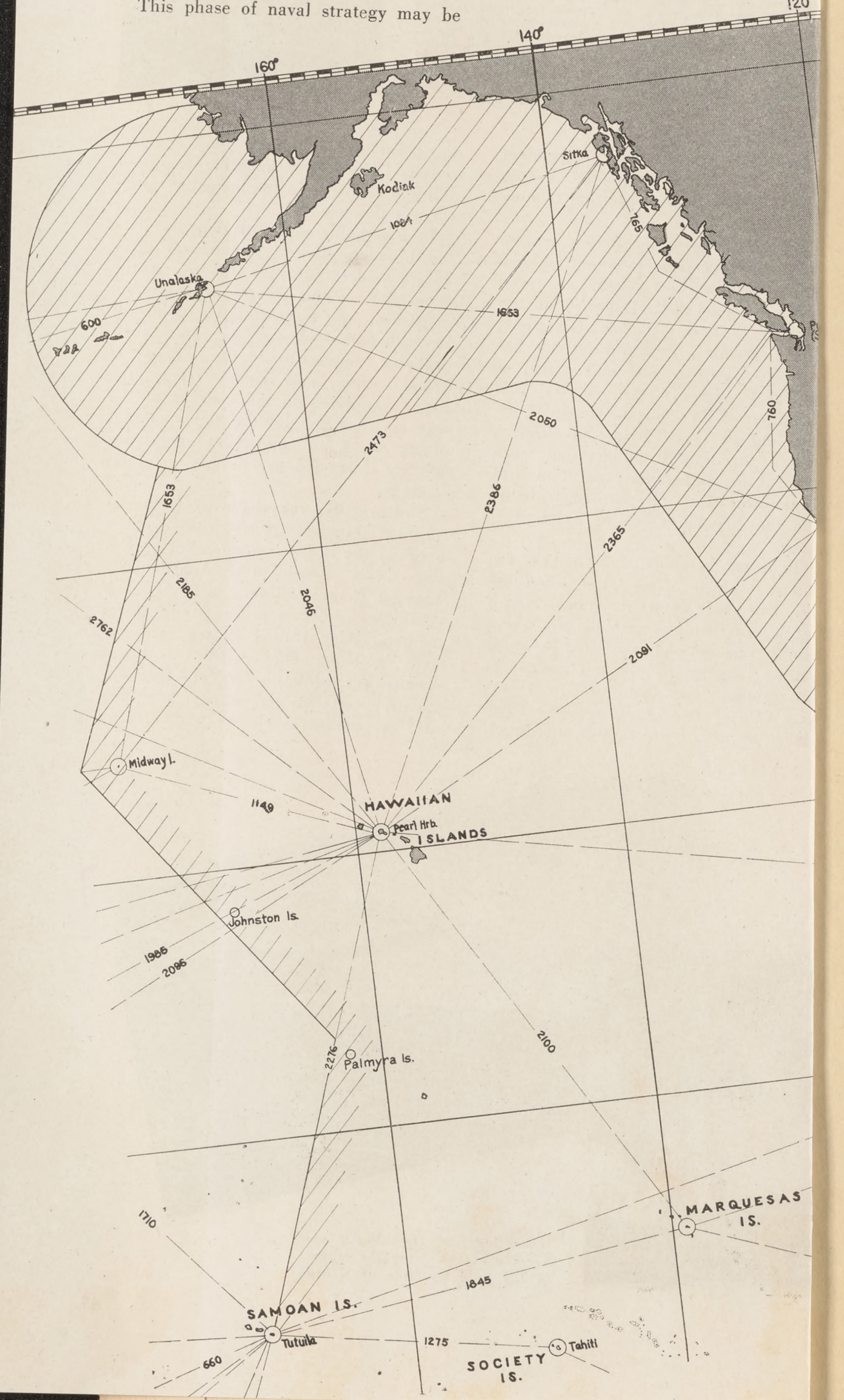
at 300 m.p.h., it is a stubby low-winged monoplane armed with four machine-guns.

¶ Fitted with the same type of blunt radial engine, the Curtiss Hawk has an equivalent speed, a range of 1,210 miles and a ceiling of 31,800 ft. Latest models incorporate armour-plating behind and underneath the closed-in pilot's cabin.

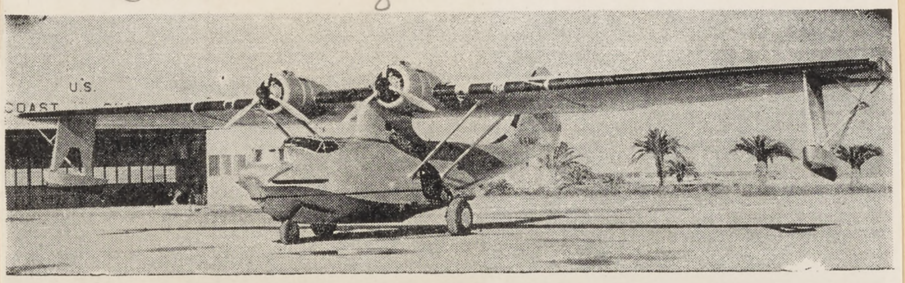
¶ To swell the fleet of British flyingboats used by the Coastal Command for submarine spotting and convoy work, Britain has ordered substantial numbers of all-metal Consolidated machines. Two engines mounted on streamlined superstructures above the wing give the plane a top speed of over 200 m.p.h. and can lift it to 29,700 ft. Range is estimated at 4,000 miles. During flight the Consolidated's floats are retracted to form wing tips.

threat to that security from without. Security thus depends on control of vital and critical sea areas and that control, in turn, depends on full information of enemy activity in those areas and the power to counteract it. These two requirements form the basis for the strategical employment of naval aircraft—the ability to obtain information quickly and with comparative security, and the power to strike with the utmost flexibility.

This phase of naval strategy may be called the defensive. It is important a while no war was ever won by the sumption of the defensive as the s total of military effort, many have b lost through relative neglect of this v factor. The basis of all military or na strategy is geography. Let us exam our geographic situation and how it conditioned the strategical disposition aircraft.


160°
140°
120°
Kodiak
Sitka
1084
765
Unalaska
600
1653
760
2050
2473
1653
2386
2365
2185
2046
2762
2091
Midway I.
1149
HAWAIIAN ISLANDS
Pearl Hrb.
Johnston Is.
1986
2096
2276
Palmyra Is.
2100
1710
MARQUESAS IS.
1845
SAMOAN IS.
Tutuila
660
1275
Tahiti
SOCIETY IS.

U.S. Coast Guard - Oct. 1940



LATEST IN AMPHIBIANS

This is the spectacular new amphibian being currently produced by the Consolidated Aircraft Corporation, San Diego, Calif., and known as Model 28-5A (designated by the Navy as XPBY-5A). This amphibian offers many aeronautical features which are the subject of careful study by Coast Guard aviation experts. Note the tricycle landing gear and the wing-tip pontoons which become extended parts of the wing when in flight.

On Page 10 of our September issue appeared the above picture. The descriptive lines accompanying pictures of the Consolidated Model 28-5A Amphibian and the GUBA flying boat were run together in a manner that confused some of the basic qualities of these two planes.

Consolidated Model 28-5A, pictured above, is a military-naval true amphibian. This plane is a product of the Consolidated Aircraft Corporation, San Diego, Calif.

The GUBA, as every aircraftsman knows, is Richard Archbold's private flying boat, most certainly not an amphibian.

We regret the error.

N. V. Davidson

AVIA

REVISTA ARGENTINA DE AERONAUTICA

Primer Organo Hispano Americano de Aviación

DICIEMBRE 1939 - ENERO 1940

50 Cts.

25 1940

Carátula: El anfibio Consolidated modelo 28-5A, denominado XPBY-5A por la Marina de los Estados Unidos de Norte América.

THE CARLSBAD JOURNA

Thursday, March 7, 1940

507

Stirring The News Hopper

By the Roving Reporter

San Diego's Consolidated

San Diego's Consolidated Aircraft factory is employing 4300 men and women, carrying a payroll of $150,000 a week, or $600,000 a month, which figures about $7,500,000 a year.

They are adding new employees at the rate of 100 a week, and just now are increasing their factory capacity with buildings and mechanical equipment to almost double its present size to take care of a backlog of orders aggregating $43,000,000. They hope to be in full operation by late summer when they will be employing between 7,000 and 8,000 men and women, with a corresponding increase in its weekly payroll, which will mean a lot of potatoes for San Diego and vicinity.

Since most of the company's orders are for government planes from this and other countries, their operations are largely of a secret and confidential nature, and to get inside the doors of the factory one is required to pass approval of the army and navy and have some one, known to the company, who is willing to vouch for one's "safety."

The Consolidated designs its own planes, and one of the principal reasons, for its phenomenal success in meeting world competition is because its product is superior in construction, range, speed, and I might say "fighting ability." Naturally, these new improvements which go into the making of Consolidated planes are valuable secrets and constitute an important element in what the customer pays for when he buys a Consolidated machine. If the French government, for example, orders a Consolidated bomber because it is speedier and more dangerous than a German bomber, they don't want anybody around the factory tipping off the secrets to the Germans.

So it was just an accident that got me into the factory Monday. Maj. R. H. Fleet, president and manager, barged into the office of Secretary T. C. Macaulay of the chamber of commerce where I was hunting news, and quicker than I can tell it I was on the way to the factory. Maj. Fleet displayed no uneasiness about the possibility of my being able to reveal any intricate mechanical secrets, but it was necessary to sign a "pledge," and have a green card stuck in my hatband so they could distinguish me from a spy or a member of the Workers Alliance.

Consolidated recruits its new employees from aviation schools throughout the country and their family records are checked and double checked and put through a wringer to make sure that there is not the wrong kind of Red in their blood corpuscles .They are then required to sign an application solemnly swearing that they are American citizens and will reveal nothing in the factory that may be of injury to the United States, or divulge information to the advantage of any foreign nation and against the interests of our national defense. They are reminded in writing of the provisions of the espionage act in which a violation involves the penalty of a $10,000 fine or imprisonment for two years.

Under these precautions, the type and character of the men observed in the factory are noticeably of high intelligence, dependable, conscientious, and therefore of cheerful appearance and worthy of confidence. There was a feeling of wholesome atmosphere about the place in which the men seemed contented, interested in what they were doing, and proud of their production. The production manager who showed me through the factory greeted his men with a genial salute and a friendly word which was returned in kind, and there were no exceptions from the engineers and the chemists to the boys who were driving rivets and spraying paint.

Speaking of rivets, there are from a quarter to a half million rivets in every machine, and they make them themselves with intricate machines that shoot them out by the thousands, all lengths, sizes and dimensions. Some planes now under construction have a wing spread of 115 feet and weigh 55,000 pounds.

The metal used is mostly aluminum, mixed with a little copper and other metals for strength and plated and "electrocuted" to prevent rust and erosion.

One of the recent additions to their equipment is a 4500-ton hydraulic press, built especially for the company at a cost of $100,000 and which can

STIRRING THE NEWS HOPPER

(Continued From Page One)

apply pressure equal to the weight of a warship. These huge presses are mounted on strong springs to prevent knocking the building down when they are in operation.

In the painting department the rooms are air conditioned, with suction fans pulling the fumes outdoors while others keep the air fresh and moving.

The automatic machines making each separate piece of the 50,000 units, aside from screws, bolts, nuts and rivets, which go into the construction of a plane, keep grinding away throughout the day and night, and more than $2,000,000 worth of parts are now in the store rooms, ready to be delivered on requisition to the assembling sections.

The company carries health, accident and death insurance on all employees desiring it, at a cost far below similar insurance available elsewhere. The sick benefits amount to $15 a week for thirteen weeks to employees earning $1,000 a year, and more for those earning up to $3,000. There are $4,000,000 in risks now being carried.

In the annual report of President Fleet to the shareholders, just issued today, the net earnings of the company for 1939 were placed at $1,104,327. New production facilities to cost $2,000,000 are to be provided immediately, $1,150,000 for new buildings, $530,000 for new machinery and equipment, $100,000 for yard paving and drainage, $35,000 for moving and $185,000 for cranes for handling equipment. The main new building facing Pacific boulevard will be 360x720 feet, giving the company about a half mile frontage of buildings on Pacific.

The company publishes its own house organ called "The Consolidator," and sponsors and encourages athletic events among its employees, and maintains a relations officer on full time keeping in friendly contact with the employees' advising, assisting and working with them in solving their problems, and maintaining sympathetic relations between all branches of the institution.

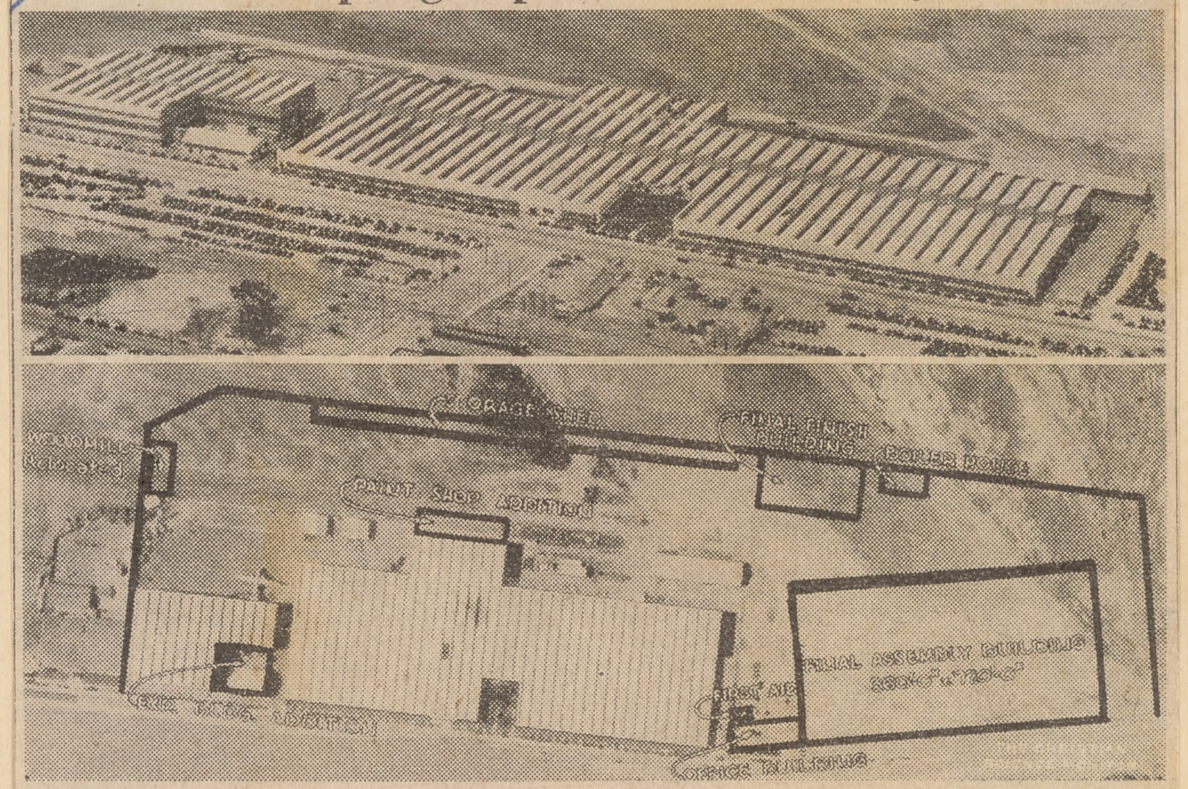
* * *

San Diego in a Coupla Nutshells

Thos. Bomar, industrial commissioner of the San Diego chamber of commerce, and to whom much credit is due for bringing Consolidated Aircraft to San Diego, delivered a talk at the Lemon Grove chamber of commerce Tuesday, in which he gave at a glance some interesting figures about his city. He said:

THE CHRISTIAN SCIENCE MONITOR, BOSTON, TUESDAY, FEBRUARY 27, 1940

Keeping Up With the Navy



Consolidated

Airplane Shop and Expansion

Upper: View of present plant of Consolidated Aircraft Corporation at San Diego, Calif. Lower: Scheme (drawn on smaller scale than upper picture) for expanded plant, showing, at right, where steel canopy for Naval assembly will be erected; and at back, where final finish building and long storage shed will stand.

Factory Growth Demands 64 Airfield Acres

By the Aviation Editor of The Christian Science Monitor

An airplane factory outgrown by inability to handle orders rather than by obsolesence, accounts for outlay which Consolidated Aircraft of San Diego, Calif., has undertaken. A Consolidated factory less than five years' old, which is located on 24.7 acres of Lindbergh Field, the City's municipal airport, will be expanded with buildings, laboratories, and yard areas to occupy a space of 64 acres.

Consolidated's growth is typical of aircraft manufacturing in southern California, due to the demand for armament both at home and abroad. Received from the Navy Department on Dec. 20, 1939, was a contract for $20,016,699, which increased the backlog of the firm's unfilled orders to $40,000,000.

News in Aviation

Inasmuch as present orders utilize plant capacity, Consolidated makes the expansion to meet the terms of the Naval contract. Included in the project is an assembly building which will cover an indoors area 360 feet by 720 feet, with a clear span of 120 feet and a clearance from floor to the bottom of the roof trusses of 36 feet. In addition, much of the yard will be asphalted, for use in final assembly operations outdoors.

FARM BUREAU HEARS COUNTY OFFICIALS

Lakeside Farm Bureau dinner meeting was held last night as the Farmer went to press. Principal speakers programmed by Chairman Clarence Foster were Supervisor W. T. Hart, Assessor Crowell Eddy, Tax Collector Sam Claggett and County Auditor Robert W. Getty.. A sound movie was also to be shown by Field Sec. Frank Weaver of Consolidated Aircraft Company, San Diego.

LAKESIDE FARMER
3/15/40

19

Novembre-Décembre 1939

Revue de l'Armée de l'Air

CONSOLIDATED
AIRCRAFT CORP.
MAR 4 1940

GAUTHIER-VILLARS, ÉDITEUR
55, Quai des Grands-Augustins, PARIS (6e)
PUBLICATION FONDÉE EN 1929
PARAISSANT TOUS LES DEUX MOIS

FRANCE :

Le N° : 18 francs — Abonnement annuel : 90 francs

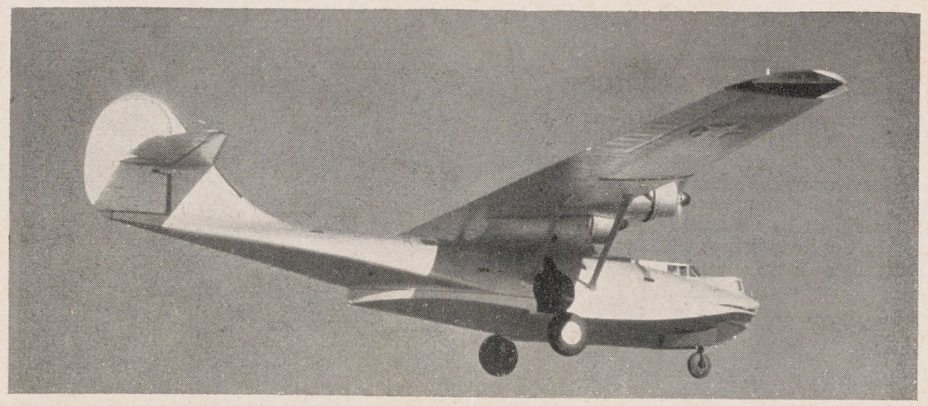
ÉTRANGER :

Le N° : 36 francs—Abonnement annuel : 180 francs

CONVENTION STOCKHOLM :

Le N° : 32 francs — Abonnement annuel : 160 francs

"AERONAUTICS" March 1940.



A Consolidated XPBY—5A Model (Manufacturer's number 28-5A) amphibian. The landing gear is of tricycle type and is fully retractable.

NAVAL AVIATION AND NAVAL POLICY

Official Photo, U. S. Navy

SO C-1 Formation. Scout observation planes such as those pictured here are launched by means of a catapult.

Official Photo, U. S. Navy

An unusual aerial photograph of a left echelon formation of patrol planes.

By Rear Adm. John H. Towers, USN

THE mission of Naval Aviation in our national defense is, primarily, to increase the efficiency of the naval service.

The basic principle of the national policy of the United States is that our armed forces are maintained for defense purposes, and the basic principle of the Navy policy is to maintain our Navy at sufficient strength to support the national policies and commerce, and to guard the continental and overseas possessions of the United States. To do this, the Navy must be properly equipped with ships, aircraft, and trained personnel. The equipment must be modern and in sufficient quantity successfully to carry out the required and assigned missions.

World conditions in recent years have not improved, and the United States, to safeguard its interests, has been forced to continue construction under the Vinson-Trammell Act of 1934 and the Naval Expansion Act of 1938.

While the governing policy is defensive, it is imperative, in the event that war is forced upon us, that our fleet shall be able to bring the enemy to terms at a safe distance from our shores within the shortest possible interval of time. To accomplish this feat, it must be adequately trained and sufficiently strong in every essential element.

The present authorized building program of ships, planes, and naval air stations is a step in the right direction and should be pushed to an early completion. So, too, should the program of construction of other air, destroyer, and submarine bases recommended during the current calendar year by the Hepburn Board.

The Naval policy in regard to heavier-than-air aviation activities is to build and maintain airplanes to the full complement authorized for aircraft carriers, tenders, battleships, cruisers, and the Fleet Marine Force, and to determine and develop the types of airplanes and appliances which are best suited for increased effectiveness of naval vessels, attacks on all classes of Naval objectives, and for scouting and patrolling.

Aircraft For Increased Effectiveness

An adjunct to this general policy is the aircraft policy which aims to build and to maintain aircraft carriers in the maximum

THE CARLSBAD JOURNA

Thursday, March 7, 1940

50

Stirring The News Hopper

By the Roving Reporter

San Diego's Consolidated

San Diego's Consolidated Aircraft factory is employing 4300 men and women, carrying a payroll of $150,000 a week, or $600,000 a month, which figures about $7,500,000 a year.

They are adding new employees at the rate of 100 a week, and just now are increasing their factory capacity with buildings and mechanical equipment to almost double its present size to take care of a backlog of orders aggregating $43,000,000. They hope to be in full operation by late summer when they will be employing between 7,000 and 8,000 men and women, with a corresponding increase in its weekly payroll, which will mean a lot of potatoes for San Diego and vicinity.

Since most of the company's orders are for government planes from this and other countries, their operations are largely of a secret and confidential nature, and to get inside the doors of the factory one is required to pass approval of the army and navy and have some one, known to the company, who is willing to vouch for one's "safety."

The Consolidated designs its own planes, and one of the principal reasons, for its phenomenal success in meeting world competition is because its product is superior in construction, range, speed, and I might say "fighting ability." Naturally, these new improvements which go into the making of Consolidated planes are valuable secrets and constitute an important element in what the customer pays for when he buys a Consolidated machine. If the French government, for example, orders a Consolidated bomber because it is speedier and more dangerous than a German bomber, they don't want anybody around the factory tipping off the secrets to the Germans.

So it was just an accident that got me into the factory Monday. Maj. R. H. Fleet, president and manager, barged into the office of Secretary T. C. Macaulay of the chamber of commerce where I was hunting news, and quicker than I can tell it I was on the way to the factory. Maj. Fleet displayed no uneasiness about the possibility of my being able to reveal any intricate mechanical secrets, but it was necessary to sign a "pledge," and have a green card stuck in my hatband so they could distinguish me from a spy or a member of the Workers Alliance.

Consolidated recruits its new employees from aviation schools throughout the country and their family records are checked and double checked and put through a wringer to make sure that there is not the wrong kind of Red in their blood corpuscles .They are then required to sign an application solemnly swearing that they are American citizens and will reveal nothing in the factory that may be of injury to the United States, or divulge information to the advantage of any foreign nation and against the interests of our national defense. They are reminded in writing of the provisions of the espionage act in which a violation involves the penalty of a $10,000 fine or imprisonment for two years.

Under these precautions, the type and character of the men observed in the factory are noticeably of high intelligence, dependable, conscientious, and therefore of cheerful appearance and worthy of confidence. There was a feeling of wholesome atmosphere about the place in which the men seemed contented, interested in what they were doing, and proud of their production. The production manager who showed me through the factory greeted his men with a genial salute and a friendly word which was returned in kind, and there were no exceptions from the engineers and the chemists to the boys who were driving rivets and spraying paint.

Speaking of rivets, there are from a quarter to a half million rivets in every machine, and they make them themselves with intricate machines that shoot them out by the thousands, all lengths, sizes and dimensions. Some planes now under construction have a wing spread of 115 feet and weigh 55,000 pounds.

The metal used is mostly aluminum, mixed with a little copper and other metals for strength and plated and "electrocuted" to prevent rust and erosion.

One of the recent additions to their equipment is a 4500-ton hydraulic press, built especially for the company at a cost of $100,000 and which can

STIRRING THE NEWS HOPPER

(Continued From Page One)

apply pressure equal to the weight of a warship. These huge presses are mounted on strong springs to prevent knocking the building down when they are in operation.

In the painting department the rooms are air conditioned, with suction fans pulling the fumes outdoors while others keep the air fresh and moving.

The automatic machines making each separate piece of the 50,000 units, aside from screws, bolts, nuts and rivets, which go into the construction of a plane, keep grinding away throughout the day and night, and more than $2,000,000 worth of parts are now in the store rooms, ready to be delivered on requisition to the assembling sections.

The company carries health, accident and death insurance on all employees desiring it, at a cost far below similar insurance available elsewhere. The sick benefits amount to $15 a week for thirteen weeks to employees earning $1,000 a year, and more for those earning up to $3,000. There are $4,000,000 in risks now being carried.

In the annual report of President Fleet to the shareholders, just issued today, the net earnings of the company for 1939 were placed at $1,104,327. New production facilities to cost $2,000,000 are to be provided immediately, $1,150,000 for new buildings, $530,000 for new machinery and equipment, $100,000 for yard paving and drainage, $35,000 for moving and $185,000 for cranes for handling equipment. The main new building facing Pacific boulevard will be 360x720 feet, giving the company about a half mile frontage of buildings on Pacific.

The company publishes its own house organ called "The Consolidator," and sponsors and encourages athletic events among its employees, and maintains a relations officer on full time keeping in friendly contact with the employees' advising, assisting and working with them in solving their problems, and maintaining sympathetic relations between all branches of the institution.

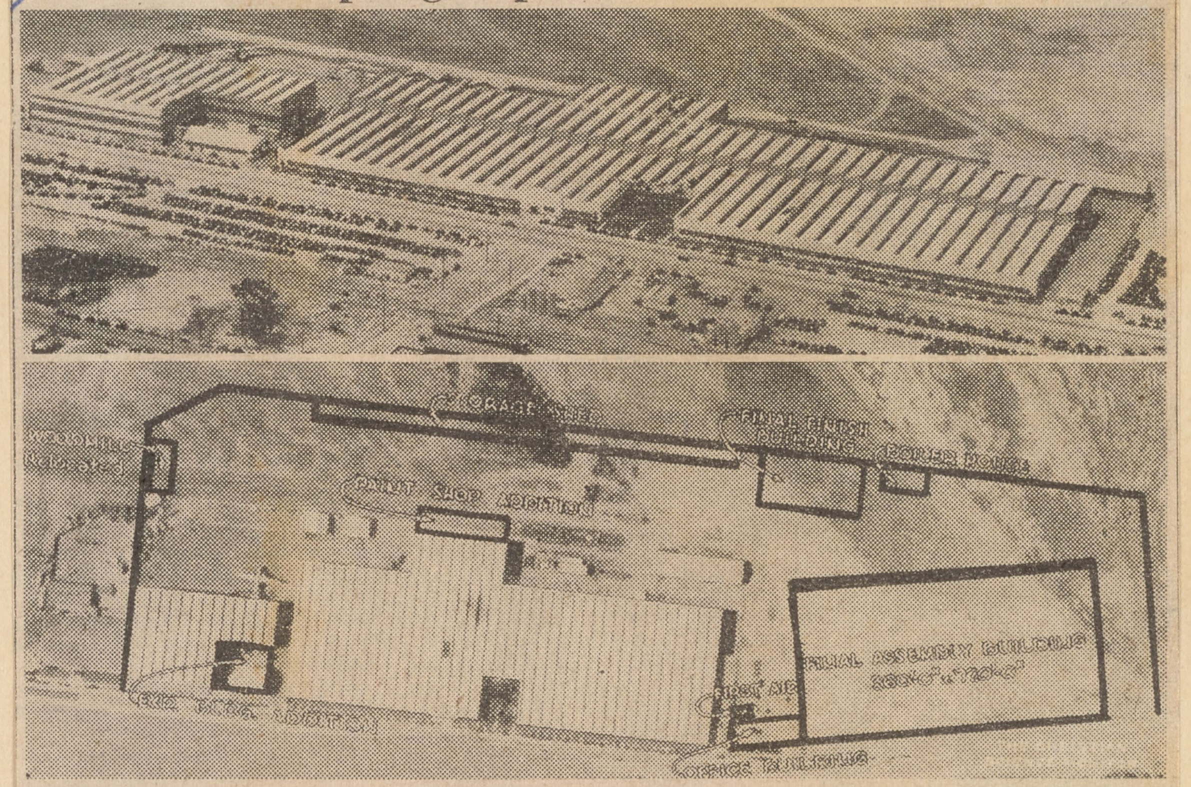
* * *

San Diego in a Coupla Nutshells

Thos. Bomar, industrial commissioner of the San Diego chamber of commerce, and to whom much credit is due for bringing Consolidated Aircraft to San Diego, delivered a talk at the Lemon Grove chamber of commerce Tuesday, in which he gave at a glance some interesting figures about his city. He said:

THE CHRISTIAN SCIENCE MONITOR, BOSTON, TUESDAY, FEBRUARY 27, 1940

Keeping Up With the Navy



Consolidated

Airplane Shop and Expansion

Upper: View of present plant of Consolidated Aircraft Corporation at San Diego, Calif. Lower: Scheme (drawn on smaller scale than upper picture) for expanded plant, showing, at right, where steel canopy for Naval assembly will be erected; and at back, where final finish building and long storage shed will stand.

Factory Growth Demands 64 Airfield Acres

By the Aviation Editor of The Christian Science Monitor

News in Aviation

An airplane factory outgrown by inability to handle orders rather than by obsolesence, accounts for outlay which Consolidated Aircraft of San Diego, Calif., has undertaken. A Consolidated factory less than five years' old, which is located on 24.7 acres of Lindbergh Field, the City's municipal airport, will be expanded with buildings, laboratories, and yard areas to occupy a space of 64 acres.

Consolidated's growth is typical of aircraft manufacturing in southern California, due to the demand for armament both at home and abroad. Received from the Navy Department on Dec. 20, 1939, was a contract for $20,016,699, which increased the backlog of the firm's unfilled orders to $40,000,000.

Inasmuch as present orders utilize plant capacity, Consolidated makes the expansion to meet the terms of the Naval contract. Included in the project is an assembly building which will cover an indoors area 360 feet by 720 feet, with a clear span of 120 feet and a clearance from floor to the bottom of the roof trusses of 36 feet. In addition, much of the yard will be asphalted, for use in final assembly operations outdoors.

FARM BUREAU HEARS COUNTY OFFICIALS

Lakeside Farm Bureau dinner meeting was held last night as the Farmer went to press. Principal speakers programmed by Chairman Clarence Foster were Supervisor W. T. Hart, Assessor Crowell Eddy, Tax Collector Sam Claggett and County Auditor Robert W. Getty.. A sound movie was also to be shown by Field Sec. Frank Weaver of Consolidated Aircraft Company, San Diego.

LAKESIDE FARMER
3/15/40

REVUE DE L'ARMÉE DE L'AIR

D'août 1929 à décembre 1933, cette revue a paru sous le titre
REVUE DES FORCES AÉRIENNES

RÉDACTION

Les communications concernant la Rédaction de la Revue doivent être adressées comme suit

Revue de l'Armée de l'Air
55, quai des Grands-Augustins
Paris (6e)

Les articles proposés doivent être tapés à la machine, au recto des feuilles seulement ; figures ou photographies sur feuilles séparées.

Tous droits de reproduction et de traduction réservés.

ADMINISTRATION

Les communications et envois concernant les abonnements, les changements d'adresse, la vente, les expéditions, la publicité doivent être adressés comme suit :

Revue de l'Armée de l'Air
55, quai des Grands-Augustins, Paris (6e)
Téléphone : DANTON 05-11, 05-12

Conditions d'abonnement annuel et de vente
(Six numéros par an)

	Abonnements	Vente au numéro
FRANCE ET COLONIES	90 fr.	18 fr.
ÉTRANGER	180 »	36 ou 32 fr.

(Convention Stockholm : 160 francs).

Gauthier-Villars édite en outre *L'Aéronautique*, revue mensuelle illustrée fondée en 1919, dont le prix d'abonnement annuel est de 180^{fr} pour la France, de 320^{fr} ou 360^{fr} pour l'Étranger. En 1939, Gauthier-Villars publie également *La Science aérienne et l'Aérotechnique* (Six numéros par an — Abonnement : 90^{fr} pour la France, 160^{fr} ou 180^{fr} pour l'Étranger). Des abonnements simultanés aux trois publications sont acceptés au prix global de 310^{fr} pour la France, de 550^{fr} ou 610^{fr} pour l'Étranger.

Conditions de publicité

Les tarifs et conditions d'insertion sont envoyés sur demande. Aucune publicité rédactionnelle n'est admise.

		Hauteur	Largeur
Dimensions utiles	la page	190^{mm}	110^{mm}
	la demi-page	95 »	110 »

LE MATÉRIEL DES AVIATIONS NATIONALES

États-Unis

LES HYDRAVIONS CONSOLIDATED.

Les premiers modèles.

Les premiers hydravions construits par la *Consolidated Aircraft Corporation* datent de 1928. C'est à cette époque que furent construits pour l'*U. S. Navy* des bimoteurs *PY-1* « *Admiral* », équipés de moteurs *Pratt and Whitney;* ils comportaient deux postes de mitrailleur, pesaient 7270^{kg} en vol et mesuraient $30^{m},50$ d'envergure. Puis vint, en 1929, le bimoteur commercial « *Commodore* » pour 20 à 32 passagers qui fut utilisé entre New-York et Buenos-Ayres; son poids en vol était de 7990^{kg}, son envergure de $30^{m},50$. Sur les quatorze exemplaires construits, douze sont encore en service.

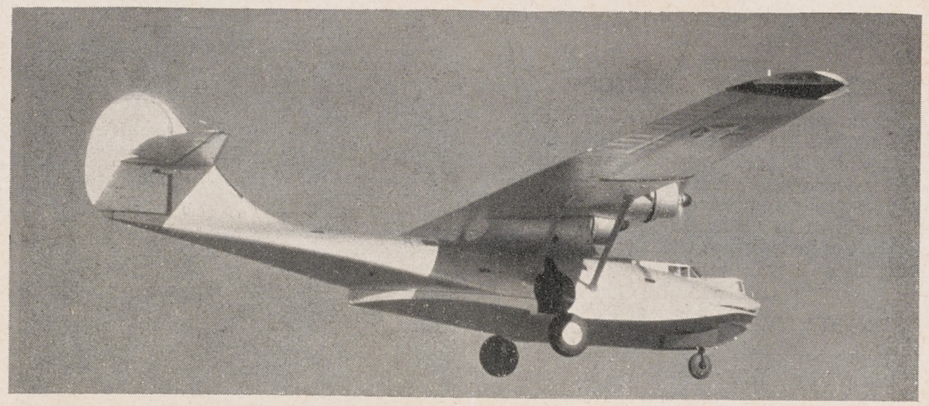
En 1932, *Consolidated* commença la sortie de ses sesquiplans bimoteurs de patrouille et de bombardement *P 2 Y*. Le prototype, le *X. P 2 Y-1* avait trois moteurs, deux entre les plans, un au-dessus qui fut supprimé ; le poids en vol était de 10880^{kg}, l'envergure de $30^{m},50$. Puis apparurent les types *P 2 Y-2* et *P 2 Y-3*, bimoteurs avec les fuseaux-moteurs installés dans l'aile, dont furent construits 23 exemplaires pour l'*U. S. Navy* et 10 pour des Marines étrangères.

Les 7 et 8 septembre 1933, six *P 2 Y-2* se rendirent en vol de groupe de Norfolk à Coco-Solo (zone de Panama), parcourant 3341^{km} en $25^{h}29^{min}$. Les 7 et 8 octobre 1933, les mêmes appareils joignaient Coco-Solo à San Diego, parcourant 4967^{km} en 30^{h}.

Le 22 janvier 1934, le *Patrol Squadron V.P.* 10 de six *P 2 Y-2*, sous les ordres du *lieutenant commander* Knefler Mc Ginnis, s'envolait de San Francisco et amerrissait à Pearl Harbour (hydrobase d'Honolulu, îles Hawaï) après $24^{h}45^{min}$ de vol, réalisant avec 3860^{km} le plus long vol en formation dans l'histoire de l'Aviation.

C'est au printemps 1935 que naquit le *PBY*. Cinq ans plus tard, cet appareil demeure incontestablement l'un des plus remarquables hydravions long-courriers construits en série.

"AERONAUTICS" March 1940.



A Consolidated XPBY—5A Model (Manufacturer's number 28-5A) amphibian. The landing gear is of tricycle type and is fully retractable.

NAVAL AVIATION

Official Photo, U. S. Navy

SO C-1 Formation. Scout observation planes such as those pictured here are launched by means of a catapult.

AND NAVAL POLICY

By Rear Adm. John H. Towers, USN

THE mission of Naval Aviation in our national defense is, primarily, to increase the efficiency of the naval service.

The basic principle of the national policy of the United States is that our armed forces are maintained for defense purposes, and the basic principle of the Navy policy is to maintain our Navy at sufficient strength to support the national policies and commerce, and to guard the continental and overseas possessions of the United States. To do this, the Navy must be properly equipped with ships, aircraft, and trained personnel. The equipment must be modern and in sufficient quantity successfully to carry out the required and assigned missions.

World conditions in recent years have not improved, and the United States, to safeguard its interests, has been forced to continue construction under the Vinson-Trammell Act of 1934 and the Naval Expansion Act of 1938.

While the governing policy is defensive, it is imperative, in the event that war is forced upon us, that our fleet shall be able to bring the enemy to terms at a safe distance from our shores within the shortest possible interval of time. To accomplish this feat, it must be adequately trained and sufficiently strong in every essential element.

The present authorized building program of ships, planes, and naval air stations is a step in the right direction and should be pushed to an early completion. So, too, should the program of construction of other air, destroyer, and submarine bases recommended during the current calendar year by the Hepburn Board.

The Naval policy in regard to heavier-than-air aviation activities is to build and maintain airplanes to the full complement authorized for aircraft carriers, tenders, battleships, cruisers, and the Fleet Marine Force, and to determine and develop the types of airplanes and appliances which are best suited for increased effectiveness of naval vessels, attacks on all classes of Naval objectives, and for scouting and patrolling.

Aircraft For Increased Effectiveness

An adjunct to this general policy is the aircraft policy which aims to build and to maintain aircraft carriers in the maximum

An unusual aerial photograph of a left echelon formation of patrol planes.

Official Photo, U. S. Navy

THE CARLSBAD JOURNA

Thursday, March 7, 1940

50¢

Stirring The News Hopper

By the Roving Reporter

San Diego's Consolidated

San Diego's Consolidated Aircraft factory is employing 4300 men and women, carrying a payroll of $150,000 a week, or $600,000 a month, which figures about $7,500,000 a year.

They are adding new employees at the rate of 100 a week, and just now are increasing their factory capacity with buildings and mechanical equipment to almost double its present size to take care of a backlog of orders aggregating $43,000,000. They hope to be in full operation by late summer when they will be employing between 7,000 and 8,000 men and women, with a corresponding increase in its weekly payroll, which will mean a lot of potatoes for San Diego and vicinity.

Since most of the company's orders are for government planes from this and other countries, their operations are largely of a secret and confidential nature, and to get inside the doors of the factory one is required to pass approval of the army and navy and have some one, known to the company, who is willing to vouch for one's "safety."

The Consolidated designs its own planes, and one of the principal reasons, for its phenomenal success in meeting world competition is because its product is superior in construction, range, speed, and I might say "fighting ability." Naturally, these new improvements which go into the making of Consolidated planes are valuable secrets and constitute an important element in what the customer pays for when he buys a Consolidated machine. If the French government, for example, orders a Consolidated bomber because it is speedier and more dangerous than a German bomber, they don't want anybody around the factory tipping off the secrets to the Germans.

So it was just an accident that got me into the factory Monday. Maj. R. H. Fleet, president and manager, barged into the office of Secretary T. C. Macaulay of the chamber of commerce where I was hunting news, and quicker than I can tell it I was on the way to the factory. Maj. Fleet displayed no uneasiness about the possibility of my being able to reveal any intricate mechanical secrets, but it was necessary to sign a "pledge," and have a green card stuck in my hatband so they could distinguish me from a spy or a member of the Workers Alliance.

Consolidated recruits its new employees from aviation schools throughout the country and their family records are checked and double checked and put through a wringer to make sure that there is not the wrong kind of Red in their blood corpuscles .They are then required to sign an application solemnly swearing that they are American citizens and will reveal nothing in the factory that may be of injury to the United States, or divulge information to the advantage of any foreign nation and against the interests of our national defense. They are reminded in writing of the provisions of the espionage act in which a violation involves the penalty of a $10,000 fine or imprisonment for two years.

Under these precautions, the type and character of the men observed in the factory are noticeably of high intelligence, dependable, conscientious, and therefore of cheerful appearance and worthy of confidence. There was a feeling of wholesome atmosphere about the place in which the men seemed contented, interested in what they were doing, and proud of their production. The production manager who showed me through the factory greeted his men with a genial salute and a friendly word which was returned in kind, and there were no exceptions from the engineers and the chemists to the boys who were driving rivets and spraying paint.

Speaking of rivets, there are from a quarter to a half million rivets in every machine, and they make them themselves with intricate machines that shoot them out by the thousands, all lengths, sizes and dimensions. Some planes now under construction have a wing spread of 115 feet and weigh 55,000 pounds.

The metal used is mostly aluminum, mixed with a little copper and other metals for strength and plated and "electrocuted" to prevent rust and erosion.

One of the recent additions to their equipment is a 4500-ton hydraulic press, built especially for the company at a cost of $100,000 and which can

STIRRING THE NEWS HOPPER

(Continued From Page One)

apply pressure equal to the weight of a warship. These huge presses are mounted on strong springs to prevent knocking the building down when they are in operation.

In the painting department the rooms are air conditioned, with suction fans pulling the fumes outdoors while others keep the air fresh and moving.

The automatic machines making each separate piece of the 50,000 units, aside from screws, bolts, nuts and rivets, which go into the construction of a plane, keep grinding away throughout the day and night, and more than $2,000,000 worth of parts are now in the store rooms, ready to be delivered on requisition to the assembling sections.

The company carries health, accident and death insurance on all employees desiring it, at a cost far below similar insurance available elsewhere. The sick benefits amount to $15 a week for thirteen weeks to employees earning $1,000 a year, and more for those earning up to $3,000. There are $4,000,000 in risks now being carried.

In the annual report of President Fleet to the shareholders, just issued today, the net earnings of the company for 1939 were placed at $1,104,327. New production facilities to cost $2,000,000 are to be provided immediately, $1,150,000 for new buildings, $530,000 for new machinery and equipment, $100,000 for yard paving and drainage, $35,000 for moving and $185,000 for cranes for handling equipment. The main new building facing Pacific boulevard will be 360x720 feet, giving the company about a half mile frontage of buildings on Pacific.

The company publishes its own house organ called "The Consolidator," and sponsors and encourages athletic events among its employees, and maintains a relations officer on full time keeping in friendly contact with the employees' advising, assisting and working with them in solving their problems, and maintaining sympathetic relations between all branches of the institution.

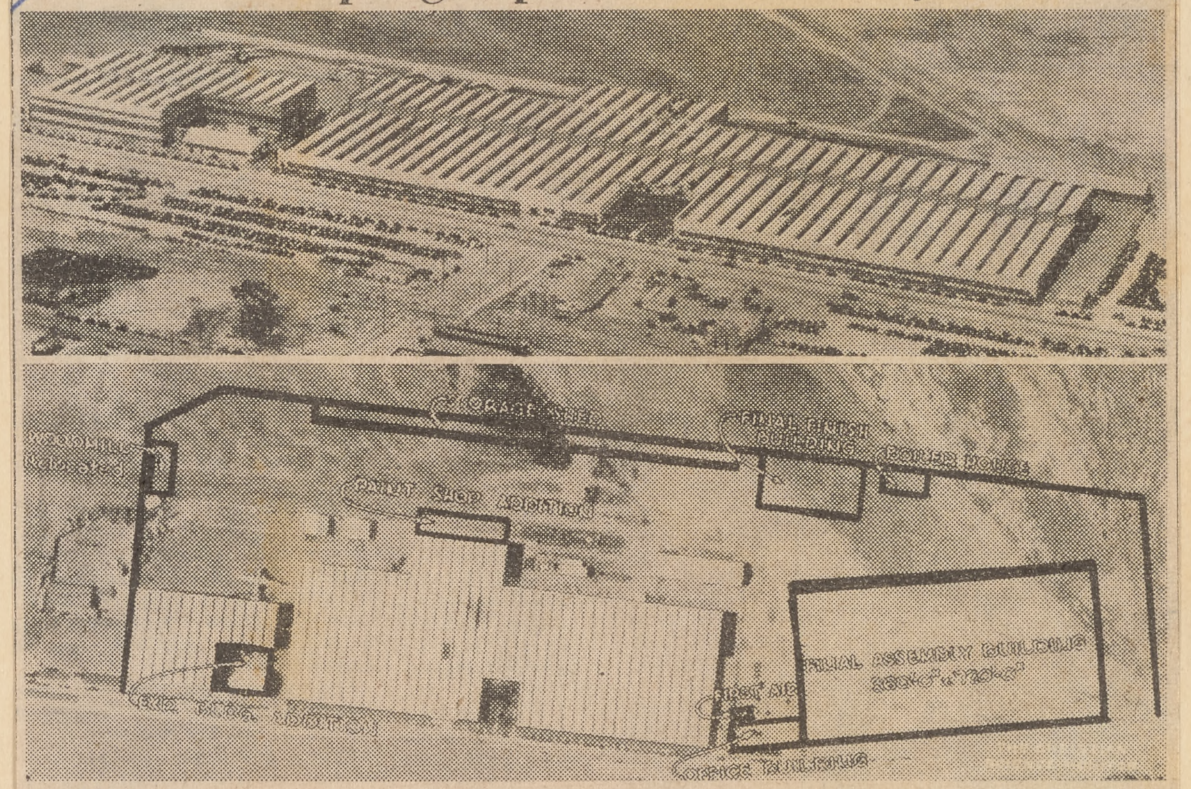
* * *

San Diego in a Coupla Nutshells

Thos. Bomar, industrial commissioner of the San Diego chamber of commerce, and to whom much credit is due for bringing Consolidated Aircraft to San Diego, delivered a talk at the Lemon Grove chamber of commerce Tuesday, in which he gave at a glance some interesting figures about his city. He said:

THE CHRISTIAN SCIENCE MONITOR, BOSTON, TUESDAY, FEBRUARY 27, 1940

Keeping Up With the Navy



Consolidated

Airplane Shop and Expansion

Upper: View of present plant of Consolidated Aircraft Corporation at San Diego, Calif. Lower: Scheme (drawn on smaller scale than upper picture) for expanded plant, showing, at right, where steel canopy for Naval assembly will be erected; and at back, where final finish building and long storage shed will stand.

Factory Growth Demands 64 Airfield Acres

By the Aviation Editor of The Christian Science Monitor

News in Aviation

An airplane factory outgrown by inability to handle orders rather than by obsolesence, accounts for outlay which Consolidated Aircraft of San Diego, Calif., has undertaken. A Consolidated factory less than five years' old, which is located on 24.7 acres of Lindbergh Field, the City's municipal airport, will be expanded with buildings, laboratories, and yard areas to occupy a space of 64 acres.

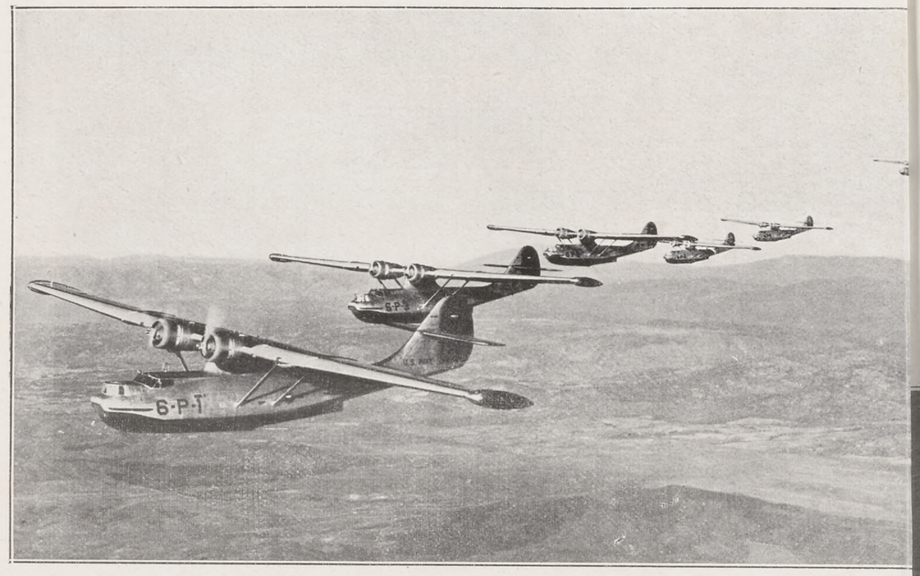
Consolidated's growth is typical of aircraft manufacturing in southern California, due to the demand for armament both at home and abroad. Received from the Navy Department on Dec. 20, 1939, was a contract for $20,016,699, which increased the backlog of the firm's unfilled orders to $40,000,000.

Inasmuch as present orders utilize plant capacity, Consolidated makes the expansion to meet the terms of the Naval contract. Included in the project is an assembly building which will cover an indoors area 360 feet by 720 feet, with a clear span of 120 feet and a clearance from floor to the bottom of the roof trusses of 36 feet. In addition, much of the yard will be asphalted, for use in final assembly operations outdoors.

FARM BUREAU HEARS COUNTY OFFICIALS

Lakeside Farm Bureau dinner meeting was held last night as the Farmer went to press. Principal speakers programmed by Chairman Clarence Foster were Supervisor W. T. Hart, Assessor Crowell Eddy, Tax Collector Sam Claggett and County Auditor Robert W. Getty.. A sound movie was also to be shown by Field Sec. Frank Weaver of Consolidated Aircraft Company, San Diego.

LAKESIDE FARMER
3/15/40



Six des hydravions Consolidated PBY-1 *de l'escadrille* V. P. 6 *qui, en janvier 1937, se rendit en formation de San Diego à Pearl Harbour avec 80 hommes d'équipages.*

Le bimoteur Consolidated PBY.

Vols d'escadrilles militaires.

Pour ses débuts dans le monde aérien, le *PBY* réalisa un coup de maître : son prototype, le *X. P 3 Y*-1 à moteurs *Pratt and Whitney* de 825$^{\mathrm{ch}}$, avec un équipage composé de Mc Ginnis, Averill, Sizer, Bolka et Wilkinson, élevait, les 14 et 15 octobre 1935, le record de distance en ligne droite à 5280$^{\mathrm{km}}$,015, battant de 940$^{\mathrm{km}}$ un record qui ne devait être battu qu'en octobre 1937 par le *Latécoère « Lieutenant-de-Vaisseau-Paris »*.

Les essais du prototype dépassèrent tellement les spécifications de l'*U. S. Navy* et les performances des concurrents qu'un premier marché, pour 60 bombardiers de patrouille *PBY*, fut aussitôt conclu. A l'heure actuelle, le nombre des *PBY* commandés par l'*U. S. Navy* dépasse 250. Notons qu'après livraison à la base aéronavale de North Island, chaque unité subit un vol sans escale d'une durée de 24$^{\mathrm{h}}$.

Ces appareils sont destinés aux bases du Pacifique et leur transfert se fait en vol, sous forme de « *routine flights* », avec les équipages militaires qui doivent les utiliser. Les moteurs sont des *Pratt and Whitney « Twin Wasp »* de 1000$^{\mathrm{ch}}$, à 14 cylindres en étoile double. C'est ainsi qu'ont été effectués les vols en formation dont la liste suit :

— 28-29 janvier 1937, 12 hydravions avec 80 hommes, de San Diego à Pearl Harbour (4108$^{\mathrm{km}}$ en 21$^{\mathrm{h}}$43$^{\mathrm{min}}$);

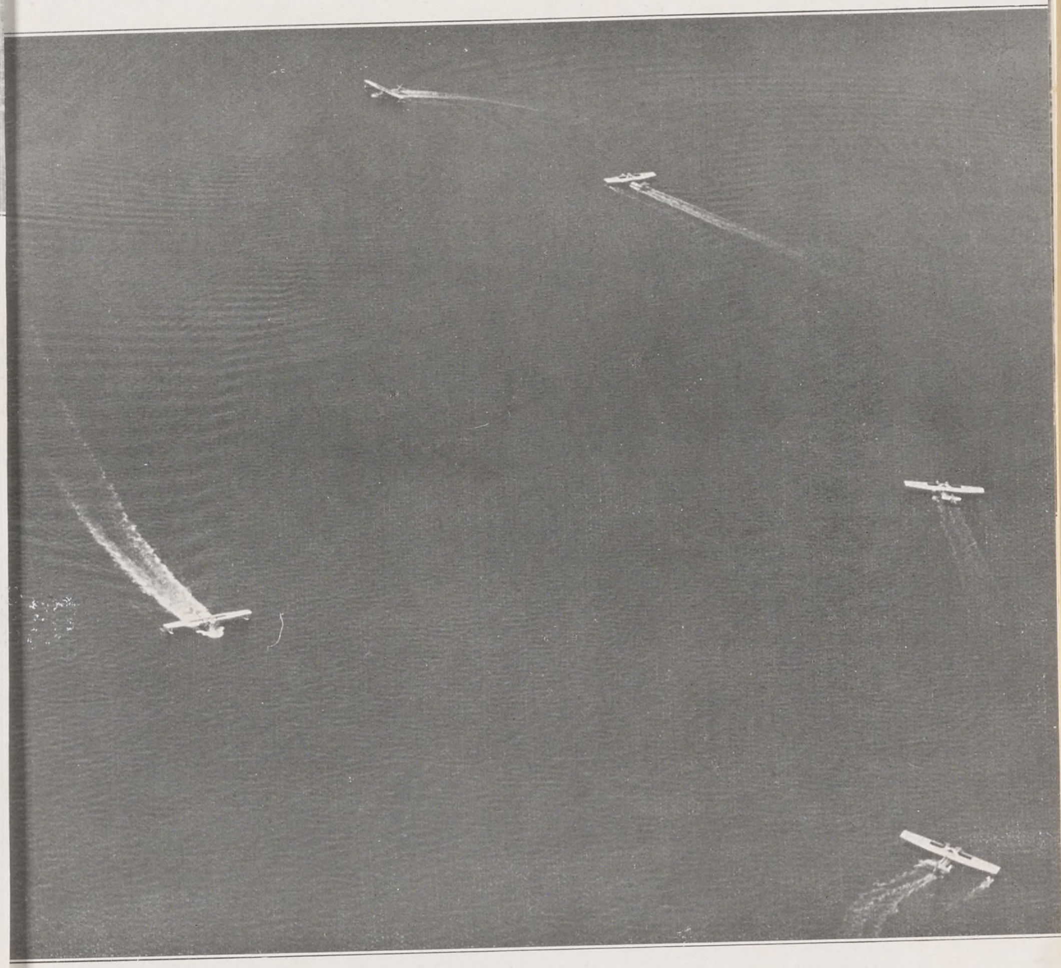
— 12-13 avril 1937, 12 hydravions avec 80 hommes, de San Diego à Pearl Harbour (4108$^{\mathrm{km}}$ en 21$^{\mathrm{h}}$21$^{\mathrm{min}}$);

— 21-22 juin 1937, 12 hydravions avec 84 hommes, de San Diego à Coco-Solo (4967$^{\mathrm{km}}$ en 27$^{\mathrm{h}}$58$^{\mathrm{min}}$);

— 8-9 décembre 1937, 14 hydravions avec 98 hommes, de San Diego à Coco-Solo (4967$^{\mathrm{km}}$ en 22$^{\mathrm{h}}$20$^{\mathrm{min}}$);

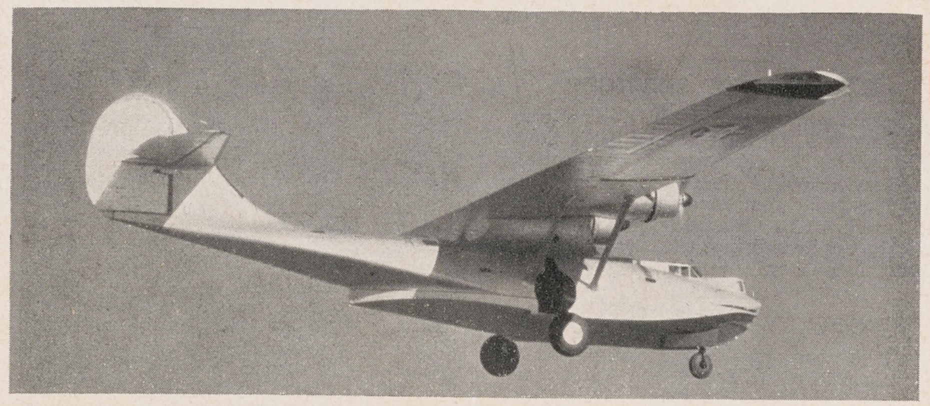
— 18-19 janvier 1938, 18 hydravions avec 127 hommes, de San Diego à Pearl Harbour (4108$^{\mathrm{km}}$ en 20$^{\mathrm{h}}$30$^{\mathrm{min}}$);

— 30-31 août 1938, 14 hydravions avec 98 hommes, de San Diego à Coco-Solo (4967$^{\mathrm{km}}$ en 26$^{\mathrm{h}}$40$^{\mathrm{min}}$);



Hydravions Consolidated PBY *évoluant à flot dans la baie de San Diego (Californie).*

"AERONAUTICS" March 1940.



A Consolidated XPBY—5A Model (Manufacturer's number 28-5A) amphibian. The landing gear is of tricycle type and is fully retractable.

NAVAL AVIATION

Official Photo, U. S. Navy

SO C-1 Formation. Scout observation planes such as those pictured here are launched by means of a catapult.

AND NAVAL POLICY

By Rear Adm. John H. Towers, USN

An unusual aerial photograph of a left echelon formation of patrol planes. *Official Photo, U. S. Navy*

THE mission of Naval Aviation in our national defense is, primarily, to increase the efficiency of the naval service.

The basic principle of the national policy of the United States is that our armed forces are maintained for defense purposes, and the basic principle of the Navy policy is to maintain our Navy at sufficient strength to support the national policies and commerce, and to guard the continental and overseas possessions of the United States. To do this, the Navy must be properly equipped with ships, aircraft, and trained personnel. The equipment must be modern and in sufficient quantity successfully to carry out the required and assigned missions.

World conditions in recent years have not improved, and the United States, to safeguard its interests, has been forced to continue construction under the Vinson-Trammell Act of 1934 and the Naval Expansion Act of 1938.

While the governing policy is defensive, it is imperative, in the event that war is forced upon us, that our fleet shall be able to bring the enemy to terms at a safe distance from our shores within the shortest possible interval of time. To accomplish this feat, it must be adequately trained and sufficiently strong in every essential element.

The present authorized building program of ships, planes, and naval air stations is a step in the right direction and should be pushed to an early completion. So, too, should the program of construction of other air, destroyer, and submarine bases recommended during the current calendar year by the Hepburn Board.

The Naval policy in regard to heavier-than-air aviation activities is to build and maintain airplanes to the full complement authorized for aircraft carriers, tenders, battleships, cruisers, and the Fleet Marine Force, and to determine and develop the types of airplanes and appliances which are best suited for increased effectiveness of naval vessels, attacks on all classes of Naval objectives, and for scouting and patrolling.

Aircraft For Increased Effectiveness

An adjunct to this general policy is the aircraft policy which aims to build and to maintain aircraft carriers in the maximum

THE CARLSBAD JOURNA

Thursday, March 7, 1940

50

Stirring The News Hopper

By the Roving Reporter

San Diego's Consolidated

San Diego's Consolidated Aircraft factory is employing 4300 men and women, carrying a payroll of $150,000 a week, or $600,000 a month, which figures about $7,500,000 a year.

They are adding new employees at the rate of 100 a week, and just now are increasing their factory capacity with buildings and mechanical equipment to almost double its present size to take care of a backlog of orders aggregating $43,000,000. They hope to be in full operation by late summer when they will be employing between 7,000 and 8,000 men and women, with a corresponding increase in its weekly payroll, which will mean a lot of potatoes for San Diego and vicinity.

Since most of the company's orders are for government planes from this and other countries, their operations are largely of a secret and confidential nature, and to get inside the doors of the factory one is required to pass approval of the army and navy and have some one, known to the company, who is willing to vouch for one's "safety."

The Consolidated designs its own planes, and one of the principal reasons, for its phenomenal success in meeting world competition is because its product is superior in construction, range, speed, and I might say "fighting ability." Naturally, these new improvements which go into the making of Consolidated planes are valuable secrets and constitute an important element in what the customer pays for when he buys a Consolidated machine. If the French government, for example, orders a Consolidated bomber because it is speedier and more dangerous than a German bomber, they don't want anybody around the factory tipping off the secrets to the Germans.

So it was just an accident that got me into the factory Monday. Maj. R. H. Fleet, president and manager, barged into the office of Secretary T. C. Macaulay of the chamber of commerce where I was hunting news, and quicker than I can tell it I was on the way to the factory. Maj. Fleet displayed no uneasiness about the possibility of my being able to reveal any intricate mechanical secrets, but it was necessary to sign a "pledge," and have a green card stuck in my hatband so they could distinguish me from a spy or a member of the Workers Alliance.

Consolidated recruits its new employees from aviation schools throughout the country and their family records are checked and double checked and put through a wringer to make sure that there is not the wrong kind of Red in their blood corpuscles .They are then required to sign an application solemnly swearing that they are American citizens and will reveal nothing in the factory that may be of injury to the United States, or divulge information to the advantage of any foreign nation and against the interests of our national defense. They are reminded in writing of the provisions of the espionage act in which a violation involves the penalty of a $10,000 fine or imprisonment for two years.

Under these precautions, the type and character of the men observed in the factory are noticeably of high intelligence, dependable, conscientious, and therefore of cheerful appearance and worthy of confidence. There was a feeling of wholesome atmosphere about the place in which the men seemed contented, interested in what they were doing, and proud of their production. The production manager who showed me through the factory greeted his men with a genial salute and a friendly word which was returned in kind, and there were no exceptions from the engineers and the chemists to the boys who were driving rivets and spraying paint.

Speaking of rivets, there are from a quarter to a half million rivets in every machine, and they make them themselves with intricate machines that shoot them out by the thousands, all lengths, sizes and dimensions. Some planes now under construction have a wing spread of 115 feet and weigh 55,000 pounds.

The metal used is mostly aluminum, mixed with a little copper and other metals for strength and plated and "electrocuted" to prevent rust and erosion.

One of the recent additions to their equipment is a 4500-ton hydraulic press, built especially for the company at a cost of $100,000 and which can

STIRRING THE NEWS HOPPER

(Continued From Page One)

apply pressure equal to the weight of a warship. These huge presses are mounted on strong springs to prevent knocking the building down when they are in operation.

In the painting department the rooms are air conditioned, with suction fans pulling the fumes outdoors while others keep the air fresh and moving.

The automatic machines making each separate piece of the 50,000 units, aside from screws, bolts, nuts and rivets, which go into the construction of a plane, keep grinding away throughout the day and night, and more than $2,000,000 worth of parts are now in the store rooms, ready to be delivered on requisition to the assembling sections.

The company carries health, accident and death insurance on all employees desiring it, at a cost far below similar insurance available elsewhere. The sick benefits amount to $15 a week for thirteen weeks to employees earning $1,000 a year, and more for those earning up to $3,000. There are $4,000,000 in risks now being carried.

In the annual report of President Fleet to the shareholders, just issued today, the net earnings of the company for 1939 were placed at $1,104,327. New production facilities to cost $2,000,000 are to be provided immediately, $1,150,000 for new buildings, $530,000 for new machinery and equipment, $100,000 for yard paving and drainage, $35,000 for moving and $185,000 for cranes for handling equipment. The main new building facing Pacific boulevard will be 360x720 feet, giving the company about a half mile frontage of buildings on Pacific.

The company publishes its own house organ called "The Consolidator," and sponsors and encourages athletic events among its employees, and maintains a relations officer on full time keeping in friendly contact with the employees' advising, assisting and working with them in solving their problems, and maintaining sympathetic relations between all branches of the institution.

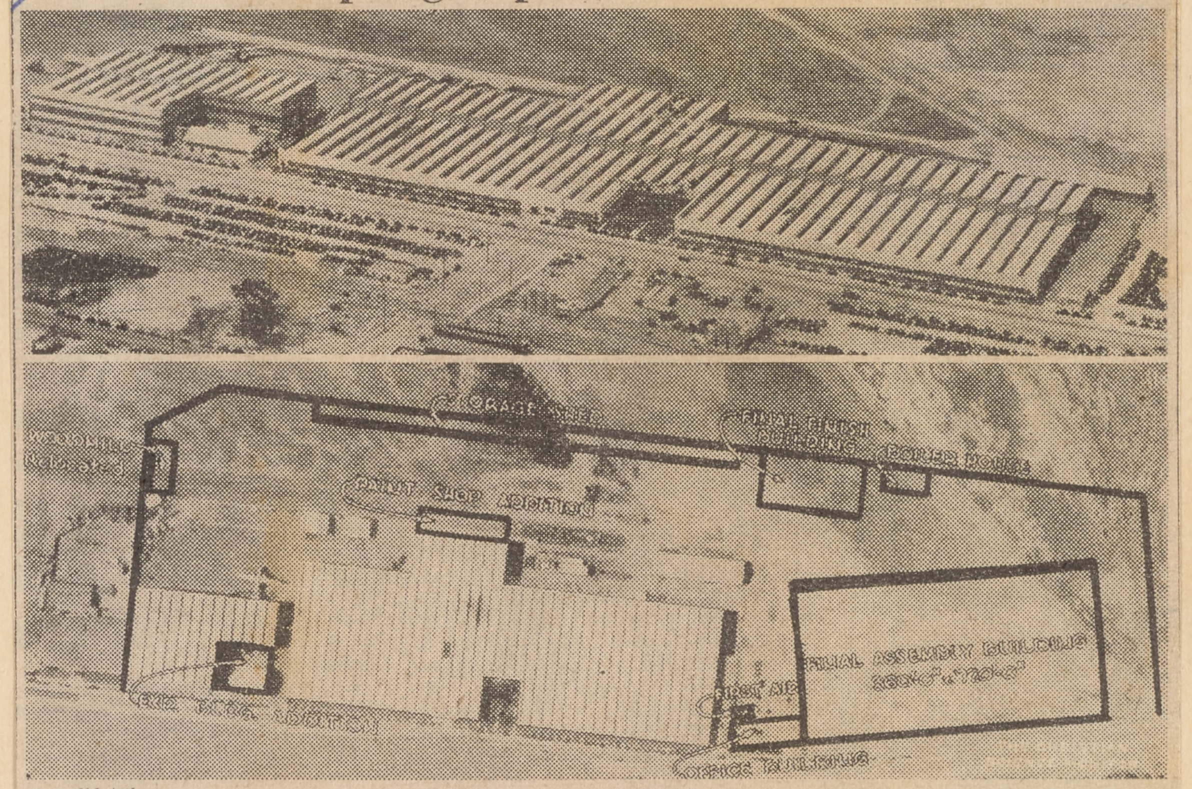
* * *

San Diego in a Coupla Nutshells

Thos. Bomar, industrial commissioner of the San Diego chamber of commerce, and to whom much credit is due for bringing Consolidated Aircraft to San Diego, delivered a talk at the Lemon Grove chamber of commerce Tuesday, in which he gave at a glance some interesting figures about his city. He said:

THE CHRISTIAN SCIENCE MONITOR, BOSTON, TUESDAY, FEBRUARY 27, 1940

Keeping Up With the Navy



Consolidated

Airplane Shop and Expansion

Upper: View of present plant of Consolidated Aircraft Corporation at San Diego, Calif. Lower: Scheme (drawn on smaller scale than upper picture) for expanded plant, showing, at right, where steel canopy for Naval assembly will be erected; and at back, where final finish building and long storage shed will stand.

Factory Growth Demands 64 Airfield Acres

By the Aviation Editor of The Christian Science Monitor

News in Aviation

An airplane factory outgrown by inability to handle orders rather than by obsolesence, accounts for outlay which Consolidated Aircraft of San Diego, Calif., has undertaken. A Consolidated factory less than five years' old, which is located on 24.7 acres of Lindbergh Field, the City's municipal airport, will be expanded with buildings, laboratories, and yard areas to occupy a space of 64 acres.

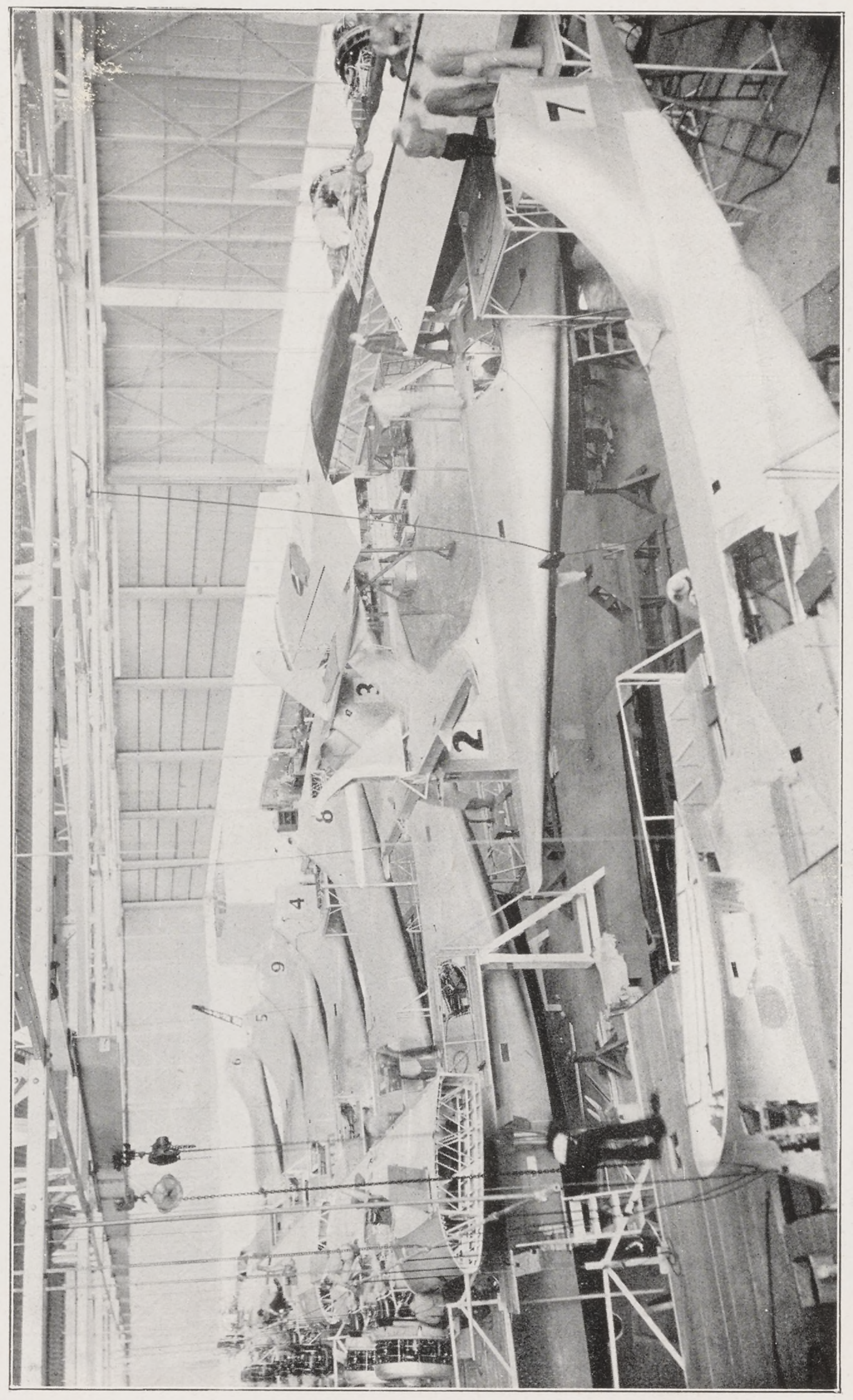
Consolidated's growth is typical of aircraft manufacturing in southern California, due to the demand for armament both at home and abroad. Received from the Navy Department on Dec. 20, 1939, was a contract for $20,016,699, which increased the backlog of the firm's unfilled orders to $40,000,000.

Inasmuch as present orders utilize plant capacity, Consolidated makes the expansion to meet the terms of the Naval contract. Included in the project is an assembly building which will cover an indoors area 360 feet by 720 feet, with a clear span of 120 feet and a clearance from floor to the bottom of the roof trusses of 36 feet. In addition, much of the yard will be asphalted, for use in final assembly operations outdoors.

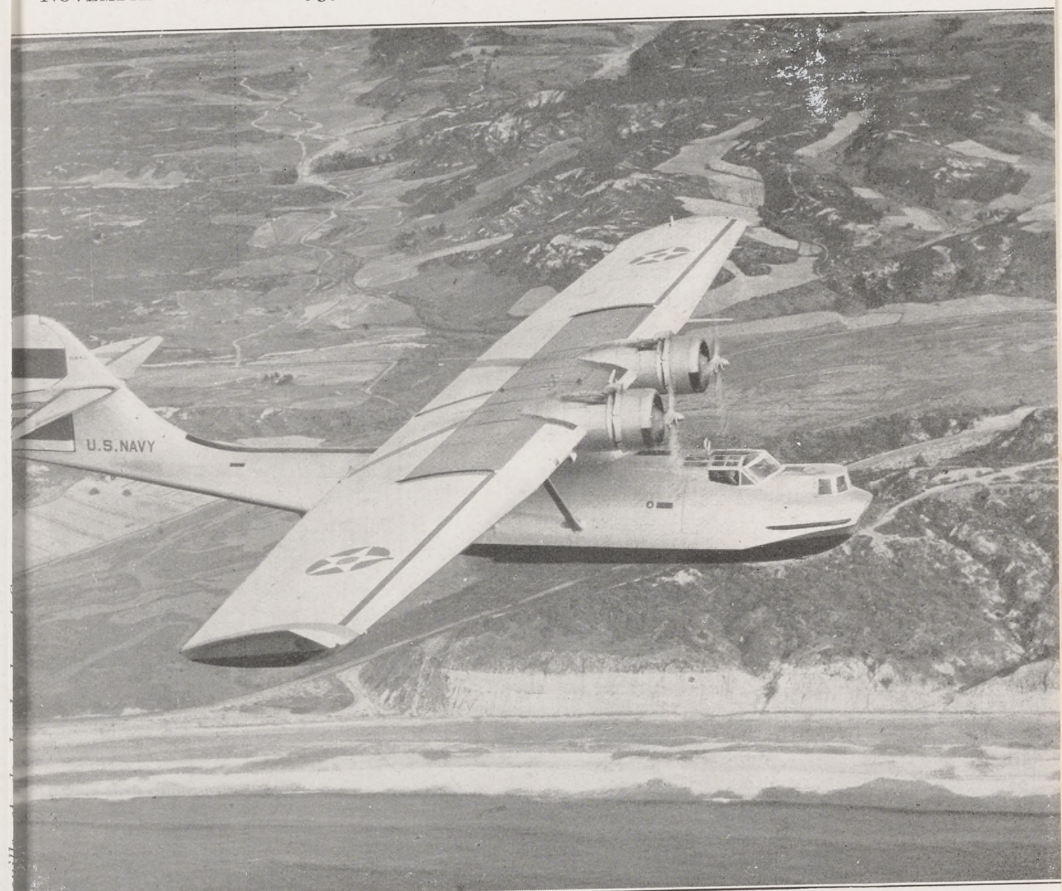
FARM BUREAU HEARS COUNTY OFFICIALS

Lakeside Farm Bureau dinner meeting was held last night as the Farmer went to press. Principal speakers programmed by Chairman Clarence Foster were Supervisor W. T. Hart, Assessor Crowell Eddy, Tax Collector Sam Claggett and County Auditor Robert W. Getty.. A sound movie was also to be shown by Field Sec. Frank Weaver of Consolidated Aircraft Company, San Diego.

LAKESIDE FARMER
3/15/40



Atelier d'assemblage des hydravions de



Aspect en vol du bimoteur CONSOLIDATED « GUBA » appartenant au professeur Richard Archbold.

— 6-7 septembre 1938, 17 hydravions avec 119 hommes, de San Diego à Pearl Harbour (4108km en 17h17min);

— 27-28 juin 1939, 15 hydravions avec 105 hommes, de San Diego à Pearl Harbour (4108km en 16h17min).

En outre, au cours de manœuvres les vols suivants ont été effectués :

— 25 juin 1938, 48 hydravions avec 300 hommes sous les ordres de l'amiral Charles A. Blakely, de San Diego au lac Washington (Seattle), 1900km (un seul appareil immobilisé à Seattle);

— 9-10 janvier 1939, 48 hydravions avec 336 hommes, de San Diego à Coco-Solo; trois seulement doivent s'arrêter dans le golfe de Fonseca (Nicaragua) avant de rejoindre Panama;

— 10 janvier 1939, 16 sur 18 hydravions, de San Diego à Guantanamo (Cuba), sans escale.

NAVAL AVIATION

Official Photo, U. S. Navy

SO C-1 Formation. Scout observation planes such as those pictured here are launched by means of a catapult.

AND NAVAL POLICY

By Rear Adm. John H. Towers, USN

An unusual aerial photograph of a left echelon formation of patrol planes.

Official Photo, U. S. Navy

THE mission of Naval Aviation in our national defense is, primarily, to increase the efficiency of the naval service.

The basic principle of the national policy of the United States is that our armed forces are maintained for defense purposes, and the basic principle of the Navy policy is to maintain our Navy at sufficient strength to support the national policies and commerce, and to guard the continental and overseas possessions of the United States. To do this, the Navy must be properly equipped with ships, aircraft, and trained personnel. The equipment must be modern and in sufficient quantity successfully to carry out the required and assigned missions.

World conditions in recent years have not improved, and the United States, to safeguard its interests, has been forced to continue construction under the Vinson-Trammell Act of 1934 and the Naval Expansion Act of 1938.

While the governing policy is defensive, it is imperative, in the event that war is forced upon us, that our fleet shall be able to bring the enemy to terms at a safe distance from our shores within the shortest possible interval of time. To accomplish this feat, it must be adequately trained and sufficiently strong in every essential element.

The present authorized building program of ships, planes, and naval air stations is a step in the right direction and should be pushed to an early completion. So, too, should the program of construction of other air, destroyer, and submarine bases recommended during the current calendar year by the Hepburn Board.

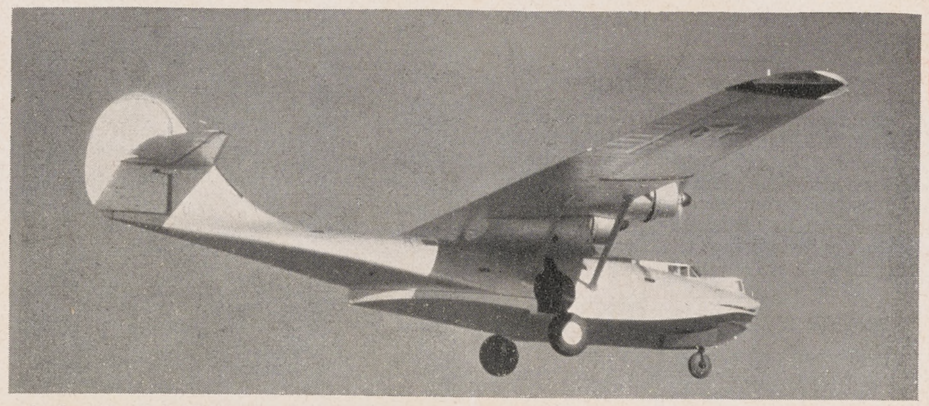
The Naval policy in regard to heavier-than-air aviation activities is to build and maintain airplanes to the full complement authorized for aircraft carriers, tenders, battleships, cruisers, and the Fleet Marine Force, and to determine and develop the types of airplanes and appliances which are best suited for increased effectiveness of naval vessels, attacks on all classes of Naval objectives, and for scouting and patrolling.

Aircraft For Increased Effectiveness

An adjunct to this general policy is the aircraft policy which aims to build and to maintain aircraft carriers in the maximum

---

"AERONAUTICS" March 1940.



A Consolidated XPBY—5A Model (Manufacturer's number 28-5A) amphibian. The landing gear is of tricycle type and is fully retractable.

THE CARLSBAD JOURNA

Thursday, March 7, 1940

50

Stirring The News Hopper

By the Roving Reporter

San Diego's Consolidated

San Diego's Consolidated Aircraft factory is employing 4300 men and women, carrying a payroll of $150,000 a week, or $600,000 a month, which figures about $7,500,000 a year.

They are adding new employees at the rate of 100 a week, and just now are increasing their factory capacity with buildings and mechanical equipment to almost double its present size to take care of a backlog of orders aggregating $43,000,000. They hope to be in full operation by late summer when they will be employing between 7,000 and 8,000 men and women, with a corresponding increase in its weekly payroll, which will mean a lot of potatoes for San Diego and vicinity.

Since most of the company's orders are for government planes from this and other countries, their operations are largely of a secret and confidential nature, and to get inside the doors of the factory one is required to pass approval of the army and navy and have some one, known to the company, who is willing to vouch for one's "safety."

The Consolidated designs its own planes, and one of the principal reasons, for its phenomenal success in meeting world competition is because its product is superior in construction, range, speed, and I might say "fighting ability." Naturally, these new improvements which go into the making of Consolidated planes are valuable secrets and constitute an important element in what the customer pays for when he buys a Consolidated machine. If the French government, for example, orders a Consolidated bomber because it is speedier and more dangerous than a German bomber, they don't want anybody around the factory tipping off the secrets to the Germans.

So it was just an accident that got me into the factory Monday. Maj. R. H. Fleet, president and manager, barged into the office of Secretary T. C. Macaulay of the chamber of commerce where I was hunting news, and quicker than I can tell it I was on the way to the factory. Maj. Fleet displayed no uneasiness about the possibility of my being able to reveal any intricate mechanical secrets, but it was necessary to sign a "pledge," and have a green card stuck in my hatband so they could distinguish me from a spy or a member of the Workers Alliance.

Consolidated recruits its new employees from aviation schools throughout the country and their family records are checked and double checked and put through a wringer to make sure that there is not the wrong kind of Red in their blood corpuscles .They are then required to sign an application solemnly swearing that they are American citizens and will reveal nothing in the factory that may be of injury to the United States, or divulge information to the advantage of any foreign nation and against the interests of our national defense. They are reminded in writing of the provisions of the espionage act in which a violation involves the penalty of a $10,000 fine or imprisonment for two years.

Under these precautions, the type and character of the men observed in the factory are noticeably of high intelligence, dependable, conscientious, and therefore of cheerful appearance and worthy of confidence. There was a feeling of wholesome atmosphere about the place in which the men seemed contented, interested in what they were doing, and proud of their production. The production manager who showed me through the factory greeted his men with a genial salute and a friendly word which was returned in kind, and there were no exceptions from the engineers and the chemists to the boys who were driving rivets and spraying paint.

Speaking of rivets, there are from a quarter to a half million rivets in every machine, and they make them themselves with intricate machines that shoot them out by the thousands, all lengths, sizes and dimensions. Some planes now under construction have a wing spread of 115 feet and weigh 55,000 pounds.

The metal used is mostly aluminum, mixed with a little copper and other metals for strength and plated and "electrocuted" to prevent rust and erosion.

One of the recent additions to their equipment is a 4500-ton hydraulic press, built especially for the company at a cost of $100,000 and which can

STIRRING THE NEWS HOPPER

(Continued From Page One)

apply pressure equal to the weight of a warship. These huge presses are mounted on strong springs to prevent knocking the building down when they are in operation.

In the painting department the rooms are air conditioned, with suction fans pulling the fumes outdoors while others keep the air fresh and moving.

The automatic machines making each separate piece of the 50,000 units, aside from screws, bolts, nuts and rivets, which go into the construction of a plane, keep grinding away throughout the day and night, and more than $2,000,000 worth of parts are now in the store rooms, ready to be delivered on requisition to the assembling sections.

The company carries health, accident and death insurance on all employees desiring it, at a cost far below similar insurance available elsewhere. The sick benefits amount to $15 a week for thirteen weeks to employees earning $1,000 a year, and more for those earning up to $3,000. There are $4,000,000 in risks now being carried.

In the annual report of President Fleet to the shareholders, just issued today, the net earnings of the company for 1939 were placed at $1,104,327. New production facilities to cost $2,000,000 are to be provided immediately, $1,150,000 for new buildings, $530,000 for new machinery and equipment, $100,000 for yard paving and drainage, $35,000 for moving and $185,000 for cranes for handling equipment. The main new building facing Pacific boulevard will be 360x720 feet, giving the company about a half mile frontage of buildings on Pacific.

The company publishes its own house organ called "The Consolidator," and sponsors and encourages athletic events among its employees, and maintains a relations officer on full time keeping in friendly contact with the employees' advising, assisting and working with them in solving their problems, and maintaining sympathetic relations between all branches of the institution.

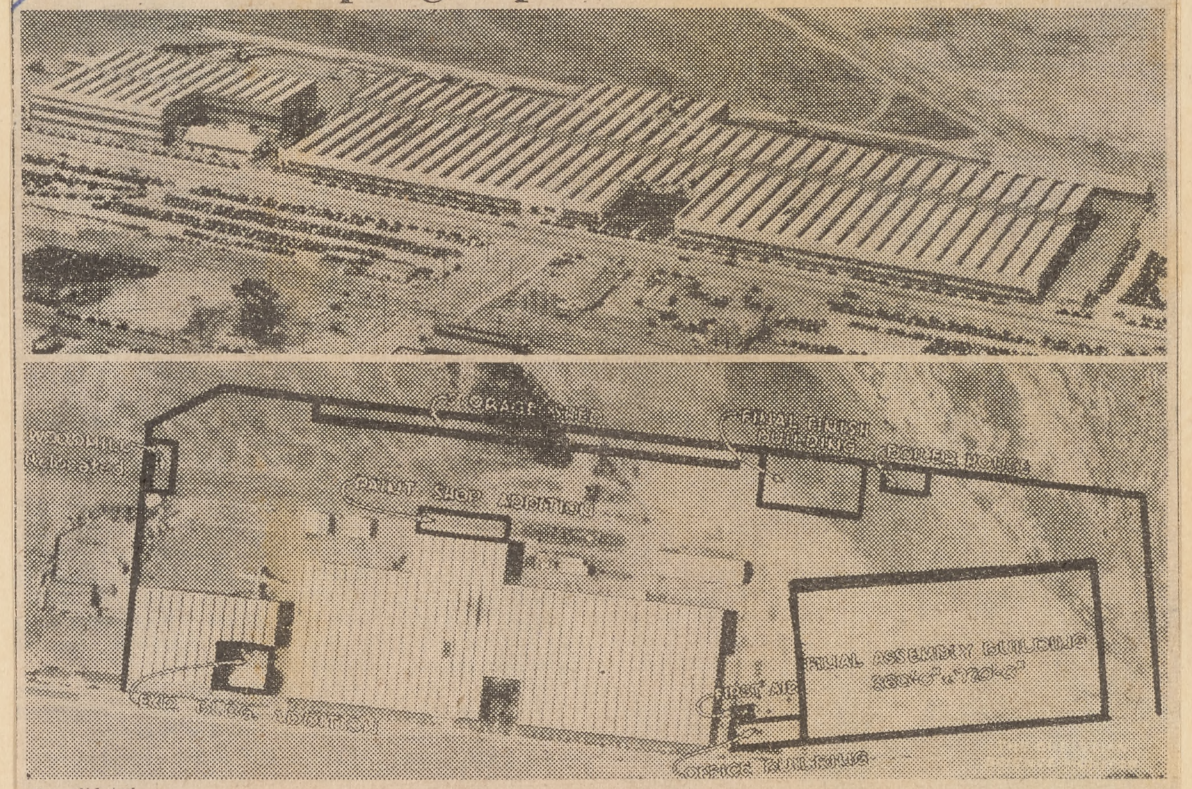
* * *

San Diego in a Coupla Nutshells

Thos. Bomar, industrial commissioner of the San Diego chamber of commerce, and to whom much credit is due for bringing Consolidated Aircraft to San Diego, delivered a talk at the Lemon Grove chamber of commerce Tuesday, in which he gave at a glance some interesting figures about his city. He said:

THE CHRISTIAN SCIENCE MONITOR, BOSTON, TUESDAY, FEBRUARY 27, 1940

Keeping Up With the Navy



Consolidated

Airplane Shop and Expansion

Upper: View of present plant of Consolidated Aircraft Corporation at San Diego, Calif. Lower: Scheme (drawn on smaller scale than upper picture) for expanded plant, showing, at right, where steel canopy for Naval assembly will be erected; and at back, where final finish building and long storage shed will stand.

Factory Growth Demands 64 Airfield Acres

By the Aviation Editor of The Christian Science Monitor

News in Aviation

An airplane factory outgrown by inability to handle orders rather than by obsolesence, accounts for outlay which Consolidated Aircraft of San Diego, Calif., has undertaken. A Consolidated factory less than five years' old, which is located on 24.7 acres of Lindbergh Field, the City's municipal airport, will be expanded with buildings, laboratories, and yard areas to occupy a space of 64 acres.

Consolidated's growth is typical of aircraft manufacturing in southern California, due to the demand for armament both at home and abroad. Received from the Navy Department on Dec. 20, 1939, was a contract for $20,016,699, which increased the backlog of the firm's unfilled orders to $40,000,000.

Inasmuch as present orders utilize plant capacity, Consolidated makes the expansion to meet the terms of the Naval contract. Included in the project is an assembly building which will cover an indoors area 360 feet by 720 feet, with a clear span of 120 feet and a clearance from floor to the bottom of the roof trusses of 36 feet. In addition, much of the yard will be asphalted, for use in final assembly operations outdoors.

FARM BUREAU HEARS COUNTY OFFICIALS

Lakeside Farm Bureau dinner meeting was held last night as the Farmer went to press. Principal speakers programmed by Chairman Clarence Foster were Supervisor W. T. Hart, Assessor Crowell Eddy, Tax Collector Sam Claggett and County Auditor Robert W. Getty.. A sound movie was also to be shown by Field Sec. Frank Weaver of Consolidated Aircraft Company, San Diego.

LAKESIDE FARMER
3/15/40

LE CONSOLIDATED « GUBA ».

Le premier utilisateur civil de l'hydravion *Consolidated PBY-1* fut, en 1937, le professeur Richard Archbold, membre de recherche du Muséum d'Histoire naturelle des États-Unis et fils d'un des principaux directeurs de la *Standard Oil Co*, qui en acquit un exemplaire en vue d'une exploration systématique de la Nouvelle-Guinée hollandaise.

Au cours d'un vol demeuré fameux, puisqu'il constituait la première traversée du continent nord-américain par un hydravion, le « *Guba* », nom donné à l'hydravion par son propriétaire, franchit, les 24 et 25 juin 1937, en $17^{h}3^{min}$, les 4350^{km} séparant San Diego de New-York par Dallas, Cincinnatti et Pittsburgh; le but du voyage étant de permettre aux ingénieurs de *Bendix* d'installer et d'essayer les appareils radio-électriques du bord.

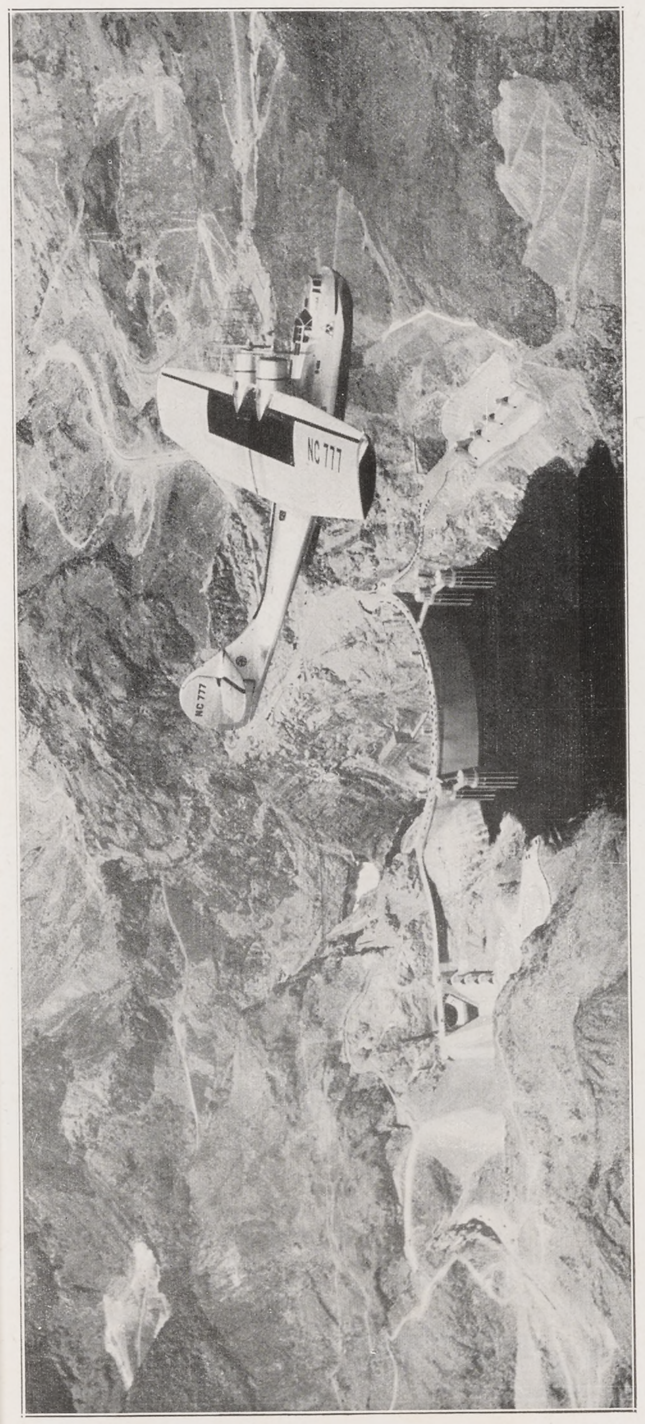
En août 1937, le Dr Archbold céda l'appareil à Sir Hubert Wilkins pour permettre à celui-ci de procéder à la recherche de l'aviateur soviétique Sigismund Levaneffsky, perdu dans les glaces polaires. C'est ainsi que Sir Wilkins, accompagné du commodore Herbert Hollick-Kenyon et de MM. G. Brown (mécanicien habituel du « *Guba* »), R. Booth et Al. Cheeseman, vola de New-York à Copper Mine, puis à Aklavik, d'où il sillonna les territoires du Nord-Ouest canadien, parcourant environ $30\,000^{km}$ au-dessus des régions arctiques.

Richard Archbold fit alors l'acquisition d'un autre *Consolidated*, du type *PBY-2*, qu'il baptisa également « *Guba* ».

La description complète de l'aménagement du « *Guba* » demanderait à elle seule de longues pages et sortirait du cadre de cet article. Qu'il suffise de préciser qu'outre un *gyropilot Sperry* et un équipement exceptionnellement complet de navigation et de p. s. v., le « *Guba* » était pourvu d'une installation radio-électrique unique en son genre : un émetteur principal, un émetteur auxiliaire, deux récepteurs (pouvant servir au radioguidage) et un radiogoniomètre; un réseau téléphonique reliant les membres de l'équipage entre eux et avec le poste radiotélégraphique et permettant l'intercommunication à bord et la connexion de n'importe quel homme d'équipage avec n'importe lequel des émetteurs ou récepteurs; un appareillage permettant à l'hydravion en vol de communiquer avec les explorateurs laissés à terre et porteurs de deux appareils *Bendix* constitués de trois éléments de 20^{kg} chacun.

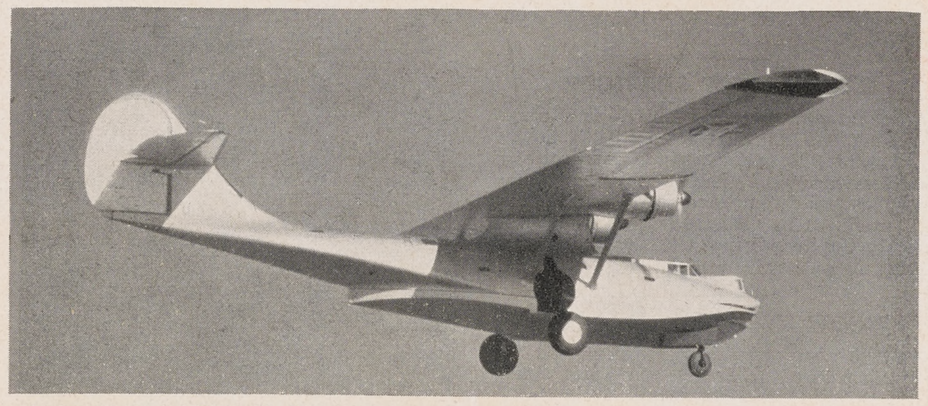
Sur le nouveau « *Guba* », le Dr Archbold franchit les 3700^{km} séparant San Diego de Miami une première fois le 3 décembre 1937 en $14^{h}10^{min}$, une seconde le 26 février 1938 en $12^{h}35^{min}$.

Il commença son véritable voyage en juin 1938. Avec un équipage composé du capitaine L. A. Yancey et de MM. R. Rogers, S. Barrinka, G. Brown et R. Booth, il parcourut les étapes suivantes : 3 juin 1938, San Diego-Pearl Harbour (4108^{km} en $18^{h}7^{min}$);



Le bimoteur CONSOLIDATED « GUBA » *du professeur Richard Archbold, à moteurs* PRATT AND WHITNEY « TWIN WASP » *de* 1000^{ch}, *survolant le* BOULDER DAM.

"AERONAUTICS" March 1940.



A Consolidated XPBY—5A Model (Manufacturer's number 28-5A) amphibian. The landing gear is of tricycle type and is fully retractable.

NAVAL AVIATION

Official Photo, U. S. Navy

SO C-1 Formation. Scout observation planes such as those pictured here are launched by means of a catapult.

AND NAVAL POLICY

By Rear Adm. John H. Towers, USN

An unusual aerial photograph of a left echelon formation of patrol planes. Official Photo, U. S. Navy

THE mission of Naval Aviation in our national defense is, primarily, to increase the efficiency of the naval service.

The basic principle of the national policy of the United States is that our armed forces are maintained for defense purposes, and the basic principle of the Navy policy is to maintain our Navy at sufficient strength to support the national policies and commerce, and to guard the continental and overseas possessions of the United States. To do this, the Navy must be properly equipped with ships, aircraft, and trained personnel. The equipment must be modern and in sufficient quantity successfully to carry out the required and assigned missions.

World conditions in recent years have not improved, and the United States, to safeguard its interests, has been forced to continue construction under the Vinson-Trammell Act of 1934 and the Naval Expansion Act of 1938.

While the governing policy is defensive, it is imperative, in the event that war is forced upon us, that our fleet shall be able to bring the enemy to terms at a safe distance from our shores within the shortest possible interval of time. To accomplish this feat, it must be adequately trained and sufficiently strong in every essential element.

The present authorized building program of ships, planes, and naval air stations is a step in the right direction and should be pushed to an early completion. So, too, should the program of construction of other air, destroyer, and submarine bases recommended during the current calendar year by the Hepburn Board.

The Naval policy in regard to heavier-than-air aviation activities is to build and maintain airplanes to the full complement authorized for aircraft carriers, tenders, battleships, cruisers, and the Fleet Marine Force, and to determine and develop the types of airplanes and appliances which are best suited for increased effectiveness of naval vessels, attacks on all classes of Naval objectives, and for scouting and patrolling.

Aircraft For Increased Effectiveness

An adjunct to this general policy is the aircraft policy which aims to build and to maintain aircraft carriers in the maximum

THE CARLSBAD JOURNA

Thursday, March 7, 1940

50

Stirring The News Hopper

By the Roving Reporter

San Diego's Consolidated

San Diego's Consolidated Aircraft factory is employing 4300 men and women, carrying a payroll of $150,000 a week, or $600,000 a month, which figures about $7,500,000 a year.

They are adding new employees at the rate of 100 a week, and just now are increasing their factory capacity with buildings and mechanical equipment to almost double its present size to take care of a backlog of orders aggregating $43,000,000. They hope to be in full operation by late summer when they will be employing between 7,000 and 8,000 men and women, with a corresponding increase in its weekly payroll, which will mean a lot of potatoes for San Diego and vicinity.

Since most of the company's orders are for government planes from this and other countries, their operations are largely of a secret and confidential nature, and to get inside the doors of the factory one is required to pass approval of the army and navy and have some one, known to the company, who is willing to vouch for one's "safety."

The Consolidated designs its own planes, and one of the principal reasons, for its phenomenal success in meeting world competition is because its product is superior in construction, range, speed, and I might say "fighting ability." Naturally, these new improvements which go into the making of Consolidated planes are valuable secrets and constitute an important element in what the customer pays for when he buys a Consolidated machine. If the French government, for example, orders a Consolidated bomber because it is speedier and more dangerous than a German bomber, they don't want anybody around the factory tipping off the secrets to the Germans.

So it was just an accident that got me into the factory Monday. Maj. R. H. Fleet, president and manager, barged into the office of Secretary T. C. Macaulay of the chamber of commerce where I was hunting news, and quicker than I can tell it I was on the way to the factory. Maj. Fleet displayed no uneasiness about the possibility of my being able to reveal any intricate mechanical secrets, but it was necessary to sign a "pledge," and have a green card stuck in my hatband so they could distinguish me from a spy or a member of the Workers Alliance.

Consolidated recruits its new employees from aviation schools throughout the country and their family records are checked and double checked and put through a wringer to make sure that there is not the wrong kind of Red in their blood corpuscles .They are then required to sign an application solemnly swearing that they are American citizens and will reveal nothing in the factory that may be of injury to the United States, or divulge information to the advantage of any foreign nation and against the interests of our national defense. They are reminded in writing of the provisions of the espionage act in which a violation involves the penalty of a $10,000 fine or imprisonment for two years.

Under these precautions, the type and character of the men observed in the factory are noticeably of high intelligence, dependable, conscientious, and therefore of cheerful appearance and worthy of confidence. There was a feeling of wholesome atmosphere about the place in which the men seemed contented, interested in what they were doing, and proud of their production. The production manager who showed me through the factory greeted his men with a genial salute and a friendly word which was returned in kind, and there were no exceptions from the engineers and the chemists to the boys who were driving rivets and spraying paint.

Speaking of rivets, there are from a quarter to a half million rivets in every machine, and they make them themselves with intricate machines that shoot them out by the thousands, all lengths, sizes and dimensions. Some planes now under construction have a wing spread of 115 feet and weigh 55,000 pounds.

The metal used is mostly aluminum, mixed with a little copper and other metals for strength and plated and "electrocuted" to prevent rust and erosion.

One of the recent additions to their equipment is a 4500-ton hydraulic press, built especially for the company at a cost of $100,000 and which can

STIRRING THE NEWS HOPPER

(Continued From Page One)

apply pressure equal to the weight of a warship. These huge presses are mounted on strong springs to prevent knocking the building down when they are in operation.

In the painting department the rooms are air conditioned, with suction fans pulling the fumes outdoors while others keep the air fresh and moving.

The automatic machines making each separate piece of the 50,000 units, aside from screws, bolts, nuts and rivets, which go into the construction of a plane, keep grinding away throughout the day and night, and more than $2,000,000 worth of parts are now in the store rooms, ready to be delivered on requisition to the assembling sections.

The company carries health, accident and death insurance on all employees desiring it, at a cost far below similar insurance available elsewhere. The sick benefits amount to $15 a week for thirteen weeks to employees earning $1,000 a year, and more for those earning up to $3,000. There are $4,000,000 in risks now being carried.

In the annual report of President Fleet to the shareholders, just issued today, the net earnings of the company for 1939 were placed at $1,104,327. New production facilities to cost $2,000,000 are to be provided immediately, $1,150,000 for new buildings, $530,000 for new machinery and equipment, $100,000 for yard paving and drainage, $35,000 for moving and $185,000 for cranes for handling equipment. The main new building facing Pacific boulevard will be 360x720 feet, giving the company about a half mile frontage of buildings on Pacific.

The company publishes its own house organ called "The Consolidator," and sponsors and encourages athletic events among its employees, and maintains a relations officer on full time keeping in friendly contact with the employees' advising, assisting and working with them in solving their problems, and maintaining sympathetic relations between all branches of the institution.

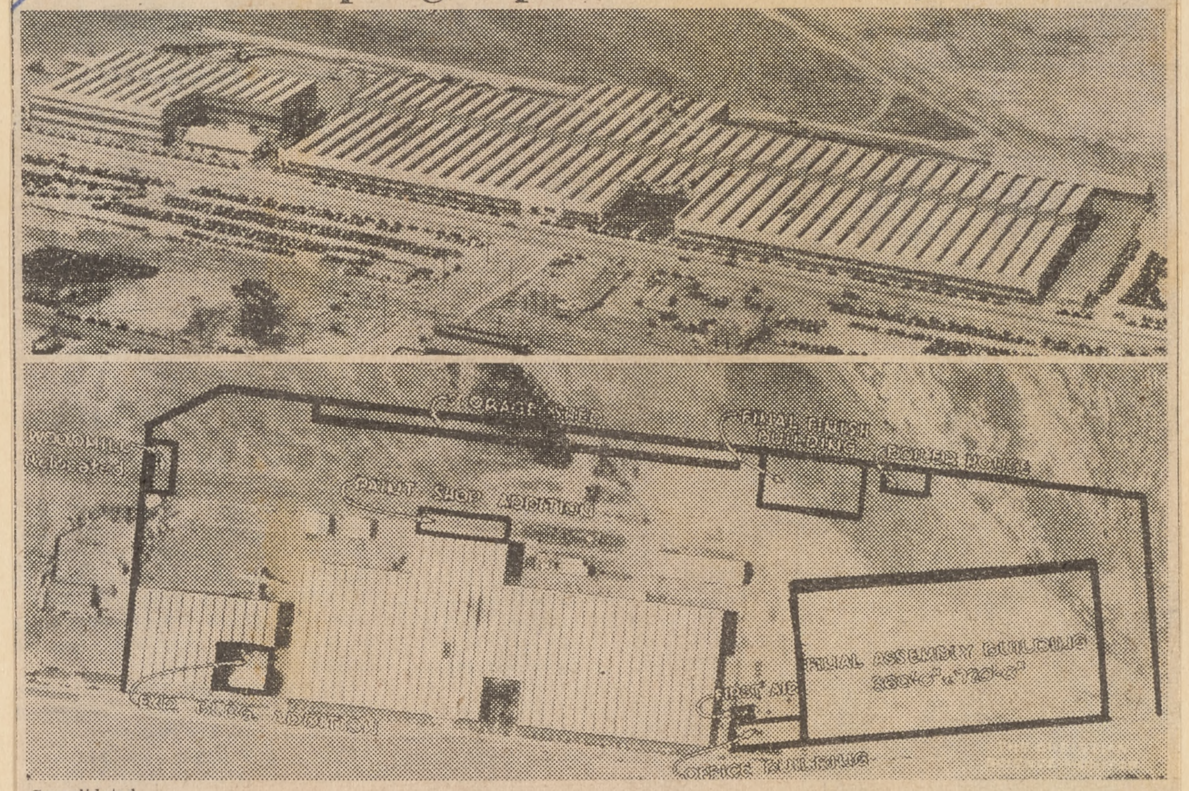
* * *

San Diego in a Coupla Nutshells

Thos. Bomar, industrial commissioner of the San Diego chamber of commerce, and to whom much credit is due for bringing Consolidated Aircraft to San Diego, delivered a talk at the Lemon Grove chamber of commerce Tuesday, in which he gave at a glance some interesting figures about his city. He said:

THE CHRISTIAN SCIENCE MONITOR, BOSTON, TUESDAY, FEBRUARY 27, 1940

Keeping Up With the Navy



Consolidated

Airplane Shop and Expansion

Upper: View of present plant of Consolidated Aircraft Corporation at San Diego, Calif. Lower: Scheme (drawn on smaller scale than upper picture) for expanded plant, showing, at right, where steel canopy for Naval assembly will be erected; and at back, where final finish building and long storage shed will stand.

Factory Growth Demands 64 Airfield Acres

By the Aviation Editor of The Christian Science Monitor

News in Aviation

An airplane factory outgrown by inability to handle orders rather than by obsolesence, accounts for outlay which Consolidated Aircraft of San Diego, Calif., has undertaken. A Consolidated factory less than five years' old, which is located on 24.7 acres of Lindbergh Field, the City's municipal airport, will be expanded with buildings, laboratories, and yard areas to occupy a space of 64 acres.

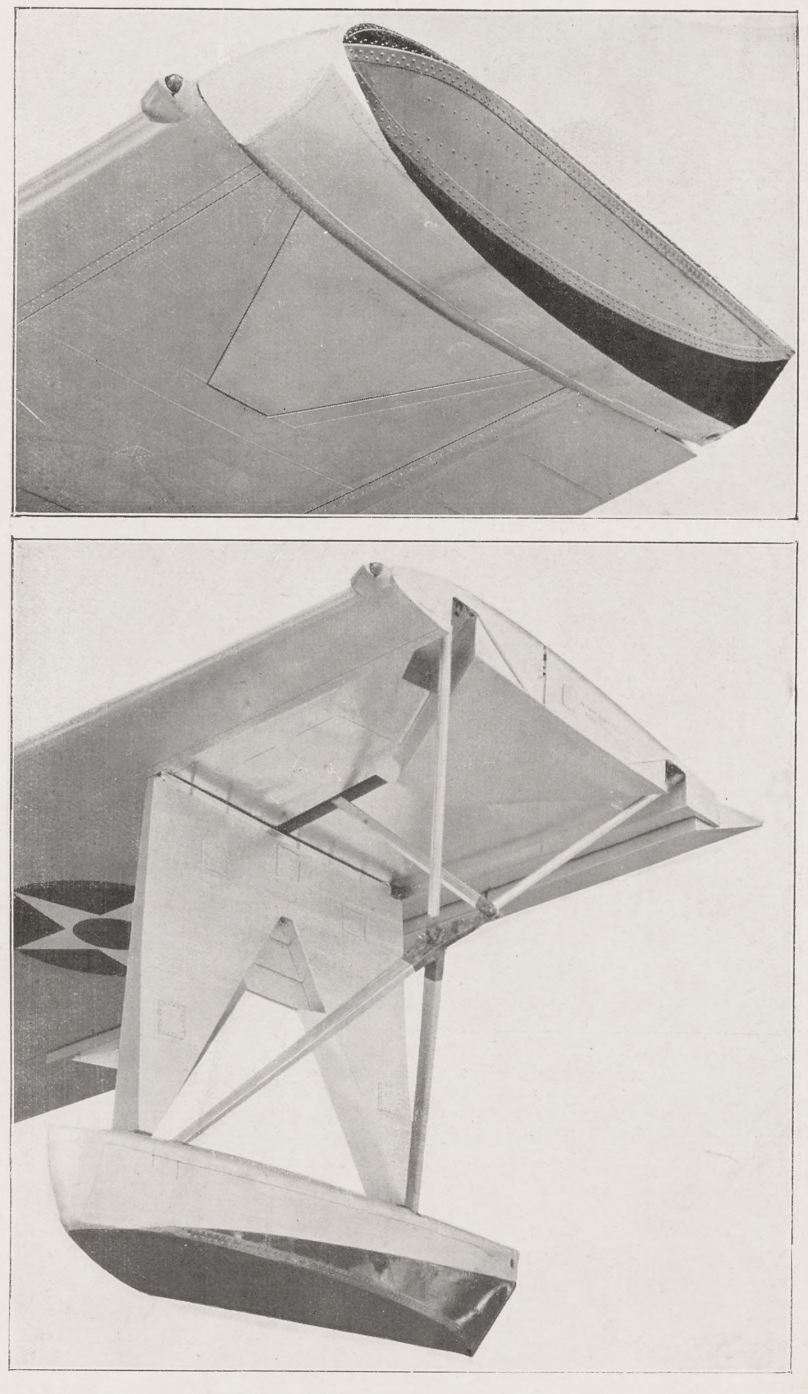
Consolidated's growth is typical of aircraft manufacturing in southern California, due to the demand for armament both at home and abroad. Received from the Navy Department on Dec. 20, 1939, was a contract for $20,016,699, which increased the backlog of the firm's unfilled orders to $40,000,000.

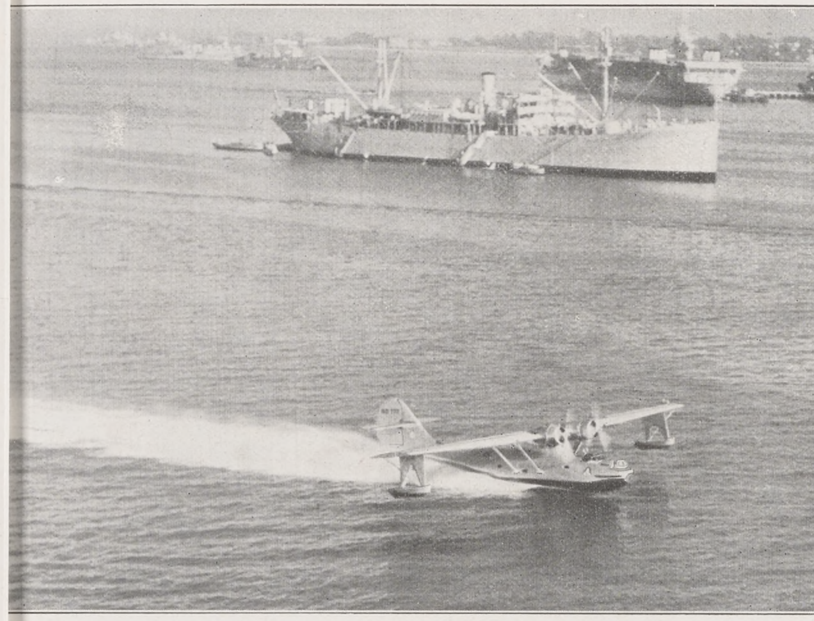
Inasmuch as present orders utilize plant capacity, Consolidated makes the expansion to meet the terms of the Naval contract. Included in the project is an assembly building which will cover an indoors area 360 feet by 720 feet, with a clear span of 120 feet and a clearance from floor to the bottom of the roof trusses of 36 feet. In addition, much of the yard will be asphalted, for use in final assembly operations outdoors.

FARM BUREAU HEARS COUNTY OFFICIALS

Lakeside Farm Bureau dinner meeting was held last night as the Farmer went to press. Principal speakers programmed by Chairman Clarence Foster were Supervisor W. T. Hart, Assessor Crowell Eddy, Tax Collector Sam Claggett and County Auditor Robert W. Getty.. A sound movie was also to be shown by Field Sec. Frank Weaver of Consolidated Aircraft Company, San Diego.

LAKESIDE FARMER
3/15/40





Aspect, en hydroplanage, d'un bimoteur CONSOLIDATED PBY.

ancien navigateur de Kingsford Smith, représentant de l'Australie, et M. J. Percival, représentant officiel de la Presse, le « *Guba* » prit le chemin du retour par les étapes suivantes :

— 12 mai 1939, Hollandia-Port Moresby (1045^{km} en $5^{h}37^{min}$); 13 mai, Port Moresby-Townsville (1142^{km} en $4^{h}41^{min}$); 14 mai, Townsville-Sydney (1802^{km} en $7^{h}22^{min}$); 3 juin, Sydney-Port Hedland (Australie occidentale) (3732^{km} en $19^{h}44^{min}$); 4 juin, Port Hedland-Batavia (Java) via l'île des Cocos (3765^{km} en $21^{h}52^{min}$); 7 juin, Batavia-île des Cocos (1351^{km} en $8^{h}28^{min}$); 13 juin, île des Cocos-île Diego Garcia (2687^{km} en $14^{h}31^{min}$); 16 juin, île Diego Garcia-îles Seychelles (1898^{km} en $8^{h}15^{min}$); 21 juin, îles Seychelles-Monbasa (Afrique orientale) (1753^{km} en $7^{h}46^{min}$); 22 juin, Monbasa-Kisumu (sur le lac Victoria) (724^{km} en $2^{h}55^{min}$); 24 juin, Kisumu-Coquithatville (1800^{km} en $8^{h}27^{min}$); 25 juin, Coquithatville-Lagos (1820^{km} en $7^{h}51^{min}$); 28 juin, Lagos-Dakar (2590^{km} en $9^{h}37^{min}$); 30 juin, Dakar-Saint-Thomas (îles de la Vierge) (5230^{km} en $19^{h}33^{min}$); 1er juillet, Saint-Thomas-New-York (2815^{km} en $11^{h}9^{min}$); 5 juillet,

---

Ci-contre, aspect du flotteur latéral babord d'un bimoteur CONSOLIDATED PBY. *En haut*, en position relevée, le flotteur vient s'ajuster à l'extrémité de l'aile où il forme un volume dépourvu de saillies. *En bas*, en position basse, il laisse apercevoir le système de fixation et de relevage.

NAVAL AVIATION

Official Photo, U. S. Navy

SO C-1 Formation. ***Scout observation planes such as those pictured here are launched by means of a catapult.***

An unusual aerial photograph of a left echelon formation of patrol planes.

Official Photo, U. S. Navy

AND NAVAL POLICY

By Rear Adm. John H. Towers, USN

THE mission of Naval Aviation in our national defense is, primarily, to increase the efficiency of the naval service.

The basic principle of the national policy of the United States is that our armed forces are maintained for defense purposes, and the basic principle of the Navy policy is to maintain our Navy at sufficient strength to support the national policies and commerce, and to guard the continental and overseas possessions of the United States. To do this, the Navy must be properly equipped with ships, aircraft, and trained personnel. The equipment must be modern and in sufficient quantity successfully to carry out the required and assigned missions.

World conditions in recent years have not improved, and the United States, to safeguard its interests, has been forced to continue construction under the Vinson-Trammell Act of 1934 and the Naval Expansion Act of 1938.

While the governing policy is defensive, it is imperative, in the event that war is forced upon us, that our fleet shall be able to bring the enemy to terms at a safe distance from our shores within the shortest possible interval of time. To accomplish this feat, it must be adequately trained and sufficiently strong in every essential element.

The present authorized building program of ships, planes, and naval air stations is a step in the right direction and should be pushed to an early completion. So, too, should the program of construction of other air, destroyer, and submarine bases recommended during the current calendar year by the Hepburn Board.

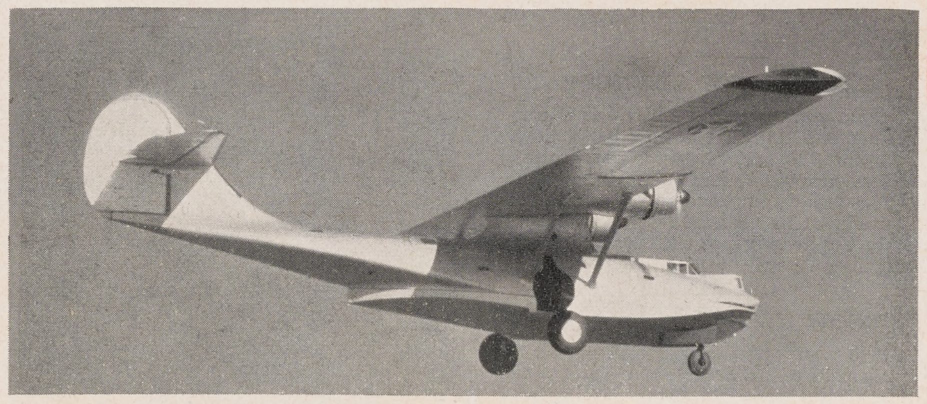
The Naval policy in regard to heavier-than-air aviation activities is to build and maintain airplanes to the full complement authorized for aircraft carriers, tenders, battleships, cruisers, and the Fleet Marine Force, and to determine and develop the types of airplanes and appliances which are best suited for increased effectiveness of naval vessels, attacks on all classes of Naval objectives, and for scouting and patrolling.

Aircraft For Increased Effectiveness

An adjunct to this general policy is the aircraft policy which aims to build and to maintain aircraft carriers in the maximum

---

"AERONAUTICS" March 1940.



A Consolidated XPBY—5A Model (Manufacturer's number 28-5A) amphibian. The landing gear is of tricycle type and is fully retractable.

THE CARLSBAD JOURNA

Thursday, March 7, 1940

Stirring The News Hopper

By the Roving Reporter

San Diego's Consolidated

San Diego's Consolidated Aircraft factory is employing 4300 men and women, carrying a payroll of $150,000 a week, or $600,000 a month, which figures about $7,500,000 a year.

They are adding new employees at the rate of 100 a week, and just now are increasing their factory capacity with buildings and mechanical equipment to almost double its present size to take care of a backlog of orders aggregating $43,000,000. They hope to be in full operation by late summer when they will be employing between 7,000 and 8,000 men and women, with a corresponding increase in its weekly payroll, which will mean a lot of potatoes for San Diego and vicinity.

Since most of the company's orders are for government planes from this and other countries, their operations are largely of a secret and confidential nature, and to get inside the doors of the factory one is required to pass approval of the army and navy and have some one, known to the company, who is willing to vouch for one's "safety."

The Consolidated designs its own planes, and one of the principal reasons, for its phenomenal success in meeting world competition is because its product is superior in construction, range, speed, and I might say "fighting ability." Naturally, these new improvements which go into the making of Consolidated planes are valuable secrets and constitute an important element in what the customer pays for when he buys a Consolidated machine. If the French government, for example, orders a Consolidated bomber because it is speedier and more dangerous than a German bomber, they don't want anybody around the factory tipping off the secrets to the Germans.

So it was just an accident that got me into the factory Monday. Maj. R. H. Fleet, president and manager, barged into the office of Secretary T. C. Macaulay of the chamber of commerce where I was hunting news, and quicker than I can tell it I was on the way to the factory. Maj. Fleet displayed no uneasiness about the possibility of my being able to reveal any intricate mechanical secrets, but it was necessary to sign a "pledge," and have a green card stuck in my hatband so they could distinguish me from a spy or a member of the Workers Alliance.

Consolidated recruits its new employees from aviation schools throughout the country and their family records are checked and double checked and put through a wringer to make sure that there is not the wrong kind of Red in their blood corpuscles .They are then required to sign an application solemnly swearing that they are American citizens and will reveal nothing in the factory that may be of injury to the United States, or divulge information to the advantage of any foreign nation and against the interests of our national defense. They are reminded in writing of the provisions of the espionage act in which a violation involves the penalty of a $10,000 fine or imprisonment for two years.

Under these precautions, the type and character of the men observed in the factory are noticeably of high intelligence, dependable, conscientious, and therefore of cheerful appearance and worthy of confidence. There was a feeling of wholesome atmosphere about the place in which the men seemed contented, interested in what they were doing, and proud of their production. The production manager who showed me through the factory greeted his men with a genial salute and a friendly word which was returned in kind, and there were no exceptions from the engineers and the chemists to the boys who were driving rivets and spraying paint.

Speaking of rivets, there are from a quarter to a half million rivets in every machine, and they make them themselves with intricate machines that shoot them out by the thousands, all lengths, sizes and dimensions. Some planes now under construction have a wing spread of 115 feet and weigh 55,000 pounds.

The metal used is mostly aluminum, mixed with a little copper and other metals for strength and plated and "electrocuted" to prevent rust and erosion.

One of the recent additions to their equipment is a 4500-ton hydraulic press, built especially for the company at a cost of $100,000 and which can

STIRRING THE NEWS HOPPER

(Continued From Page One)

apply pressure equal to the weight of a warship. These huge presses are mounted on strong springs to prevent knocking the building down when they are in operation.

In the painting department the rooms are air conditioned, with suction fans pulling the fumes outdoors while others keep the air fresh and moving.

The automatic machines making each separate piece of the 50,000 units, aside from screws, bolts, nuts and rivets, which go into the construction of a plane, keep grinding away throughout the day and night, and more than $2,000,000 worth of parts are now in the store rooms, ready to be delivered on requisition to the assembling sections.

The company carries health, accident and death insurance on all employees desiring it, at a cost far below similar insurance available elsewhere. The sick benefits amount to $15 a week for thirteen weeks to employees earning $1,000 a year, and more for those earning up to $3,000. There are $4,000,000 in risks now being carried.

In the annual report of President Fleet to the shareholders, just issued today, the net earnings of the company for 1939 were placed at $1,104,327. New production facilities to cost $2,000,000 are to be provided immediately, $1,150,000 for new buildings, $530,000 for new machinery and equipment, $100,000 for yard paving and drainage, $35,000 for moving and $185,000 for cranes for handling equipment. The main new building facing Pacific boulevard will be 360x720 feet, giving the company about a half mile frontage of buildings on Pacific.

The company publishes its own house organ called "The Consolidator," and sponsors and encourages athletic events among its employees, and maintains a relations officer on full time keeping in friendly contact with the employees' advising, assisting and working with them in solving their problems, and maintaining sympathetic relations between all branches of the institution.

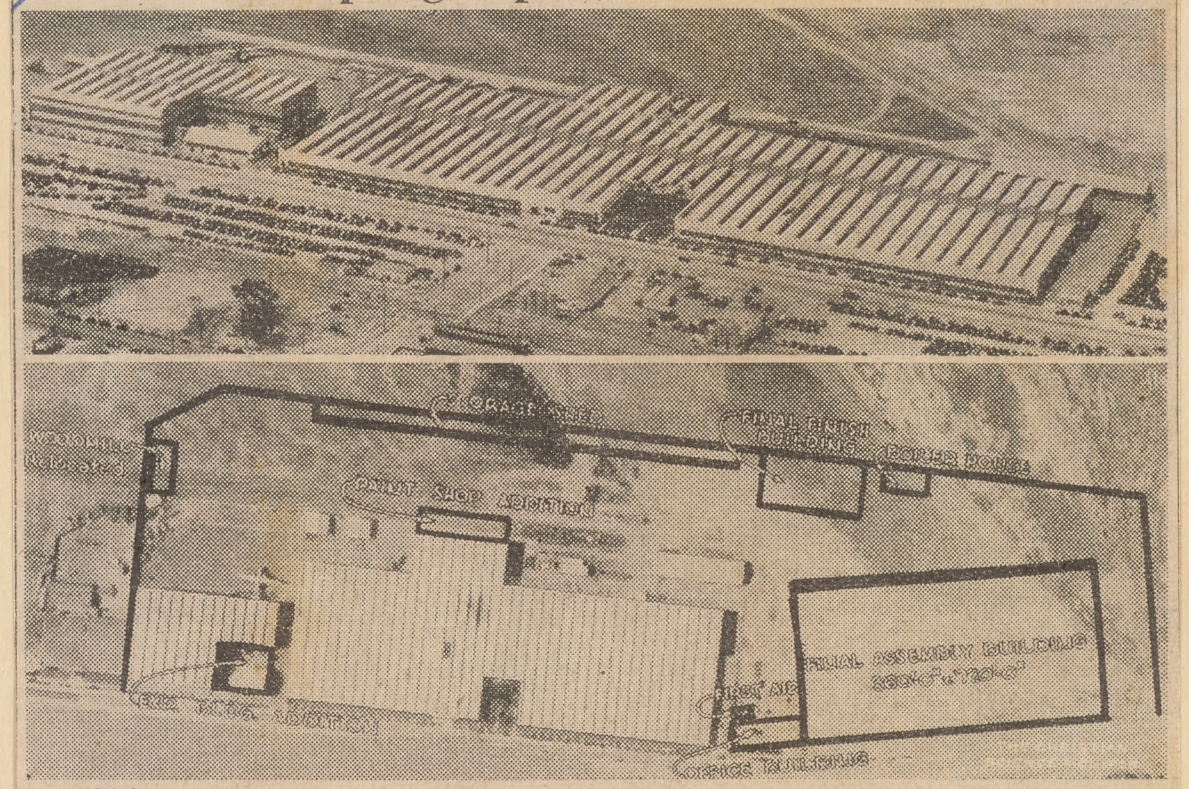
* * *

San Diego in a Coupla Nutshells

Thos. Bomar, industrial commissioner of the San Diego chamber of commerce, and to whom much credit is due for bringing Consolidated Aircraft to San Diego, delivered a talk at the Lemon Grove chamber of commerce Tuesday, in which he gave at a glance some interesting figures about his city. He said:

THE CHRISTIAN SCIENCE MONITOR, BOSTON, TUESDAY, FEBRUARY 27, 1940

Keeping Up With the Navy



Consolidated

Airplane Shop and Expansion

Upper: View of present plant of Consolidated Aircraft Corporation at San Diego, Calif. Lower: Scheme (drawn on smaller scale than upper picture) for expanded plant, showing, at right, where steel canopy for Naval assembly will be erected; and at back, where final finish building and long storage shed will stand.

Factory Growth Demands 64 Airfield Acres

By the Aviation Editor of The Christian Science Monitor

News in Aviation

An airplane factory outgrown by inability to handle orders rather than by obsolesence, accounts for outlay which Consolidated Aircraft of San Diego, Calif., has undertaken. A Consolidated factory less than five years' old, which is located on 24.7 acres of Lindbergh Field, the City's municipal airport, will be expanded with buildings, laboratories, and yard areas to occupy a space of 64 acres.

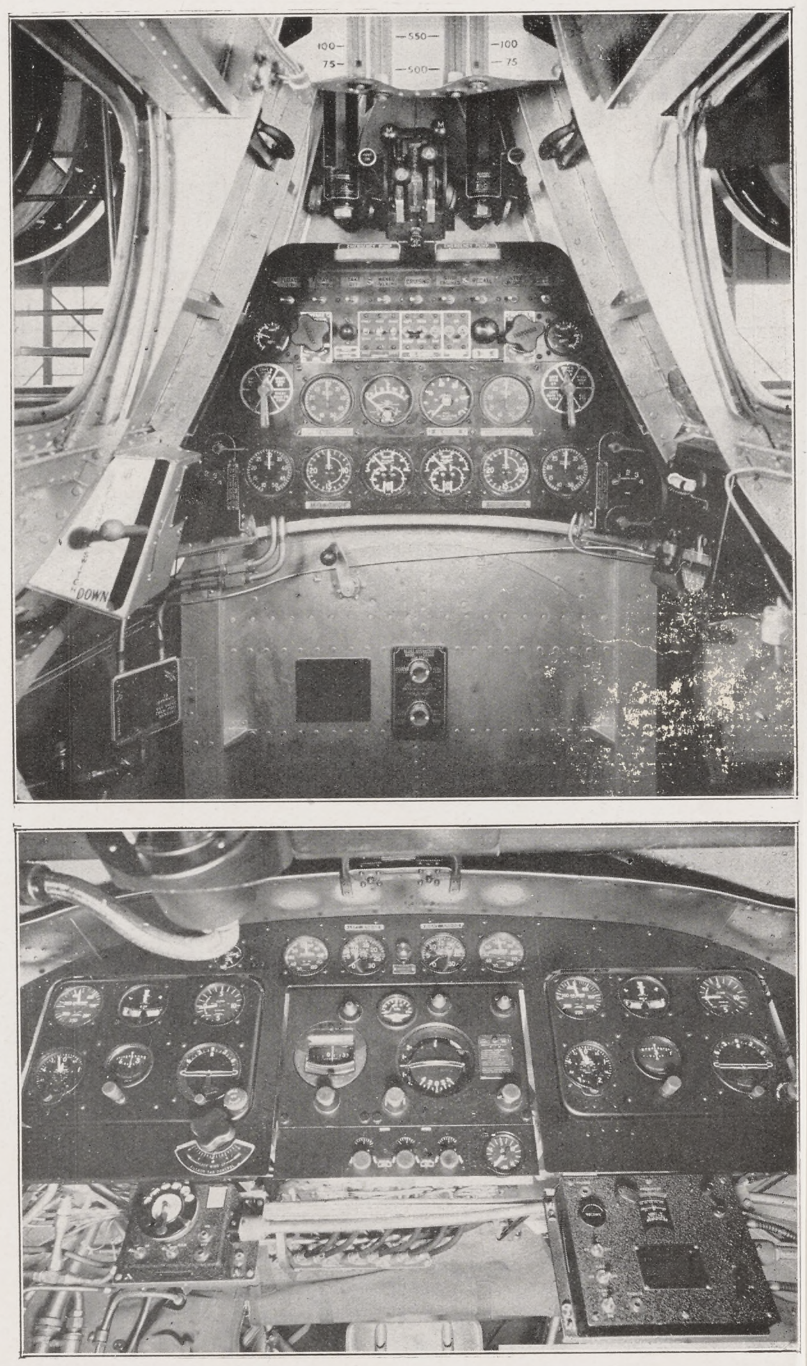
Consolidated's growth is typical of aircraft manufacturing in southern California, due to the demand for armament both at home and abroad. Received from the Navy Department on Dec. 20, 1939, was a contract for $20,016,699, which increased the backlog of the firm's unfilled orders to $40,000,000.

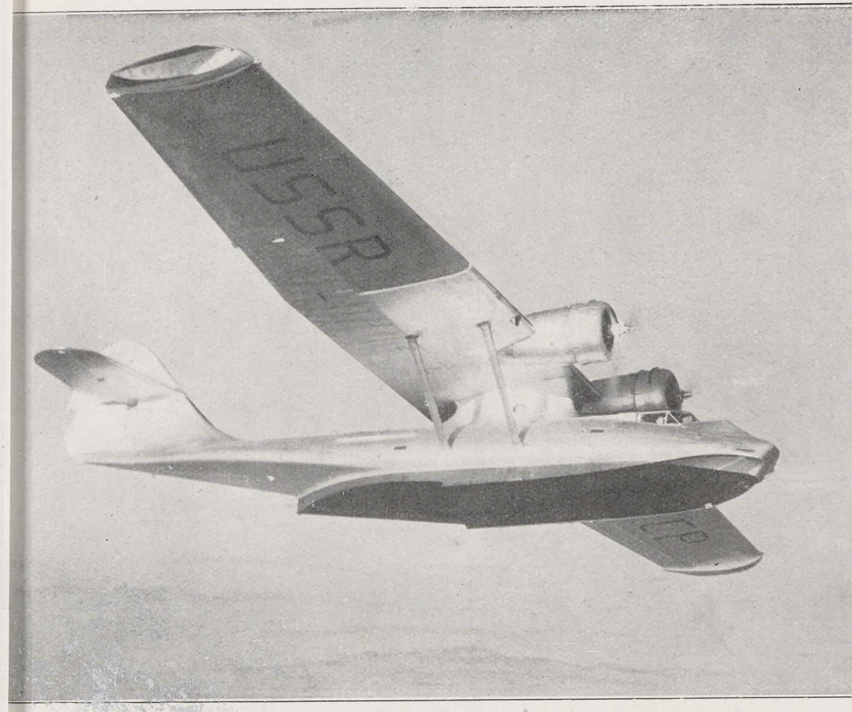
Inasmuch as present orders utilize plant capacity, Consolidated makes the expansion to meet the terms of the Naval contract. Included in the project is an assembly building which will cover an indoors area 360 feet by 720 feet, with a clear span of 120 feet and a clearance from floor to the bottom of the roof trusses of 36 feet. In addition, much of the yard will be asphalted, for use in final assembly operations outdoors.

FARM BUREAU HEARS COUNTY OFFICIALS

Lakeside Farm Bureau dinner meeting was held last night as the Farmer went to press. Principal speakers programmed by Chairman Clarence Foster were Supervisor W. T. Hart, Assessor Crowell Eddy, Tax Collector Sam Claggett and County Auditor Robert W. Getty.. A sound movie was also to be shown by Field Sec. Frank Weaver of Consolidated Aircraft Company, San Diego.

LAKESIDE FARMER
3/15/40





Aspect en vol d'un bimoteur CONSOLIDATED PBY *vendu, avec la licence de construction, à l'U.R.S.S. (« U.S.S.R. » en anglais) au début de* 1937.

New-York-New-Orleans (2090^{km} en 10^{h}18^{min}); 6 juillet, New-Orleans-San Diego (2495^{km} en 9^{h}39^{min}); total du retour, 38 745^{km}.

Ainsi se terminait un tour du monde de 50 300^{km}, réalisant à la fois le plus long tour du monde aérien, le premier tour du monde en hydravion, le plus long parcours en hydravion au-dessus de l'Océan (Dakar-Saint-Thomas), enfin la première traversée de l'Océan Indien entre l'Australie et l'Afrique.

HYDRAVIONS EXPÉRIMENTAUX CONSOLIDATED.

En mai 1939, l'*Air Ministry* britannique commanda à *Consolidated* un bimoteur 28/5 (version commerciale du *PBY*) pour des fins expérimentales. L'appareil fut livré par la voie des airs (équipage R. Rogers-L. Gancey-R. Boothe-G. Brower). Venu de San Diego à Botwood avec une escale à Buffalo, l'hydravion franchit, le 14 juillet,

---

Ci-contre, aspect de la partie inférieure du poste de contrôle des moteurs, à la base de la cheminée centrale (en haut) *et aspect du tableau de bord du poste de pilotage* (en bas) *dans le* PBY.

NAVAL AVIATION

AND NAVAL POLICY

By Rear Adm. John H. Towers, USN

Official Photo, U. S. Navy

SO C-1 Formation. Scout observation planes such as those pictured here are launched by means of a catapult.

An unusual aerial photograph of a left echelon formation of patrol planes. Official Photo, U. S. Navy

THE mission of Naval Aviation in our national defense is, primarily, to increase the efficiency of the naval service.

The basic principle of the national policy of the United States is that our armed forces are maintained for defense purposes, and the basic principle of the Navy policy is to maintain our Navy at sufficient strength to support the national policies and commerce, and to guard the continental and overseas possessions of the United States. To do this, the Navy must be properly equipped with ships, aircraft, and trained personnel. The equipment must be modern and in sufficient quantity successfully to carry out the required and assigned missions.

World conditions in recent years have not improved, and the United States, to safeguard its interests, has been forced to continue construction under the Vinson-Trammell Act of 1934 and the Naval Expansion Act of 1938.

While the governing policy is defensive, it is imperative, in the event that war is forced upon us, that our fleet shall be able to bring the enemy to terms at a safe distance from our shores within the shortest possible interval of time. To accomplish this feat, it must be adequately trained and sufficiently strong in every essential element.

The present authorized building program of ships, planes, and naval air stations is a step in the right direction and should be pushed to an early completion. So, too, should the program of construction of other air, destroyer, and submarine bases recommended during the current calendar year by the Hepburn Board.

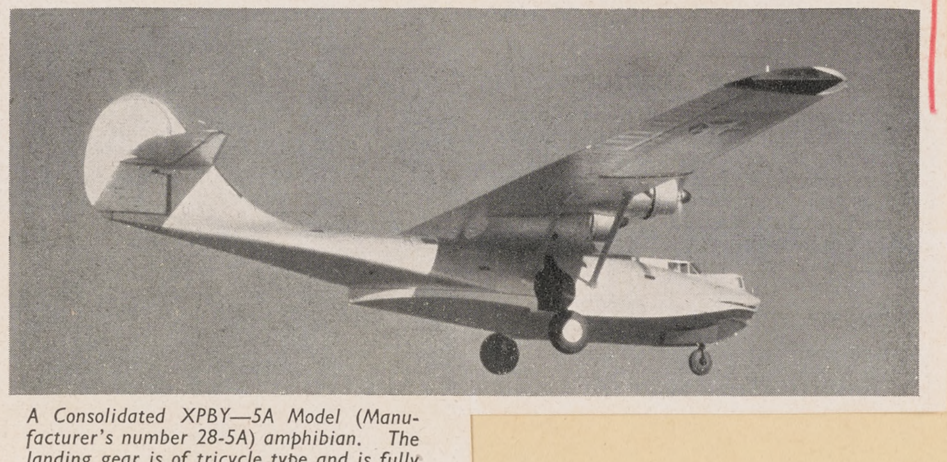
The Naval policy in regard to heavier-than-air aviation activities is to build and maintain airplanes to the full complement authorized for aircraft carriers, tenders, battleships, cruisers, and the Fleet Marine Force, and to determine and develop the types of airplanes and appliances which are best suited for increased effectiveness of naval vessels, attacks on all classes of Naval objectives, and for scouting and patrolling.

Aircraft For Increased Effectiveness

An adjunct to this general policy is the aircraft policy which aims to build and to maintain aircraft carriers in the maximum

---

"AERONAUTICS" March 1940.



A Consolidated XPBY—5A Model (Manufacturer's number 28-5A) amphibian. The landing gear is of tricycle type and is fully retractable.

THE CARLSBAD JOURNA

Thursday, March 7, 1940

50

Stirring The News Hopper

By the Roving Reporter

San Diego's Consolidated

San Diego's Consolidated Aircraft factory is employing 4300 men and women, carrying a payroll of $150,000 a week, or $600,000 a month, which figures about $7,500,000 a year.

They are adding new employees at the rate of 100 a week, and just now are increasing their factory capacity with buildings and mechanical equipment to almost double its present size to take care of a backlog of orders aggregating $43,000,000. They hope to be in full operation by late summer when they will be employing between 7,000 and 8,000 men and women, with a corresponding increase in its weekly payroll, which will mean a lot of potatoes for San Diego and vicinity.

Since most of the company's orders are for government planes from this and other countries, their operations are largely of a secret and confidential nature, and to get inside the doors of the factory one is required to pass approval of the army and navy and have some one, known to the company, who is willing to vouch for one's "safety."

The Consolidated designs its own planes, and one of the principal reasons, for its phenomenal success in meeting world competition is because its product is superior in construction, range, speed, and I might say "fighting ability." Naturally, these new improvements which go into the making of Consolidated planes are valuable secrets and constitute an important element in what the customer pays for when he buys a Consolidated machine. If the French government, for example, orders a Consolidated bomber because it is speedier and more dangerous than a German bomber, they don't want anybody around the factory tipping off the secrets to the Germans.

So it was just an accident that got me into the factory Monday. Maj. R. H. Fleet, president and manager, barged into the office of Secretary T. C. Macaulay of the chamber of commerce where I was hunting news, and quicker than I can tell it I was on the way to the factory. Maj. Fleet displayed no uneasiness about the possibility of my being able to reveal any intricate mechanical secrets, but it was necessary to sign a "pledge," and have a green card stuck in my hatband so they could distinguish me from a spy or a member of the Workers Alliance.

Consolidated recruits its new employees from aviation schools throughout the country and their family records are checked and double checked and put through a wringer to make sure that there is not the wrong kind of Red in their blood corpuscles .They are then required to sign an application solemnly swearing that they are American citizens and will reveal nothing in the factory that may be of injury to the United States, or divulge information to the advantage of any foreign nation and against the interests of our national defense. They are reminded in writing of the provisions of the espionage act in which a violation involves the penalty of a $10,000 fine or imprisonment for two years.

Under these precautions, the type and character of the men observed in the factory are noticeably of high intelligence, dependable, conscientious, and therefore of cheerful appearance and worthy of confidence. There was a feeling of wholesome atmosphere about the place in which the men seemed contented, interested in what they were doing, and proud of their production. The production manager who showed me through the factory greeted his men with a genial salute and a friendly word which was returned in kind, and there were no exceptions from the engineers and the chemists to the boys who were driving rivets and spraying paint.

Speaking of rivets, there are from a quarter to a half million rivets in every machine, and they make them themselves with intricate machines that shoot them out by the thousands, all lengths, sizes and dimensions. Some planes now under construction have a wing spread of 115 feet and weigh 55,000 pounds.

The metal used is mostly aluminum, mixed with a little copper and other metals for strength and plated and "electrocuted" to prevent rust and erosion.

One of the recent additions to their equipment is a 4500-ton hydraulic press, built especially for the company at a cost of $100,000 and which can

STIRRING THE NEWS HOPPER

(Continued From Page One)

apply pressure equal to the weight of a warship. These huge presses are mounted on strong springs to prevent knocking the building down when they are in operation.

In the painting department the rooms are air conditioned, with suction fans pulling the fumes outdoors while others keep the air fresh and moving.

The automatic machines making each separate piece of the 50,000 units, aside from screws, bolts, nuts and rivets, which go into the construction of a plane, keep grinding away throughout the day and night, and more than $2,000,000 worth of parts are now in the store rooms, ready to be delivered on requisition to the assembling sections.

The company carries health, accident and death insurance on all employees desiring it, at a cost far below similar insurance available elsewhere. The sick benefits amount to $15 a week for thirteen weeks to employees earning $1,000 a year, and more for those earning up to $3,000. There are $4,000,000 in risks now being carried.

In the annual report of President Fleet to the shareholders, just issued today, the net earnings of the company for 1939 were placed at $1,104,327. New production facilities to cost $2,000,000 are to be provided immediately, $1,150,000 for new buildings, $530,000 for new machinery and equipment, $100,000 for yard paving and drainage, $35,000 for moving and $185,000 for cranes for handling equipment. The main new building facing Pacific boulevard will be 360x720 feet, giving the company about a half mile frontage of buildings on Pacific.

The company publishes its own house organ called "The Consolidator," and sponsors and encourages athletic events among its employees, and maintains a relations officer on full time keeping in friendly contact with the employees' advising, assisting and working with them in solving their problems, and maintaining sympathetic relations between all branches of the institution.

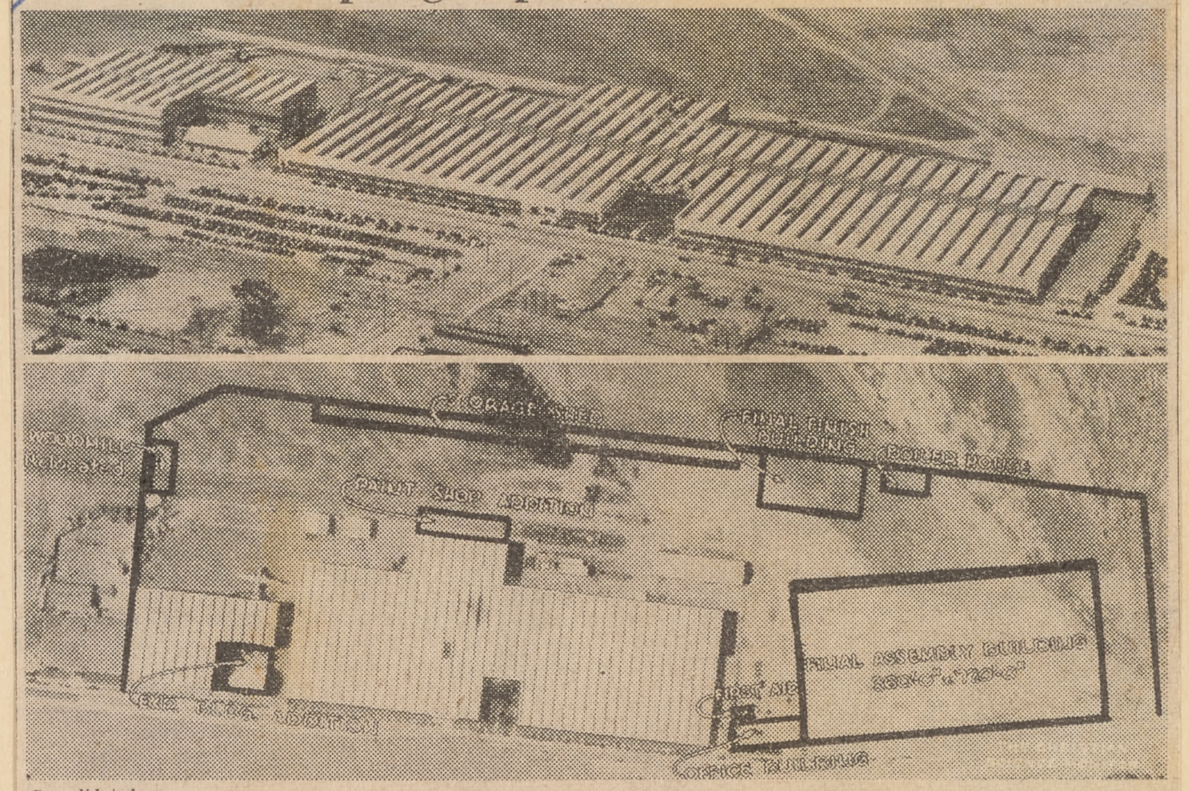
* * *

San Diego in a Coupla Nutshells

Thos. Bomar, industrial commissioner of the San Diego chamber of commerce, and to whom much credit is due for bringing Consolidated Aircraft to San Diego, delivered a talk at the Lemon Grove chamber of commerce Tuesday, in which he gave at a glance some interesting figures about his city. He said:

THE CHRISTIAN SCIENCE MONITOR, BOSTON, TUESDAY, FEBRUARY 27, 1940

Keeping Up With the Navy



Consolidated

Airplane Shop and Expansion

Upper: View of present plant of Consolidated Aircraft Corporation at San Diego, Calif. Lower: Scheme (drawn on smaller scale than upper picture) for expanded plant, showing, at right, where steel canopy for Naval assembly will be erected; and at back, where final finish building and long storage shed will stand.

Factory Growth Demands 64 Airfield Acres

By the Aviation Editor of The Christian Science Monitor

An airplane factory outgrown by inability to handle orders rather than by obsolesence, accounts for outlay which Consolidated Aircraft of San Diego, Calif., has undertaken. A Consolidated factory less than five years' old, which is located on 24.7 acres of Lindbergh Field, the City's municipal airport, will be expanded with buildings, laboratories, and yard areas to occupy a space of 64 acres.

Consolidated's growth is typical of aircraft manufacturing in southern California, due to the demand for armament both at home and abroad. Received from the Navy Department on Dec. 20, 1939, was a contract for $20,016,699, which increased the backlog of the firm's unfilled orders to $40,000,000.

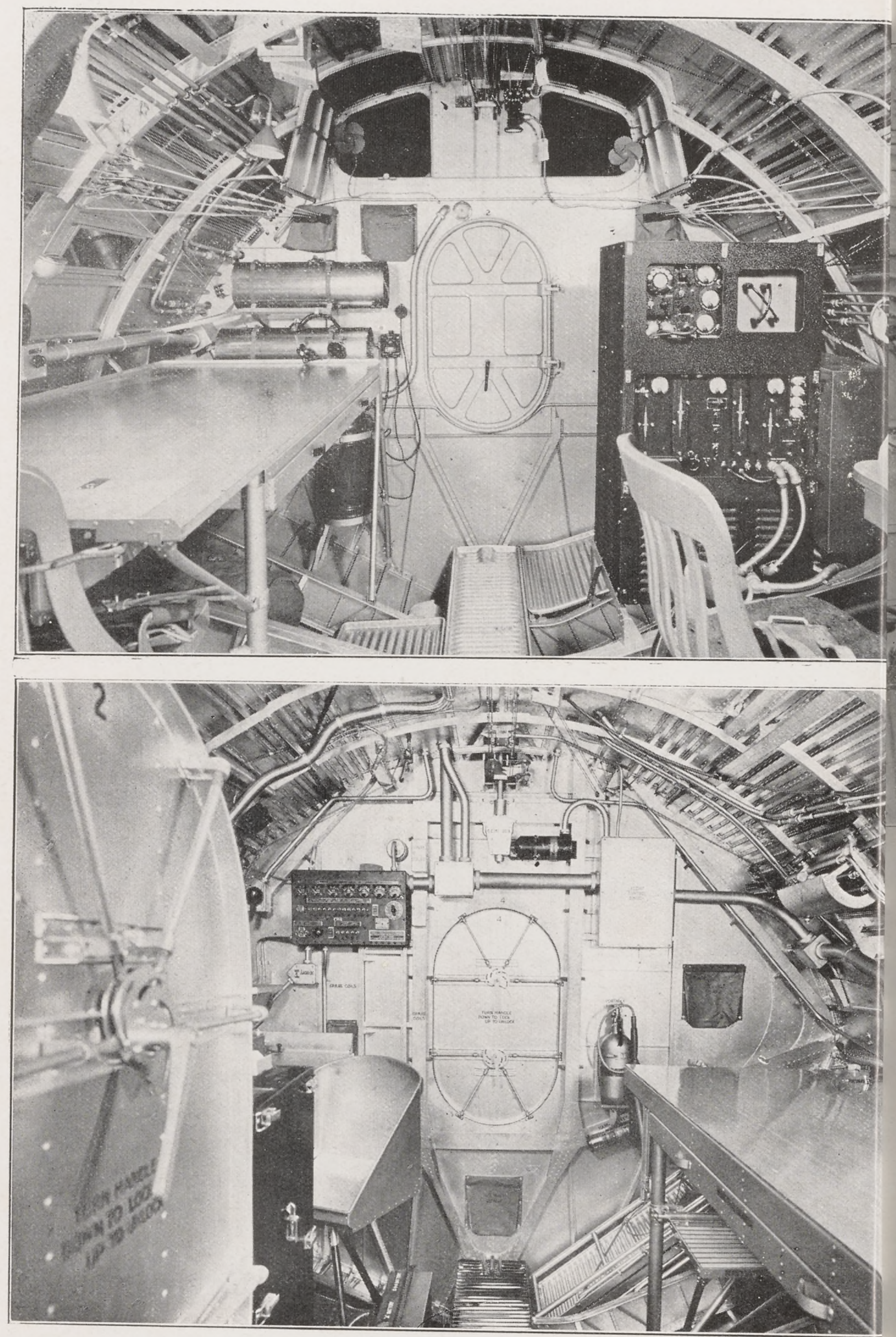
Inasmuch as present orders utilize plant capacity, Consolidated makes the expansion to meet the terms of the Naval contract. Included in the project is an assembly building which will cover an indoors area 360 feet by 720 feet, with a clear span of 120 feet and a clearance from floor to the bottom of the roof trusses of 36 feet. In addition, much of the yard will be asphalted, for use in final assembly operations outdoors.

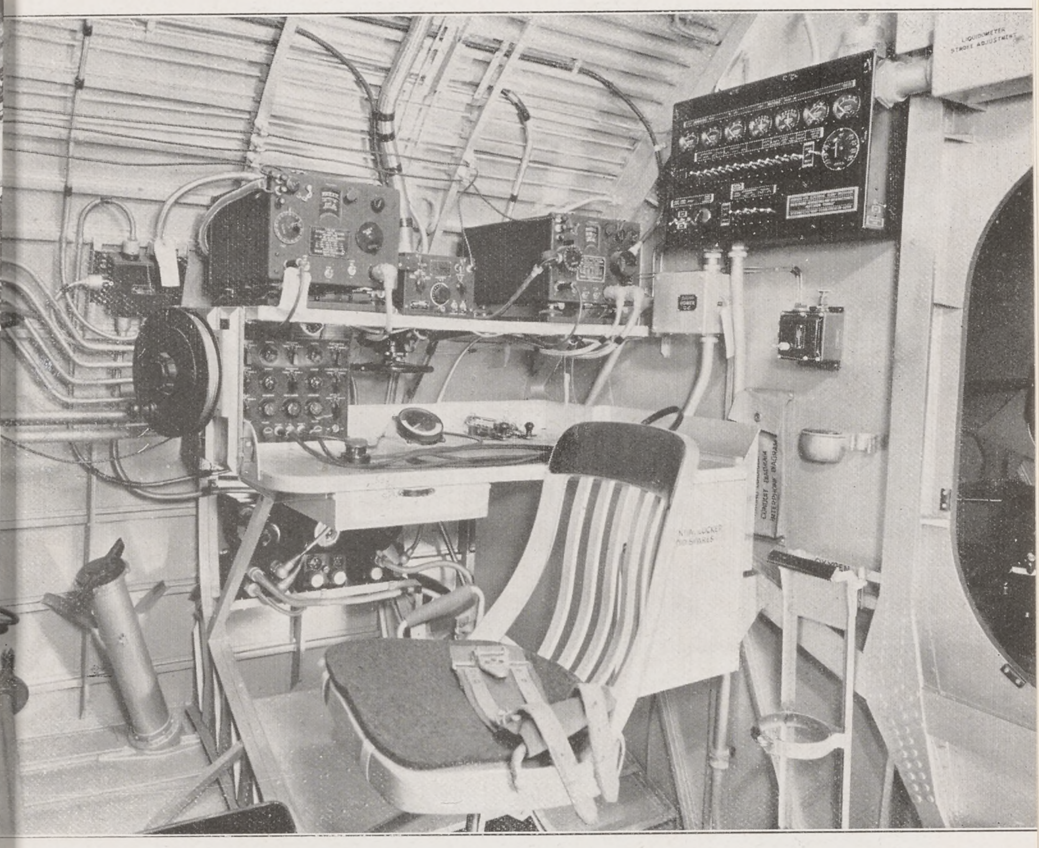
News in Aviation

FARM BUREAU HEARS COUNTY OFFICIALS

Lakeside Farm Bureau dinner meeting was held last night as the Farmer went to press. Principal speakers programmed by Chairman Clarence Foster were Supervisor W. T. Hart, Assessor Crowell Eddy, Tax Collector Sam Claggett and County Auditor Robert W. Getty.. A sound movie was also to be shown by Field Sec. Frank Weaver of Consolidated Aircraft Company, San Diego.

LAKESIDE FARMER
3/15/40





Détail de l'équipement radiotélégraphique à bord du Consolidated PBY.

les 3920^{km} de Botwood au *Marine Aircraft Experimental Establishment* de la R. A. F., à Felixstowe, en 15^{h}24^{min}.

C'est également un *Consolidated* 28/5 que les *American Export Air Lines* ont choisi pour leurs voyages expérimentaux au-dessus de l'Atlantique. L'appareil, baptisé « *Transatlantic* », effectua, en juillet 1939 sur le trajet New-York-Marignane et retour deux liaisons d'étude, avec un équipage de cinq hommes aux ordres du commandant Patrick Byrne.

Ci-contre, aspects du poste de navigation et de radiotélégraphie du PBY. *En haut*, aspect d'arrière en avant; *en bas*, aspect d'avant en arrière. A tribord, le poste de radiotélégraphie; à bâbord, la table à cartes; à chaque extrémité, une porte étanche de 0^{m},56 de largeur.

NAVAL AVIATION

Official Photo, U. S. Navy

SO C-1 Formation. Scout observation planes such as those pictured here are launched by means of a catapult.

AND NAVAL POLICY

By Rear Adm. John H. Towers, USN

An unusual aerial photograph of a left echelon formation of patrol planes.

Official Photo, U. S. Navy

THE mission of Naval Aviation in our national defense is, primarily, to increase the efficiency of the naval service.

The basic principle of the national policy of the United States is that our armed forces are maintained for defense purposes, and the basic principle of the Navy policy is to maintain our Navy at sufficient strength to support the national policies and commerce, and to guard the continental and overseas possessions of the United States. To do this, the Navy must be properly equipped with ships, aircraft, and trained personnel. The equipment must be modern and in sufficient quantity successfully to carry out the required and assigned missions.

World conditions in recent years have not improved, and the United States, to safeguard its interests, has been forced to continue construction under the Vinson-Trammell Act of 1934 and the Naval Expansion Act of 1938.

While the governing policy is defensive, it is imperative, in the event that war is forced upon us, that our fleet shall be able to bring the enemy to terms at a safe distance from our shores within the shortest possible interval of time. To accomplish this feat, it must be adequately trained and sufficiently strong in every essential element.

The present authorized building program of ships, planes, and naval air stations is a step in the right direction and should be pushed to an early completion. So, too, should the program of construction of other air, destroyer, and submarine bases recommended during the current calendar year by the Hepburn Board.

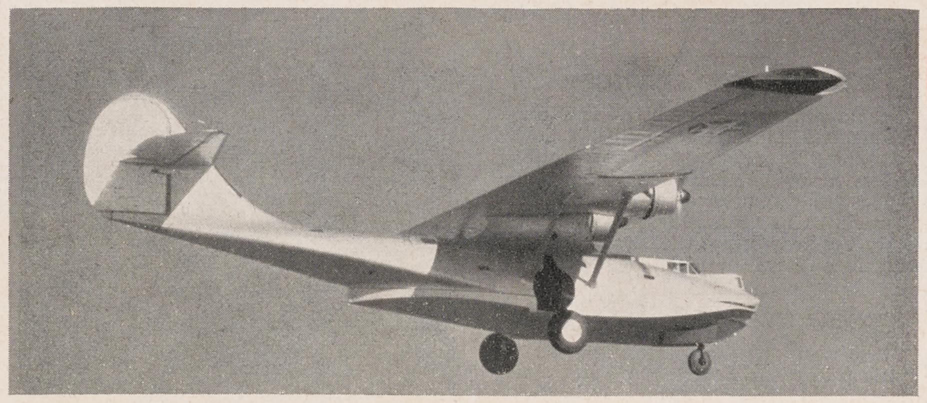
The Naval policy in regard to heavier-than-air aviation activities is to build and maintain airplanes to the full complement authorized for aircraft carriers, tenders, battleships, cruisers, and the Fleet Marine Force, and to determine and develop the types of airplanes and appliances which are best suited for increased effectiveness of naval vessels, attacks on all classes of Naval objectives, and for scouting and patrolling.

Aircraft For Increased Effectiveness

An adjunct to this general policy is the aircraft policy which aims to build and to maintain aircraft carriers in the maximum

---

"AERONAUTICS" March 1940.



A Consolidated XPBY—5A Model (Manufacturer's number 28-5A) amphibian. The landing gear is of tricycle type and is fully retractable.

THE CARLSBAD JOURNA

Thursday, March 7, 1940

50

Stirring The News Hopper

By the Roving Reporter

San Diego's Consolidated

San Diego's Consolidated Aircraft factory is employing 4300 men and women, carrying a payroll of $150,000 a week, or $600,000 a month, which figures about $7,500,000 a year.

They are adding new employees at the rate of 100 a week, and just now are increasing their factory capacity with buildings and mechanical equipment to almost double its present size to take care of a backlog of orders aggregating $43,000,000. They hope to be in full operation by late summer when they will be employing between 7,000 and 8,000 men and women, with a corresponding increase in its weekly payroll, which will mean a lot of potatoes for San Diego and vicinity.

Since most of the company's orders are for government planes from this and other countries, their operations are largely of a secret and confidential nature, and to get inside the doors of the factory one is required to pass approval of the army and navy and have some one, known to the company, who is willing to vouch for one's "safety."

The Consolidated designs its own planes, and one of the principal reasons, for its phenomenal success in meeting world competition is because its product is superior in construction, range, speed, and I might say "fighting ability." Naturally, these new improvements which go into the making of Consolidated planes are valuable secrets and constitute an important element in what the customer pays for when he buys a Consolidated machine. If the French government, for example, orders a Consolidated bomber because it is speedier and more dangerous than a German bomber, they don't want anybody around the factory tipping off the secrets to the Germans.

So it was just an accident that got me into the factory Monday. Maj. R. H. Fleet, president and manager, barged into the office of Secretary T. C. Macaulay of the chamber of commerce where I was hunting news, and quicker than I can tell it I was on the way to the factory. Maj. Fleet displayed no uneasiness about the possibility of my being able to reveal any intricate mechanical secrets, but it was necessary to sign a "pledge," and have a green card stuck in my hatband so they could distinguish me from a spy or a member of the Workers Alliance.

Consolidated recruits its new employees from aviation schools throughout the country and their family records are checked and double checked and put through a wringer to make sure that there is not the wrong kind of Red in their blood corpuscles .They are then required to sign an application solemnly swearing that they are American citizens and will reveal nothing in the factory that may be of injury to the United States, or divulge information to the advantage of any foreign nation and against the interests of our national defense. They are reminded in writing of the provisions of the espionage act in which a violation involves the penalty of a $10,000 fine or imprisonment for two years.

Under these precautions, the type and character of the men observed in the factory are noticeably of high intelligence, dependable, conscientious, and therefore of cheerful appearance and worthy of confidence. There was a feeling of wholesome atmosphere about the place in which the men seemed contented, interested in what they were doing, and proud of their production. The production manager who showed me through the factory greeted his men with a genial salute and a friendly word which was returned in kind, and there were no exceptions from the engineers and the chemists to the boys who were driving rivets and spraying paint.

Speaking of rivets, there are from a quarter to a half million rivets in every machine, and they make them themselves with intricate machines that shoot them out by the thousands, all lengths, sizes and dimensions. Some planes now under construction have a wing spread of 115 feet and weigh 55,000 pounds.

The metal used is mostly aluminum, mixed with a little copper and other metals for strength and plated and "electrocuted" to prevent rust and erosion.

One of the recent additions to their equipment is a 4500-ton hydraulic press, built especially for the company at a cost of $100,000 and which can

STIRRING THE NEWS HOPPER

(Continued From Page One)

apply pressure equal to the weight of a warship. These huge presses are mounted on strong springs to prevent knocking the building down when they are in operation.

In the painting department the rooms are air conditioned, with suction fans pulling the fumes outdoors while others keep the air fresh and moving.

The automatic machines making each separate piece of the 50,000 units, aside from screws, bolts, nuts and rivets, which go into the construction of a plane, keep grinding away throughout the day and night, and more than $2,000,000 worth of parts are now in the store rooms, ready to be delivered on requisition to the assembling sections.

The company carries health, accident and death insurance on all employees desiring it, at a cost far below similar insurance available elsewhere. The sick benefits amount to $15 a week for thirteen weeks to employees earning $1,000 a year, and more for those earning up to $3,000. There are $4,000,000 in risks now being carried.

In the annual report of President Fleet to the shareholders, just issued today, the net earnings of the company for 1939 were placed at $1,104,327. New production facilities to cost $2,000,000 are to be provided immediately, $1,150,000 for new buildings, $530,000 for new machinery and equipment, $100,000 for yard paving and drainage, $35,000 for moving and $185,000 for cranes for handling equipment. The main new building facing Pacific boulevard will be 360x720 feet, giving the company about a half mile frontage of buildings on Pacific.

The company publishes its own house organ called "The Consolidator," and sponsors and encourages athletic events among its employees, and maintains a relations officer on full time keeping in friendly contact with the employees' advising, assisting and working with them in solving their problems, and maintaining sympathetic relations between all branches of the institution.

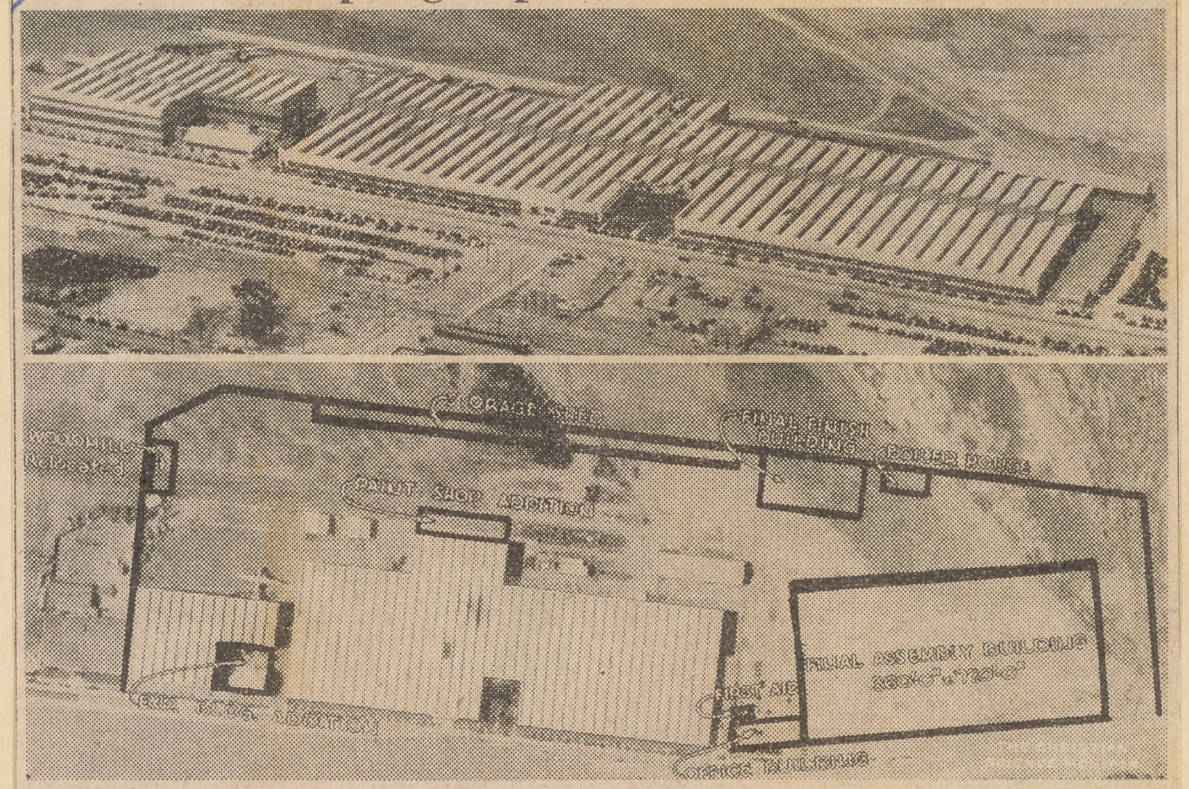
* * *

San Diego in a Coupla Nutshells

Thos. Bomar, industrial commissioner of the San Diego chamber of commerce, and to whom much credit is due for bringing Consolidated Aircraft to San Diego, delivered a talk at the Lemon Grove chamber of commerce Tuesday, in which he gave at a glance some interesting figures about his city. He said:

THE CHRISTIAN SCIENCE MONITOR, BOSTON, TUESDAY, FEBRUARY 27, 1940

Keeping Up With the Navy



Consolidated

Airplane Shop and Expansion

Upper: View of present plant of Consolidated Aircraft Corporation at San Diego, Calif. Lower: Scheme (drawn on smaller scale than upper picture) for expanded plant, showing, at right, where steel canopy for Naval assembly will be erected; and at back, where final finish building and long storage shed will stand.

Factory Growth Demands 64 Airfield Acres

By the Aviation Editor of The Christian Science Monitor

An airplane factory outgrown by inability to handle orders rather than by obsolesence, accounts for outlay which Consolidated Aircraft of San Diego, Calif., has undertaken. A Consolidated factory less than five years' old, which is located on 24.7 acres of Lindbergh Field, the City's municipal airport, will be expanded with buildings, laboratories, and yard areas to occupy a space of 64 acres.

Consolidated's growth is typical of aircraft manufacturing in southern California, due to the demand for armament both at home and abroad. Received from the Navy Department on Dec. 20, 1939, was a contract for $20,016,699, which increased the backlog of the firm's unfilled orders to $40,000,000.

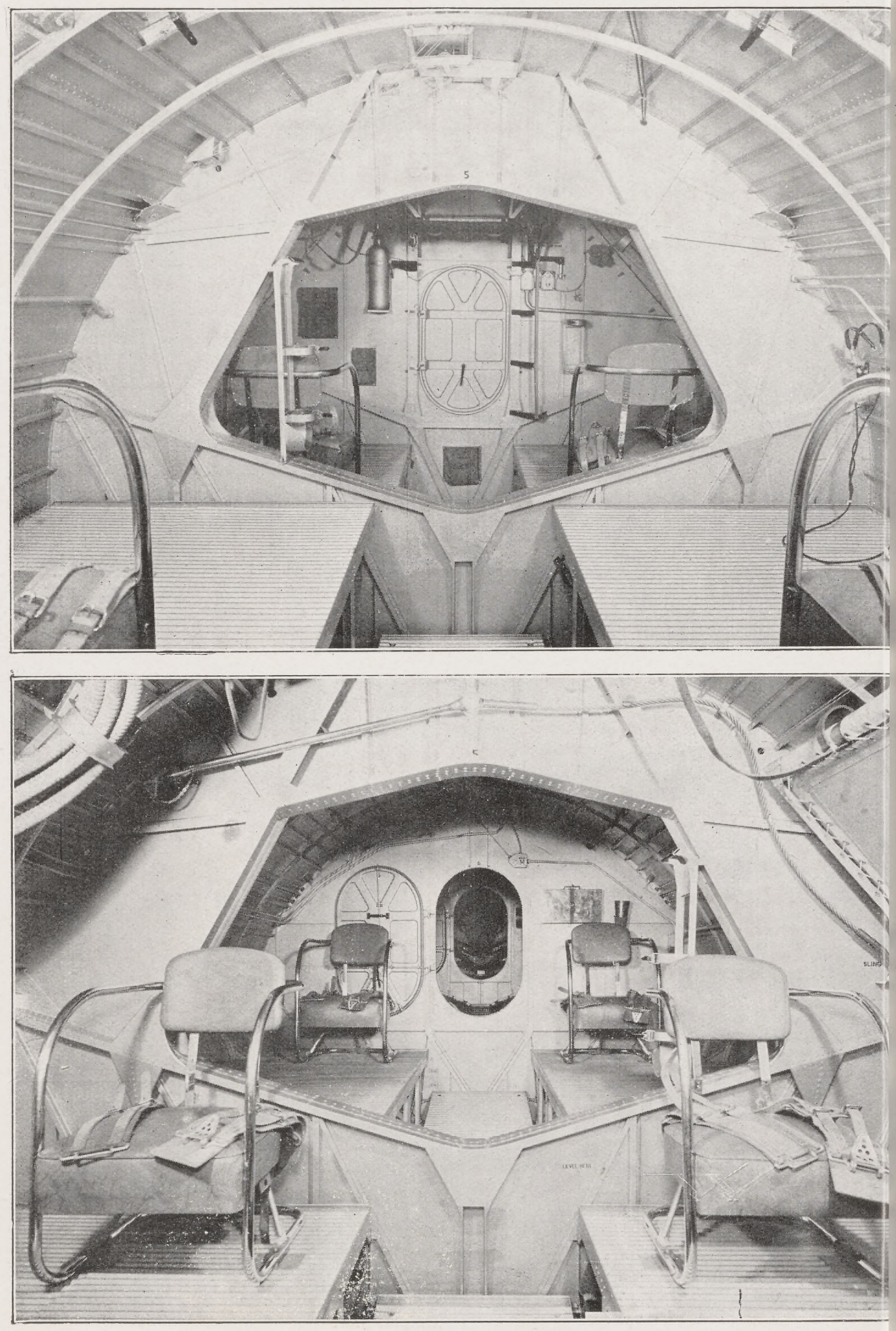
News in Aviation

Inasmuch as present orders utilize plant capacity, Consolidated makes the expansion to meet the terms of the Naval contract. Included in the project is an assembly building which will cover an indoors area 360 feet by 720 feet, with a clear span of 120 feet and a clearance from floor to the bottom of the roof trusses of 36 feet. In addition, much of the yard will be asphalted, for use in final assembly operations outdoors.

FARM BUREAU HEARS COUNTY OFFICIALS

Lakeside Farm Bureau dinner meeting was held last night as the Farmer went to press. Principal speakers programmed by Chairman Clarence Foster were Supervisor W. T. Hart, Assessor Crowell Eddy, Tax Collector Sam Claggett and County Auditor Robert W. Getty.. A sound movie was also to be shown by Field Sec. Frank Weaver of Consolidated Aircraft Company, San Diego.

LAKESIDE FARMER
3/15/40



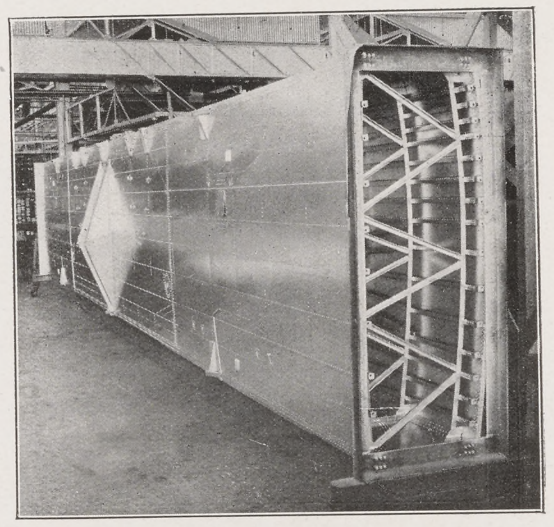
DESCRIPTION DU PBY.

L'hydravion de patrouille et de bombardement *PBY* est un monoplan bimoteur à coque, entièrement construit en alliage léger.

L'aile, semi-cantilever, est reliée à la coque par une cheminée centrale, qui remplace l'ensemble de mâts du *P 2 Y*, et étayée de part et d'autre par une paire de mâts carénés. Elle est construite en trois parties : une partie centrale, de section constante, contenant les réservoirs d'essence et portant les fuseaux-moteurs, et deux tronçons latéraux, de section décroissante, démontables mais non repliables, et recevant les ballonnets. La charpente est à deux longerons, avec revêtement travaillant renforcé par des raidisseurs en Z. Le bord d'attaque et le bord de fuite sont démontables; le bord d'attaque contient les organes de commande des moteurs, les canalisations d'essence et d'huile et les phares d'amerrissage. Des chemins de marche permettant l'inspection et l'entretien des ailes entre les longerons pour la partie centrale, au-dessus du longeron avant pour les tronçons latéraux : ce sont les surfaces de l'extrados qui apparaissent en noir sur les photographies des pages 677 et 679.

Les ailerons, compensés statiquement et aérodynamiquement, sont construits en caisson et revêtus par entoilage; l'aileron gauche est muni d'un volet correcteur, réglable en vol.

Les flotteurs, innovation particulièrement originale de *Consolidated*, sont latéralement relevables, construits en aluminium et séparés en trois compartiments par des cloisons étanches (*voir* phot.,

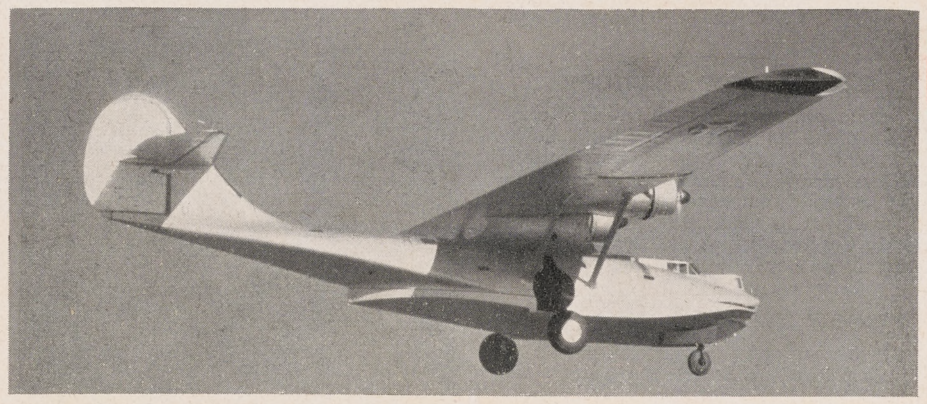


Aspect, en fin de construction, du segment central de voilure du PBY.

Ci-contre, aspect des cabines destinées à l'équipage du PBY.

En haut, aspect d'arrière en avant; *en bas*, aspect d'avant en arrière. C'est à la partie antérieure de la cabine, formant le fond du cliché supérieur, qu'est installé le poste de contrôle et de commande des moteurs.

"AERONAUTICS" March 1940.



A Consolidated XPBY—5A Model (Manufacturer's number 28-5A) amphibian. The landing gear is of tricycle type and is fully retractable.

NAVAL AVIATION

Official Photo, U. S. Navy

SO C-1 Formation. *Scout observation planes such as those pictured here are launched by means of a catapult.*

AND NAVAL POLICY

By Rear Adm. John H. Towers, USN

THE mission of Naval Aviation in our national defense is, primarily, to increase the efficiency of the naval service.

The basic principle of the national policy of the United States is that our armed forces are maintained for defense purposes, and the basic principle of the Navy policy is to maintain our Navy at sufficient strength to support the national policies and commerce, and to guard the continental and overseas possessions of the United States. To do this, the Navy must be properly equipped with ships, aircraft, and trained personnel. The equipment must be modern and in sufficient quantity successfully to carry out the required and assigned missions.

World conditions in recent years have not improved, and the United States, to safeguard its interests, has been forced to continue construction under the Vinson-Trammell Act of 1934 and the Naval Expansion Act of 1938.

While the governing policy is defensive, it is imperative, in the event that war is forced upon us, that our fleet shall be able to bring the enemy to terms at a safe distance from our shores within the shortest possible interval of time. To accomplish this feat, it must be adequately trained and sufficiently strong in every essential element.

The present authorized building program of ships, planes, and naval air stations is a step in the right direction and should be pushed to an early completion. So, too, should the program of construction of other air, destroyer, and submarine bases recommended during the current calendar year by the Hepburn Board.

The Naval policy in regard to heavier-than-air aviation activities is to build and maintain airplanes to the full complement authorized for aircraft carriers, tenders, battleships, cruisers, and the Fleet Marine Force, and to determine and develop the types of airplanes and appliances which are best suited for increased effectiveness of naval vessels, attacks on all classes of Naval objectives, and for scouting and patrolling.

Aircraft For Increased Effectiveness

An adjunct to this general policy is the aircraft policy which aims to build and to maintain aircraft carriers in the maximum

An unusual aerial photograph of a left echelon formation of patrol planes.

Official Photo, U. S. Navy

THE CARLSBAD JOURNA

Thursday, March 7, 1940

50

Stirring The News Hopper

By the Roving Reporter

San Diego's Consolidated

San Diego's Consolidated Aircraft factory is employing 4300 men and women, carrying a payroll of $150,000 a week, or $600,000 a month, which figures about $7,500,000 a year.

They are adding new employees at the rate of 100 a week, and just now are increasing their factory capacity with buildings and mechanical equipment to almost double its present size to take care of a backlog of orders aggregating $43,000,000. They hope to be in full operation by late summer when they will be employing between 7,000 and 8,000 men and women, with a corresponding increase in its weekly payroll, which will mean a lot of potatoes for San Diego and vicinity.

Since most of the company's orders are for government planes from this and other countries, their operations are largely of a secret and confidential nature, and to get inside the doors of the factory one is required to pass approval of the army and navy and have some one, known to the company, who is willing to vouch for one's "safety."

The Consolidated designs its own planes, and one of the principal reasons, for its phenomenal success in meeting world competition is because its product is superior in construction, range, speed, and I might say "fighting ability." Naturally, these new improvements which go into the making of Consolidated planes are valuable secrets and constitute an important element in what the customer pays for when he buys a Consolidated machine. If the French government, for example, orders a Consolidated bomber because it is speedier and more dangerous than a German bomber, they don't want anybody around the factory tipping off the secrets to the Germans.

So it was just an accident that got me into the factory Monday. Maj. R. H. Fleet, president and manager, barged into the office of Secretary T. C. Macaulay of the chamber of commerce where I was hunting news, and quicker than I can tell it I was on the way to the factory. Maj. Fleet displayed no uneasiness about the possibility of my being able to reveal any intricate mechanical secrets, but it was necessary to sign a "pledge," and have a green card stuck in my hatband so they could distinguish me from a spy or a member of the Workers Alliance.

Consolidated recruits its new employees from aviation schools throughout the country and their family records are checked and double checked and put through a wringer to make sure that there is not the wrong kind of Red in their blood corpuscles .They are then required to sign an application solemnly swearing that they are American citizens and will reveal nothing in the factory that may be of injury to the United States, or divulge information to the advantage of any foreign nation and against the interests of our national defense. They are reminded in writing of the provisions of the espionage act in which a violation involves the penalty of a $10,000 fine or imprisonment for two years.

Under these precautions, the type and character of the men observed in the factory are noticeably of high intelligence, dependable, conscientious, and therefore of cheerful appearance and worthy of confidence. There was a feeling of wholesome atmosphere about the place in which the men seemed contented, interested in what they were doing, and proud of their production. The production manager who showed me through the factory greeted his men with a genial salute and a friendly word which was returned in kind, and there were no exceptions from the engineers and the chemists to the boys who were driving rivets and spraying paint.

Speaking of rivets, there are from a quarter to a half million rivets in every machine, and they make them themselves with intricate machines that shoot them out by the thousands, all lengths, sizes and dimensions. Some planes now under construction have a wing spread of 115 feet and weigh 55,000 pounds.

The metal used is mostly aluminum, mixed with a little copper and other metals for strength and plated and "electrocuted" to prevent rust and erosion.

One of the recent additions to their equipment is a 4500-ton hydraulic press, built especially for the company at a cost of $100,000 and which can

STIRRING THE NEWS HOPPER

(Continued From Page One)

apply pressure equal to the weight of a warship. These huge presses are mounted on strong springs to prevent knocking the building down when they are in operation.

In the painting department the rooms are air conditioned, with suction fans pulling the fumes outdoors while others keep the air fresh and moving.

The automatic machines making each separate piece of the 50,000 units, aside from screws, bolts, nuts and rivets, which go into the construction of a plane, keep grinding away throughout the day and night, and more than $2,000,000 worth of parts are now in the store rooms, ready to be delivered on requisition to the assembling sections.

The company carries health, accident and death insurance on all employees desiring it, at a cost far below similar insurance available elsewhere. The sick benefits amount to $15 a week for thirteen weeks to employees earning $1,000 a year, and more for those earning up to $3,000. There are $4,000,000 in risks now being carried.

In the annual report of President Fleet to the shareholders, just issued today, the net earnings of the company for 1939 were placed at $1,104,327. New production facilities to cost $2,000,000 are to be provided immediately, $1,150,000 for new buildings, $530,000 for new machinery and equipment, $100,000 for yard paving and drainage, $35,000 for moving and $185,000 for cranes for handling equipment. The main new building facing Pacific boulevard will be 360x720 feet, giving the company about a half mile frontage of buildings on Pacific.

The company publishes its own house organ called "The Consolidator," and sponsors and encourages athletic events among its employees, and maintains a relations officer on full time keeping in friendly contact with the employees' advising, assisting and working with them in solving their problems, and maintaining sympathetic relations between all branches of the institution.

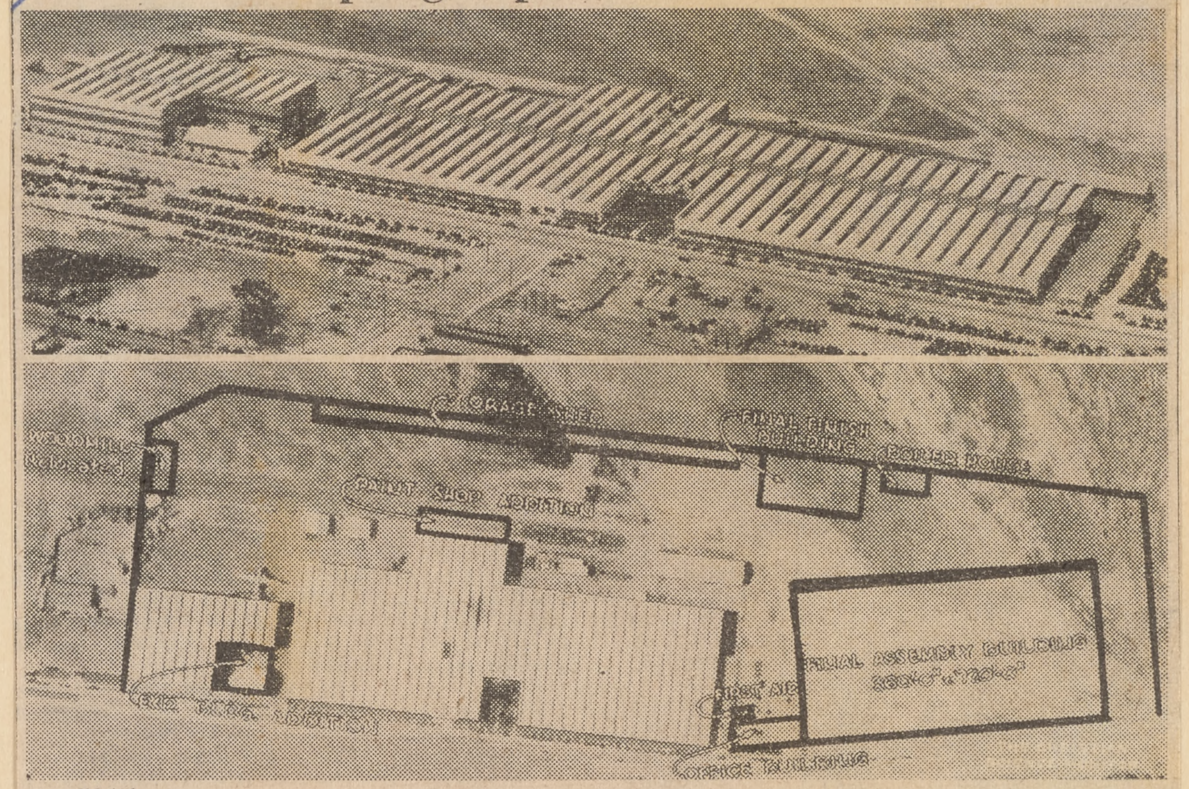
* * *

San Diego in a Coupla Nutshells

Thos. Bomar, industrial commissioner of the San Diego chamber of commerce, and to whom much credit is due for bringing Consolidated Aircraft to San Diego, delivered a talk at the Lemon Grove chamber of commerce Tuesday, in which he gave at a glance some interesting figures about his city. He said:

THE CHRISTIAN SCIENCE MONITOR, BOSTON, TUESDAY, FEBRUARY 27, 1940

Keeping Up With the Navy



Consolidated

Airplane Shop and Expansion

Upper: View of present plant of Consolidated Aircraft Corporation at San Diego, Calif. Lower: Scheme (drawn on smaller scale than upper picture) for expanded plant, showing, at right, where steel canopy for Naval assembly will be erected; and at back, where final finish building and long storage shed will stand.

Factory Growth Demands 64 Airfield Acres

By the Aviation Editor of The Christian Science Monitor

An airplane factory outgrown by inability to handle orders rather than by obsolesence, accounts for outlay which Consolidated Aircraft of San Diego, Calif., has undertaken. A Consolidated factory less than five years' old, which is located on 24.7 acres of Lindbergh Field, the City's municipal airport, will be expanded with buildings, laboratories, and yard areas to occupy a space of 64 acres.

Consolidated's growth is typical of aircraft manufacturing in southern California, due to the demand for armament both at home and abroad. Received from the Navy Department on Dec. 20, 1939, was a contract for $20,016,699, which increased the backlog of the firm's unfilled orders to $40,000,000.

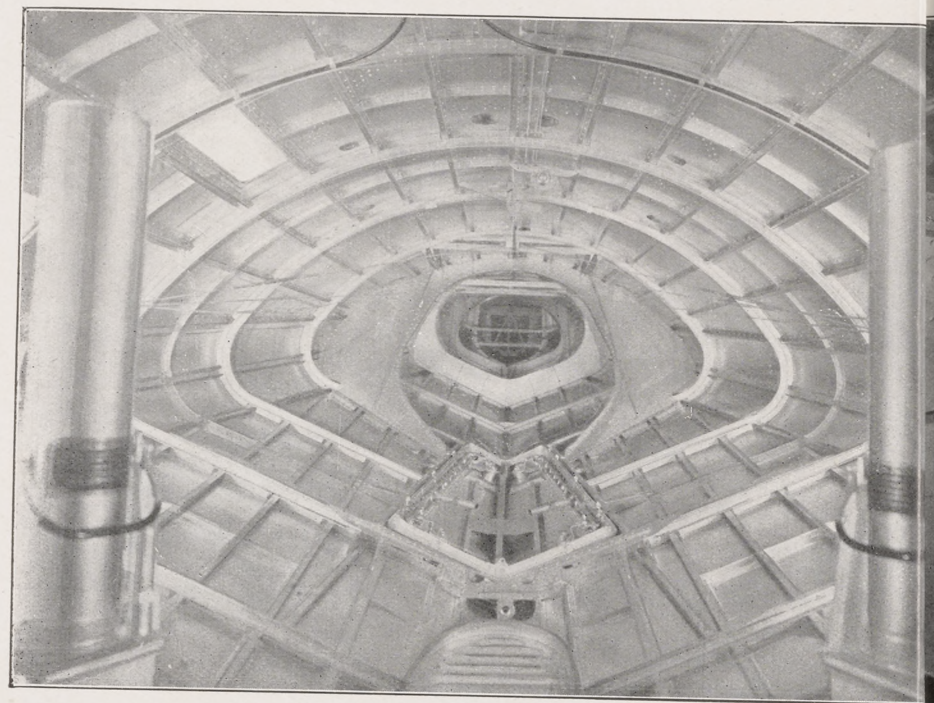
Inasmuch as present orders utilize plant capacity, Consolidated makes the expansion to meet the terms of the Naval contract. Included in the project is an assembly building which will cover an indoors area 360 feet by 720 feet, with a clear span of 120 feet and a clearance from floor to the bottom of the roof trusses of 36 feet. In addition, much of the yard will be asphalted, for use in final assembly operations outdoors.

News in Aviation

FARM BUREAU HEARS COUNTY OFFICIALS

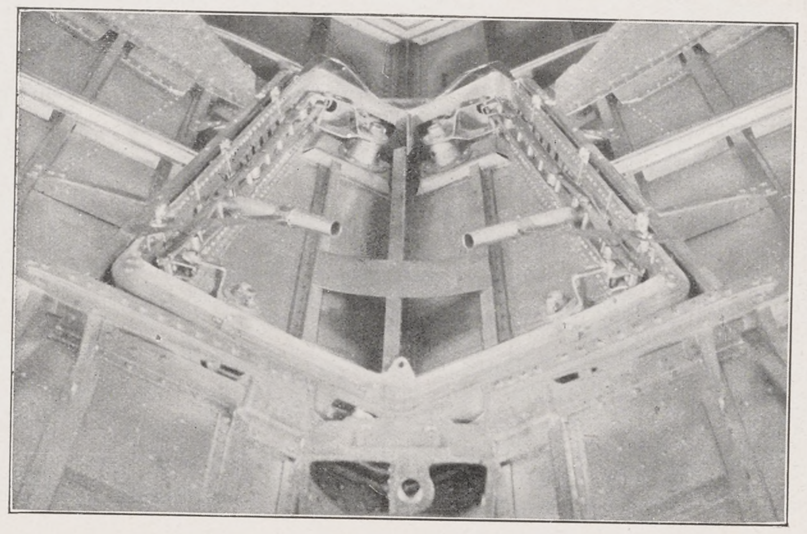
Lakeside Farm Bureau dinner meeting was held last night as the Farmer went to press. Principal speakers programmed by Chairman Clarence Foster were Supervisor W. T. Hart, Assessor Crowell Eddy, Tax Collector Sam Claggett and County Auditor Robert W. Getty.. A sound movie was also to be shown by Field Sec. Frank Weaver of Consolidated Aircraft Company, San Diego.

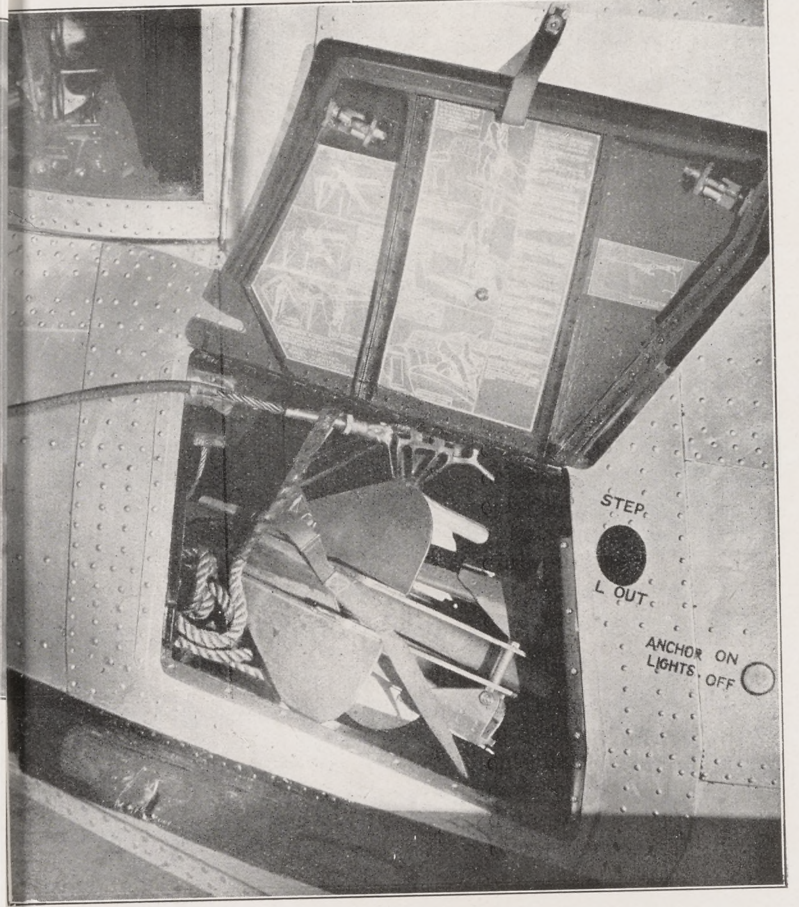
LAKESIDE FARMER
3/15/40



Aspects du compartiment arrière du CONSOLIDATED PBY.

Ci-dessus, aspect général montrant notamment le mode de construction et les câbles de commande des gouvernes arrière. *Ci-dessous*, portion agrandie du document précédent, montrant l'ouverture percée dans la partie non immergée de la coque et au-dessus de laquelle vient s'installer la tourelle inférieure de mitrailleuse.





Logement d'ancre avec commande d'ouverture, à l'avant de la coque du PBY.

La coque, à deux redans, est construite en alliage léger. Elle est divisée en compartiments percés d'ouvertures ovales, que des portes obturent d'une façon parfaitement étanche. D'avant en arrière, les compartiments suivants se succèdent :

1° Un poste de bombardier-mitrailleur, protégé en proue par un revêtement amortisseur en caoutchouc, percé vers l'avant par un hublot de bombardement dont la vitre est doublée d'un rideau de tôle (*voir* phot., p. 689) et au-dessus par une ouverture circulaire permettant l'adaptation d'une tourelle de mitrailleuse et la manœuvre à flot de l'hydravion;

2° Un poste de pilotage, à deux commandes côte à côte (*voir* phot., p. 682);

NAVAL AVIATION

Official Photo, U. S. Navy

SO C-1 Formation. Scout observation planes such as those pictured here are launched by means of a catapult.

AND NAVAL POLICY

By Rear Adm. John H. Towers, USN

An unusual aerial photograph of a left echelon formation of patrol planes. *Official Photo, U. S. Navy*

THE mission of Naval Aviation in our national defense is, primarily, to increase the efficiency of the naval service.

The basic principle of the national policy of the United States is that our armed forces are maintained for defense purposes, and the basic principle of the Navy policy is to maintain our Navy at sufficient strength to support the national policies and commerce, and to guard the continental and overseas possessions of the United States. To do this, the Navy must be properly equipped with ships, aircraft, and trained personnel. The equipment must be modern and in sufficient quantity successfully to carry out the required and assigned missions.

World conditions in recent years have not improved, and the United States, to safeguard its interests, has been forced to continue construction under the Vinson-Trammell Act of 1934 and the Naval Expansion Act of 1938.

While the governing policy is defensive, it is imperative, in the event that war is forced upon us, that our fleet shall be able to bring the enemy to terms at a safe distance from our shores within the shortest possible interval of time. To accomplish this feat, it must be adequately trained and sufficiently strong in every essential element.

The present authorized building program of ships, planes, and naval air stations is a step in the right direction and should be pushed to an early completion. So, too, should the program of construction of other air, destroyer, and submarine bases recommended during the current calendar year by the Hepburn Board.

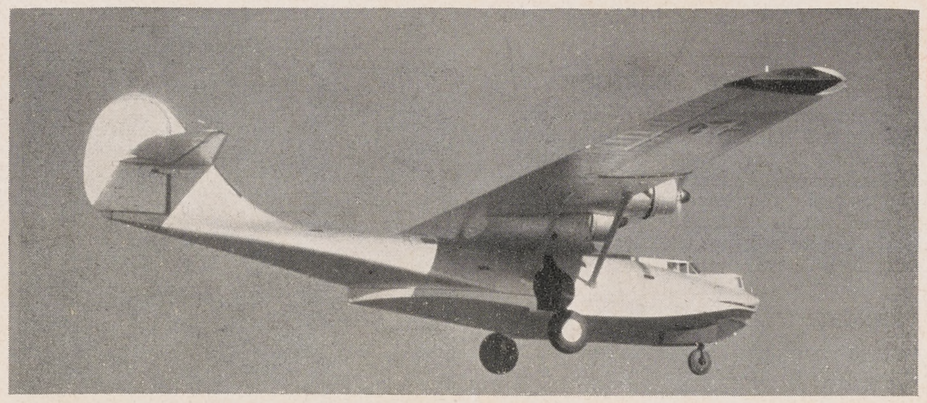
The Naval policy in regard to heavier-than-air aviation activities is to build and maintain airplanes to the full complement authorized for aircraft carriers, tenders, battleships, cruisers, and the Fleet Marine Force, and to determine and develop the types of airplanes and appliances which are best suited for increased effectiveness of naval vessels, attacks on all classes of Naval objectives, and for scouting and patrolling.

Aircraft For Increased Effectiveness

An adjunct to this general policy is the aircraft policy which aims to build and to maintain aircraft carriers in the maximum

---

"AERONAUTICS" March 1940.



A Consolidated XPBY—5A Model (Manufacturer's number 28-5A) amphibian. The landing gear is of tricycle type and is fully retractable.

THE CARLSBAD JOURNA

Thursday, March 7, 1940

50

Stirring The News Hopper

By the Roving Reporter

San Diego's Consolidated

San Diego's Consolidated Aircraft factory is employing 4300 men and women, carrying a payroll of $150,000 a week, or $600,000 a month, which figures about $7,500,000 a year.

They are adding new employees at the rate of 100 a week, and just now are increasing their factory capacity with buildings and mechanical equipment to almost double its present size to take care of a backlog of orders aggregating $43,000,000. They hope to be in full operation by late summer when they will be employing between 7,000 and 8,000 men and women, with a corresponding increase in its weekly payroll, which will mean a lot of potatoes for San Diego and vicinity.

Since most of the company's orders are for government planes from this and other countries, their operations are largely of a secret and confidential nature, and to get inside the doors of the factory one is required to pass approval of the army and navy and have some one, known to the company, who is willing to vouch for one's "safety."

The Consolidated designs its own planes, and one of the principal reasons, for its phenomenal success in meeting world competition is because its product is superior in construction, range, speed, and I might say "fighting ability." Naturally, these new improvements which go into the making of Consolidated planes are valuable secrets and constitute an important element in what the customer pays for when he buys a Consolidated machine. If the French government, for example, orders a Consolidated bomber because it is speedier and more dangerous than a German bomber, they don't want anybody around the factory tipping off the secrets to the Germans.

So it was just an accident that got me into the factory Monday. Maj. R. H. Fleet, president and manager, barged into the office of Secretary T. C. Macaulay of the chamber of commerce where I was hunting news, and quicker than I can tell it I was on the way to the factory. Maj. Fleet displayed no uneasiness about the possibility of my being able to reveal any intricate mechanical secrets, but it was necessary to sign a "pledge," and have a green card stuck in my hatband so they could distinguish me from a spy or a member of the Workers Alliance.

Consolidated recruits its new employees from aviation schools throughout the country and their family records are checked and double checked and put through a wringer to make sure that there is not the wrong kind of Red in their blood corpuscles .They are then required to sign an application solemnly swearing that they are American citizens and will reveal nothing in the factory that may be of injury to the United States, or divulge information to the advantage of any foreign nation and against the interests of our national defense. They are reminded in writing of the provisions of the espionage act in which a violation involves the penalty of a $10,000 fine or imprisonment for two years.

Under these precautions, the type and character of the men observed in the factory are noticeably of high intelligence, dependable, conscientious, and therefore of cheerful appearance and worthy of confidence. There was a feeling of wholesome atmosphere about the place in which the men seemed contented, interested in what they were doing, and proud of their production. The production manager who showed me through the factory greeted his men with a genial salute and a friendly word which was returned in kind, and there were no exceptions from the engineers and the chemists to the boys who were driving rivets and spraying paint.

Speaking of rivets, there are from a quarter to a half million rivets in every machine, and they make them themselves with intricate machines that shoot them out by the thousands, all lengths, sizes and dimensions. Some planes now under construction have a wing spread of 115 feet and weigh 55,000 pounds.

The metal used is mostly aluminum, mixed with a little copper and other metals for strength and plated and "electrocuted" to prevent rust and erosion.

One of the recent additions to their equipment is a 4500-ton hydraulic press, built especially for the company at a cost of $100,000 and which can

STIRRING THE NEWS HOPPER

(Continued From Page One)

apply pressure equal to the weight of a warship. These huge presses are mounted on strong springs to prevent knocking the building down when they are in operation.

In the painting department the rooms are air conditioned, with suction fans pulling the fumes outdoors while others keep the air fresh and moving.

The automatic machines making each separate piece of the 50,000 units, aside from screws, bolts, nuts and rivets, which go into the construction of a plane, keep grinding away throughout the day and night, and more than $2,000,000 worth of parts are now in the store rooms, ready to be delivered on requisition to the assembling sections.

The company carries health, accident and death insurance on all employees desiring it, at a cost far below similar insurance available elsewhere. The sick benefits amount to $15 a week for thirteen weeks to employees earning $1,000 a year, and more for those earning up to $3,000. There are $4,000,000 in risks now being carried.

In the annual report of President Fleet to the shareholders, just issued today, the net earnings of the company for 1939 were placed at $1,104,327. New production facilities to cost $2,000,000 are to be provided immediately, $1,150,000 for new buildings, $530,000 for new machinery and equipment, $100,000 for yard paving and drainage, $35,000 for moving and $185,000 for cranes for handling equipment. The main new building facing Pacific boulevard will be 360x720 feet, giving the company about a half mile frontage of buildings on Pacific.

The company publishes its own house organ called "The Consolidator," and sponsors and encourages athletic events among its employees, and maintains a relations officer on full time keeping in friendly contact with the employees' advising, assisting and working with them in solving their problems, and maintaining sympathetic relations between all branches of the institution.

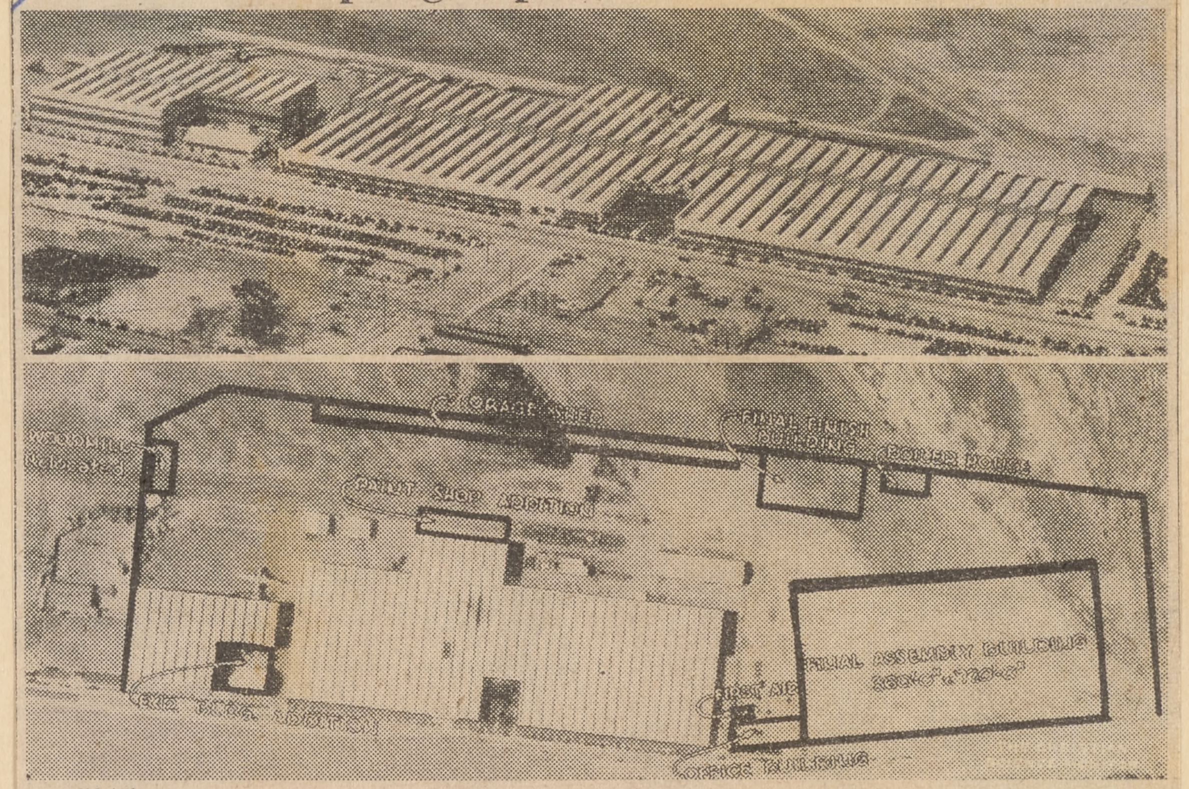
* * *

San Diego in a Coupla Nutshells

Thos. Bomar, industrial commissioner of the San Diego chamber of commerce, and to whom much credit is due for bringing Consolidated Aircraft to San Diego, delivered a talk at the Lemon Grove chamber of commerce Tuesday, in which he gave at a glance some interesting figures about his city. He said:

THE CHRISTIAN SCIENCE MONITOR, BOSTON, TUESDAY, FEBRUARY 27, 1940

Keeping Up With the Navy



Consolidated

Airplane Shop and Expansion

Upper: View of present plant of Consolidated Aircraft Corporation at San Diego, Calif. Lower: Scheme (drawn on smaller scale than upper picture) for expanded plant, showing, at right, where steel canopy for Naval assembly will be erected; and at back, where final finish building and long storage shed will stand.

Factory Growth Demands 64 Airfield Acres

By the Aviation Editor of The Christian Science Monitor

An airplane factory outgrown by inability to handle orders rather than by obsolesence, accounts for outlay which Consolidated Aircraft of San Diego, Calif., has undertaken. A Consolidated factory less than five years' old, which is located on 24.7 acres of Lindbergh Field, the City's municipal airport, will be expanded with buildings, laboratories, and yard areas to occupy a space of 64 acres.

Consolidated's growth is typical of aircraft manufacturing in southern California, due to the demand for armament both at home and abroad. Received from the Navy Department on Dec. 20, 1939, was a contract for $20,016,699, which increased the backlog of the firm's unfilled orders to $40,000,000.

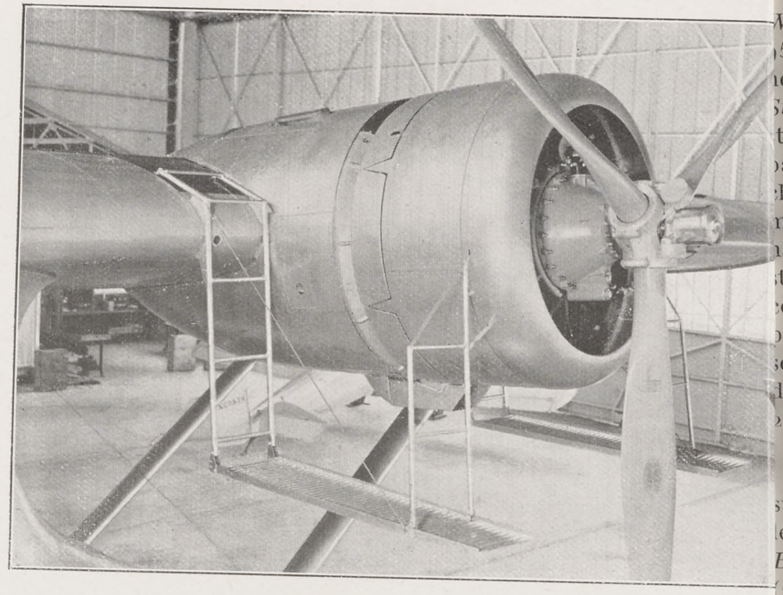
Inasmuch as present orders utilize plant capacity, Consolidated makes the expansion to meet the terms of the Naval contract. Included in the project is an assembly building which will cover an indoors area 360 feet by 720 feet, with a clear span of 120 feet and a clearance from floor to the bottom of the roof trusses of 36 feet. In addition, much of the yard will be asphalted, for use in final assembly operations outdoors.

News in Aviation

FARM BUREAU HEARS COUNTY OFFICIALS

Lakeside Farm Bureau dinner meeting was held last night as the Farmer went to press. Principal speakers programmed by Chairman Clarence Foster were Supervisor W. T. Hart, Assessor Crowell Eddy, Tax Collector Sam Claggett and County Auditor Robert W. Getty.. A sound movie was also to be shown by Field Sec. Frank Weaver of Consolidated Aircraft Company, San Diego.

LAKESIDE FARMER
3/15/40



Aspect du fuseau-moteur bâbord d'un CONSOLIDATED PBY.
Le *PBY* est normalement équipé de moteurs *Pratt and Whitney « Twin Wasp* de 900 à 1200^{ch}.

3° Un poste de navigation et de radiotélégraphie (*voir* phot., p. 684)

4° Une cabine ventilée pour l'équipage avec poste de contrôl mécanique (*voir* phot., p. 686);

5° Une cabine ventilée pour l'équipage (*voir* phot., p. 686);

6° Un poste de tir latéral avec deux mitrailleuses, servant auss de cuisine et de toilette; il contient un bateau pliant de secour (*voir* phot., p. 688);

7° Un poste de tir inférieur avec une mitrailleuse allant jusqu'à la queue (*voir* phot., p. 690).

Des portes d'accès percent la coque au compartiment de proue (trou circulaire), au poste de pilotage, de chaque côté du poste de tir latéral et enfin en queue dans la partie non immergée à flot.

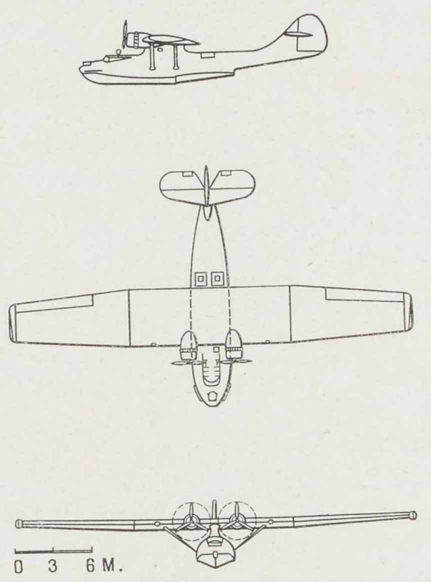
Toutes les fenêtres sont en matière plastique *Libbey-Owens-Ford*, à base de résine acrylique.

L'installation électrique — constituée par trois génératrices, respectivement montées sur chacun des moteurs et sur un petit moteur auxiliaire, et par trois accumulateurs, respectivement installés dans chacun des fuseaux-moteurs et dans la coque — fournit le courant nécessaire au démarrage des moteurs, au relevage des flotteurs, à l'éclairage intérieur et extérieur, aux phares d'amerrissage et à la radio.

Les moteurs sont des *Pratt and Whitney « Twin Wasp »* ou des

---

Wright « Cyclone » de 50-1200^{ch}, actionnant des élices tripales *Hamilton-Standard* à vitesse constante et montés dans des bâtis en tubes d'acier au chrome-molybdène, eux-mêmes installés dans des nacelles venues de construction avec la partie centrale de l'aile. La capacité des réservoirs d'essence est de 6620^{l}, celle des réservoirs d'huile de 260^{l}.



Ensembles du bimoteur CONSOLIDATED PBY.

L'armement est constitué par quatre mitrailleuses orientables, type *Browning*, de 3 pouces ($7^{mm},7$) : une au poste de proue, deux juste en arrière de l'aile (une de chaque côté de la coque) et une en queue tirant vers le bas. La capacité de charge de bombes est de 18169^{kg} : quatre bombes de 454^{kg}, huit de 227^{kg} ou deux torpilles de 908^{kg}. En outre, l'appareil emporte une bombe lumineuse, deux parachutes à bombes et deux pistolets de signalisation.

Ajoutons que la version civile du *PBY*, le *Consolidated* 28/5, est normalement aménagée pour 28 passagers.

Caractéristiques :

Envergure	$31^{m},70$
Longueur	$20^{m},50$
Hauteur	$5^{m},64$
Surface portante	130^{m^2}

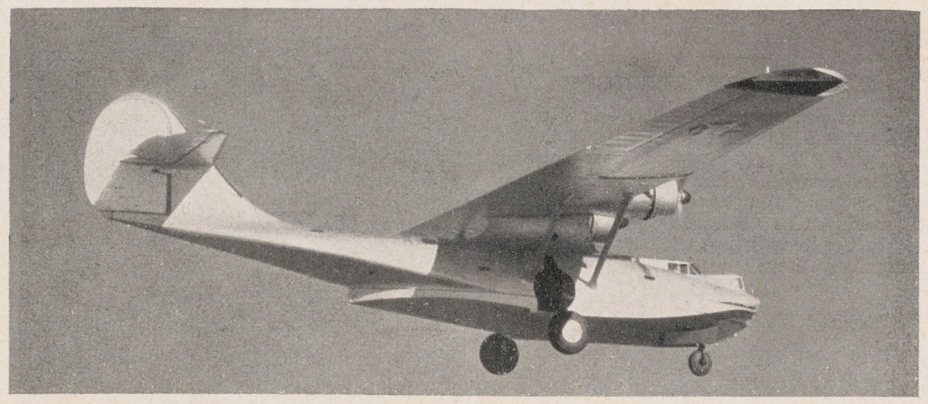
	Bombardement 2454^{kg} de bombes.		Reconnaissance pas de bombes.	
antité d'essence	1720^{l}	4700^{l}	2970^{l}	5950^{l}
ids à vide	6570^{kg}	6570^{kg}	6570^{kg}	6570^{kg}
ids en ordre de vol	9973^{kg}	12259^{kg}	9973^{kg}	12259^{kg}

Performances :

a. avec moteurs *Pratt and Whitney* de 900-1050^{ch} :

esse maximum	$310^{km/h}$	$306^{km/h}$	$318^{km/h}$	$314^{km/h}$
ntée à 1525^{m}	$4^{min}\ 24^{sec}$	$6^{min}\ 24^{sec}$	$4^{min}\ 18^{sec}$	6^{min}
ntée à 4575^{m}	$14^{min}\ 48^{sec}$	$23^{min}\ 18^{sec}$	$14^{min}\ 18^{sec}$	22^{min}
afond	8570^{m}	7140^{m}	8660^{m}	7320^{m}
yon d'action	1740^{km}	4330^{km}	3360^{km}	5970^{km}
yon d'action maximum				6430^{km}

"AERONAUTICS" March 1940.



A Consolidated XPBY—5A Model (Manufacturer's number 28-5A) amphibian. The landing gear is of tricycle type and is fully retractable.

NAVAL AVIATION

Official Photo, U. S. Navy

SO C-1 Formation. Scout observation planes such as those pictured here are launched by means of a catapult.

AND NAVAL POLICY

By Rear Adm. John H. Towers, USN

THE mission of Naval Aviation in our national defense is, primarily, to increase the efficiency of the naval service.

The basic principle of the national policy of the United States is that our armed forces are maintained for defense purposes, and the basic principle of the Navy policy is to maintain our Navy at sufficient strength to support the national policies and commerce, and to guard the continental and overseas possessions of the United States. To do this, the Navy must be properly equipped with ships, aircraft, and trained personnel. The equipment must be modern and in sufficient quantity successfully to carry out the required and assigned missions.

World conditions in recent years have not improved, and the United States, to safeguard its interests, has been forced to continue construction under the Vinson-Trammell Act of 1934 and the Naval Expansion Act of 1938.

While the governing policy is defensive, it is imperative, in the event that war is forced upon us, that our fleet shall be able to bring the enemy to terms at a safe distance from our shores within the shortest possible interval of time. To accomplish this feat, it must be adequately trained and sufficiently strong in every essential element.

The present authorized building program of ships, planes, and naval air stations is a step in the right direction and should be pushed to an early completion. So, too, should the program of construction of other air, destroyer, and submarine bases recommended during the current calendar year by the Hepburn Board.

The Naval policy in regard to heavier-than-air aviation activities is to build and maintain airplanes to the full complement authorized for aircraft carriers, tenders, battleships, cruisers, and the Fleet Marine Force, and to determine and develop the types of airplanes and appliances which are best suited for increased effectiveness of naval vessels, attacks on all classes of Naval objectives, and for scouting and patrolling.

Aircraft For Increased Effectiveness

An adjunct to this general policy is the aircraft policy which aims to build and to maintain aircraft carriers in the maximum

An unusual aerial photograph of a left echelon formation of patrol planes. *Official Photo, U. S. Navy*

THE CARLSBAD JOURNA

Thursday, March 7, 1940

507

Stirring The News Hopper

By the Roving Reporter

San Diego's Consolidated

San Diego's Consolidated Aircraft factory is employing 4300 men and women, carrying a payroll of $150,000 a week, or $600,000 a month, which figures about $7,500,000 a year.

They are adding new employees at the rate of 100 a week, and just now are increasing their factory capacity with buildings and mechanical equipment to almost double its present size to take care of a backlog of orders aggregating $43,000,000. They hope to be in full operation by late summer when they will be employing between 7,000 and 8,000 men and women, with a corresponding increase in its weekly payroll, which will mean a lot of potatoes for San Diego and vicinity.

Since most of the company's orders are for government planes from this and other countries, their operations are largely of a secret and confidential nature, and to get inside the doors of the factory one is required to pass approval of the army and navy and have some one, known to the company, who is willing to vouch for one's "safety."

The Consolidated designs its own planes, and one of the principal reasons, for its phenomenal success in meeting world competition is because its product is superior in construction, range, speed, and I might say "fighting ability." Naturally, these new improvements which go into the making of Consolidated planes are valuable secrets and constitute an important element in what the customer pays for when he buys a Consolidated machine. If the French government, for example, orders a Consolidated bomber because it is speedier and more dangerous than a German bomber, they don't want anybody around the factory tipping off the secrets to the Germans.

So it was just an accident that got me into the factory Monday. Maj. R. H. Fleet, president and manager, barged into the office of Secretary T. C. Macaulay of the chamber of commerce where I was hunting news, and quicker than I can tell it I was on the way to the factory. Maj. Fleet displayed no uneasiness about the possibility of my being able to reveal any intricate mechanical secrets, but it was necessary to sign a "pledge," and have a green card stuck in my hatband so they could distinguish me from a spy or a member of the Workers Alliance.

Consolidated recruits its new employees from aviation schools throughout the country and their family records are checked and double checked and put through a wringer to make sure that there is not the wrong kind of Red in their blood corpuscles .They are then required to sign an application solemnly swearing that they are American citizens and will reveal nothing in the factory that may be of injury to the United States, or divulge information to the advantage of any foreign nation and against the interests of our national defense. They are reminded in writing of the provisions of the espionage act in which a violation involves the penalty of a $10,000 fine or imprisonment for two years.

Under these precautions, the type and character of the men observed in the factory are noticeably of high intelligence, dependable, conscientious, and therefore of cheerful appearance and worthy of confidence. There was a feeling of wholesome atmosphere about the place in which the men seemed contented, interested in what they were doing, and proud of their production. The production manager who showed me through the factory greeted his men with a genial salute and a friendly word which was returned in kind, and there were no exceptions from the engineers and the chemists to the boys who were driving rivets and spraying paint.

Speaking of rivets, there are from a quarter to a half million rivets in every machine, and they make them themselves with intricate machines that shoot them out by the thousands, all lengths, sizes and dimensions. Some planes now under construction have a wing spread of 115 feet and weigh 55,000 pounds.

The metal used is mostly aluminum, mixed with a little copper and other metals for strength and plated and "electrocuted" to prevent rust and erosion.

One of the recent additions to their equipment is a 4500-ton hydraulic press, built especially for the company at a cost of $100,000 and which can

STIRRING THE NEWS HOPPER

(Continued From Page One)

apply pressure equal to the weight of a warship. These huge presses are mounted on strong springs to prevent knocking the building down when they are in operation.

In the painting department the rooms are air conditioned, with suction fans pulling the fumes outdoors while others keep the air fresh and moving.

The automatic machines making each separate piece of the 50,000 units, aside from screws, bolts, nuts and rivets, which go into the construction of a plane, keep grinding away throughout the day and night, and more than $2,000,000 worth of parts are now in the store rooms, ready to be delivered on requisition to the assembling sections.

The company carries health, accident and death insurance on all employees desiring it, at a cost far below similar insurance available elsewhere. The sick benefits amount to $15 a week for thirteen weeks to employees earning $1,000 a year, and more for those earning up to $3,000. There are $4,000,000 in risks now being carried.

In the annual report of President Fleet to the shareholders, just issued today, the net earnings of the company for 1939 were placed at $1,104,327. New production facilities to cost $2,000,000 are to be provided immediately, $1,150,000 for new buildings, $530,000 for new machinery and equipment, $100,000 for yard paving and drainage, $35,000 for moving and $185,000 for cranes for handling equipment. The main new building facing Pacific boulevard will be 360x720 feet, giving the company about a half mile frontage of buildings on Pacific.

The company publishes its own house organ called "The Consolidator," and sponsors and encourages athletic events among its employees, and maintains a relations officer on full time keeping in friendly contact with the employees' advising, assisting and working with them in solving their problems, and maintaining sympathetic relations between all branches of the institution.

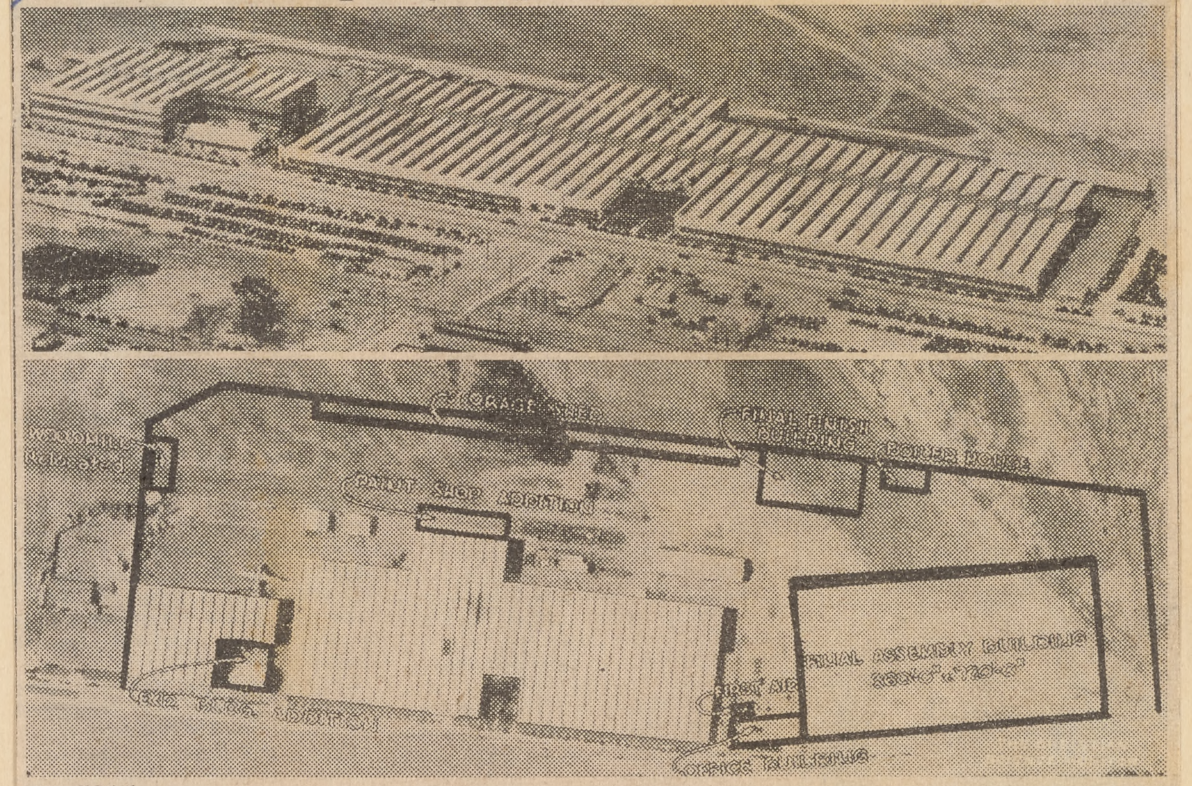
* * *

San Diego in a Coupla Nutshells

Thos. Bomar, industrial commissioner of the San Diego chamber of commerce, and to whom much credit is due for bringing Consolidated Aircraft to San Diego, delivered a talk at the Lemon Grove chamber of commerce Tuesday, in which he gave at a glance some interesting figures about his city. He said:

THE CHRISTIAN SCIENCE MONITOR, BOSTON, TUESDAY, FEBRUARY 27, 1940

Keeping Up With the Navy



Consolidated

Airplane Shop and Expansion

Upper: View of present plant of Consolidated Aircraft Corporation at San Diego, Calif. Lower: Scheme (drawn on smaller scale than upper picture) for expanded plant, showing, at right, where steel canopy for Naval assembly will be erected; and at back, where final finish building and long storage shed will stand.

Factory Growth Demands 64 Airfield Acres

By the Aviation Editor of The Christian Science Monitor

News in Aviation

An airplane factory outgrown by inability to handle orders rather than by obsolesence, accounts for outlay which Consolidated Aircraft of San Diego, Calif., has undertaken. A Consolidated factory less than five years' old, which is located on 24.7 acres of Lindbergh Field, the City's municipal airport, will be expanded with buildings, laboratories, and yard areas to occupy a space of 64 acres.

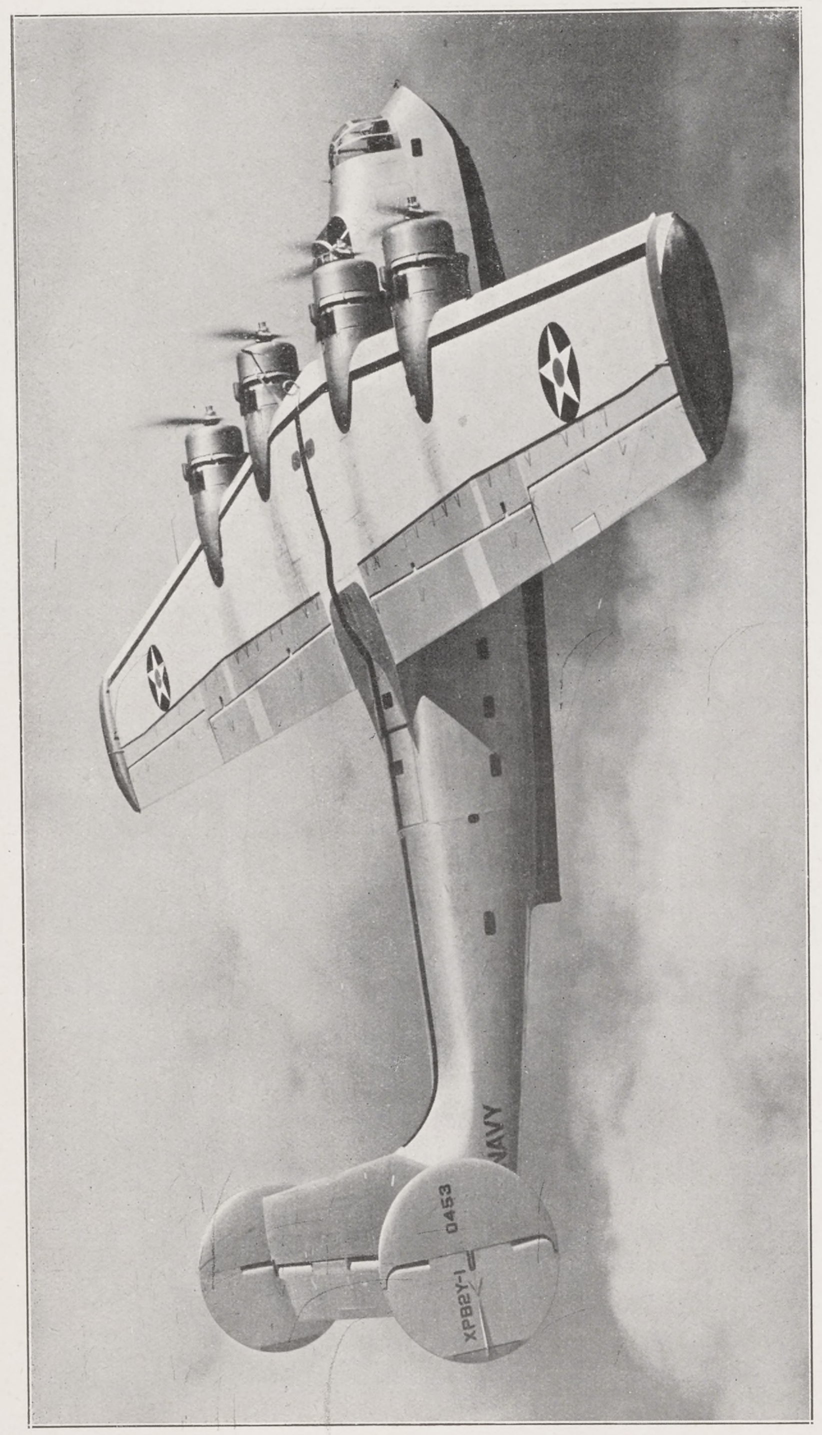
Consolidated's growth is typical of aircraft manufacturing in southern California, due to the demand for armament both at home and abroad. Received from the Navy Department on Dec. 20, 1939, was a contract for $20,016,699, which increased the backlog of the firm's unfilled orders to $40,000,000.

Inasmuch as present orders utilize plant capacity, Consolidated makes the expansion to meet the terms of the Naval contract. Included in the project is an assembly building which will cover an indoors area 360 feet by 720 feet, with a clear span of 120 feet and a clearance from floor to the bottom of the roof trusses of 36 feet. In addition, much of the yard will be asphalted, for use in final assembly operations outdoors.

FARM BUREAU HEARS COUNTY OFFICIALS

Lakeside Farm Bureau dinner meeting was held last night as the Farmer went to press. Principal speakers programmed by Chairman Clarence Foster were Supervisor W. T. Hart, Assessor Crowell Eddy, Tax Collector Sam Claggett and County Auditor Robert W. Getty.. A sound movie was also to be shown by Field Sec. Frank Weaver of Consolidated Aircraft Company, San Diego.

LAKESIDE FARMER
3/15/40



Aspect en vol du quadrimoteur prototype de bombardement et de patrouille CONSOLIDATED X. PB 2 Y-1 *sous sa forme définitive, c'est-à-dire avec deux jeux de plans de queue verticaux installés aux extrémités d'un stabilisateur accusant un dièdre accentué vers le haut.*

Deux postes de combat à tourelle orientable sont installés l'un à la proue, l'autre à l'extrême arrière sous les gouvernes horizontales.

Derrière l'aile, se trouve, un poste de navigation, dont les vues, largement dégagées vers le ciel, facilitent les observations astronomiques.

L'appareil est tout spécialement adapté aux missions de longue durée et, à ce titre, équipé pour rester longtemps loin de toute base. Il est pourvu d'un train de roues destiné à la mise à flot, dont les roues sont normalement remisées dans des logements ménagés à cet effet dans la coque. L'aménagement intérieur et le confort ont été l'objet d'un soin particulier : l'équipage, normalement composé de 7 à 12 hommes suivant les missions, dispose d'une cabine, de toilettes et de dortoirs spacieux et insonorisés, ainsi que d'une cuisine avec frigidaire; l'air est renouvelé par des ventilateurs et conditionné en température; un réseau téléphonique réunit tous les habitacles. Des génératrices, actionnées par deux moteurs auxiliaires, fournissent un courant alternatif de 110 volts.

A l'heure actuelle, le *PB 2 Y* n'a pas encore fait l'objet d'une commande de l'*U. S. Navy*.

Selon le constructeur, une version civile du *PB 2 Y* pourrait transporter 30 passagers, avec un rayon d'action maximum de 8000^{kn} et une vitesse maximum de 385$^{km/h}$.

Le bimoteur Consolidated 31.

LE PROTOTYPE.

Le dernier né de la *Consolidated Aircraft Corporation*, le *Consolidated* 31, a effectué son premier vol le 5 mars 1939 après dix mois seulement d'études et de construction.

Cet appareil semble être surtout un prototype expérimental sans équipement spécial, avant-coureur de longs-courriers commerciaux et de bombardiers militaires, et peut-être une sorte de maquette volante préparant la construction du quadrimoteur de 50^t « *Trans-Oceanic* » pour 54 passagers et celle du sextimoteur de 77^t pour 100 passagers.

Selon le constructeur, le *Consolidated* 31 peut porter 52 passagers de jour et, au-dessus de l'Atlantique, 28 passagers de jour et de nuit.

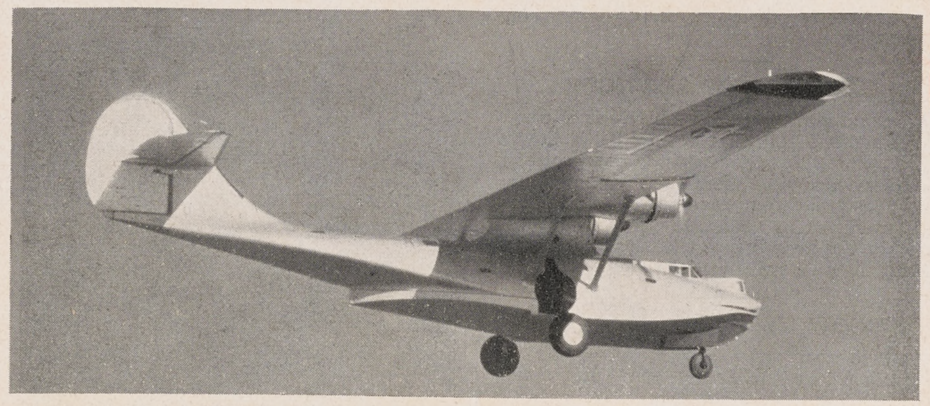
DESCRIPTION.

Le *Consolidated* 31 est un monoplan entièrement construit en duralumin, avec revêtement général en aluminium avec rivets à tête noyée et entoilage des surfaces mobiles.

L'aile, entièrement cantilever, porte les fuseaux-moteurs et des ballonnets latéraux, non basculants comme pour le *PBY* et le *PB 2 Y*, mais remontant verticalement jusqu'à l'intrados. Cette aile — et

---

"AERONAUTICS" March 1940.



A Consolidated XPBY—5A Model (Manufacturer's number 28-5A) amphibian. The landing gear is of tricycle type and is fully retractable.

NAVAL AVIATION

Official Photo, U. S. Navy

SO C-1 Formation. *Scout observation planes such as those pictured here are launched by means of a catapult.*

AND NAVAL POLICY

By Rear Adm. John H. Towers, USN

An unusual aerial photograph of a left echelon formation of patrol planes.

Official Photo, U. S. Navy

THE mission of Naval Aviation in our national defense is, primarily, to increase the efficiency of the naval service.

The basic principle of the national policy of the United States is that our armed forces are maintained for defense purposes, and the basic principle of the Navy policy is to maintain our Navy at sufficient strength to support the national policies and commerce, and to guard the continental and overseas possessions of the United States. To do this, the Navy must be properly equipped with ships, aircraft, and trained personnel. The equipment must be modern and in sufficient quantity successfully to carry out the required and assigned missions.

World conditions in recent years have not improved, and the United States, to safeguard its interests, has been forced to continue construction under the Vinson-Trammell Act of 1934 and the Naval Expansion Act of 1938.

While the governing policy is defensive, it is imperative, in the event that war is forced upon us, that our fleet shall be able to bring the enemy to terms at a safe distance from our shores within the shortest possible interval of time. To accomplish this feat, it must be adequately trained and sufficiently strong in every essential element.

The present authorized building program of ships, planes, and naval air stations is a step in the right direction and should be pushed to an early completion. So, too, should the program of construction of other air, destroyer, and submarine bases recommended during the current calendar year by the Hepburn Board.

The Naval policy in regard to heavier-than-air aviation activities is to build and maintain airplanes to the full complement authorized for aircraft carriers, tenders, battleships, cruisers, and the Fleet Marine Force, and to determine and develop the types of airplanes and appliances which are best suited for increased effectiveness of naval vessels, attacks on all classes of Naval objectives, and for scouting and patrolling.

Aircraft For Increased Effectiveness

An adjunct to this general policy is the aircraft policy which aims to build and to maintain aircraft carriers in the maximum

THE CARLSBAD JOURNA

Thursday, March 7, 1940

50

Stirring The News Hopper

By the Roving Reporter

San Diego's Consolidated

San Diego's Consolidated Aircraft factory is employing 4300 men and women, carrying a payroll of $150,000 a week, or $600,000 a month, which figures about $7,500,000 a year.

They are adding new employees at the rate of 100 a week, and just now are increasing their factory capacity with buildings and mechanical equipment to almost double its present size to take care of a backlog of orders aggregating $43,000,000. They hope to be in full operation by late summer when they will be employing between 7,000 and 8,000 men and women, with a corresponding increase in its weekly payroll, which will mean a lot of potatoes for San Diego and vicinity.

Since most of the company's orders are for government planes from this and other countries, their operations are largely of a secret and confidential nature, and to get inside the doors of the factory one is required to pass approval of the army and navy and have some one, known to the company, who is willing to vouch for one's "safety."

The Consolidated designs its own planes, and one of the principal reasons, for its phenomenal success in meeting world competition is because its product is superior in construction, range, speed, and I might say "fighting ability." Naturally, these new improvements which go into the making of Consolidated planes are valuable secrets and constitute an important element in what the customer pays for when he buys a Consolidated machine. If the French government, for example, orders a Consolidated bomber because it is speedier and more dangerous than a German bomber, they don't want anybody around the factory tipping off the secrets to the Germans.

So it was just an accident that got me into the factory Monday. Maj. R. H. Fleet, president and manager, barged into the office of Secretary T. C. Macaulay of the chamber of commerce where I was hunting news, and quicker than I can tell it I was on the way to the factory. Maj. Fleet displayed no uneasiness about the possibility of my being able to reveal any intricate mechanical secrets, but it was necessary to sign a "pledge," and have a green card stuck in my hatband so they could distinguish me from a spy or a member of the Workers Alliance.

Consolidated recruits its new employees from aviation schools throughout the country and their family records are checked and double checked and put through a wringer to make sure that there is not the wrong kind of Red in their blood corpuscles .They are then required to sign an application solemnly swearing that they are American citizens and will reveal nothing in the factory that may be of injury to the United States, or divulge information to the advantage of any foreign nation and against the interests of our national defense. They are reminded in writing of the provisions of the espionage act in which a violation involves the penalty of a $10,000 fine or imprisonment for two years.

Under these precautions, the type and character of the men observed in the factory are noticeably of high intelligence, dependable, conscientious, and therefore of cheerful appearance and worthy of confidence. There was a feeling of wholesome atmosphere about the place in which the men seemed contented, interested in what they were doing, and proud of their production. The production manager who showed me through the factory greeted his men with a genial salute and a friendly word which was returned in kind, and there were no exceptions from the engineers and the chemists to the boys who were driving rivets and spraying paint.

Speaking of rivets, there are from a quarter to a half million rivets in every machine, and they make them themselves with intricate machines that shoot them out by the thousands, all lengths, sizes and dimensions. Some planes now under construction have a wing spread of 115 feet and weigh 55,000 pounds.

The metal used is mostly aluminum, mixed with a little copper and other metals for strength and plated and "electrocuted" to prevent rust and erosion.

One of the recent additions to their equipment is a 4500-ton hydraulic press, built especially for the company at a cost of $100,000 and which can

STIRRING THE NEWS HOPPER

(Continued From Page One)

apply pressure equal to the weight of a warship. These huge presses are mounted on strong springs to prevent knocking the building down when they are in operation.

In the painting department the rooms are air conditioned, with suction fans pulling the fumes outdoors while others keep the air fresh and moving.

The automatic machines making each separate piece of the 50,000 units, aside from screws, bolts, nuts and rivets, which go into the construction of a plane, keep grinding away throughout the day and night, and more than $2,000,000 worth of parts are now in the store rooms, ready to be delivered on requisition to the assembling sections.

The company carries health, accident and death insurance on all employees desiring it, at a cost far below similar insurance available elsewhere. The sick benefits amount to $15 a week for thirteen weeks to employees earning $1,000 a year, and more for those earning up to $3,000. There are $4,000,000 in risks now being carried.

In the annual report of President Fleet to the shareholders, just issued today, the net earnings of the company for 1939 were placed at $1,104,327. New production facilities to cost $2,000,000 are to be provided immediately, $1,150,000 for new buildings, $530,000 for new machinery and equipment, $100,000 for yard paving and drainage, $35,000 for moving and $185,000 for cranes for handling equipment. The main new building facing Pacific boulevard will be 360x720 feet, giving the company about a half mile frontage of buildings on Pacific.

The company publishes its own house organ called "The Consolidator," and sponsors and encourages athletic events among its employees, and maintains a relations officer on full time keeping in friendly contact with the employees' advising, assisting and working with them in solving their problems, and maintaining sympathetic relations between all branches of the institution.

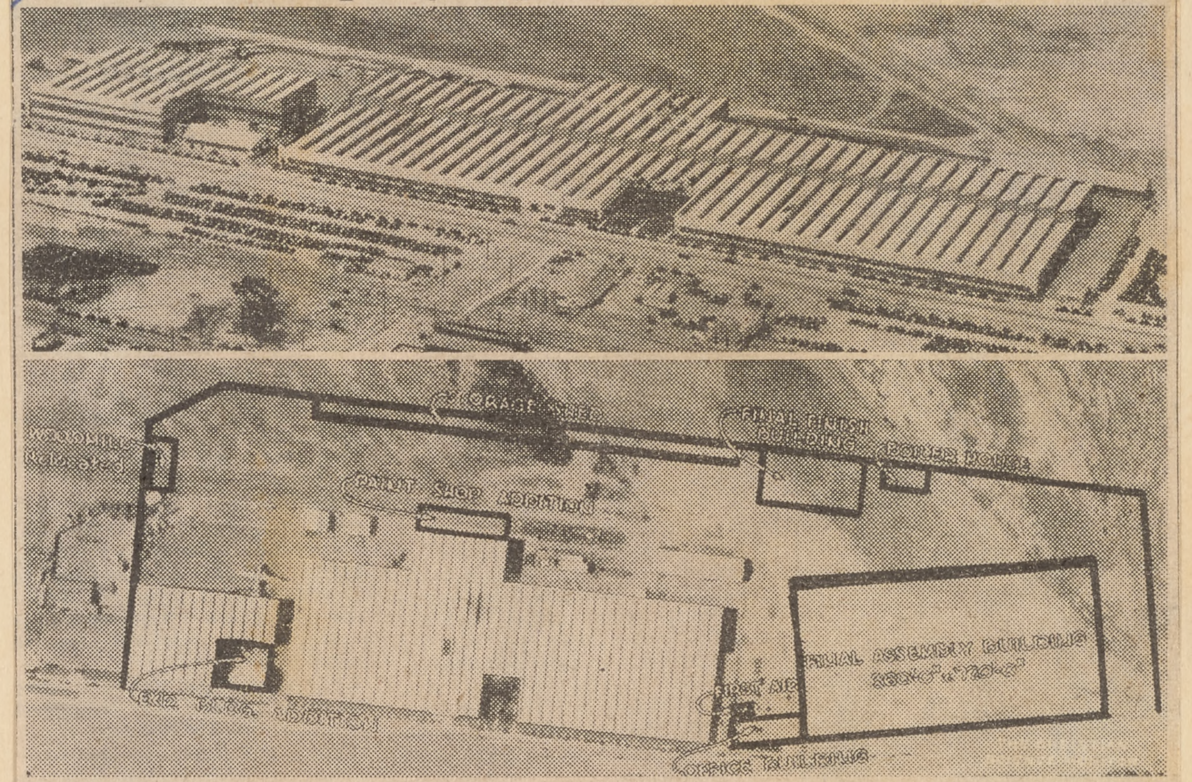
* * *

San Diego in a Coupla Nutshells

Thos. Bomar, industrial commissioner of the San Diego chamber of commerce, and to whom much credit is due for bringing Consolidated Aircraft to San Diego, delivered a talk at the Lemon Grove chamber of commerce Tuesday, in which he gave at a glance some interesting figures about his city. He said:

THE CHRISTIAN SCIENCE MONITOR, BOSTON, TUESDAY, FEBRUARY 27, 1940

Keeping Up With the Navy



Consolidated

Airplane Shop and Expansion

Upper: View of present plant of Consolidated Aircraft Corporation at San Diego, Calif. Lower: Scheme (drawn on smaller scale than upper picture) for expanded plant, showing, at right, where steel canopy for Naval assembly will be erected; and at back, where final finish building and long storage shed will stand.

Factory Growth Demands 64 Airfield Acres

By the Aviation Editor of The Christian Science Monitor

An airplane factory outgrown by inability to handle orders rather than by obsolesence, accounts for outlay which Consolidated Aircraft of San Diego, Calif., has undertaken. A Consolidated factory less than five years' old, which is located on 24.7 acres of Lindbergh Field, the City's municipal airport, will be expanded with buildings, laboratories, and yard areas to occupy a space of 64 acres.

Consolidated's growth is typical of aircraft manufacturing in southern California, due to the demand for armament both at home and abroad. Received from the Navy Department on Dec. 20, 1939, was a contract for $20,016,699, which increased the backlog of the firm's unfilled orders to $40,000,000.

Inasmuch as present orders utilize plant capacity, Consolidated makes the expansion to meet the terms of the Naval contract. Included in the project is an assembly building which will cover an indoors area 360 feet by 720 feet, with a clear span of 120 feet and a clearance from floor to the bottom of the roof trusses of 36 feet. In addition, much of the yard will be asphalted, for use in final assembly operations outdoors.

News in Aviation

FARM BUREAU HEARS COUNTY OFFICIALS

Lakeside Farm Bureau dinner meeting was held last night as the Farmer went to press. Principal speakers programmed by Chairman Clarence Foster were Supervisor W. T. Hart, Assessor Crowell Eddy, Tax Collector Sam Claggett and County Auditor Robert W. Getty.. A sound movie was also to be shown by Field Sec. Frank Weaver of Consolidated Aircraft Company, San Diego.

LAKESIDE FARMER
3/15/40

c'est là, semble-t-il, la plus grosse originalité de l'appareil — est à profil extra-mince donnant pratiquement un écoulement laminaire sur toute la surface. Il est logique de référer cette innovation à un travail du *N. A. C. A.* sur les profils de ce type, travail dont le Dr G. W. Lewis, directeur du *N. A. C. A.*, a donné lecture lors d'un récent congrès de ce comité.

L'aile est pourvue de volets *Fowler* à commande hydraulique sur toute la partie du bord de fuite non occupée par les ailerons. Les réservoirs d'essence sont contenus dans la partie centrale de l'aile; leurs parois constituent les surfaces mêmes d'extrados et d'intrados.

La coque, à flancs plats et de section haute, comporte deux ponts. Le pont supérieur est réservé à un équipage normalement constitué par 5 hommes (un chef de bord assurant le contrôle des moteurs, deux pilotes, un radio-opérateur et un navigateur. Le pont inférieur comporte huit compartiments pour les passagers ou le fret.

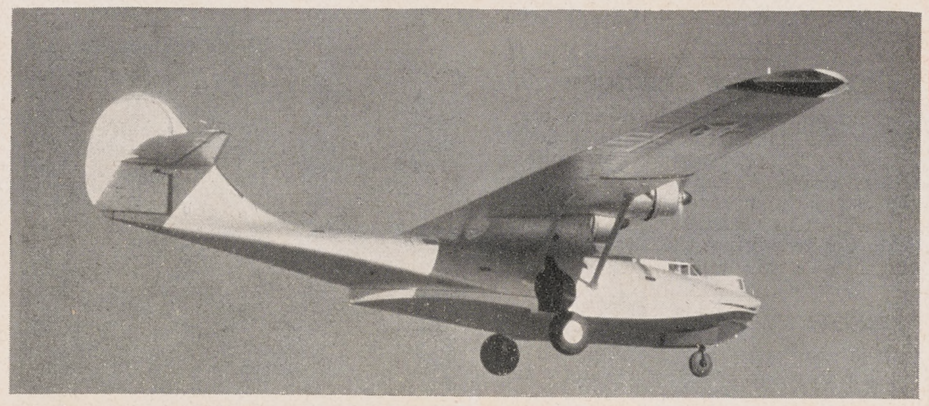
Comme le *X. PB 2 Y*, le *Consolidated* 31 possède un train de roulement à trois roues escamotables, pour la mise à flot et la manœuvre au sol.

Les moteurs sont des *Wright* « *Duplex Cyclone* » à 18 cylindres en étoile double, refroidis par l'air et développant 2000^{ch} au décollage; ils actionnent des hélices *Hamilton* « *Hydromatic* » de $4^{m},88$ de diamètre, à vitesse constante et mise en drapeau automatique.

Spécialement équipé pour les vols de grandes distances, c'est-à-dire avec des réservoirs supplémentaires dans la coque, l'appareil aurait un rayon d'action de $19\ 300^{km}$; c'est dire que pratiquement il pourrait se rendre sans escale de n'importe quel point du globe à n'importe quel autre point.

R. M.

"AERONAUTICS" March 1940.



A Consolidated XPBY—5A Model (Manufacturer's number 28-5A) amphibian. The landing gear is of tricycle type and is fully retractable.

NAVAL AVIATION

Official Photo, U. S. Navy

SO C-1 Formation. Scout observation planes such as those pictured here are launched by means of a catapult.

AND NAVAL POLICY

By Rear Adm. John H. Towers, USN

THE mission of Naval Aviation in our national defense is, primarily, to increase the efficiency of the naval service.

The basic principle of the national policy of the United States is that our armed forces are maintained for defense purposes, and the basic principle of the Navy policy is to maintain our Navy at sufficient strength to support the national policies and commerce, and to guard the continental and overseas possessions of the United States. To do this, the Navy must be properly equipped with ships, aircraft, and trained personnel. The equipment must be modern and in sufficient quantity successfully to carry out the required and assigned missions.

World conditions in recent years have not improved, and the United States, to safeguard its interests, has been forced to continue construction under the Vinson-Trammell Act of 1934 and the Naval Expansion Act of 1938.

While the governing policy is defensive, it is imperative, in the event that war is forced upon us, that our fleet shall be able to bring the enemy to terms at a safe distance from our shores within the shortest possible interval of time. To accomplish this feat, it must be adequately trained and sufficiently strong in every essential element.

The present authorized building program of ships, planes, and naval air stations is a step in the right direction and should be pushed to an early completion. So, too, should the program of construction of other air, destroyer, and submarine bases recommended during the current calendar year by the Hepburn Board.

The Naval policy in regard to heavier-than-air aviation activities is to build and maintain airplanes to the full complement authorized for aircraft carriers, tenders, battleships, cruisers, and the Fleet Marine Force, and to determine and develop the types of airplanes and appliances which are best suited for increased effectiveness of naval vessels, attacks on all classes of Naval objectives, and for scouting and patrolling.

Aircraft For Increased Effectiveness

An adjunct to this general policy is the aircraft policy which aims to build and to maintain aircraft carriers in the maximum

An unusual aerial photograph of a left echelon formation of patrol planes. *Official Photo, U. S. Navy*

VOL. I. — No. 10

Aircraft News

HUGE ORDER FOR BOMBERS BY FOREIGNERS

3-28-40.

SAN DIEGO—Consolidated Aircraft Corporation officials disclosed that construction of PBY-type patrol bombers similar to those used by the United States Navy has been started for foreign nations—presumably the Allies. The contract is believed to involve a $9,000,000 expenditure.

The local concern, in the midst of a $200,000 erpansion program and boasting the largest backlog in its history—$49,00,000—confirmed a statement by Rear Admiral John H. Towers, Bureau of Aeronautics chief, in Washington, that the twin-engined Consolidated planes are one of four types of Navy aircraft approved for export to the Allies.

Total to $49,000,000

Maj. Reuben H. Fleet, president of Consolidated, declared that orders recently received from abroad—believed to be England and France—raised the company's amount of unfinished work to approximately $49,000,000.

He refused to divulge the exact number of planes involved, declaring he was sworn to secrecy by the purchasers.

The PBY type is one of the most famous seaplanes in the world, having effected trail-blazing mass flights from San Diego to the Canal Zone and Honolulu and from Hawaii to the Philippines.

Archbold's Flights

A $250,000 commercial version, owned by Richard Archbold, wealthy explorer-aviator, was used with an American Museum of Natural History expedition in operations from a mountain lake in Netherlands New Guinea last year and later flew around the world, the first seaplane to cross Australia, the Indian Ocean and Africa.

John Millar, Consolidated Aircraft Corporation's London representative, has just arrived in San Diego for conferences related to the British contract, it was learned recently.

Tribune 4/2/40

BOMBER ON LINE FOR INSPECTION AS ARMY DAY EVENT

San Diego's observance of Army day Saturday will feature aviation, with the public invited to visit Lindbergh field from 9:30 a.m. to 4 p.m. to inspect army planes and equipment and national guard anti-aircraft equipment. A feature of the exhibit will be Consolidated's new four-motored army bomber, which will be on the line for public inspection, it was reported.

Open house will be held at the air corps reserve hangars at the south side of the municipal airport, with all the planes lined up for inspection, according to report by Maj. Gen. R. R. Van Deman, U.S.A. ret., chairman of the military affairs committee of the chamber of commerce. Open house also will be held at the Ryan School of Aeronautics, with army air corps cadets acting as guides for tours of inspection of training planes and through the school.

The national guard will have on Lindbergh field four new anti-aircraft guns, two 800,000,000 candlepower searchlights; modern aircraft radio sets, and trucks, including a big wire-laying truck.

Union 4-3-40

Army to Exhibit Consair Bomber

San Diegans on Army day, Saturday, will have an opportunity to inspect the huge, four-motored bomber built by Consolidated Aircraft Corp. for the army air corps.

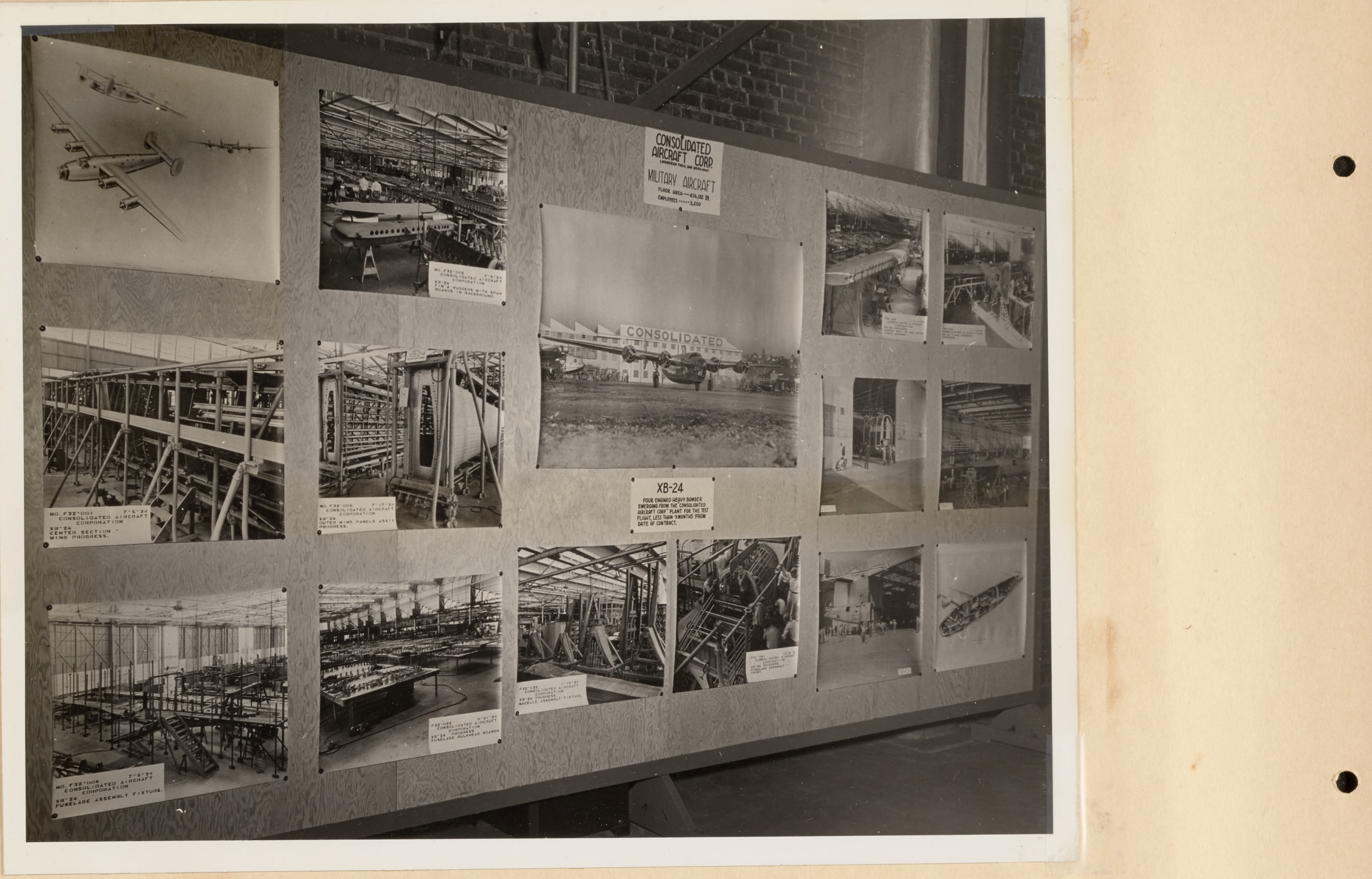
Maj. Gen. R. H. Van Deman, U.S.A., ret, chamber of commerce military affairs committee chairman, said the bomber will be on exhibition at Lindbergh field from 9:30 a.m. to 4 p.m.

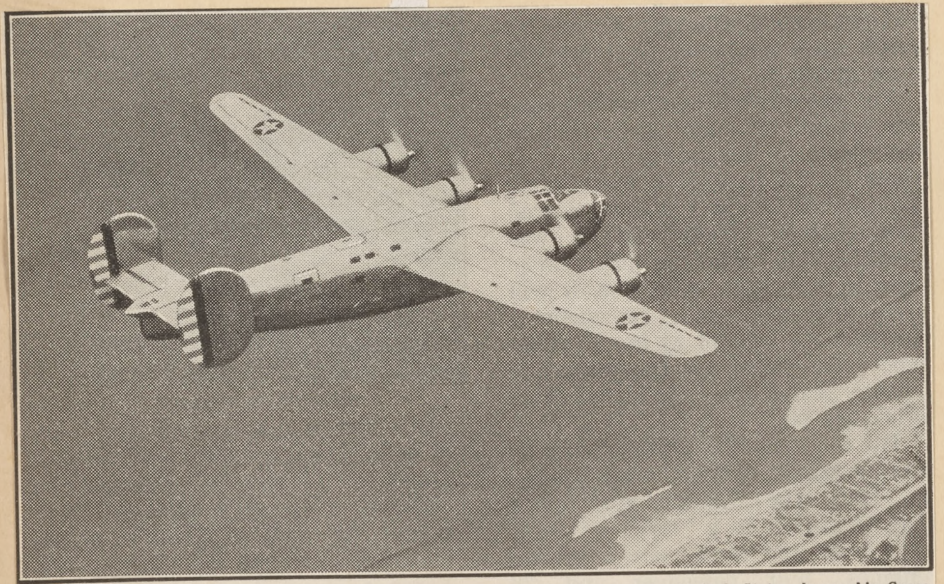
The municipal airport also will be the scene of other Army day attractions, Gen. Van Deman said.

Open house will be held at the army air corps reserve hangars and at Ryan School of Aeronautics where air corps cadets will act as guides for an inspection tour of the school and the training planes.

The national guard will exhibit four new anti-aircraft guns, a wire laying truck, aircraft radio sets and two 800,000,000-candlepower searchlights.

Army air corps authorities at March and Moffett fields have been requested to put on display at Lindbergh field pursuit, attack and observation planes.


CONSOLIDATED AIRCRAFT CORP.
LINDBERGH FIELD, SAN DIEGO, CALIF.
MILITARY AIRCRAFT
FLOOR AREA ····· 456,132 SQ. FT.
EMPLOYEES ····· 3,200
CONSOLIDATED
XB-24
FOUR ENGINED HEAVY BOMBER EMERGING FROM THE "CONSOLIDATED AIRCRAFT CORP." PLANT FOR THE TEST FLIGHT, LESS THAN 9 MONTHS FROM DATE OF CONTRACT.



Consolidated Model 32 4-engined heavy bomber, a type in production for the United States Army Air Corps. It has a top speed of over 300 m.p.h. and a range of about 3,000 miles. Photograph by courtesy of the Consolidated Aircraft Corporation, U.S.A.

Meccano November 1940

Union

Air Plants Take 90 a Week From S. D. School

4-4-40.

Gearing its operations to the absorption power of the aircraft industry here, the Vocational school is admitting 90 aviation students a week and releasing that number for employment, H. A. Tiemann, director of vocational education, reported yesterday.

He said the goal is 150 a week but will not be reached unless an equivalent number of aviation industry jobs are in sight.

"Cooperation between employers and the school is excellent," he said. "Preference is given to locally trained youths by the employment offices of all our local aviation plants."

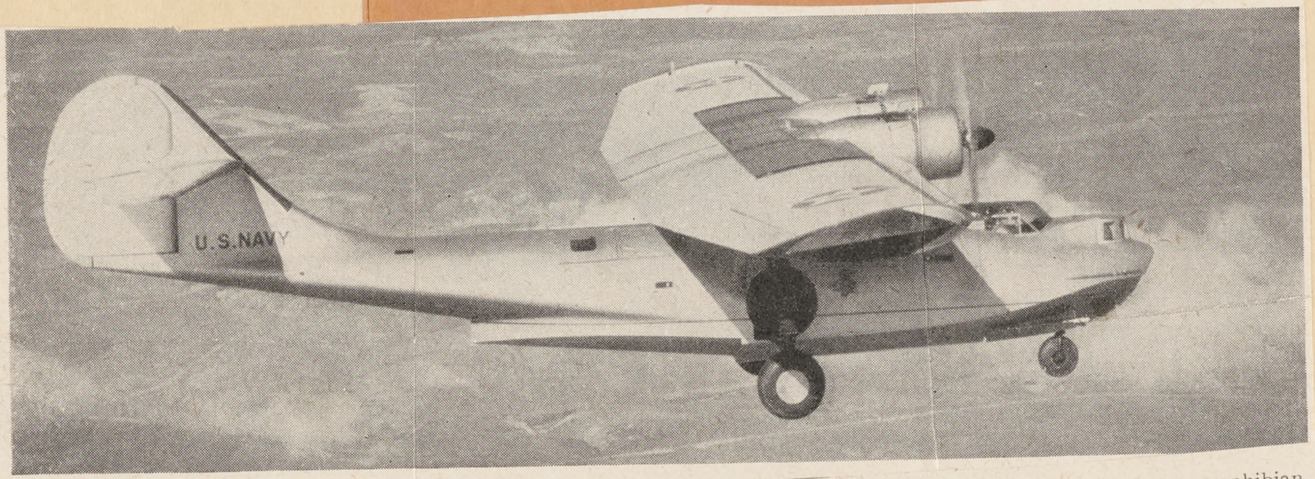
The general pick-up of employment also has helped place students from other departments of the school in various types of employment, he added.

Since July 1, 460 students have been played in full-time employment, 324 in aircraft plants, 65 in retail selling and business occupations, 20 in welding work, 20 in machine shops, 19 as sign painters and show-card writers, 7 in auto repair shops and 5 in woodworking occupations, Tiemann reported.

"Without vocational education a majority of these young men and women would in all probability still be unemployed and our community would not be receiving the benefit of over $500,000 in earning power they are now producing," he concluded.

EXTRACT FROM
FLIGHT,
Dorset House, Stamford St., S.E.I.

8 FEB 19



WITH ITS WHEELS DOWN

Amphibian for Coastal Patrols

NOW undergoing tests at U.S. Naval Air Station, Anacostia, D.C., is the Consolidated Model 28 flying boat in its amphibian version. The company's designation is Model 28-5A, while the Navy number is XPBY-5A.

The tricycle undercarriage is fully retractable, the main wheels going into the sides of the hull and bow wheel into a completely enclosed hatch in the planing bottom. Automatic means are provided to eject all water in this hatch before the plane is in the air.

This boat, now that it is an amphibian, should make a magnificent unit for coastal patrol work. It has a great advantage over a flying boat for such work in that it can be serviced at much less elaborate bases. All that an amphibian needs for a base is a ramp; it can climb and descend it under its own power. Patrol work on the very long coastlines of Canada and Australia could be done most efficiently with such equipment.

Fleet Buys Kinner Engines

Confident that the neutrality ban will be modified, Fleet Aircraft Ltd., of Ft. Erie, Canada, ordered $83,000 worth of aircraft engines from Kinner Motors, of Los Angeles. Fifty engines are contracted for and the order was accompanied by a letter of credit assuring payment even though the engines may have to be stored. This will be done until such time as Fleet may legally take delivery Kinner officials stated. Aero Digest 10/39

4-5-40

Retired Officer Dies After Brief Illness

Union

Lt. Comdr. Donald Marshall Carpenter, U.S.N., ret., died yesterday at naval hospital after a brief illness. He was production manager and member of the board at Consolidated Aircraft Corp.

Born in 1894, he was graduated from the Naval academy, Annapolis, in 1916. He retired from the navy in 1936. Services will be held at Christ Episcopal church, 926 C ave., Coronado, at 10:30 this morning, with Johnson-Saum Co. in charge of arrangements.

Comdr. Carpenter resided at 825 Margarita ave., Coronado. He was the husband of Clara M. Carpenter, and the father of Donald and Patrick Carpenter.

Union 4-4-40

Archbold Will Lecture Here Monday

"Round the World on Biological Exploration" will be the theme of Richard Archbold's special lecture in the auditorium, House of Hospitality, Monday night at 8.

Bringing color and sound motion pictures and a collection of slides, the noted explorer will tell of his New Guinea expedition and round-the-world flight on the "Guba," famous San Diego-built flying laboratory. A research associate of the American Museum of Natural History, Archbold made nation-wide news when he hopped from San Diego sometime ago in the "Guba" on her maiden flight. Since then, the young research scientist has contributed many specimens to museums and has published a book.

ADMISSION BY TICKET

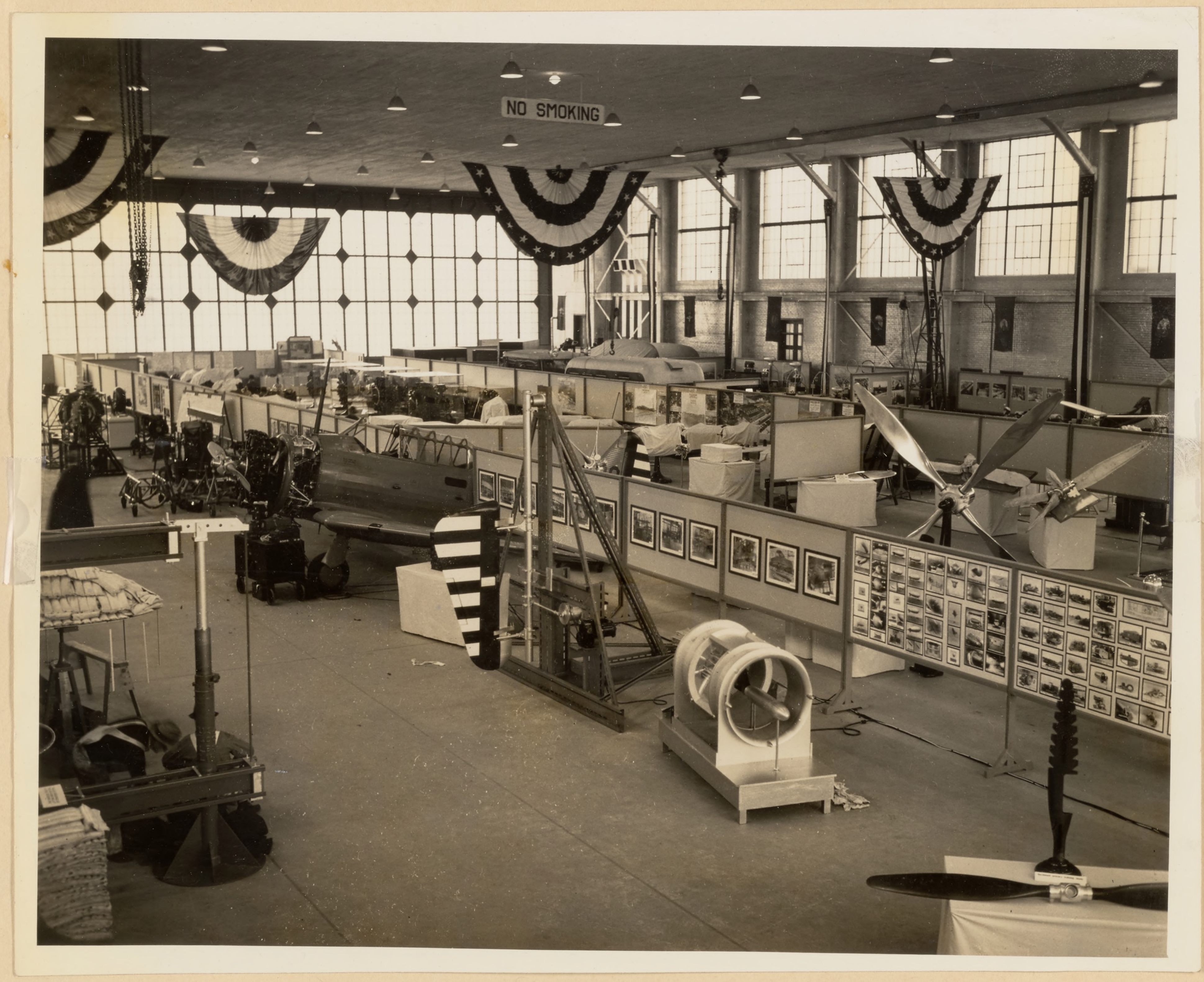
The lecture, under auspices of Fellows of the San Diego Society of Natural History, was originally scheduled for the Natural History museum. Because of interest shown it will be held in an auditorium which seats about 600.

"Admission will be by ticket only," Clinton G. Abbott, museum director stated, "in order to assure all members admittance." Anyone having a membership card will be permitted to bring two friends. Persons not already members of the society who care to join in advance of the lecture will be welcomed.

ATTAINMENTS RECOUNTED

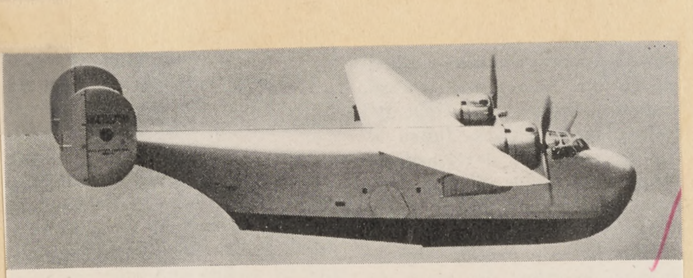
Archbold, of New York and San Diego, resides at present at Tanque Verde ranch, Ariz. His south sea work interrupted by war, he has lately been engaged in ecological investigation, study of effects of desert conditions on mammal life.

Besides his biological research, Archbold was the first white man to discover an unknown tribal "nation" in Dutch New Guinea interior, and first to fly a "flying boat" over the Indian ocean. He surveyed and demonstrated the possibilities of a new air-route from Australia to England via Africa.



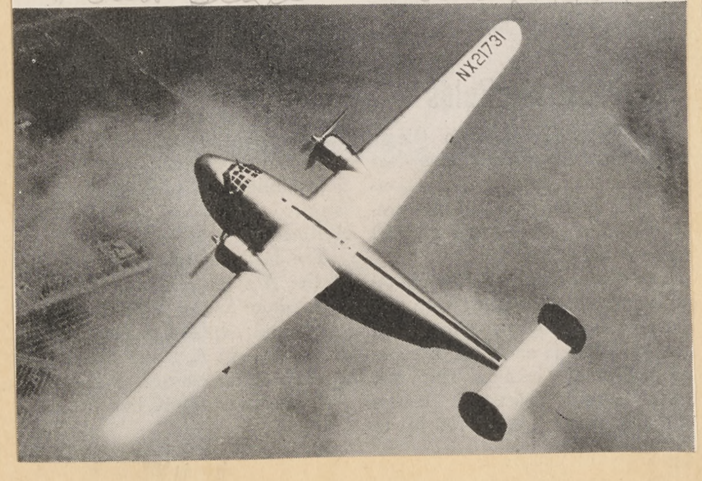
Western Flying Nov. 1939

When Consolidated Aircraft Corp. wanted two powerful new type aircraft engines in a hurry from the Pratt & Whitney Co. plant in East Hartford, the Army loaded them on its C-39 transport. Here's the crew after it landed in San Diego: Lieut. T. J. Schofield, Maj. E. R. McReynolds, Lieut. Glenn Holland, welcomed by E. N. Gott of Consolidated and W. G. Chamberlain of Pratt & Whitney.



The Wright Duplex Cyclone powered Consolidated flying boat Model 31 during one of its test flights over San Diego

Aero Digest - Aug. 1939



AVIATION MARCH '40

Consolidated Expands

Last December Consolidated Aircraft was sitting pretty, with a $20,000,000 backlog that promised to use the full capacity of the five-year old 25-acre plant at San Diego. Then, at one blow, the biggest single aircraft order ever placed by the government doubled Consolidated's backlog and threw a real production problem on their hands.

Now comes the announcement of an 87% increase in factory space to provide the needed capacity. An additional 64 acres have been leased or optioned, d 400,000 sq. ft. will be ed. New facilities will in- e final assembly, final finish, paint shop and wood mill, and experimental, maintenance, and office space. Extra assembly space is also to be provided by paving yard areas, since well-known California climate permits outdoor work most of the year.

Under a closing agreement with the Treasury, part of the cost of expansion is to be charged against the government order.

VOL. I. — No. 10

Aircraft News

HUGE ORDER FOR BOMBERS BY FOREIGNERS

3-28-40.

SAN DIEGO—Consolidated Aircraft Corporation officials disclosed that construction of PBY-type patrol bombers similar to those used by the United States Navy has been started for foreign nations—presumably the Allies. The contract is believed to involve a $9.000,000 expenditure.

The local concern, in the midst of a $200,000 erpansion program and boasting the largest backlog in its history—$49,00,000—confirmed a statement by Rear Admiral John H. Towers, Bureau of Aeronautics chief, in Washington, that the twin-engined Consolidated planes are one of four types of Navy aircraft approved for export to the Allies.

Total to $49,000,000

Maj. Reuben H. Fleet, president of Consolidated, declared that orders recently received from abroad—believed to be England and France—raised the company's amount of unfinished work to approximately $49,000,000.

He refused to divulge the exact number of planes involved, declaring he was sworn to secrecy by the purchasers.

The PBY type is one of the most famous seaplanes in the world, having effected trail-blazing mass flights from San Diego to the Canal Zone and Honolulu and from Hawaii to the Philippines.

Archbold's Flights

A $250,000 commercial version, owned by Richard Archbold, wealthy explorer-aviator, was used with an American Museum of Natural History expedition in operations from a mountain lake in Netherlands New Guinea last year and later flew around the world, the first seaplane to cross Australia, the Indian Ocean and Africa.

John Millar, Consolidated Aircraft Corporation's London representative, has just arrived in San Diego for conferences related to the British contract, it was learned recently.

~~Tribune~~ 4/2/40

BOMBER ON LINE FOR INSPECTION AS ARMY DAY EVENT

San Diego's observance of Army day Saturday will feature aviation, with the public invited to visit Lindbergh field from 9:30 a.m. to 4 p.m. to inspect army planes and equipment and national guard anti-aircraft equipment. A feature of the exhibit will be Consolidated's new four-motored army bomber, which will be on the line for public inspection, it was reported.

Open house will be held at the air corps reserve hangars at the south side of the municipal airport, with all the planes lined up for inspection, according to report by Maj. Gen. R. R. Van Deman, U.S.A. ret., chairman of the military affairs committee of the chamber of commerce. Open house also will be held at the Ryan School of Aeronautics, with army air corps cadets acting as guides for tours of inspection of training planes and through the school.

The national guard will have on Lindbergh field four new anti-aircraft guns, two 800,000,000 candlepower searchlights; modern aircraft radio sets, and trucks, including a big wire-laying truck.

---

* * *

Union 4-3-40

Army to Exhibit Consair Bomber

San Diegans on Army day, Saturday, will have an opportunity to inspect the huge, four-motored bomber built by Consolidated Aircraft Corp. for the army air corps.

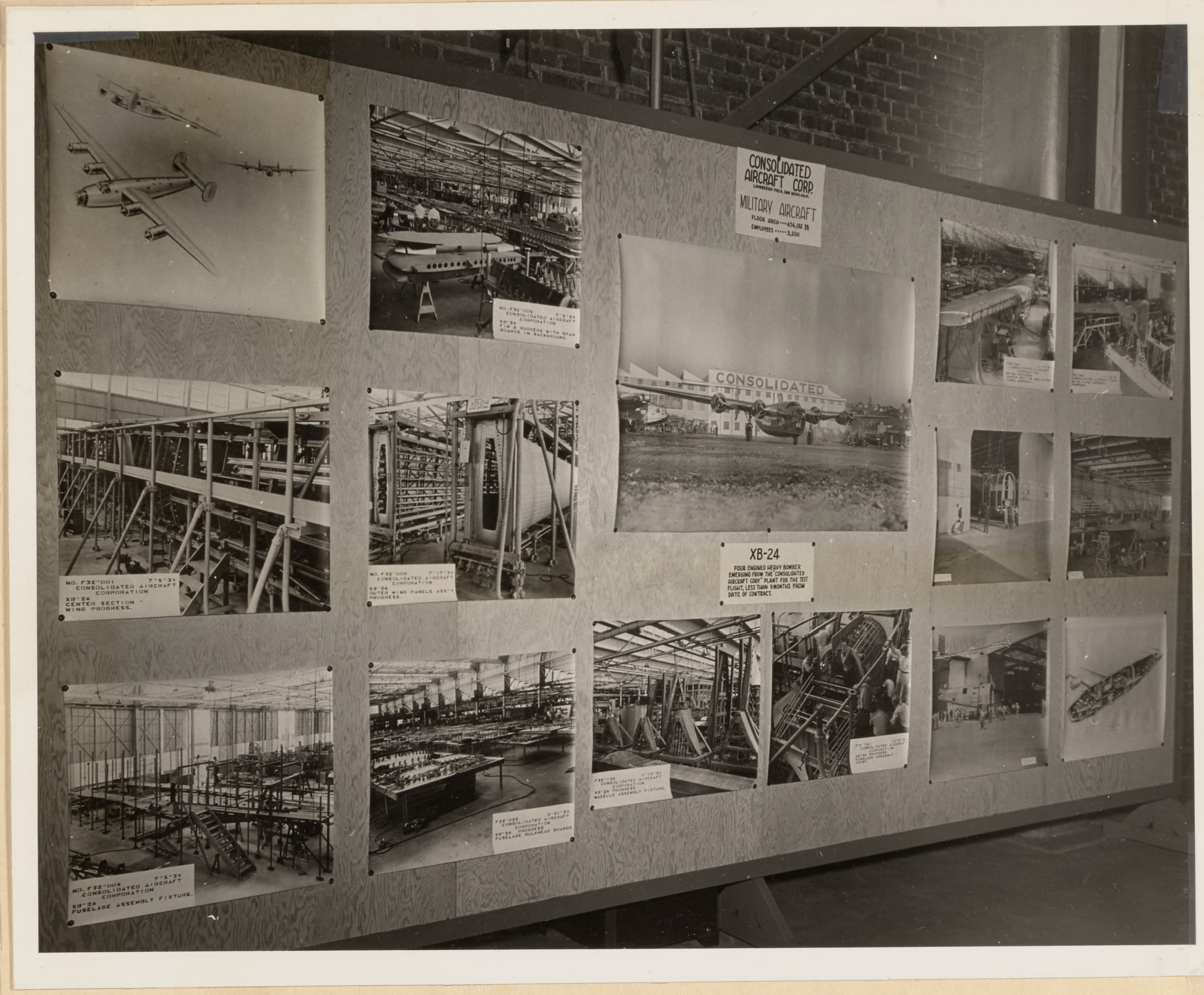
Maj. Gen. R. H. Van Deman, U.S.A., ret, chamber of commerce military affairs committee chairman, said the bomber will be on exhibition at Lindbergh field from 9:30 a.m. to 4 p.m.

The municipal airport also will be the scene of other Army day attractions, Gen. Van Deman said.

Open house will be held at the army air corps reserve hangars and at Ryan School of Aeronautics where air corps cadets will act as guides for an inspection tour of the school and the training planes.

The national guard will exhibit four new anti-aircraft guns, a wire laying truck, aircraft radio sets and two 800,000,000-candlepower searchlights.

Army air corps authorities at March and Moffett fields have been requested to put on display at Lindbergh field pursuit, attack and observation planes.


CONSOLIDATED AIRCRAFT CORP.
LINDBERGH FIELD, SAN DIEGO, CALIF.
MILITARY AIRCRAFT
FLOOR AREA ····· 456,132 SQ. FT.
EMPLOYEES ······ 3,200
CONSOLIDATED
XB-24
FOUR ENGINED HEAVY BOMBER EMERGING FROM THE "CONSOLIDATED AIRCRAFT CORP." PLANT FOR THE TEST FLIGHT, LESS THAN 9 MONTHS FROM DATE OF CONTRACT.

Union

Air Plants Take 90 a Week From S. D. School

4-4-40

Gearing its operations to the absorption power of the aircraft industry here, the Vocational school is admitting 90 aviation students a week and releasing that number for employment, H. A. Tiemann, director of vocational education, reported yesterday.

He said the goal is 150 a week but will not be reached unless an equivalent number of aviation industry jobs are in sight.

"Cooperation between employers and the school is excellent," he said. "Preference is given to locally trained youths by the employment offices of all our local aviation plants."

The general pick-up of employment also has helped place stud... from other...

...occupa-... 20 in welding work, 20 in machine shops, 19 as sign painters and show-card writers, 7 in auto repair shops and 5 in woodworking occupations, Tiemann reported.

"Without vocational education a majority of these young men and women would in all probability still be unemployed and our community would not be receiving the benefit of over $500,000 in earning power they are now producing," he concluded.

---

ing good results on a weight-and-strength basis. This wider field, however, means that there is all the more reason for tackling the problem.

In single-engined aircraft so much fuel and equipment has to be carried in the wings that no standard ...ing can yet be expected. Each type of load requires

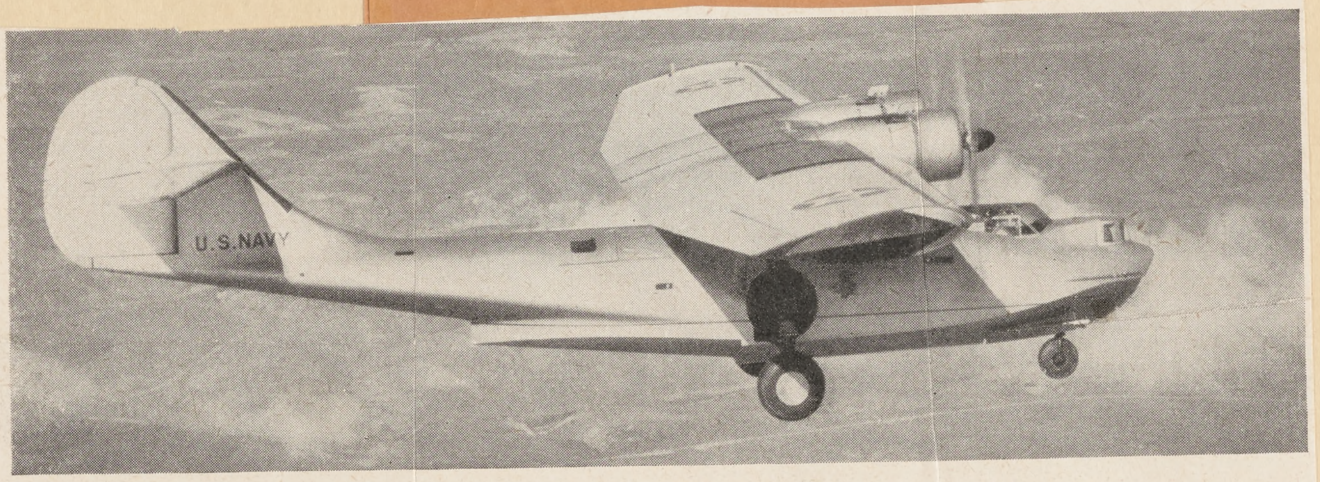
---

EXTRACT FROM

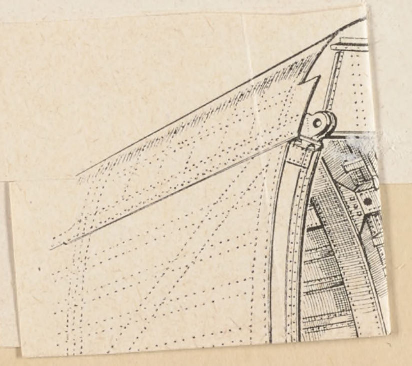
FLIGHT,

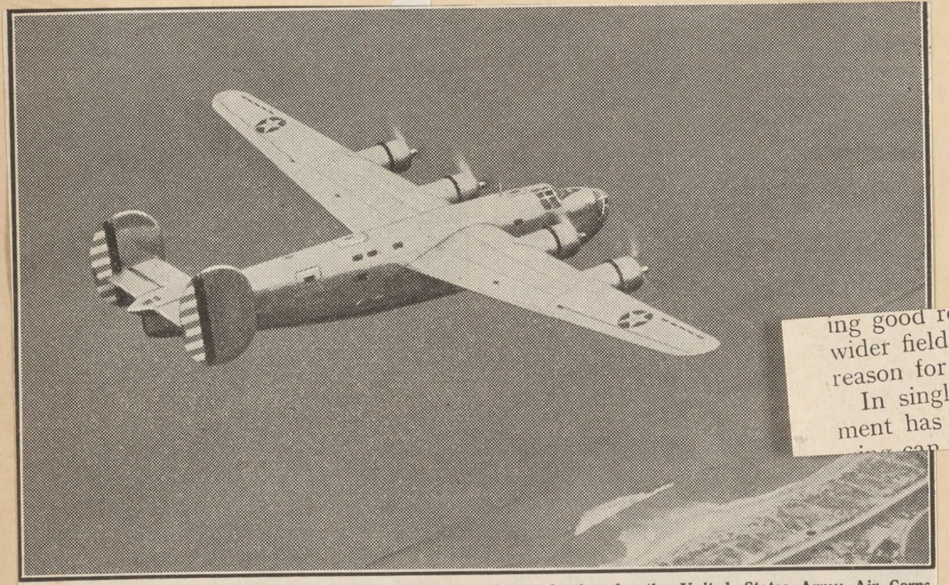
Dorset House, Stamford St., S.E.I.

8 FEB 19



WITH ITS WHEELS DOWN : The Consolidated Model 28 as an amphibian.





Consolidated Model 32 4-engined heavy bomber, a type in production for the United States Army Air Corps. It has a top speed of over 300 m.p.h. and a range of about 3,000 miles. Photograph by courtesy of the Consolidated Aircraft Corporation, U.S.A.

Meccano November 1940

Fleet Buys Kinner Engines

Confident that the neutrality ban will be modified, Fleet Aircraft Ltd., of Ft. Erie, Canada, ordered $83,000 worth of aircraft engines from Kinner Motors, of Los Angeles. Fifty engines are contracted for and the order was accompanied by a letter of credit assuring payment even though the engines may have to be stored. This will be done until such time as Fleet may legally take delivery Kinner officials stated. Aero Digest 10/39

4-5-40

Union

Retired Officer Dies After Brief Illness

Lt. Comdr. Donald Marshall Carpenter, U.S.N., ret., died yesterday at naval hospital after a brief illness. He was production manager and member of the board at Consolidated Aircraft Corp.

Born in 1894, he was graduated from the Naval academy, Annapolis, in 1916. He retired from the navy in 1936. Services will be held at Christ Episcopal church, 926 C ave., Coronado, at 10:30 this morning, with Johnson-Saum Co. in charge of arrangements.

Comdr. Carpenter resided at 825 Margarita ave., Coronado. He was the husband of Clara M. Carpenter, and the father of Donald and Patrick Carpenter.

Union 4-4-40

Archbold Will Lecture Here Monday

"Round the World on Biological Exploration" will be the theme of Richard Archbold's special lecture in the auditorium, House of Hospitality, Monday night at 8.

Bringing color and sound motion pictures and a collection of slides, the noted explorer will tell of his New Guinea expedition and round-the-world flight on the "Guba," famous San Diego-built flying laboratory. A research associate of the American Museum of Natural History, Archbold made nation-wide news when he hopped from San Diego sometime ago in the "Guba" on her maiden flight. Since then, the young research scientist has contributed many specimens to museums and has published a book.

ADMISSION BY TICKET

The lecture, under auspices of Fellows of the San Diego Society of Natural History, was originally scheduled for the Natural History museum. Because of interest shown it will be held in an auditorium which seats about 600.

"Admission will be by ticket only," Clinton G. Abbott, museum director stated, "in order to assure all members admittance." Anyone having a membership card will be permitted to bring two friends. Persons not already members of the society who care to join in advance of the lecture will be welcomed.

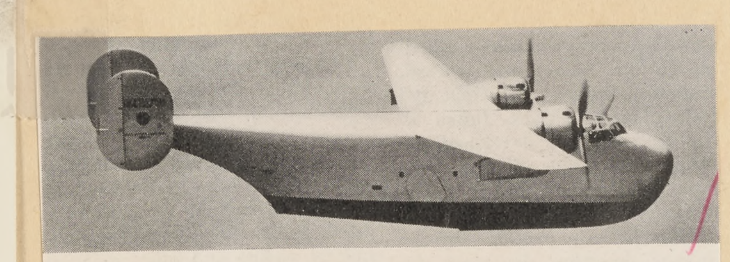
ATTAINMENTS RECOUNTED

Archbold, of New York and San Diego, resides at present at Tanque Verde ranch, Ariz. His south sea work interrupted by war, he has lately been engaged in ecological investigation, study of effects of desert conditions on mammal life.

Besides his biological research, Archbold was the first white man to discover an unknown tribal "nation" in Dutch New Guinea interior, and first to fly a "flying boat" over the Indian ocean. He surveyed and demonstrated the possibilities of a new air-route from Australia to England via Africa.

Western Flying Nov. 1939

When Consolidated Aircraft Corp. wanted two powerful new type aircraft engines in a hurry from the Pratt & Whitney Co. plant in East Hartford, the Army loaded them on its C-39 transport. Here's the crew after it landed in San Diego: Lieut. T. J. Schofield, Maj. E. R. McReynolds, Lieut. Glenn Holland, welcomed by E. N. Gott of Consolidated and W. G. Chamberlain of Pratt & Whitney.



The Wright Duplex Cyclone powered Consolidated flying boat Model 31 during one of its test flights over San Diego

Aero Digest - Aug. 1939

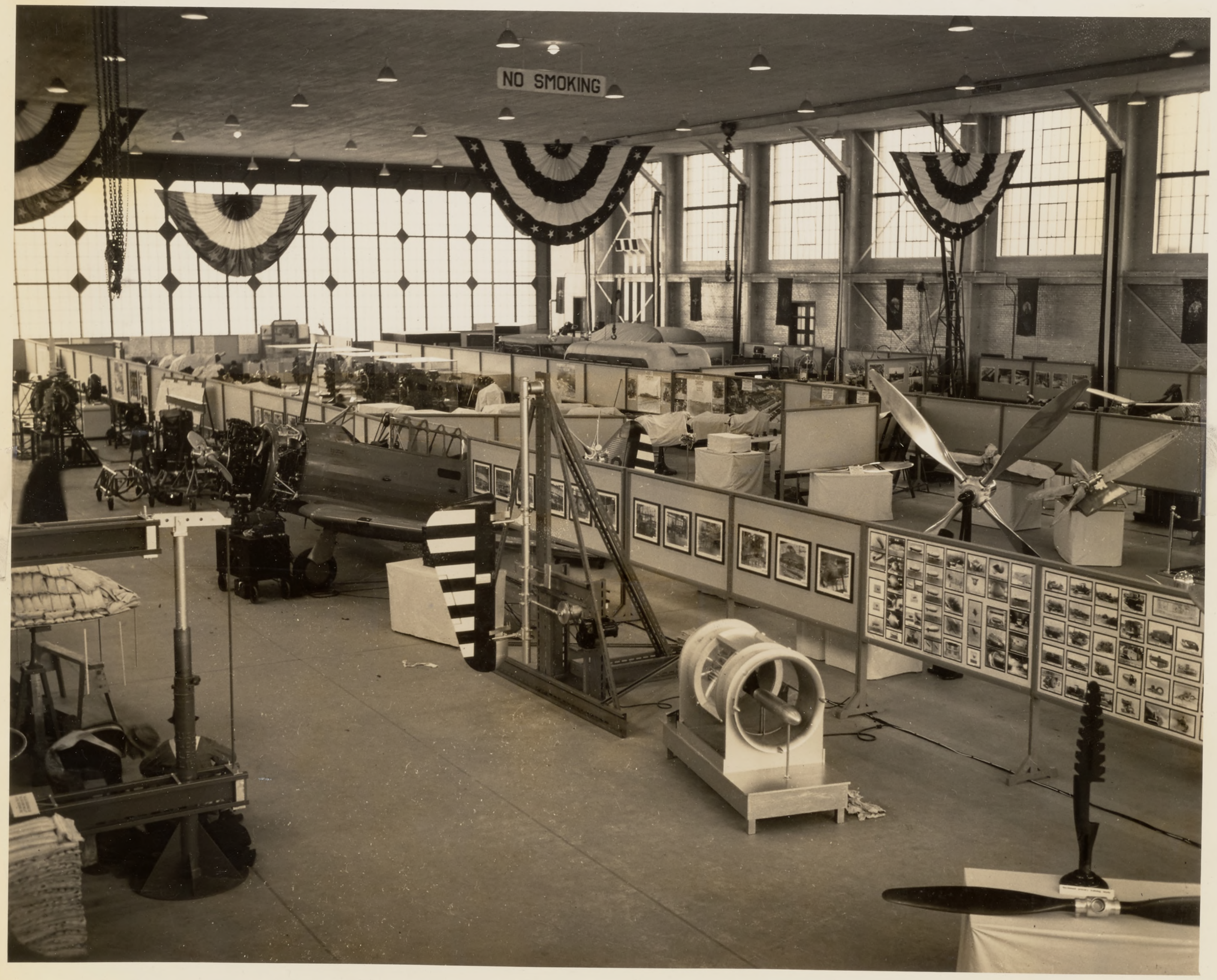
AVIATION MARCH '40

Consolidated Expands

Last December Consolidated Aircraft was sitting pretty, with a $20,000,000 backlog that promised to use the full capacity of the five-year old 25-acre plant at San Diego. Then, at one blow, the biggest single aircraft order ever placed by the government doubled Consolidated's backlog and threw a real production problem on their hands.

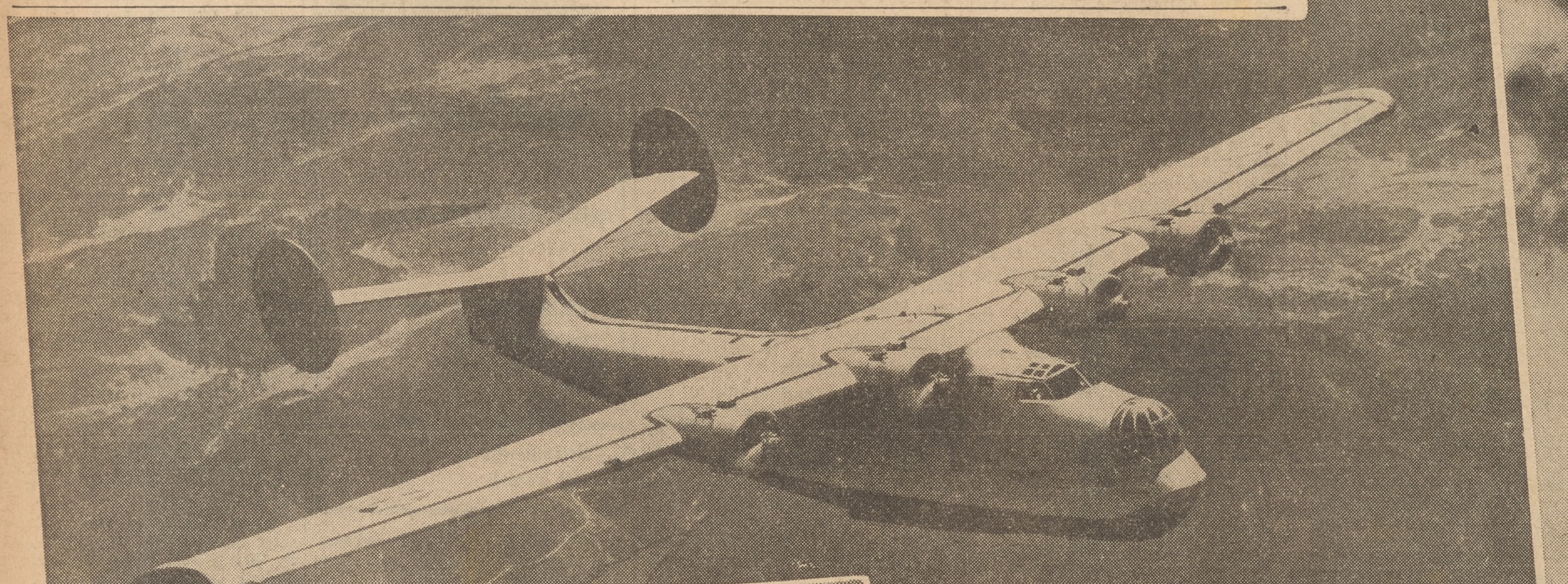
Now comes the announcement of an 87% increase in factory space to provide the needed capacity. An additional 64 acres have been leased or optioned, d 400,000 sq. ft. will be ed. New facilities will in- e final assembly, final finish, paint shop and wood mill, and experimental, maintenance, and office space. Extra assembly space is also to be provided by paving yard areas, since well-known California climate permits outdoor work most of the year.

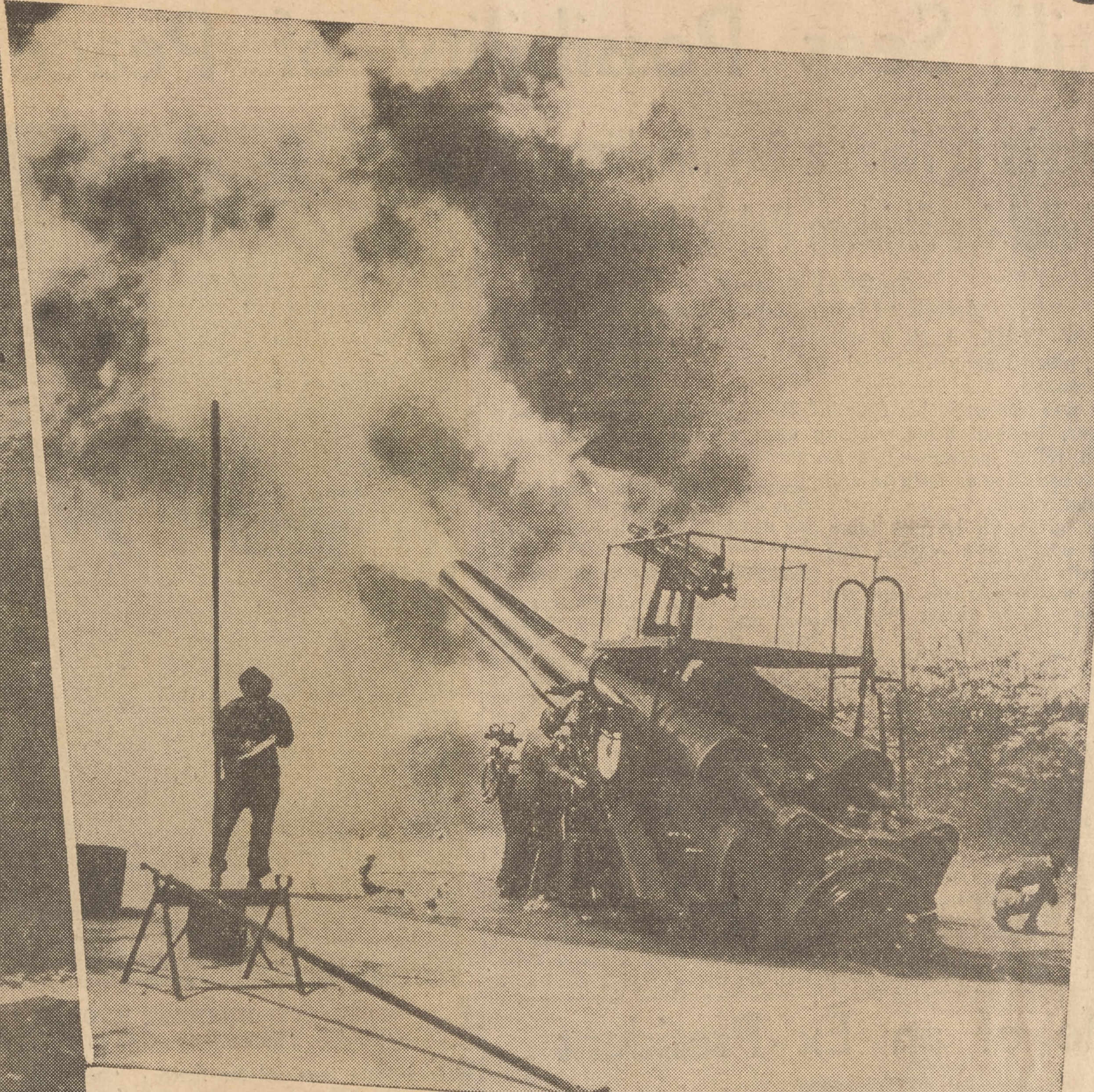
Under a closing agreement with the Treasury, part of the cost of expansion is to be charged against the government order.



Editorials • Books • Music • Art • Theaters
FEATURES-WORLD NEWS
The San Diego Union
SUNDAY MORNING, APRIL 7, 1940 PAGE ONE-C

CROSSROADS FORTRESS





Huge navy bombers, similar to the one pictured upper left, will play their part in Uncle Sam's war games now under way off Hawaii. (Official U. S. Navy photograph). Flaming gasses billow forth as the 16-inch, Barbette-mount, Hawaiian coast defense gun, upper right, speaks. (Associated Press photo).

These warships of the United States fleet are on their way to the Hawaiian islands to engage in the Pacific war games and in particular to solve "Fleet Problem 21." (Associated Press photo).

This unusual picture shows a 16-inch coast defense gun being fired somewhere in Hawaii as a warm-up for the Pacific war games this month. (Associated Press photo).

AVIATION, APRIL 1940

Consolidated Aircraft directors have decided not to make a dividend payment for the present, in order to retain company funds within the business and avoid issuance of additional stock. Unannounced foreign orders amounting to $7,000,000 were recently received for an export version of the "PBY" bomber used by the Navy. Backlog includes $20,000,000 in flying boats for the Navy, and $12,000,000 in four-engine bombers for the Air Corps.

AVIATION - MARCH '40

REPORT CARD

Of Air School

With thousands of new men needed for Southern California aircraft factories, the aviation schools of that section have been hard pressed to provide enough skilled men. Every school and factory has cooperated to make the expansion process as orderly as possible. At Lockheed an extensive employee training program is in full swing. In San Diego, where Consolidated Aircraft Corporation is currently doubling its factory facilities and both Solar and Ryan are hiring steadily, the vocational schools of the city have taken a hand in the training program, offering six-week courses designed to teach aircraft shop fundamentals to 2000 young men by July 1st. Ryan School of Aeronautics has expanded its course to include a six-week mechanic course, and has inaugurated a number of new training programs, including a course for parachute riggers.

Union
4/9/40.

TH

Archbold Thrills Audience With Flight Films

By CURTIS ZAHN

Bringing highlights of what you'd see on a 'round-the-world flight, Richard Archbold, flying scientific explorer, thrilled a capacity audience with a lecture and motion pictures last night in House of Hospitality, Balboa park.

Something of a streamlined travelog on the screen, Archbold's skillfully taken films, started—interestingly enough—at Lindbergh field, where the flying laboratory, Guba, took off.

275 LANGUAGES USED

In New Guinea, where the explorer contacted a heretofore unknown tribe, the natives were the least surprised of anybody.

"They seemed to take our airplane and guns as a matter of fact," Archbold stated, "but they were surprised at our inability to converse." On one island alone, he added, some 275 languages were spoken.

At another native village the exploring party had difficulty getting meat. Pigs were the only edible animals to be found, and they were highly prized—much more so than the money offered them, Archbold said.

"But they'd sell you anything," he added, "if you could find the right kind of sea-shells. The trouble was to find them."

PLANE HAD TROUBLES

Photographing tree-climbing kangaroos and wild orchids were just a few of the things the scientists found time for. They covered ground which previously had taken years. The plane had its difficulties, however. At Port Evans, they took on 15 gallons of gasoline and had to load it into five-gallon tins, rowing it out to the plane. This was made even more laborious by the fact that tides there averaged 30 feet.

In one inland trip, the Guba had to land and take off in an S-shaped slough little wider than its wingspread.

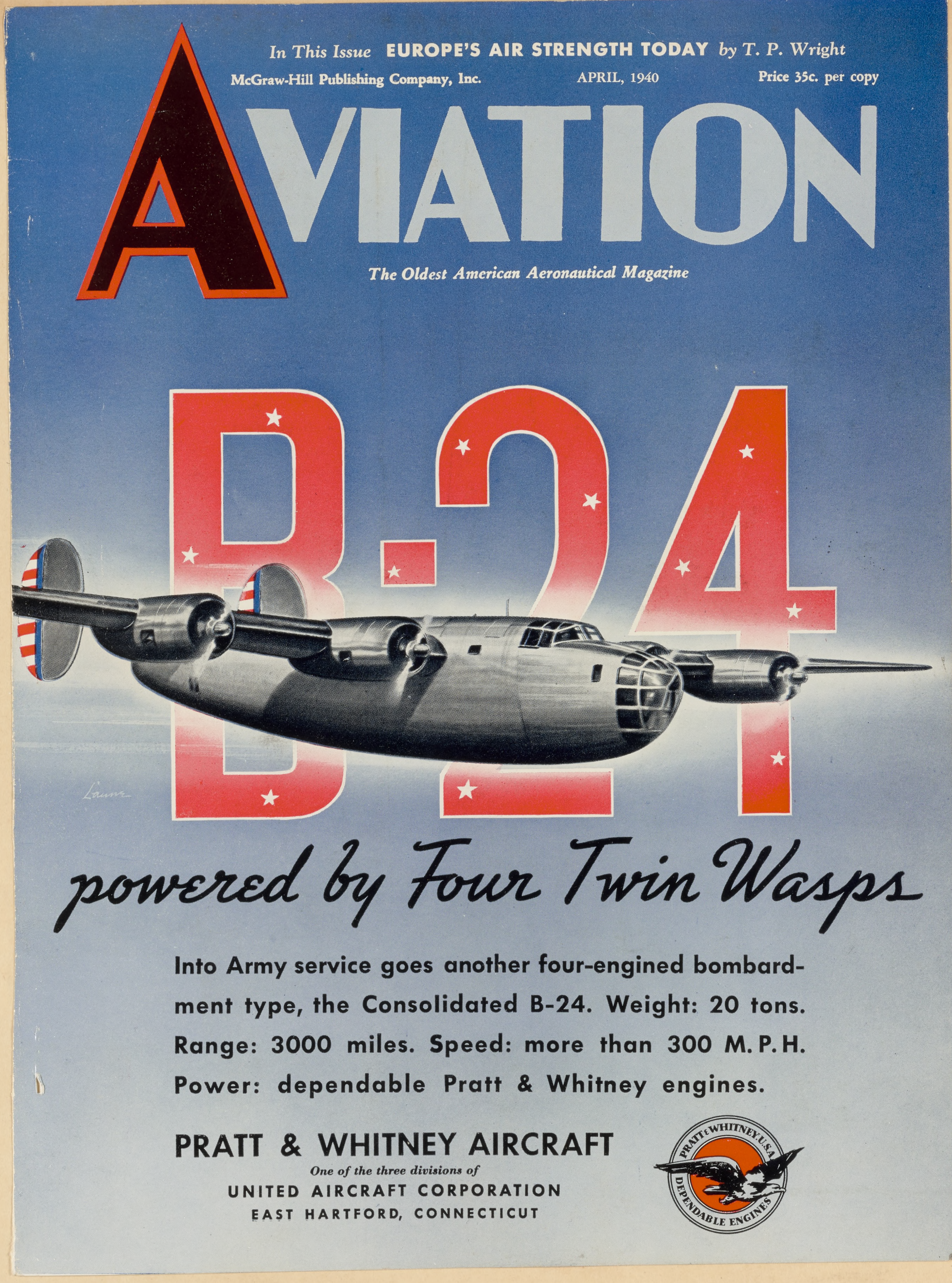
Leaving the Guineas, Archbold was asked to fly the Indian ocean as an experimental trip to map a new route. The trip, as is now known, was highly successful and practical.

YACHTS 150 YEARS OLD

In reviewing the native groups he'd contacted in various islands, Archbold stated that the Cocos islanders, numbering some 1400, were the happiest.

Of interest to yachtsmen were the close-ups of native sailing sloops. Built of solid teak on good lines, many of the craft were claimed to be 150 years old.

Archbold, who thrice has explored New Guinea, was introduced by J. D. Sefton, museum president. The lecture was sponsored by the San Diego Society of Natural History. A research associate of the American Society of Natural History, Archbold has cooperated substantially with the local museum and recently published his book, "New Guinea Expedition," at a local printing establishment.



In This Issue **EUROPE'S AIR STRENGTH TODAY** by T. P. Wright

McGraw-Hill Publishing Company, Inc. APRIL, 1940 Price 35c. per copy

AVIATION

The Oldest American Aeronautical Magazine

powered by Four Twin Wasps

Into Army service goes another four-engined bombardment type, the Consolidated B-24. Weight: 20 tons. Range: 3000 miles. Speed: more than 300 M.P.H. Power: dependable Pratt & Whitney engines.

PRATT & WHITNEY AIRCRAFT
One of the three divisions of
UNITED AIRCRAFT CORPORATION
EAST HARTFORD, CONNECTICUT

PRATT & WHITNEY U.S.A. DEPENDABLE ENGINES

AVIATION - March 1940

New Consolidated

An official Army Air Corps release covering the new Consolidated XB-24 four-engine landplane bomber gives the plane a gross weight of 40,000 lbs., wing span 110 ft., length 64 ft., over-all height 19 ft., and with accomodations for a crew of six to nine men, depending on mission.

Performance estimates include a top speed of more than 300 miles per hour, range of approximately 3,000 miles, and bomb load capacity of about four tons. The plane is powered by four Pratt & Whitney 18-cylinder twin-row engines of 1200 h.p. each, and is propelled by Hamilton Standard 3-blade hydromatic constant speed propellers of 12 ft. diameter.

The wing is of the Davis airfoil type, with high aspect ratio and high mid-wing mounting on the fuselage. Construction is all-metal throughout, of stressed-skin design, with fabric covered control surfaces. Landing gear is of tricycle type, retractable. Fowler type trailing edge flaps extend the length of the wing inboard of the ailerons. Large bomb doors open in the belly and generous hatches and turrets are provided in nose, top, sides and rear of the fuselage.

AVIATION - MARCH 40

High Wing Bomber

The Army's new Consolidated bombardment plane, XB-24, has just made its initial flight at Lindbergh Field, San Diego. It is powered with four Pratt & Whitney 18-cylinder twin-row radial engines rated at 1200 h.p. each. Propellers are Hamilton Standard three-blade hydromatic constant speed, 12 feet in diameter.

The XB-24 is a high-wing type, all metal construction, full cantilever high aspect ratio, with tractor nacelles mounted flush to the upper surface of the center section. Fowler type flaps extend inboard from the ailerons.

AVIATION - MARCH - 40

Consolidated Aircraft is expanding its plant 82% to take care of a record $43,000,000 backlog. In negotiation are said to be British and French orders which would bring the backlog up to around $50,000,000.

Among the aviation investment trust annual reports for 1939, National Aviation disclosed a net asset value of $17.27 a share, Air Investors $1.67 a common share, and Aviation Capital Inc. $40.02 a share.

American Aviation 1-1-40

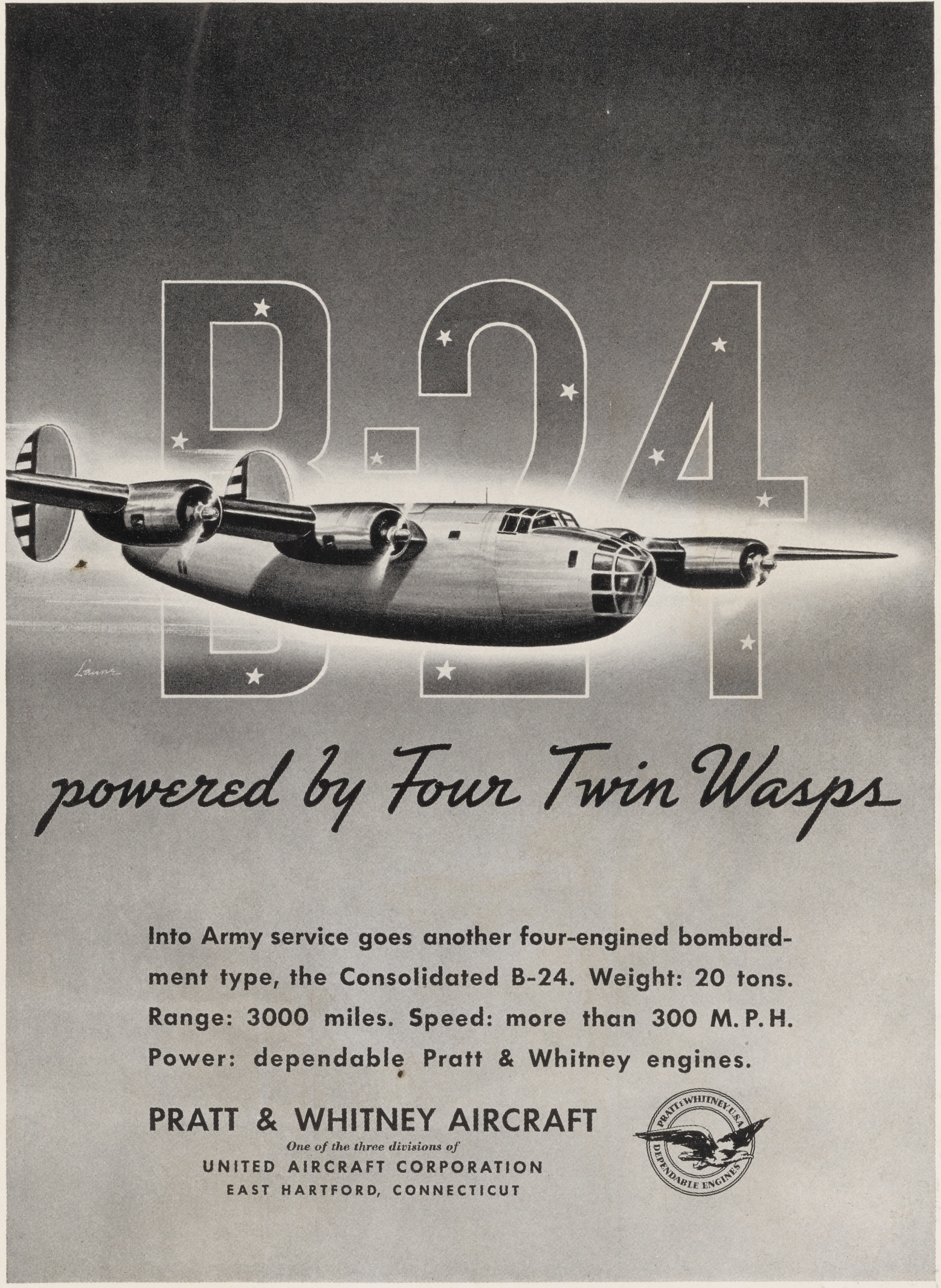
Consolidated Makes 1st Industry Closing Agreement Providing for Expansion Costs

First closing agreement negotiated by the Treasury Dept. with any aircraft manufacturer, and the second ever reached with any industrial firm, has been concluded with the Consolidated Aircraft Corp. of San Diego, it became known Dec. 20.

The agreement provides that for the period in which the company is engaged in a contract for the Navy Dept., Consolidated may charge off gainst federal taxes certain costs indent to performance of the conact. The company may charge as an ndirect factory expense the cost of tools used during that time and the depreciated cost, less salvage value, of certain buildings which must be demolished to fulfill the contract. This also may include the cost of demolition. Consolidated's plant expansion is understood to be about $2,000,000, an increase of 92% of floor area.

In general the agreement provides for proper deductions against taxes for expenses of plant expansions necessitated by contracts on national defense orders.

U.S. air Service April '40.


B-24
powered by Four Twin Wasps

Into Army service goes another four-engined bombardment type, the Consolidated B-24. Weight: 20 tons. Range: 3000 miles. Speed: more than 300 M.P.H. Power: dependable Pratt & Whitney engines.

PRATT & WHITNEY AIRCRAFT
One of the three divisions of
UNITED AIRCRAFT CORPORATION
EAST HARTFORD, CONNECTICUT

PRATT & WHITNEY U.S.A. DEPENDABLE ENGINES

NEW YORK TIMES
MAY 17 1940

50,000 Planes Possible in Year, Says Aeronautical Chamber Head

Colonel Jouett Asserts Plants Are Geared for Expansion, With 100,000 Workers and Related Industries Ready

By tripling the floor space of aircraft plants, doubling the area of aircraft engine factories, multiplying the present number of employes by three, and operating all plants on a full-shift basis, the aircraft industry of the United States can produce the 50,000 military planes President Roosevelt yesterday told Congress he hoped the nation could be geared to produce in a year, Colonel John H. Jouett, president of the Aeronautical Chamber of Commerce of America, stated last night.

"Fortunately, the entire industry is in the best possible position to undertake the expansion in an orderly manner," Colonel Jouett said. "Of our forty-five airplane plants, twenty-three are working on military orders. The rearmament program started last year, and quantity orders from the Allies during the last several months have developed our production capacity, and so changed manufacturing technique, that further expansion is relatively simple. In other words, we have had nearly a year's experience in expanding production." production."

Colonel Jouett said he could foresee no serious bottlenecks in materials, tools or employes to retard production.

"The bottlenecks that threatened increased production several months ago no longer exist," he continued. "The numerous related industries which must be depended upon to supply tools and materials have so arranged their facilities that there appears to be no danger of bottlenecks in any of the lines purveying to our manufacturers.

"The industry now has about 100,000 employes in the plane, engine and accessories plants. It has spent considerable money training new employes, and does not anticipate any great difficulty in securing all necessary labor over the period needed for expansion."

Procurement methods under a 50,000 plane output program would differ somewhat for those of normal times, however, Colonel Jouett asserted.

"It should be realized," he said, "that normal peacetime procedure in government procurement of aircraft equipment must be somewhat modified in order to speed up production. Certain departmental interpretations of existing laws probably will have to be changed in order to develop the subcontracting system to the fullest possible extent."

In aviation circles it was pointed out that all aircraft factories not now filling military orders for our own or foreign governments would probably take on a great deal of the subcontract work. It was also pointed out that in the production of so large a number of planes it was likely that greater speed would be attained than ever before. Plants would "tool-up" for a certain model of a plane and would then go into assembly-line production on it. This would mean a simplification of operations and long periods of output without changing dies or jigs.

Manufacturers Held Ready

Special to THE NEW YORK TIMES.

BURBANK, Calif., May 16—"If President Roosevelt wants to open the throttle for a 50,000-plane take-off, the American airplane industry is ready to go right now," Robert E. Gross, president of California's Lockheed Aircraft Corporation, said tonight.

"With the best supplies of raw materials in the world, with the greatest machine tool industry in existence, the job can be done if the industry gets the chance and the signal to go."

By The United Press.

SANTA MONICA, Calif, May 16—Donald W. Douglas, president of Douglas Aircraft expressed the belief today that American aircraft builders could meet President Roosevelt's demand for 50,000 war planes a year.

"I know the American aircraft manufacturers, functioning under a free democratic system in the American way and unhampered by politics and partisanship, can and will help the President and Congress meet the challenge to everything this nation holds dear," he said.

SAN DIEGO, Calif., May 16 (UP)—Production facilities of existing aircraft plants must be greatly enlarged if President Roosevelt's demand for 50,000 fighting planes is to be filled, Major Reuben H. Fleet, president of Consolidated Aircraft, said today.

"We must know ahead of time what orders might be expected in order to produce in any such emergency," he explained.

American Aviation

2-15-40

Consair Increasing Present Area 87% at Lindbergh Field

The building expansion now under way at Consolidated Aircraft Corp.'s plant, San Diego, Cal., will aggregate approximately 396,000 sq. ft., or an increase in the present area of 87%, company has announced. Largest single area to be roofed is the new final assembly building measuring 360 by 720 ft.

Prior to the expansion, Consair had under lease 24.7 acres on which the factory buildings are located, and an additional 7.6 acres under option. New leases and options now cover an area of 64 acres. This area is all located on Lindbergh Field.

American Aviation

News in Pictures

6/15/40

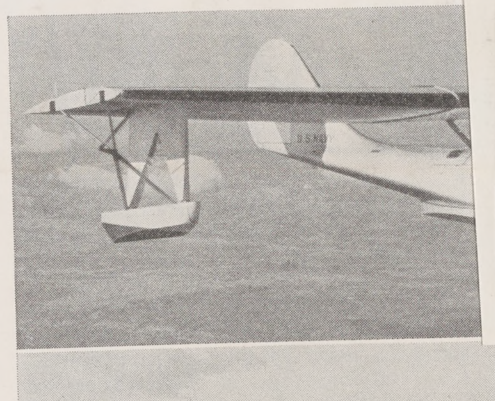
A dinner, honoring Richard Archbold, flying explorer and research associate of the American Museum of Natural History, and his crew of the Guba flying boat, was held recently in San Diego, Cal. Maj. Reuben H. Fleet, president of Consolidated Aircraft Corp., presented Archbold and his crew with a scroll from the NAA. Earl Prudden, president of the Aero Club of San Diego, presented him a gold trophy. Left to right: Maj. Fleet, Archbold, Prudden.

Fleet Elects Langford

Fleet Aircraft Ltd. directors were re-elected recently in Toronto with the exception of H. E. Langford, secretary, who was elected to replace J. B. Hay, resigned.

American Aviation 6-1-40

Nation



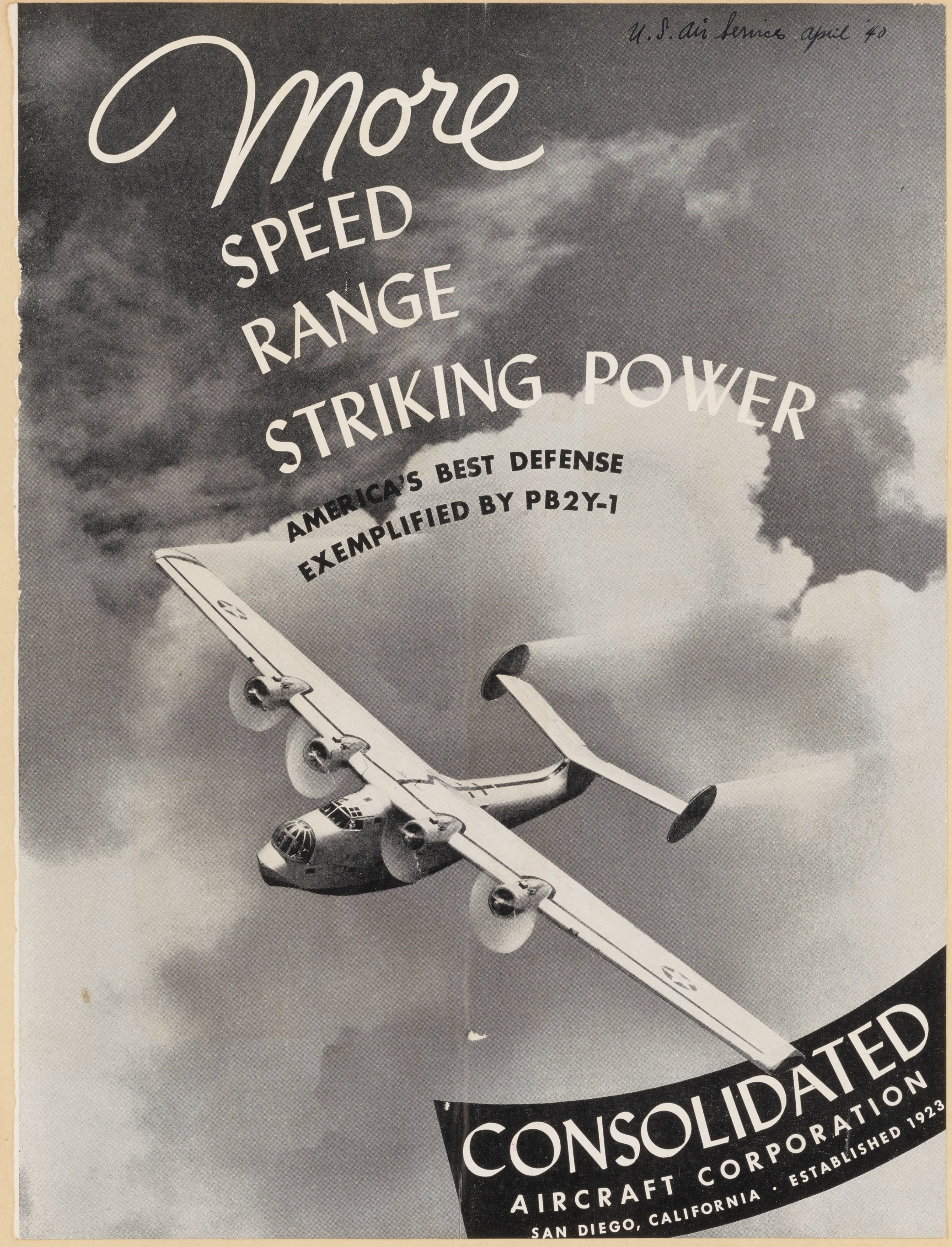
Aviation

Looking Forward

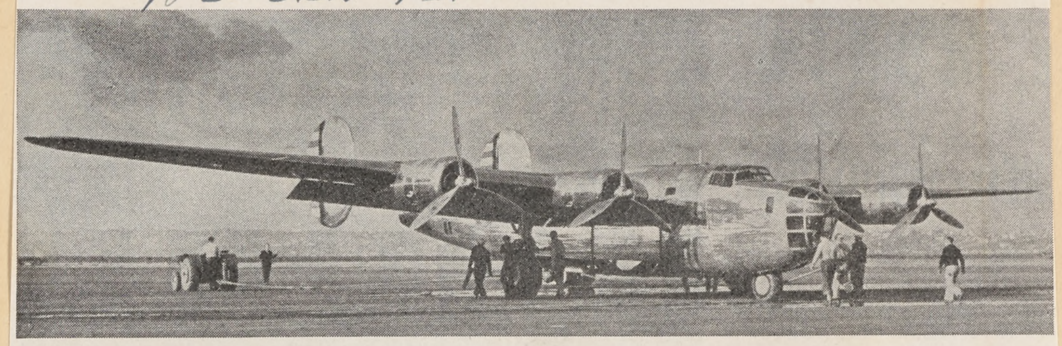
Robert H. Hinckley, chairman of the Civil Aeronautics Authority, makes the following predictions:

Two years ago, we had 17,700 licensed

U. S. Air Service april '40



WESTERN FLYING MARCH 1940



First officially released photograph of the Consolidated B-24 four-engined bomber built for the U. S. Army Air Corps. Note that the huge ship incorporates the new Davis "mystery" wing and tricycle landing gear.

DETAILS ON NEW CONSOLIDATED BOMBER RELEASED BY AIR CORPS

THE **U. S. Army Air Corps'** new bombardment airplane, technically known as the XB-24, recently made test flights at Lindbergh Field, San Diego, California.

Built by the **Consolidated Aircraft Corp.,** it is a four-motored bomber of high wing, all-metal construction. The wing is a full cantilever type of high aspect ratio with four tractor engine nacelles mounted flush to the upper surface of the center section. Fowler type flaps extend inboard of ailerons.

Power is furnished by four Pratt & Whitney 18-cylinder twin-row radial air-cooled engines rated at 1200 h.p. each. The propellers are Hamilton Standard three-bladed hydromatic constant speed types, 12 ft. in diameter.

The approximate gross weight of the airplane is 40,000 lb.; wing span, 110 ft.; length of fuselage, 64 ft.; and over-all height, 19 ft. Tactical requirements are for a crew of from six to nine persons, depending upon the mission to be performed.

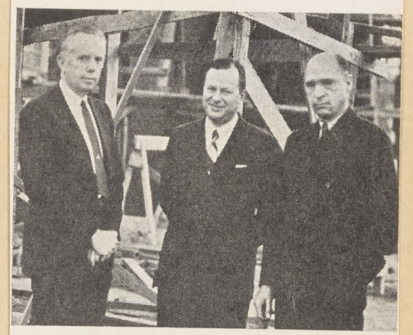
Control surfaces are fabric-covered and fully counterweighted. A full cantilever horizontal stabilizer has twin fins and rudders mounted at the tips. The all-metal stressed skin fuselage is equipped with hatches and windows in the nose, tail, turtledeck, back, and bottom. The landing gear is of tricycle type with single wheel forward. This retracts into the fuselage. The rear or main landing wheels retract into wing wells.

This airplane, from preliminary examinations, gives evidence of living up to the advancements in aerodynamic and performance characteristics predicted. These include a speed of over 300 miles per hour, a range of approximately 3000 miles, and a bomb carrying capacity of approximately four tons.

Amer. Aviation

r February 15, 1940

AITI Board



Executive board members of Aero Industries Technical Institute, Los Angeles (left to right), are John K. Northrop, president of Northrop Aircraft Inc.; Robert E. Gross, president of Lockheed Aircraft Corp., and Charles A. Van Dusen, vice president of Consolidated Aircraft Corp., after inspecting the institute's new building during its construction.

American Aviation 9/15/40

Consair Acquires Hall

Maj. Reuben H. Fleet, president of Consolidated Aircraft Corp. at San Diego, Cal., on Sept. 3 dedicated a new $2,500,000 addition to the company's plant and said that announcement of "vast future expansion was being withheld because of a Senate bill authorizing conscription of industry."

Maj. Fleet later announced acquisition by purchase of Hall-Aluminum Aircraft Corp. The latter company vacated its Bristol, Pa., site several weeks ago. There have been reports that Consolidated would build a plant at Dallas, Tex., using the Hall name, and it is believed Maj. Fleet's statement on Sept. 3 had reference to this proposal.

The new Consolidated facilities consist of a three-story building having dimensions of 260 by 720 ft.

Company has been contemplating further extensions at San Diego which would involve a cost of $800,000.

Consair's backlog is in excess of $120,000,000 and its record total of employes now stands at 9,485.

March 1940

CONSAIR STARTS EXPANSION WORK

CONSOLIDATED Aircraft Corp., San Diego, has embarked upon a factory expansion program which will increase the present area of the plant by 87 per cent at a cost of more than $2,000,000.

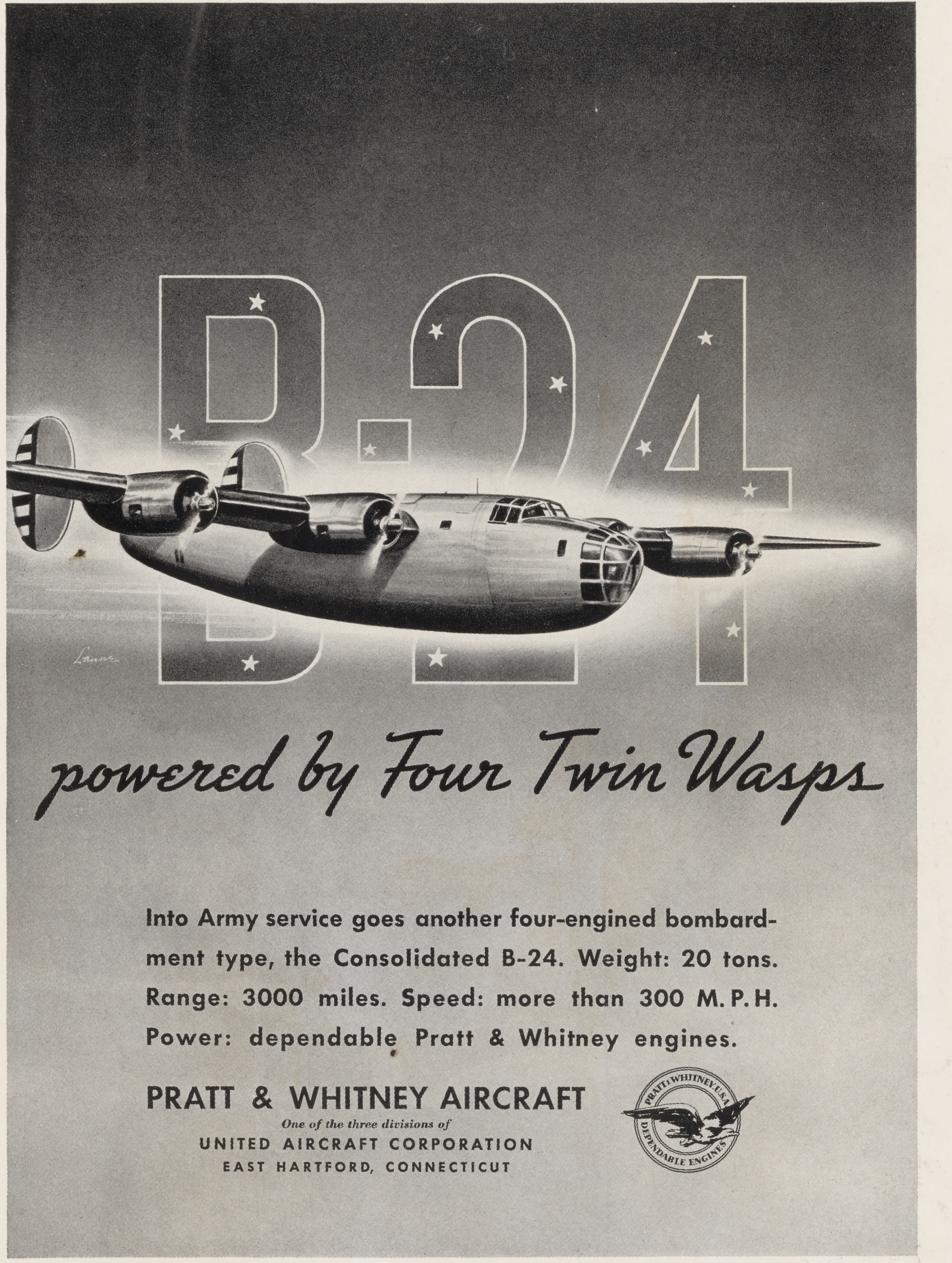
Seven new steel frame buildings will be erected at an expense of $1,200,000 and in excess of $800,000 will be expended for new production equipment. Bids have already been called for the construction work. By late 1940 Consolidated's factory will embrace 1,500,000 square feet and employ at least 7000 men on Army and Navy contracts which form the bulk of Consair's $43,000,000 backlog.

The original factory buildings are less than five years old. The large experimental building, the photo, physical and chemical laboratory, paint storage and tool buildings are just over three years old. Prior to the expansion program Consolidated had 24.7 acres of land on **Lindbergh Field** under lease and 7.6 acres under option. New leases and options now cover an area of 64 acres.

In addition to new buildings, all factory yard areas will be paved and used for outdoor assembly and maintenance areas.

Orders for which the plant is being enlarged are the Navy contract of $20,016,699 for long range patrol bombers and the Army Air Corps contract of $11,365,000 for a fleet of the new B-24 bombers.

U.S. air Service April '40.



B-24
powered by Four Twin Wasps

Into Army service goes another four-engined bombardment type, the Consolidated B-24. Weight: 20 tons. Range: 3000 miles. Speed: more than 300 M.P.H. Power: dependable Pratt & Whitney engines.

PRATT & WHITNEY AIRCRAFT
One of the three divisions of
UNITED AIRCRAFT CORPORATION
EAST HARTFORD, CONNECTICUT

NEW YORK TIMES
MAY 17 1940

50,000 Planes Possible in Year, Says Aeronautical Chamber Head

Colonel Jouett Asserts Plants Are Geared for Expansion, With 100,000 Workers and Related Industries Ready

By tripling the floor space of aircraft plants, doubling the area of aircraft engine factories, multiplying the present number of employes by three, and operating all plants on a full-shift basis, the aircraft industry of the United States can produce the 50,000 military planes President Roosevelt yesterday told Congress he hoped the nation could be geared to produce in a year, Colonel John H. Jouett, president of the Aeronautical Chamber of Commerce of America, stated last night.

"Fortunately, the entire industry is in the best possible position to undertake the expansion in an orderly manner," Colonel Jouett said. "Of our forty-five airplane plants, twenty-three are working on military orders. The rearmament program started last year, and quantity orders from the Allies during the last several months have developed our production capacity, and so changed manufacturing technique, that further expansion is relatively simple. In other words, we have had nearly a year's experience in expanding production." production."

Colonel Jouett said he could foresee no serious bottlenecks in materials, tools or employes to retard production.

"The bottlenecks that threatened increased production several months ago no longer exist," he continued. "The numerous related industries which must be depended upon to supply tools and materials have so arranged their facilities that there appears to be no danger of bottlenecks in any of the lines purveying to our manufacturers.

"The industry now has about 100,000 employes in the plane, engine and accessories plants. It has spent considerable money training new employes, and does not anticipate any great difficulty in securing all necessary labor over the period needed for expansion."

Procurement methods under a 50,000 plane output program would differ somewhat for those of normal times, however, Colonel Jouett asserted.

"It should be realized," he said, "that normal peacetime procedure in government procurement of aircraft equipment must be somewhat modified in order to speed up production. Certain departmental interpretations of existing laws probably will have to be changed in order to develop the subcontracting system to the fullest possible extent."

In aviation circles it was pointed out that all aircraft factories not now filling military orders for our own or foreign governments would probably take on a great deal of the subcontract work. It was also pointed out that in the production of so large a number of planes it was likely that greater speed would be attained than ever before. Plants would "tool-up" for a certain model of a plane and would then go into assembly-line production on it. This would mean a simplification of operations and long periods of output without changing dies or jigs.

Manufacturers Held Ready

Special to THE NEW YORK TIMES.

BURBANK, Calif., May 16—"If President Roosevelt wants to open the throttle for a 50,000-plane take-off, the American airplane industry is ready to go right now," Robert E. Gross, president of California's Lockheed Aircraft Corporation, said tonight.

"With the best supplies of raw materials in the world, with the greatest machine tool industry in existence, the job can be done if the industry gets the chance and the signal to go."

By The United Press.

SANTA MONICA, Calif, May 16—Donald W. Douglas, president of Douglas Aircraft expressed the belief today that American aircraft builders could meet President Roosevelt's demand for 50,000 war planes a year.

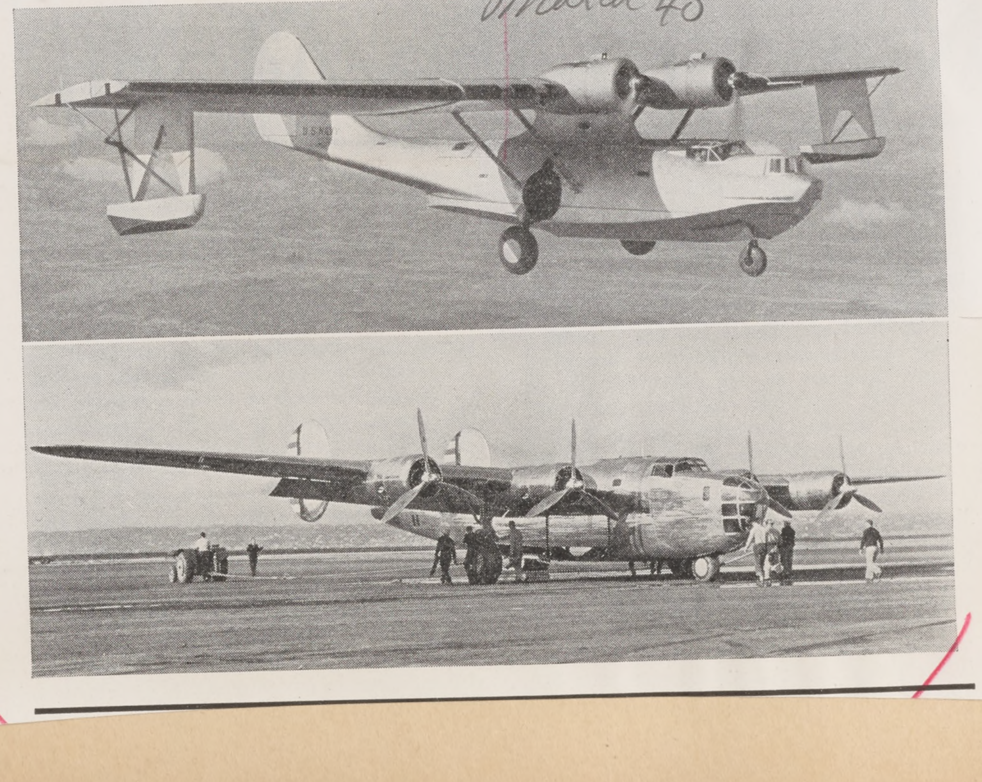
"I know the American aircraft manufacturers, functioning under a free democratic system in the American way and unhampered by politics and partisanship, can and will help the President and Congress meet the challenge to everything this nation holds dear," he said.

SAN DIEGO, Calif., May 16 (UP)—Production facilities of existing aircraft plants must be greatly enlarged if President Roosevelt's demand for 50,000 fighting planes is to be filled, Major Reuben H. Fleet, president of Consolidated Aircraft, said today.

"We must know ahead of time what orders might be expected in order to produce in any such emergency," he explained.

National Aeronautics
March '40

Official U. S. Navy Photograph



Mightiest and newest bombers of the American air services now undergoing tests. The top photo shows the XPBY-5A, a modification with wheeled landing gear of the PBY series of flying boats. Powered by two 850 h.p. Pratt and Whitney engines and carrying a crew of six or seven men, this ten-ton patrol bomber can fly more than 3,200 miles non-stop at 175 m.p.h. Below is the XB-24, 20-ton "flying fortress" which recently made better than 300 m.p.h. Its range is 3,000 miles, and it can carry along a crew of 8 or 9 and 4 tons of bombs. It is powered by 4 Pratt and Whitney, 18-cylinder, 1,200 horse power engines and is equipped with 3-blade, 12-foot, Hamilton Standard propellers. The Navy bomber has a wing spread of 104 feet and a fuselage of 65 feet. The Army monster has a wing spread of 110 feet and a 64-foot fuselage. Both ships were built by the Consolidated Aircraft Corporation, San Diego, Calif.

American Aviation
2-15-40

Consair Increasing Present Area 87% at Lindbergh Field

The building expansion now under way at Consolidated Aircraft Corp.'s plant, San Diego, Cal., will aggregate approximately 396,000 sq. ft., or an increase in the present area of 87%, company has announced. Largest single area to be roofed is the new final assembly building measuring 360 by 720 ft.

Prior to the expansion, Consair had under lease 24.7 acres on which the factory buildings are located, and an additional 7.6 acres under option. New leases and options now cover an area of 64 acres. This area is all located on Lindbergh Field.

American Aviation

News in Pictures

6/15/40

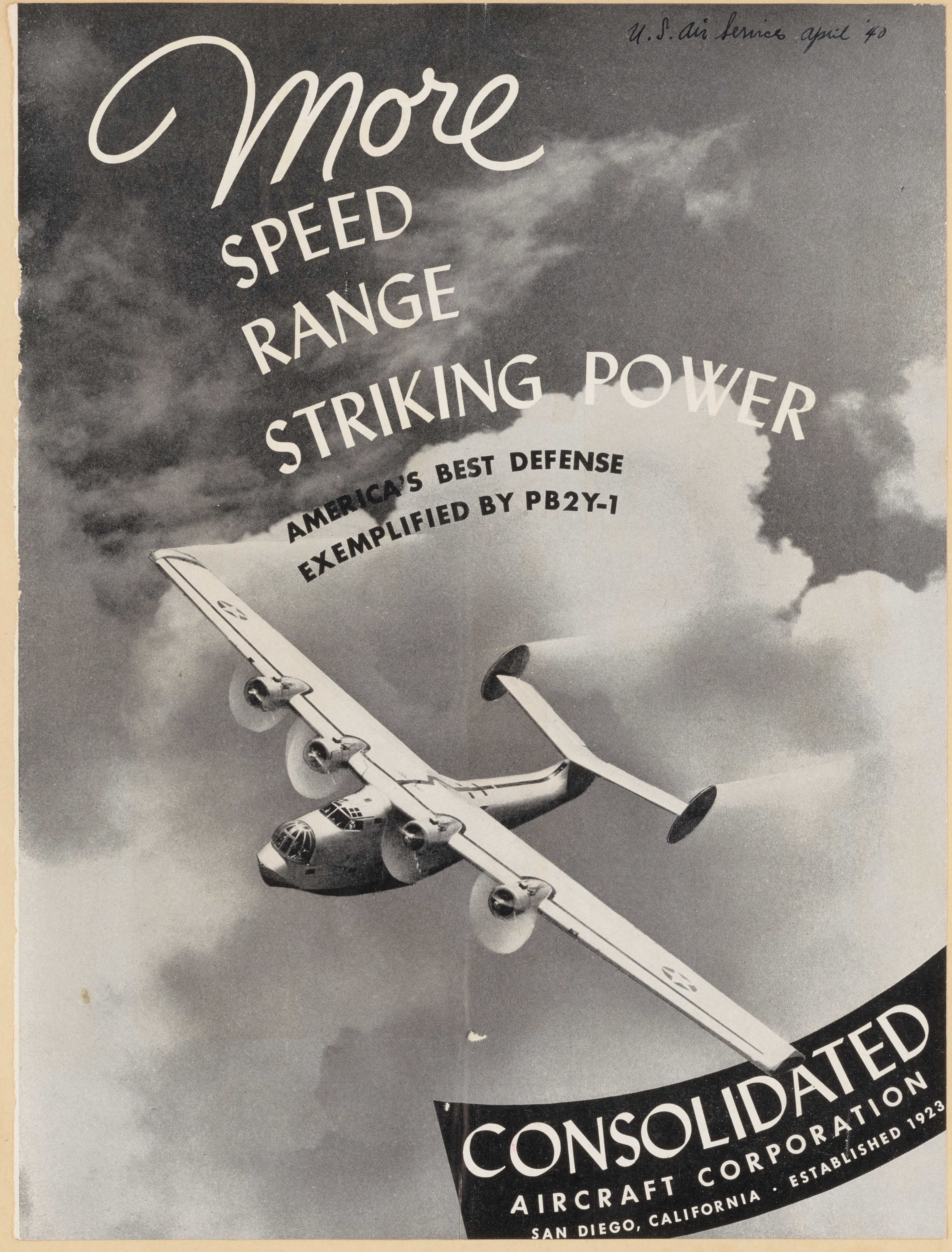
A dinner, honoring Richard Archbold, flying explorer and research associate of the American Museum of Natural History, and his crew of the Guba flying boat, was held recently in San Diego, Cal. Maj. Reuben H. Fleet, president of Consolidated Aircraft Corp., presented Archbold and his crew with a scroll from the NAA. Earl Prudden, president of the Aero Club of San Diego, presented him a gold trophy. Left to right: Maj. Fleet, Archbold, Prudden.

Fleet Elects Langford

Fleet Aircraft Ltd. directors were re-elected recently in Toronto with the exception of H. E. Langford, secretary, who was elected to replace J. B. Hay, resigned.

American Aviation 6-1-40

U.S. Air Service april '40

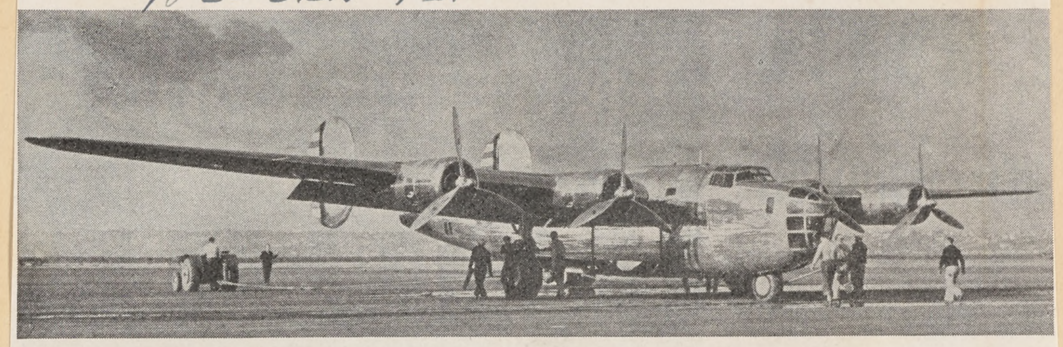


More
SPEED
RANGE
STRIKING POWER

AMERICA'S BEST DEFENSE
EXEMPLIFIED BY PB2Y-1

CONSOLIDATED
AIRCRAFT CORPORATION
SAN DIEGO, CALIFORNIA · ESTABLISHED 1923

WESTERN FLYING MARCH 1940



First officially released photograph of the Consolidated B-24 four-engined bomber built for the U. S. Army Air Corps. Note that the huge ship incorporates the new Davis "mystery" wing and tricycle landing gear.

DETAILS ON NEW CONSOLIDATED BOMBER RELEASED BY AIR CORPS

THE **U. S. Army Air Corps'** new bombardment airplane, technically known as the XB-24, recently made test flights at Lindbergh Field, San Diego, California.

Built by the **Consolidated Aircraft Corp.,** it is a four-motored bomber of high wing, all-metal construction. The wing is a full cantilever type of high aspect ratio with four tractor engine nacelles mounted flush to the upper surface of the center section. Fowler type flaps extend inboard of ailerons.

Power is furnished by four Pratt & Whitney 18-cylinder twin-row radial air-cooled engines rated at 1200 h.p. each. The propellers are Hamilton Standard three-bladed hydromatic constant speed types, 12 ft. in diameter.

The approximate gross weight of the airplane is 40,000 lb.; wing span, 110 ft.; length of fuselage, 64 ft.; and over-all height, 19 ft. Tactical requirements are for a crew of from six to nine persons, depending upon the mission to be performed.

Control surfaces are fabric-covered and fully counterweighted. A full cantilever horizontal stabilizer has twin fins and rudders mounted at the tips. The all-metal stressed skin fuselage is equipped with hatches and windows in the nose, tail, turtledeck, back, and bottom. The landing gear is of tricycle type with single wheel forward. This retracts into the fuselage. The rear or main landing wheels retract into wing wells.

This airplane, from preliminary examinations, gives evidence of living up to the advancements in aerodynamic and performance characteristics predicted. These include a speed of over 300 miles per hour, a range of approximately 3000 miles, and a bomb carrying capacity of approximately four tons.

March 1940

CONSAIR STARTS EXPANSION WORK

CONSOLIDATED Aircraft Corp., San Diego, has embarked upon a factory expansion program which will increase the present area of the plant by 87 per cent at a cost of more than $2,000,000.

Seven new steel frame buildings will be erected at an expense of $1,200,000 and in excess of $800,000 will be expended for new production equipment. Bids have already been called for the construction work. By late 1940 Consolidated's factory will embrace 1,500,000 square feet and employ at least 7000 men on Army and Navy contracts which form the bulk of Consair's $43,000,000 backlog.

The original factory buildings are less than five years old. The large experimental building, the photo, physical and chemical laboratory, paint storage and tool buildings are just over three years old. Prior to the expansion program Consolidated had 24.7 acres of land on **Lindbergh Field** under lease and 7.6 acres under option. New leases and options now cover an area of 64 acres.

In addition to new buildings, all factory yard areas will be paved and used for outdoor assembly and maintenance areas.

Orders for which the plant is being enlarged are the Navy contract of $20,016,699 for long range patrol bombers and the Army Air Corps contract of $11,365,000 for a fleet of the new B-24 bombers.

Amer. Aviation

r February 15, 1940

AITI Board

Executive board members of Aero Industries Technical Institute, Los Angeles (left to right), are John K. Northrop, president of Northrop Aircraft Inc.; Robert E. Gross, president of Lockheed Aircraft Corp., and Charles A. Van Dusen, vice president of Consolidated Aircraft Corp., after inspecting the institute's new building during its construction.

American Aviation 9/15/40

Consair Acquires Hall

Maj. Reuben H. Fleet, president of Consolidated Aircraft Corp. at San Diego, Cal., on Sept. 3 dedicated a new $2,500,000 addition to the company's plant and said that announcement of "vast future expansion was being withheld because of a Senate bill authorizing conscription of industry."

Maj. Fleet later announced acquisition by purchase of Hall-Aluminum Aircraft Corp. The latter company vacated its Bristol, Pa., site several weeks ago. There have been reports that Consolidated would build a plant at Dallas, Tex., using the Hall name, and it is believed Maj. Fleet's statement on Sept. 3 had reference to this proposal.

The new Consolidated facilities consist of a three-story building having dimensions of 260 by 720 ft.

Company has been contemplating further extensions at San Diego which would involve a cost of $800,000.

Consair's backlog is in excess of $120,000,000 and its record total of employes now stands at 9,485.

THE GOODYEAR NEWS, *April, 1940* CIRCULATION apprx 50,000 Copies.

AERONAUTICS

AMPHIBIAN: *Land and Ocean Abilities Extend Ship's Range*

Equipped to rise from or alight on either land or water, Consolidated Aircraft Corporation's recent contribution to aeronautical progress, U. S. Navy plane XPBY-5A, is rated largest amphibian plane in the world.

The ship is a twin-engined flying boat to which has been added the amphibian feature, so that it can operate from land or sea, to land or water bases in remote localities, thus opening wider fields of utility.

Landing gear is tricycle type, single wheel forward and two aft, all fully retractable. Side wheel and supporting mechanism, complete with oleo shock struts, retract into wells in the side of the hull. Nose wheel in the bow is completely closed over in the retracted position by automatically operated hatches, so that no resistance to planing is encountered. All three wheels are operated by a central hydraulic power drive.

Flight testing with the gear in all positions and in combination with the retractable wing tip floats failed to disclose any adverse effects. Advantages of the landing gear, aside from greatly extending the scope of utility, are many: for rough water taxiing, the extended gear serves as a sea anchor, greatly assisting in control in open water, and in making an approach for mooring or ramp in an adverse wind. Also, more engine power may be applied for short turns without undue acceleration. Turns on the water are achieved with far less skidding and the danger of scraping the keel on the ramp is eliminated.

There is no need for a beaching crew, because the ship can climb a ramp or beach under its own power, descending in like manner, completely controlled by brakes. Side wheels are above water when the ship rises on the step, in making a take-off, and automatic means have been provided to eject all water in the closed bow-wheel hatch before the plane is in the air, so that flying trim is unaffected.

U.S.
GUA
U.S. NAVY

". . . opening wider fields of utility . . ." *Official U. S. Navy photo.*

Contributing to smooth landings of the plane is its Goodyear multiple disc brake equipment.

FASTEST: *New Waco Commercial Rated Tops in Its Power Class*

Considered one of the fastest commercial ships in its power class, Waco's trim, new Model E has demonstrated its ability, since records show it has a maximum speed at sea level of 185 MPH., when powered with a Jacobs L-6 motor; 200 MPH. with Pratt & Whitney's SB Wasp Jr. and 204 with a Wright R 975 E-3 job.

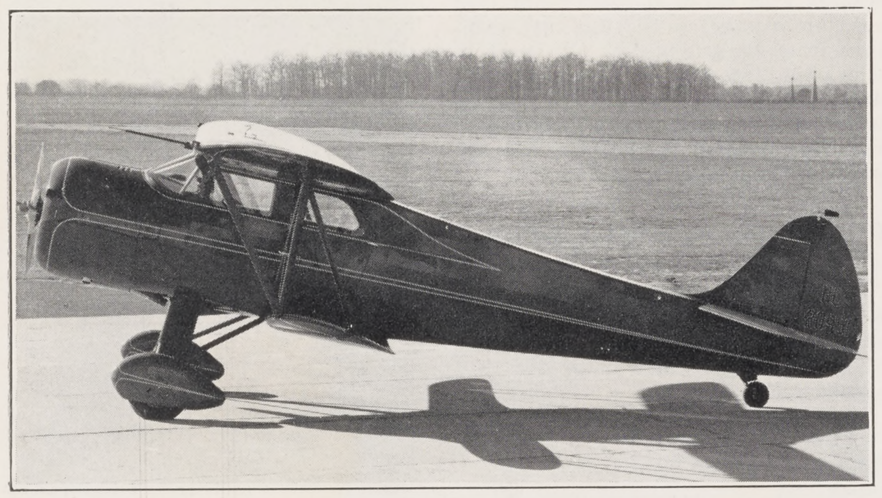
Optimum altitude cruising speed, points out Southern Flight, is 177 MPH. with the Jacobs; 195 with the Wasp and 200 with the Wright, while service ceiling with the three motors is 18,000, 23,500 and 24,000 feet, respectively.

New and interesting is the fact that the ship's wings are of plywood, latest development of Waco, chosen because of its declared higher degree of elasticity, plus non-warping factors. Engineers rate its ability high to absorb excessive gust loads without permanent set, plus a greater strength weight ratio. Wing lightness and ease of repairing are also points to be considered, technicians say.

Carrying capacity of the ship is four to five passengers and seating is well-balanced at no inconvenience to any occupant. Strong semblance to motor car type design is plainly evident, there is better visibility in a new, rounded windshield, and improved instrument panel places all dials and the radio directly in front of the pilot, with air temperature instruments located on the panel's right.

Engine refinements are a new type mounting termed "cushioned power," should reduce transmission of engine vibration to a minimum. Desired temperatures are maintained by means of a ventilator, controllable in flight.

Included in the standard equipment of the new Waco are: electric starter, generator, navigation lights, retractable landing lights, hydraulic brakes and parking brakes. Tires and tubes, Goodyear intermediate type, hydraulic brakes and tail wheel equipment, Goodyear.



". . . capacity of the ship, four to five . . ."

RANDOM

PHILOSOPHICAL: Tacked on the walls of the salesroom of The Newsome-Gibson Co., Goodyear flooring dealers in far-off Lubbock, Texas, is the following quotation from John Ruskin, which expresses a lot of truth, whether applied to flooring, tires or anything else the public buys.

"When you buy for price, these days, you can never be sure.

"It's unwise to pay too much, but it's worse to pay too little.

"When you pay too much, you lose a little money, that is all.

"But when you pay too little, you sometimes lose everything, because the thing that you bought was incapable of doing the thing it was bought to do.

"The common law of business balance prohibits paying a little and getting a lot. It can't be done.

"If you deal with the lowest bidder, it is well to add something for the risk you run. And if you do that, you will have enough to pay for something better."

American Aviation 4/15/40

Consair Engineer

J. M. Gwinn Jr.

Is now production engineer of Consolidated Aircraft Corp. at San Diego, Cal., having resigned recently as chief project engineer of Bell Aircraft Corp.

SUBLETTING DISCUSSED

Lockheed and Douglas, Anticipating Huge Orders, Confer on a 'Farm Out' Policy

Los Angeles, Apr. 4—In anticipation of huge orders (possibly as much as $200,000,000) from France and Britain for bombardment and pursuit aircraft, Douglas Aircraft Co. Inc. and Lockheed Aircraft Corp., it was learned, have been conferring with other west coast manufacturers regarding a "farm out" policy for the gigantic contracts.

To preclude added design work and save weeks in engineering, all manufacturing information and assistance would be exchanged. Should Douglas get the Allied order for as many as 850 twin-engined attack-bombers, Boeing and Consolidated are expected to receive a possible 25% apiece of the sublet contract. Lockheed, which may receive an order for as many as 1,200 P-38 twin-engined interceptor pursuit ships, has been discussing a similar policy with Vultee Aircraft Inc.

4/15-40
American Aviation

San Diegoans

Two aircraft industry leaders take time out to be "shot" by an AMERICAN AVIATION photographer. On the left is Edmund T. Wilson, president of Solar Aircraft Corp., San Diego, and on the right is Ed Gott, vice-president of Consolidated Aircraft Corp. The two companies are neighbors at San Diego's expansive Lindbergh Field. Both are doing capacity business.

American Aviation
1-1-40

Union 4/14/40

Aero Engineers To Meet Here

Aircraft engineers from all parts of the southland are expected to attend the Society of Automotive Engineers' meeting at the San Diego club Friday evening.

Walter Hite

Walter Hite, Timm Aircraft Co. chief engineer, will speak on "Plastics in Aircraft Construction."

K. M. Jackson, chief of Consolidated's structural test department, will talk on "New Materials in Aircraft and Their Testing."

Ellis W. Templin, general chairman for the southern California section, Society of Automotive Engineers, will preside. The meeting was arranged by I. M. Laddon, Consolidated Aircraft Corp. chief engineer.

4/12/40 Tribune.

CONSAIR IN LINE FOR BIG ALLIED ORDERS, N. Y. VIEW

With Consolidated Aircraft Corp.'s plant expansion well underway, rumor were current today the firm is likely to be favored with larger orders of allied patrol bombers. The firm, according to reports from New York, recently was named as one of eight major American aircraft companies which "would get the business" of the allies provided it was able to produce the planes.

Conferences with British and French missions in the east now are reported being held by I. M. Laddon, Consair vice president.

Doubling Backlog

The company's backlog of approximately $50,000,000 is expected to be doubled as a result of new orders, from foreign nations and the American government. Personnel at the plant, now approximately 5000, is being increased daily.

Largest new unit in the Consolidated plant expansion program will be a final assembly building, 360 by 720 feet, adjoining the plant to the north. An addition to the experimental building, at the south of the main plant, is nearing completion.

Union 4/17/40

Allies About to Sign U.S. Plane Orders

NEW YORK, April 16 (A.P.)—The New York Times says contracts for the first large-scale orders of American warplanes by England and France since the outbreak of the war probably will be signed before the end of the week.

The Anglo-French purchasing mission in this country, adds the newspaper, is expected to place immediate orders for about 4600 bombers, flying boats and pursuit planes which have been released for export by the federal government.

A spokesman for the mission was quoted that now that an agreement as to prices has been reached, the mission could open conferences with manufacturers to learn the number of planes it could expect to receive monthly.

The Times says the planes in which the mission has shown most interest are said to be bombers and combat trainers made by North American Aviation Co. of Inglewood, Calif.; an improved version of the Lockheed-Hudson bomber, built in Burbank, Calif.; the new Martin F-4, built in Baltimore; the Douglas DB-7 bomber built in Santa Monica, Calif.; long-range bombers and flying boats of the Consolidated Aircraft Corp., San Diego; and the Vought-Sikorsky dive bomber made in Bridgeport, Conn.

Navy Bombers In Patrol of Passage

Trib. 4/11/40

Navy patrol planes are maintaining close watch on ships passing through the Windward passage in the Carribean, and strict military regulations are in effect at the Panama canal, said Capt. F. H. Roberts, master of the American-Hawaiian freighter Ohioan, which sailed north from San Diego late yesterday after discharging cargo from the east coast here. Roberts said twin-motored bombers in the Carribean closely scrutinize the superstructure of ships going through the passage to see that no attempts are made to change the vessel's identity.

A perfect view of the annular eclipse of the sun was obtained by those aboard the Ohioan last Sunday, Roberts reported. He said skies were clear, and that as the sun began to be obscured the temperature dropped three degrees.

Union 4/19/40

Consair Signs Year's Contract With Union

Retroactive to April 15 and affecting 4000 employes and all other workers who may be added to the payroll on an hourly paid basis in next 12 months, a contract just has been signed between the Consolidated Aircraft Corp. and the International Association of Machinists, Aircraft lodge 1125.

C. L. Bentley, representing the grand lodge of the association, said the agreement provides for a 40-hour week, time-and-a-half and double time for overtime, vacation with pay for one week for one year's service or more.

DIFFERENTIALS FIXED

Bentley said the contract further provides for five-cent differentials for regular Saturday and Sunday employes as well as all night employes and a minimum five-cent differential for lead men over the highest rate paid the men they supervise. Placed in effect is the maintenance of rates of pay in departmental transfers, when the work is similar.

"The most important provision of the contract," Bentley said, "is the setting up of a wage board. This consists of three men representing Aircraft Lodge 1125 and three men representing the management. This board will review the wage rates of all hourly paid employes every four months so that adjustments in wages may be made to meet increased costs of living and in recognition of experience and skill acquired by employes, as well as to adjust any inequalities of rates now in effect."

FOR ONE YEAR

The agreement is for one year, and thereafter subject to 15-day written notice by either party. Participating in the negotiations were Maj. R. H. Fleet, Consolidated president, who was assisted by James L. Kelly and W. A. Clark; J. B. Waskey, L. A. Perry and W. R. Davis, representing Aircraft Lodge 1125, and Bentley, representing the grand lodge.

Consolidated will become one of the largest aircraft plants in the world with completion of the present expansion program. Officials say the present personnel will be expanded to 7000 by mid-June with possibility that additional thousands will be employed during the late summer and fall.

Union 4/[illegible]/40

Allies Contract For 1500 Planes

WASHINGTON, April 18 (A.P.)—Great Britain and France contracted tentatively today to purchase more than 1500 speedy American warplanes expected to cost at least $120,000,000.

Reports of large-scale buying were confirmed by Arthur B. Purvis, head of the Anglo-French purchasing mission, who said "huge quantities" were involved. Although he mentioned no figures, aviation experts in close touch with the negotiations said at least 1500 planes were covered by the tentative contracts.

FIRST OF 4600 ORDER

Described as probably the largest such purchases on record they are the first of a series of projected orders for some 4600 aircraft of the latest type developed for the U. S. army and navy.

The initial contracts were for Curtiss fighting planes and for Douglas attack bombers, which congress has been told were superior to any that have seen action thus far in the European war.

Purvis also said the Allies were about to sign contracts in New York for an unidentified third type.

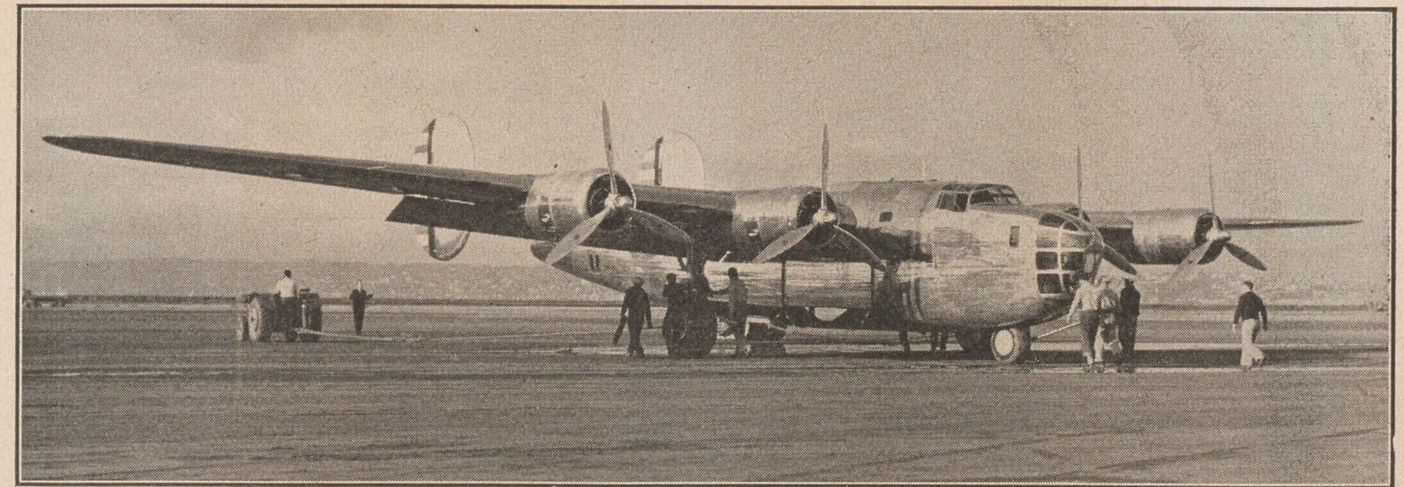
The Allied chairman indicated after a conference at the treasury with Secretary Morgenthau that large orders for at least two other models were imminent. Aside from the Curtiss and Douglas, which he said were signed in New York, he mentioned a Lockheed P-38 two-motor pursuit plane, a Bell single motor P-49 pursuit craft and a Lockheed-Hudson light bomber as figuring in current negotiations.

FIRST DELIVERY IN FALL

The first contracts conformed to a revised policy by which the war and navy departments agreed to release their most advanced models for export sale and delay some of their own deliveries in return for various concessions by the foreign buyers.

Airmen estimated that deliveries of the first of the planes ordered could not be expected before fall. They thought it significant that hundreds of pursuit planes were ordered at the outset, since these are designed to cope with bombing raids.

, Published: LONDON, ENG.



The new XB-24 heavy bomber for the United States Army Air Corps being towed on to Lindbergh Field aerodrome, San Diego. It was built by the Consolidated Aircraft Corporation, U.S.A., to whom we are indebted for this photograph.

Air News

Latest American Heavy Bomber

The latest type of heavy bomber for the United States Army Air Corps is shown in the fine photograph at the top of this page. This machine has been built by the Consolidated Aircraft Corporation, of California, U.S.A., and recently made its first flight at Lindbergh Field, San Diego.

It is technically known as the XB-24, and is a high wing all-metal monoplane with a span of 110 ft. and a length of 64 ft. The stressed skin fuselage has hatches and windows in the nose, tail, back and bottom. Tricycle landing gear is fitted, with a single wheel forward that retracts into the fuselage, and two rear or main wheels that withdraw into wells in the wings.

Each of the four Pratt and Whitney 1,200 h.p. air cooled engines drives a constant-speed airscrew 12 ft. in diameter. The calculated top speed of this formidable bomber is over 300 m.p.h., and sufficient fuel will be carried to give a range of about 3,000 miles. The maximum bomb load will be about three tons. A crew of six to nine men will be carried, depending upon the mission to be performed.

American Rivalry on Transatlantic Air Routes

American Export Airlines have ordered three triple-engined Sikorsky flying boats for their proposed transatlantic air service. Each boat will be equipped to carry 16 passengers and a crew of 11. The company recently applied to the Civil Aeronautics Authority for licenses to operate air services between the United States and Marseilles by both the northern route, which is by way of Botwood, Newfoundland, and Foynes, in Eire, and by the southern one, via the Azores, Lisbon and Biscarosse. Permission for a service to Rome by way of Lisbon and Barcelona also was asked for. Last year the company carried out a series of transatlantic survey flights with a Consolidated 28 flying boat bought for the purpose.

At present Pan American Airways are the only company licensed by the C.A.A. to operate American transatlantic air services. They are reported to be planning to make their service to Lisbon a daily one within a few months.

Truly "Empire"

Almost every R.A.F. flying boat that goes on ocean patrol is an "Empire" boat in the fullest sense of the word. These large aircraft are the military counterparts of the Empire flying boats of civil aviation, and their pilots and crews come from all parts of the Empire.

The captain of one flying boat wears the dark blue uniform of the Royal Australian Air Force, and his second pilot is a New Zealander. The crew includes Englishmen, Scots and Welshmen and one other Australian. In another flying boat the captain is an Englishman, who flies with Scots, Welsh, and Canadians; a third "Sunderland" has a Canadian captain, and his companions are Welsh and English.

The veteran of one Squadron is a South African, who as second pilot has a young Yorkshireman from Doncaster. Another member of the crew, a fitter, comes of a prominent Yorkshire family from whose grounds the young Doncaster officer says he was often chased as a boy.

At one time it was hoped to get all-English, all-Scots, Irish, Welsh, or Canadian flying boats, but the reshuffling caused by expansion has made this impossible. There are already all-Australian flying boats, and there will be more all-Dominion boats when pilots and crews begin to arrive under the Empire training scheme.

Death of a Fine Imperial Airways Pilot

Capt. Frederick Dismore, of Imperial Airways, who died suddenly at Bristol on 17th February last, was justly proud of the fact that although he had flown well over a million miles he had never lost the life of a single passenger. He held a pilot's certificate for 27 years. During the last war he served in the R.F.C. and R.A.F. Afterward he was a pilot for three years with Handley Page Transport, one of the four pioneer air transport firms out of which Imperial Airways was formed in 1924.

Capt. Dismore was the first Imperial Airways pilot to complete 1,000,000 miles of flying, and by the time he celebrated his silver jubilee as a pilot, in August 1938, he had flown 1,250,000 miles in 11,600 flying hours, and had flown across the English Channel at least 4,600 times.

Britannia Trophy Award

The Britannia Trophy is awarded annually by the Royal Aero Club for what is considered to be the "most meritorious performance in the air during the year." The Club announced recently that the Trophy in respect of 1939 has been awarded to Mr. Alex. Henshaw for his record London–Capetown–London flight made in February of that year. On that occasion Henshaw took off from Gravesend aerodrome in his Percival "Gull" light monoplane, and 39 hr. 25 min. later he landed at Wingfield aerodrome, Capetown, having flown non-stop at an average speed of 152 m.p.h. The return flight was almost as good, and was accomplished in 39 hr. 36 min., at an average speed of 151 m.p.h.

Henshaw's success was a triple one, as in addition to setting up new records for solo flights in each direction, he surpassed by 30½ hr. the record for a "there and back" flight set up by Flying Officer A. E. Clouston and Mrs. Kirby-Green on the 14th-20th November 1937. Flying Officer Clouston used his D.H. "Comet" monoplane.

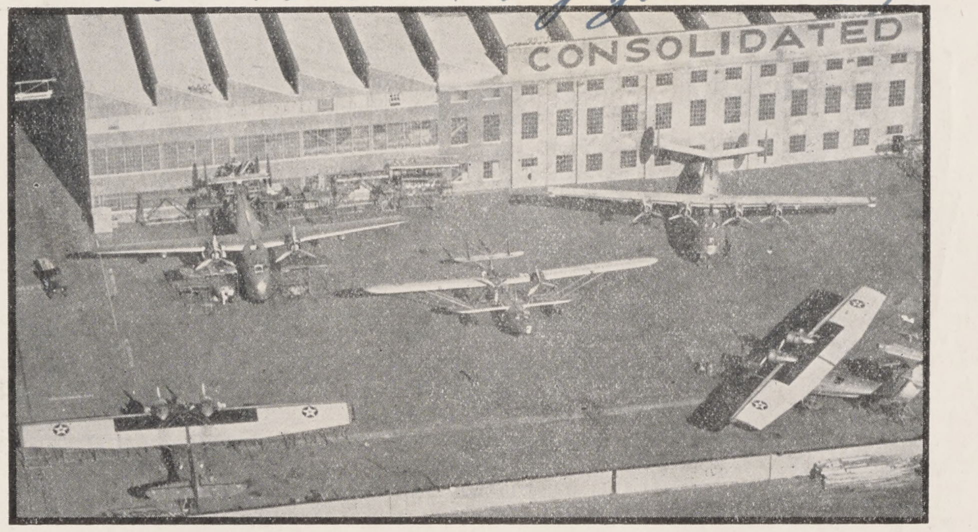
End of the Airship *"Los Angeles"*

The United States airship *"Los Angeles"* is being dismantled, and the metal from her will be sold as scrap. The *"Los Angeles"* was built at Friedrichshafen, Germany, under the designation "Z.R.3," and was flown from there across the North Atlantic to Lakehurst, New Jersey, on 12th–15th October 1924, accomplishing the 5,066 miles flight in 81 hr. 17 min. On this delivery flight she was commanded by Dr. Hugo Eckener, of Zeppelin fame. As a unit of the United States Airship Service the *"Los Angeles"* made about 240 successful flights during her career, and hundreds of officers and men of the United States Army Air Corps were trained in her.

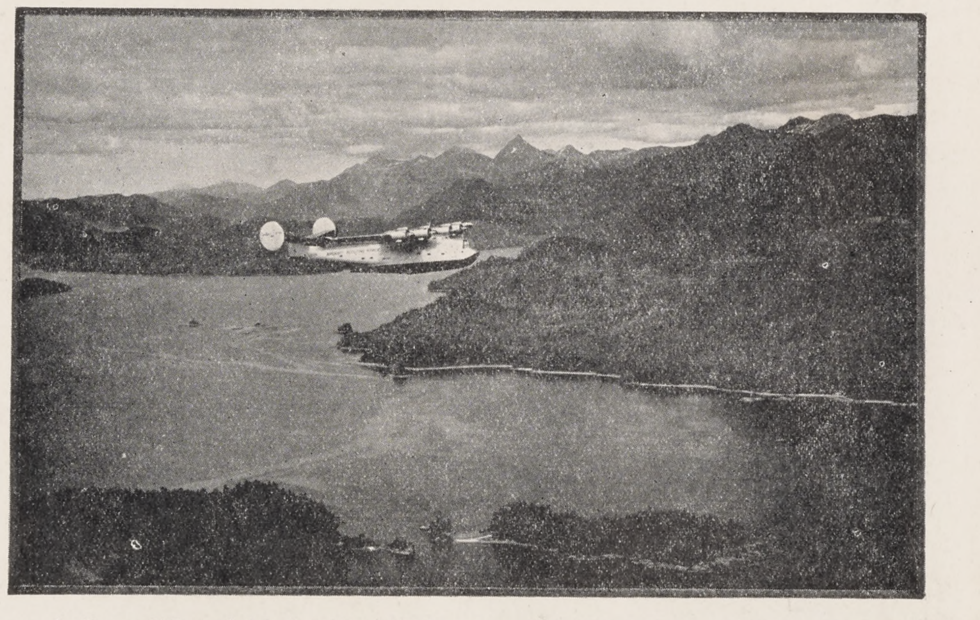
South African Gliding Record

A new soaring height record for South Africa was achieved recently by Mr. G. Dommisse, of Pretoria. He took off from the Rand Airport, Germiston, and reached a height of 12,000 ft. during a flight that lasted 7 hr. 20 min. The only instruments fitted in his glider were an airspeed indicator and a bubble level.

The U-S Fleet Magazine (S.D.)



In the photo above taken of the plant yard of the Consolidated Aircraft Corp. you will notice at the upper left, the Model 31, Consolidated's latest boat and the plane that boasts the two most powerful radial air-cooled engines ever to be installed in an aircraft. To the upper right is the U. S. Navy's four-engined XPB2Y-1, the plane which has hopped across the continent and back covering the entire distance over land and without benefit of gear for descent upon land. In the center is one of the old timers, a Consolidated P2Y, one of the type which, in a formation of six planes, made the first massed flight from San Francisco to Honolulu (2,414 miles—Jan., 1934). At the bottom, left is a PBY being fitted for special work and to the right the world's largest Amphibian, the XPBY-5A, recently flown to Washington.



A Consolidated Model No. 29 four engined flying boat.—Photo shows the plane in flight near Sitka, Alaska on a recent flight to that territory.

LATE CONSAIR BOMBERS RELEASED FOR POSSIBLE SALES TO ALLIES

Union 7/18/40

Two of Consolidated Aircraft Corp.'s latest and most powerful long-range patrol bombers, the army's XB-24 and the navy's XPB2Y-1, have been released for negotiation for possible purchase by the Anglo-French purchasing commission, according to word received here yesterday from Washington.

Unofficial advices are to the effect Great Britain and France may award a joint contract to Consolidated for what army and navy authorities agree are two of the fastest, longest range and heaviest armament-carrying planes constructed in this country.

The XB-24 recently completed its acceptance trial flights. Of 24 tons, the huge craft is of high wing, all-metal construction, 64 feet long, 110 feet wing spread and equipped with four 1200-horsepower Pratt-Whitney engines. It has a speed in excess of 300 miles an hour and can cruise 3000 miles carrying four tons of bombs. It carries a crew of nine in wartime.

The navy has released virtually no details of the construction features of the XPB2Y-1. It is a 4-motored all-metal bomber, heavily armed, and weighs when fully loaded with bombs, about 24 tons. Equipped for high altitude flying, it is reported to have a cruising range of 4500 miles.

For a brief period the plane was the aerial flagship of Rear Adm. Arthur B. Cook, scouting force aircraft commander. Recently it has been based at the Naval air station for the training of pilots to handle the 4-motored planes which soon will supplant the present two-motored PBY-type patrol bombers.

Flight 9-5-40

On With the Job

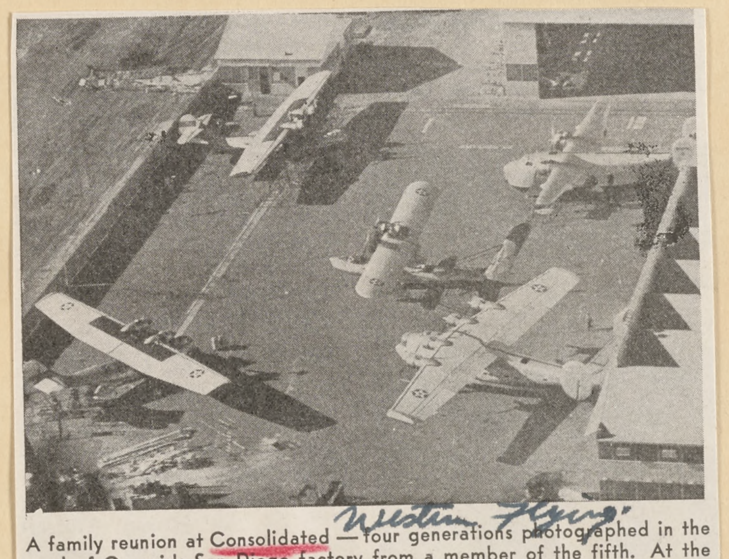
On Aug. 21 five companies, Douglas, Lockheed, Boeing, Vultee and Consolidated, announced in a joint statement that they were going ahead with preparations to increase their production without waiting to know what legislation Congress would pass to reduce their profits. The Companies stated that on their own responsibility members of the U.S. Aircraft Industry had bought materials worth more than £20,000,000, and added 21,000 employees to their pay rolls, and made contracts for additional plant and equipment valued at more than £10,000,000.

Reports have been current for some time that the production of aero-motors was still behind airframe production. The real "bottle-neck" is with the new Allison motors. Only 65 Allison motors were built in July, but by November this rate should be increased to about 400 a month. The Pratt and Whitney Division of the United Aircraft Corporation expects to produce between 700 and 800 motors a month in the near future. The Curtiss Wright Corporation is understood to have reached a rate of about 600 motors a month.

Flight 9-5-40

R.A.A.F. Buys Consolidateds

AUSTRALIA has ordered seven Consolidated PBY-5 amphibians for use by the Royal Australian Air Force. This nosewheel flying boat, known in its civil version without wheels as the Model 28, was described in *Flight* for February 8, page 114h, and its suitability to patrol work on the Australian coastline was pointed out. The Model 28 is powered by two Pratt and Whitney R-1830-S1C3G, rated at 1,050 h.p. at 2,550 r.p.m at 7,800ft. Take-off rating is 1,200 h.p. at 2,700 r.p.m. Maximum speed is given as 199 m.p.h. at 7,800ft.



Western Flying

A family reunion at Consolidated — four generations photographed in the yard of Consair's San Diego factory from a member of the fifth. At the upper left is Navy PBY. Upper right is the Model 31. Center is a P2Y, one of the first Navy long range patrol boats. Lower left is the Navy's XPBY-5A amphibian, and lower right is the XPB2Y-1 four-engined flying boat, first U. S. Navy flagplane. Camera plane was the Consolidated Fleetster utility ship.

Richard Archbold's Unique Achievement

RICHARD ARCHBOLD, in his Consolidated Model 28 flying boat (U. S. Navy designation PBY patrol bomber), completed nearly two years' work in eleven months when he terminated his expedition in Netherlands New Guinea, last May, and flew his *Guba* to Sydney, Australia, en route home. On his homeward voyage, Mr. Archbold established a number of new records with the GUBA:

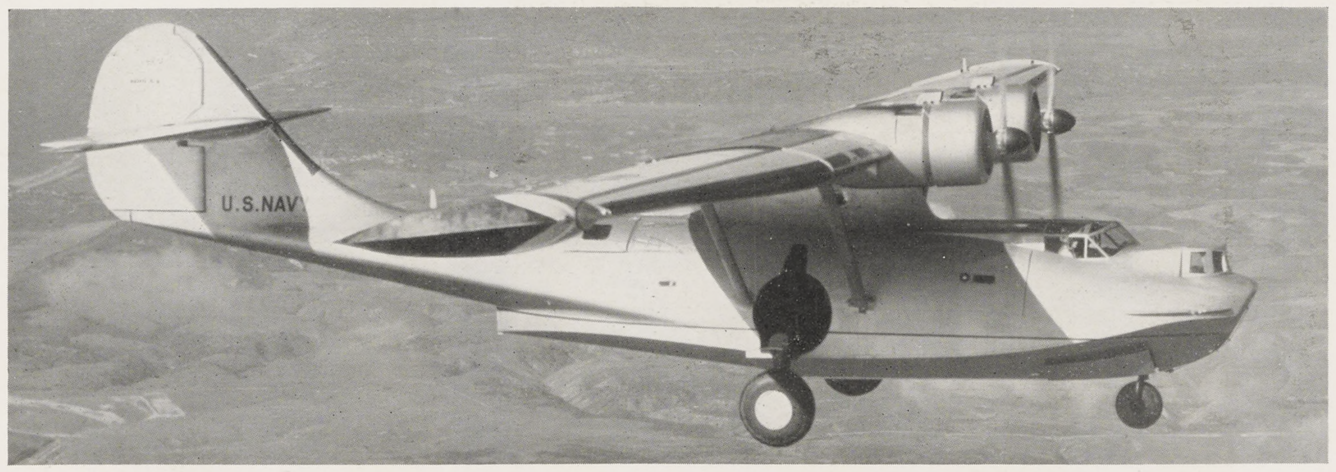
1. It was the first time an airplane has flown around the world at its greatest diameter.
2. The longest flying boat over-ocean non-stop flight—Daker to St. Thomas, Virgin Islands—3,300 miles.
3. The first time a flying boat has flown around the world.
4. The first time an airplane has crossed the Indian Ocean from Australia to Africa.
5. The first time a flying boat has flown across Africa.
6. The first time a flying boat has flown across Australia.

US AIR SERVICES - Oct 193

INTAVIA WORLD MARCH '40.

New Aircraft

THE CONSOLIDATED MODEL 28-5A



The Consolidated Model 28-5A twin-engined Amphibian with wheels lowered.

THE Consolidated Aircraft Corpn. has delivered to the U.S. Navy an amphibious version of the well-known Model 28 (Naval PBY Series) flying-boat which is designated the Model 28–5A (XPBY-5A).

The landing gear is of the tricycle type with the main wheels retracting into wells in the sides of the hull and the nose wheel into a compartment in the bow, which is closed by automatically-operated hatches. All three wheels are operated by a central hydraulic drive, the power being derived from the main power-plant or from an auxiliary engine. Emergency hand gear is also provided.

There is no need for a beaching crew as the Model 28–5A can climb a ramp or beach under its own power and can descend in the same manner completely controlled by its brakes.

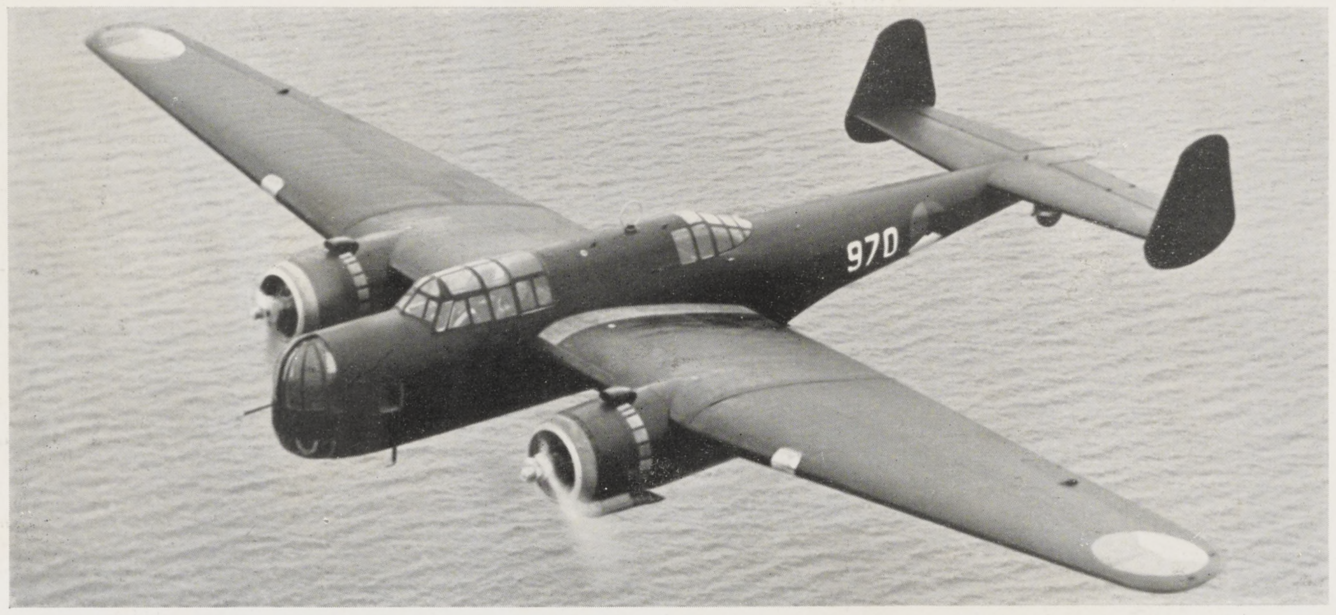
No special technique is needed for either take-off or return to land or water. The side wheels are above water when the machine rises on its step to take-off and water is automatically ejected from the bow wheel hatch before it is in the air, so that flying trim is not affected. When running up the engine on land the wheels may be locked, elevators pulled hard back and both engines given full take-off throttle without any possibility of the nose wheel rising from the ground. When landing the brakes may be put hard on without any adverse effect. In a side-wind landing the tendency is to straighten out.

THE FOKKER T.9

The illustration below shows the Fokker T.9 twin-engined Bomber monoplane which has been specially developed by the N.V. Fliegtuigenfabriek Fokker for the East Indies Army Air Service.

Unlike the majority of its predecessors the T.9 is of all-metal construction with a stressed-skin covering to wings and fuselage. It conforms to modern practice by being a mid-wing cantilever monoplane, with retractable undercarriage and a twin-ruddered tailplane.

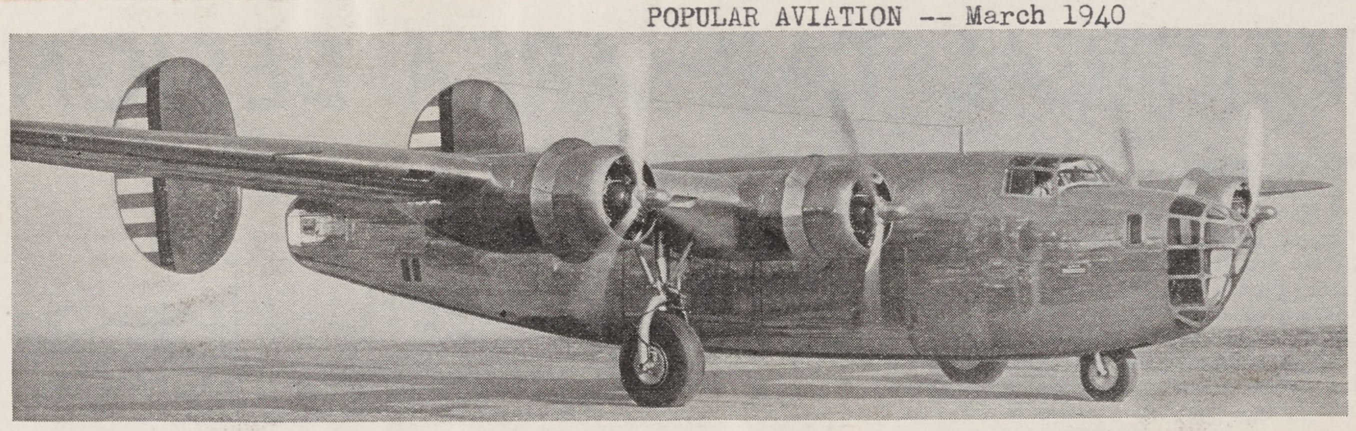
The T.9 is fitted with two Bristol "Hercules" fourteen-cylinder double-row radial sleeve-valve engines. No details of performance are available.



The Fokker T.9 monoplane (two Bristol "Hercules" engines) built for the Netherlands East Indies Army Air Service

---

POPULAR AVIATION -- March 1940



Above is first exclusive photograph of four-engined Consolidated B-24 bomber for the U. S. Army Air Corps. The wing is the secret new airfoil first installed on the Consolidated Model 31 flying boat.

Consair Needs More Specialists As Plane Production Stepped Up

Union 4/22/40

Although they are not making a nation-wide appeal for experienced men whose training enables them to orient themselves to plane designing quickly, Consolidated Aircraft Corp. officials announced yesterday they are seeking such workers in every part of the country, particularly in universities and colleges.

Steadily mounting orders from American and foreign governments make such a step imperative to keep pace with production, company officials said.

Especially needed are men with training as stress and armament engineers, specification experts, power plant, electrical, wing, fuselage and under-carriage engineers, research, hydraulics and design engineers, checkers and lay-out draftsmen.

The five major aircraft manufacturers in southern California have construction backlogs of $218,651,525, with an anticipated $200,000,000 or more from the Allied purchasing mission. Consolidated backlog totals $50,000,000, which probably will be doubled before midsummer, officials said.

Los Angeles plants are seeking experienced men, United Press reported. The total number of men employed in the southland in plane manufacture is 29,381, of which more than 5000 are employed in San Diego's three plants, Consolidated, Ryan and Solar.

Four Consolidated officials are in Washington and New York consulting with war and navy department authorities and the Anglo-French purchasing mission. They are Maj. Reuben H. Fleet, president; I. M. Laddon, chief engineer; C. A. Van Dusen, works manager, and Edgar Gott, publicity manager.

Trib. 4/23/40

ORGANIZE CLUB OF ORIGINAL AIRMAIL VETS

Organization of the "Last Man Pioneer Air Mail club" has been effected in Chicago bv 20 pioneers, former civilian employes of the postoffice department, who served in all branches of the service, according to word received by Edward D. Havens, La Mesa, one of the original air mail mechanics.

Havens, now supervisor in the assembly and test department of the A. and R. division, naval air station, resides at 7921 Lemon circle, La Mesa. Anyone who was in the air mail service from 1918 to 1927, when it was under the postoffice department, is asked to contact him in order to get on the mailing list as a member of the club.

The organization will have no offices and no dues. It is estimated that some 600 airmail veterans are eligible for membership. The executive committee includes Jack Knight, educational director of United Air Lines; Capt. Benjamin B. Lipsner superintendent of the first U.S. airmail service; Edward Nelson, acting secretary, and others. Maj. R. W. Schroeder, former holder of the world's altitude record, is a member of the advisory committee.

Among airmail pioneers in San Diego are Maj. Reuben H. Fleet, president of Consolidated Aircraft Corp., who was officer in charge of airmail when it was first inaugurated in May, 1918, between Washington, D. C., and New York, and Otto Praeger, who supervised the start of airmail service for the postoffice department.

Trib 4/23/40

Trained Men Sought By Consolidated

With other large aircraft companies in southern California, Consolidated Aircraft Corp. is seeking experienced, trained men, according to report by Consair officials. They said that especially needed are men with training as stress and armament engineers, specification experts, power plant, electrical, wing, fuselage and under-carriage engineers, research, hydraulics and design engineers, and checkers and lay-out draftsmen.

The five major aircraft manufacturing companies in southern California have construction backlogs of $218,651,525, with an anticipated $200,000,000 or more from the allied purchasing mission. Of this total, the Consolidated backlog is $50,000,000.

Union April 26/40

Allies Consider Buying New Consair Bombers

Confirming announcement made here last week, the army air corps yesterday authorized the sale to foreign powers of Consolidated Aircraft Corp.'s new four-motored long-range bomber, the United Press reported from Washington.

The Anglo-French purchasing mission is reported to be considering purchase of 50 or more of the powerful bombers which have a flight range in excess of 3000 miles carrying four tons of bombs.

Union 4/22/40

Shortage Reported Of Aero Engineers

LOS ANGELES, April 21 (A.P.)—Jobs are open here for aeronautical engineers.

"We have 790 engineers on the payroll and we must raise that figue to 900 by July 1," Hall L. Hibbard, chief engineer for the Lockheed Aircraft Corp., said today. He indicated a similar situation exists at other factories in this area.

Hibbard insisted that this is not due altogether to war orders, pointing out that Harold J. Geder, engineer, for instance, is working on a design for a 32-passenger plane that may fly tail-first in 1945.

He said the great need is for stress and armament engineers; specification experts; power plant, electrical, wing, fuselage and under-carriage engineers; research, hydraulics and design engineers; checkers and layout draftsmen.

Trib 4/25/40

Navy Contract Won By Consair Plant

The Consolidated Aircraft Corp. has been awarded a $26,221 contract for spare parts for planes by the navy department, The Associated Press reported from Washington, D. C.

Trib 4/25/40

Approve Sale To Allies of S.D. Bombers

Army authorization of the sale to foreign powers of Consolidated Aircraft Corp.'s new four-motored bomber was announced today at Washington, D. C., where the allied purchasing mission said it contracted for the purchase of $200,000,000 worth of American airplanes.

Consolidated authorities said they had as yet received no word of the authorization and that any allied purchases of the plane probably would not be made known until Consair has been notified officially of the release.

The allies are considering purchase of 50 or 60 Consair B-24 bombers, the United Press reports from Washington, D. C.

Arthur B. Purvis, British, and Rene Pleven, French representative of the mission, told reporters that these contracts included large quantities of Bell pursuit planes, Curtiss pursuit planes, Douglas bombers and Allison, Wright and Pratt-Whitney motors.

O.K. All Purchases

Purvis added that the United States had now released for allied purchase all of the late type military aircraft which the allies had sought permission to buy, The Associated Press reported.

He declined to give the individual number or cost of different types of planes or engines because the information might interfere with pending negotiations for additional military equipment. Several months ago, the mission said it was embarking on a potential $1,000,000,000 worth of buying in this country.

Release of late-type American planes previously asked by the allies was completed a few days ago, said Purvis, when the army authorized the sale of the Consair bombers.

Cost of the engines to be purchased, the allied representatives continued, included cost of building the factories in which they will be produced. Purvis and Pleven said the allies were building factories for American manufacturers for all additional orders of engines.

Purvis, Pleven and Capt. Harry E. Collins, chairman of the president's committee to coordinate foreign and domestic airplane purchasing, called on Treasury Secy. Morgenthau today to review developments to date. Morgenthau is the president's contact man with the committee.

Trib 4/29/40.

Towers and Aid Due For Navy Air Tour

Rear Adm. John H. Towers, chief of the navy bureau of aeronautics, and Capt. Alfred E. Montgomery, an aid, will inspect San Diego navy and commercial aviation activities this week, according to word received today from Washington, D. C., by Rear Adm. J. R. Defrees, 11th naval district commandant.

The officers tentatively are due here by navy plane Friday afternoon and will remain until Monday or Tuesday of next week. In addition to inspecting the navy's flying forces and aviation shore facilities here, they plan to visit Consolidated Aircraft Corp., where large numbers of navy bombers are under construction. Both Towers and Montgomery have been on duty in San Diego in the past.

Union 4/26/40

Plane Orders Exceed 4000

WASHINGTON, April 25 (A.P.)—Great Britain and France have swelled their pending orders for American war planes to well beyond 4000, it was indicated today by an announcement that the Allies in the last two weeks have placed aircraft and engine contracts aggregating $200,000,000.

The announcement came from officials of the Allied purchasing mission who said large quantities of speedy Curtiss and Bell pursuit planes, Douglas bombers and engines of three types were included.

The latest purchases, it was estimated by airmen in touch with the negotiations, represent nearly 2000 planes and an undisclosed larger number of Allison, Wright and Pratt & Whitney motors.

NEWTYPE TO GET WAR TEST

Arthur B. Purvis, chairman of the mission, and Rene Pleven, French representative, said the cost of the engines included facilities to produce them. They explained that the Allies were financing factory expansions necessitated by the orders.

The announcement of the Bell contract promised a European war test for an unusual type of fighting plane, the P-39 developed for the army air corps. This plane mounts a small cannon in its nose and is powered by an engine placed in the center of the fuselage.

The Curtiss pursuit planes include both P-40 and P-46 models, released by the army in accord with the new policy by which the air corps expects to acquire more advanced models at no additional cost along with valuable technical information on the performance of American planes in combat.

CONSAIRS INCLUDED

The Douglas craft are fast two-motor bombers. They figured with the Curtiss planes in contracts disclosed previously.

The estimate that pending orders have been increased to more than 4000 was based on official figures showing that American plants on March 1 were working on 1363 military aircraft for Britain and 1371 for France.

Talking to reporters after conferring with Secy. Morgenthau at the treasury, Mr. Purvis said that the army had now released for export all the late type aircraft which the Allies had sought. The latest, he said, was the long-range B-24 Consolidated bomber.

NORTHROP TO MAKE CONSAIR PARTS

Western Flying.

NORTHROP AIRCRAFT, Inc., with the first unit of its new plant completed, will go into production on a $700,000 order for small assemblies for the Consolidated Aircraft Corporation. The parts will be manufactured during the interim before Northrop goes into production on its own airplane, for which the plant was erected.

CONSOLIDATED AIRCRAFT CORP.
Lindbergh Field
San Diego, Calif.

Western Flying.

Personnel: President and general manager, R. H. Fleet; vice president and works manager, C. A. Van Dusen; vice president and chief engineer, I. M. Laddon; vice president and materials supervisor, C. T. Leigh; vice presidents, E. N. Gott, H. E. Weihmiller; secretary, R. A. Stanberry; assistant secretary and factory superintendent, J. L. Kelley; treasurer, W. M. Shanahan; service manager, W. B. Wheatley; personnel manager, Don Frye.

Union 4/30/40

Navy Aviation Head to Visit S. D. Friday

The navy's bureau of aeronautics will direct its official attention to San Diego's varied service and service-connected aviation activities this week, according to information received yesterday from Washington by Rear Adm. J. R. Defrees, commandant of the 11th Naval district and the local operating base.

Adm. Towers

Rear Adm. John H. Towers, chief of the bureau of aeronautics, according to a tentative schedule announced by the commandant, plans to arrive here from the capital by plane Friday afternoon and remain until next Monday or Tuesday. He will be accompanied by Capt. Alfred E. Montgomery, who is serving in the bureau of aeronautics.

In addition to inspections of the navy's flying forces and establishments here Adm. Towers is expected to devote time to study of the local commercial plane building plants. He is no stranger to San Diego, having served here in several important posts prior to his present duty.

Capt. Montgomery soon is to take command of the U.S.S. Ranger, local aircraft carrier basing temporarily on the Atlantic coast.

CONSAIR STARTS EXPANSION WORK

Western Flying

CONSOLIDATED Aircraft Corp., San Diego, has embarked upon a factory expansion program which will increase the present area of the plant by 87 per cent at a cost of more than $2,000,000.

Seven new steel frame buildings will be erected at an expense of $1,200,000 and in excess of $800,000 will be expended for new production equipment. Bids have already been called for the construction work. By late 1940 Consolidated's factory will embrace 1,500,000 square feet and employ at least 7000 men on Army and Navy contracts which form the bulk of Consair's $43,000,000 backlog.

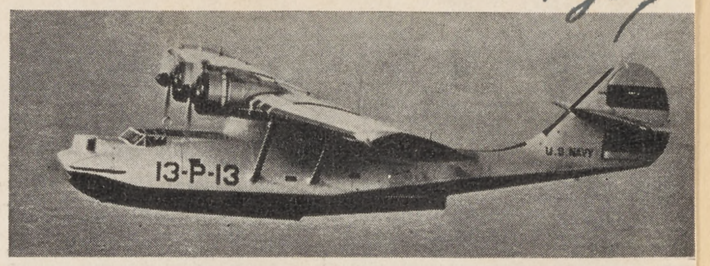
The original factory buildings are less than five years old. The large experimental building, the photo, physical and chemical laboratory, paint storage and tool buildings are just over three years old. Prior to the expansion program Consolidated had 24.7 acres of land on **Lindbergh Field** under lease and 7.6 acres under option. New leases and options now cover an area of 64 acres.

In addition to new buildings, all factory yard areas will be paved and used for outdoor assembly and maintenance areas.

Orders for which the plant is being enlarged are the Navy contract of $20,016,699 for long range patrol bombers and the Army Air Corps contract of $11,365,000 for a fleet of the new B-24 bombers.

Consolidated Aircraft Corp.
Lindbergh Field, San Diego, Calif.

Western Flying



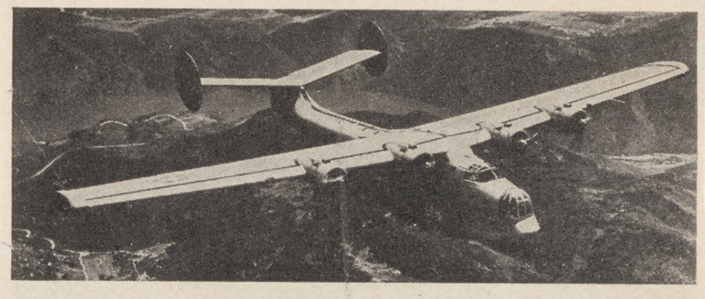
PBY-4 (U. S. Navy) Patrol Bomber

TYPE: 5-9- place, closed, flying boat, monoplane.
DIMENSIONS: Length, 65 ft. 1.75 in. Height, 17 ft. 11 in. Span, 104 ft.
AREAS: Wing (incl. ailerons), 1400 sq. ft.
WEIGHTS: Gross weight loaded, 27,413 lbs. Wing loading, 19.3 lbs. per sq. ft. Power loading, 11.4 lbs. per h.p.
POWER PLANT: 2 P&W Twin Wasps, geared. Engine limits, (maximum except takeoff) 1050 h.p. each at 7800 ft., 2550 r.p.m.
PERFORMANCE: Placard speeds: level flight (high speed), 199 m.p.h.; cruising speed, 179 m.p.h.; stalling speed (landing), 69 m.p.h. Climb at sea level, 920 ft. 1st min. Usable ceiling, 24,000 ft. Maximum range 4000 mi.
CONSTRUCTION: Wings, aluminum alloy, stressed skin, Z-bar stiffeners, fabric covered ailerons and trailing edges. Fuselage, monocoque, aluminum alloy construction, smooth skin, re-inforced with Z bars. Empennage, stressed skin, aluminum alloy, fabric covered movable surfaces.
STANDARD EQUIPMENT: Instruments, sensitive altimeters, engine pressure gauge units, carb. temp. gauges, manifold pres. gauge, clock, airspeed ind., thermocouples, oil temp. gauges, ammeters, direct gyro, Gyro horizon and pilot, elec. tach., fuel gauges. Trimming tabs on rudder and elevators. Other equipment, shock mounted instrument panels, batteries, fire extinguishers, flares, starters.
REMARKS: Other data restricted.

XPBY-5A (U. S. Navy) Amphibian Patrol Bomber

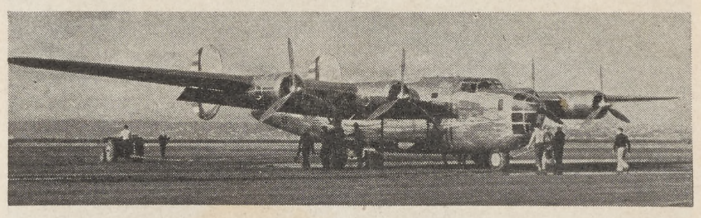
TYPE: 5-9 place, closed, amphibion, monoplane.
DIMENSIONS: Length, 65 ft. 1¾ in. Height, 19 ft. 9 in. Span, 104 ft.
AREAS: Wing (incl. ailerons) 1400 sq. ft.
WEIGHTS: Gross weight loaded, 27,413 normal lbs., 30,500 lbs. (provisional.) Wing loading, 19.6 lbs. per sq. ft. Power loading, 11.4 lbs per h.p.
POWER PLANT: 2 P&W R-1830-S1C3G. Engine limits, (maximum except takeoff) 1050 h.p. each at 2550 r.p.m. Maximum of 1200 h.p. each available for takeoff.
PERFORMANCE: Placard speeds: level flight (high speed), 199 m.p.h. at 7,800 ft.; cruising speed, 179 m.p.h. at 7,800 ft., stalling speed (landing), 69 m.p.h. Climb at sea level, 920 ft. 1st min. Service ceiling, 24,000 ft. Maximum range 4,000 mi.
REMARKS: Basically the Model 28 twin-engined flying boat, with addition of amphibion gear, suitably incorporated in the structure. Landing gear is of the tricycle type with a single wheel forward and two aft.

PB2Y-1 (U. S. Navy) Patrol Bomber



TYPE: Four engine, long range, flying boat, monoplane.
REMARKS: All data restricted.

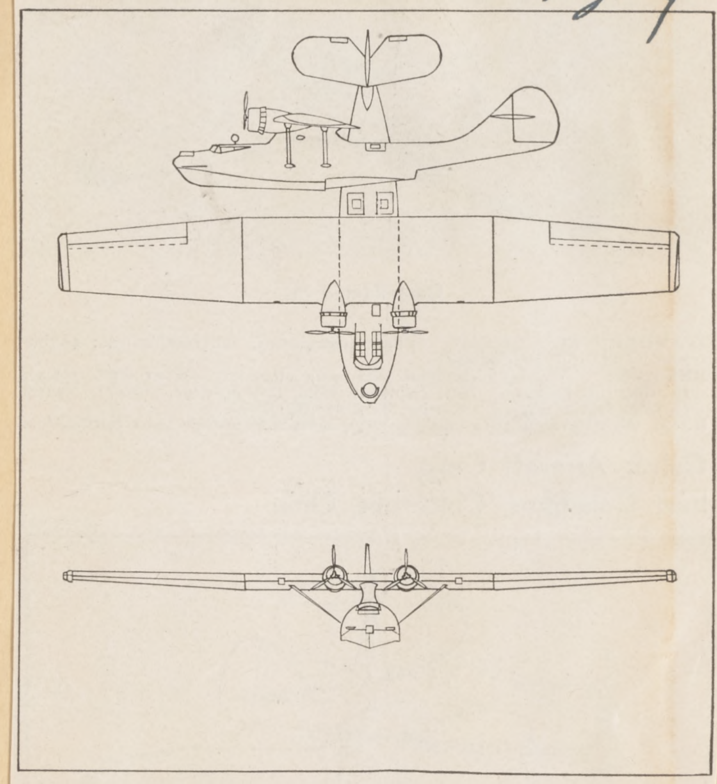
XB-24 (U. S. Army) Heavy Bomber

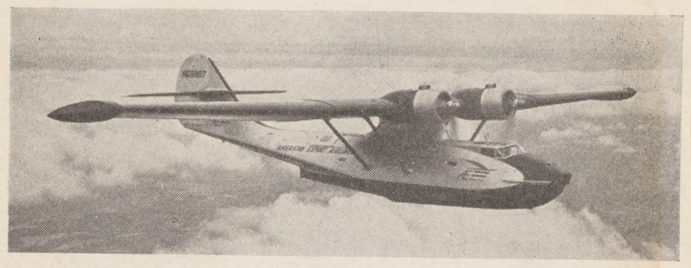


TYPE: 6-9 place, closed, land, monoplane.
DIMENSIONS: Length, 64 ft. Height, 19 ft. Span, 110 ft.
WEIGHTS: Gross weight loaded, 40,000 lbs.
POWER PLANT: 4 P&W twin-row engines. Maximum of 1200 h.p. each available for takeoff.
PERFORMANCE: Placard speeds: level flight (high speed), more than 300 m.p.h. Maximum range approx. 3000 mi.
CONSTRUCTION: Wings, all metal, full cantilever. Fuselage, all metal. Empennage, all metal. Landing gear, tricycle, retractable.
STANDARD EQUIPMENT: Flight instruments, full complement. Engine instruments, full complement. Propellers, Hamilton Standard 3-blade hydromatic full-feathering. Wing flaps, Fowler type, inboard of ailerons. Trimming tabs on rudders and elevators, adjustable in flight.
REMARKS: Bomb carrying capacity approx. four tons. Other data restricted.

Consolidated Aircraft Corporation
Lindbergh Field, San Diego, Calif.

Western Flying



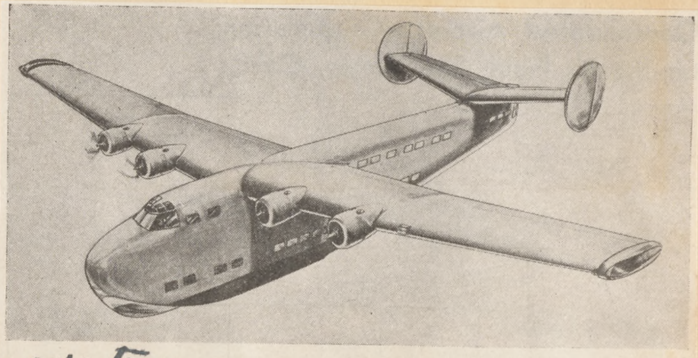


Model 28 Flying Boat (2 P. & W., 2400 h.p.)

TYPE: 12-24-place, closed, sea, monoplane.
DIMENSIONS: Length, 65 ft. 1.75 in. Height, 17 ft. 11 in. Span, 104 ft.
AREAS: Wing (incl. ailerons), 1400 sq. ft.
WEIGHTS: Gross weight loaded, 30,500 (provisional), 27,000 (normal). lbs. Wing loading, 19.3 lbs. per sq. ft. Power loading, 11.3 lbs. per h.p.
POWER PLANT: 2 P&W R1830-S1C3G. Engine limits (maximum except takeoff), 1050 h.p. each at 7500 ft., 2550 r.p.m. Maximum of 1200 h.p. (each) available for takeoff.
PERFORMANCE: Placard speeds: level flight (high speed), 199 m.p.h. at 7800 ft.; cruising speed, 179 m.p.h. at 7800 ft.; stalling speed (landing) without flaps, 69 m.p.h. Climb at sea level, 920 ft. 1st min. Usable ceiling, 24,000 ft. Maximum range, 4000 mi.
CONSTRUCTION: Wings, stressed skin aluminum alloy, smooth skin reinforced with Z-bar stiffeners. Fuselage, monocoque, aluminum alloy, smooth skin reinforced with Z-bar stiffeners. Empennage, stressed skin aluminum alloy, fabric covered movable surfaces.
STANDARD EQUIPMENT: Flight instruments, shock mounted instrument panel, sensitive altimeters, compass, directional gyro, gyro horizon, gyropilot, clock, airspeed indicator; engine instruments, pressure gauge units, carburetor temperature gauges, manifold pressure gauges electrical tachometers ammeters, oil temperature gauges, fuel gauges, thermocouples. Starter, electrical. Propeller, constant speed. Landing lights, radio, radio shielding. Trimming tabs on rudder and elevators adjustable in flight. Other equipment, batteries, fire extinguishers and flares.
REMARKS: Amphibion version also available.
NOTE: All data supplied by manufacturer; subject to revision upon certification.

Model 29 Flying Boat (4 P. & W., 4800 h.p.) Experimental

TYPE: 36 or 62-place, closed, sea, monoplane.
DIMENSIONS: Length, 79 ft. 3 in. Height, 25 ft. 4 in. Span, 115 ft.
AREAS: Wing (incl. ailerons), 1780 sq. ft.
WEIGHTS: Gross weight loaded, 65,000 lbs. Wing loading, 36.5 lbs. per sq. ft. Power loading, 13.5 lbs. per h.p.
POWER PLANT: 4 P&W R1830-S1C3G. Engine limits (maximum except takeoff), 1050 h.p. (each) at 7800 ft., 2550 r.p.m. Maximum of 1200 h.p. (each) available for take off.
PERFORMANCE: Placard speeds: level flight (high speed), 226 m.p.h. at 7800 ft; cruising speed, 210 m.p.h. at 75% power at 10,000 ft.; stalling speed (landing) without flaps, 70 m.p.h. Climb at sea level, 690 ft. 1st min. Service ceiling, 18,000 ft. Maximum range, 5200 mi.
CONSTRUCTION: Wings, cantilever, skin stressed, all metal. Fuselage, monocoque, aluminum alloy. Empennage, aluminum alloy, full cantilever.



Consolidated 29

Western Flying.

STANDARD EQUIPMENT: Flight instruments, full complement; engine instruments, full complement.
REMARKS: Fuel tanks integral with wing structure. Wing floats retract to wing tips in flight. Dual rudders. Wing trailing edge, movable control surfaces fabric covered. Further data not furnished.
NOTE: All data supplied by manufacturer; subject to revision upon certificati

Western Flying

DETAILS ON NEW CONSOLIDATED BOMBER RELEASED BY AIR CORPS

THE U. S. Army Air Corps' new bombardment airplane, technically known as the XB-24, recently made test flights at Lindbergh Field, San Diego, California.

Built by the Consolidated Aircraft Corp., it is a four-motored bomber of high wing, all-metal construction. The wing is a full cantilever type of high aspect ratio with four tractor engine nacelles mounted flush to the upper surface of the center section. Fowler type flaps extend inboard of ailerons.

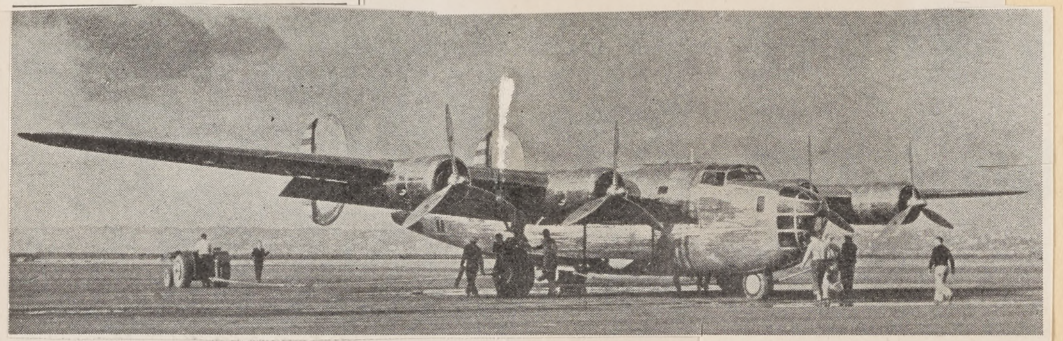
Power is furnished by four Pratt & Whitney 18-cylinder twin-row radial air-cooled engines rated at 1200 h.p. each. The propellers are Hamilton Standard three-bladed hydromatic constant speed types, 12 ft. in diameter.

The approximate gross weight of the airplane is 40,000 lb.; wing span, 110 ft.; length of fuselage, 64 ft.; and over-all height, 19 ft. Tactical requirements are for a crew of from six to nine persons, depending upon the mission to be performed.

Control surfaces are fabric-covered and fully counter-weighted. A full cantilever horizontal stabilizer has twin fins and rudders mounted at the tips. The all-metal stressed skin fuselage is equipped with hatches and windows in the nose, tail, turtledeck, back, and bottom. The landing gear is of tricycle type with single wheel forward. This retracts into the fuselage. The rear or main landing wheels retract into wing wells.

This airplane, from preliminary examinations, gives evidence of living up to the advancements in aerodynamic and performance characteristics predicted. These include a speed of over 300 miles per hour, a range of approximately 3000 miles, and a bomb carrying capacity of approximately four tons.

Consolidated Aircraft Corporation is test flying its new four-engined B-24 long range bomber utilizing the advanced **"Davis wing"** airfoil. The manufacturer holds a contract amounting to $11,365,000 for an undisclosed number of four-engined bombers. Western Flying.



First officially released photograph of the Consolidated B-24 four-engined bomber built for the U. S. Army Air Corps. Note that the huge ship incorporates the new Davis "mystery" wing and tricycle landing gear.

The San Diego Union

PAGE EIGHT-A THURSDAY MORNING, MAY 2, 1940

Tete-a-Tete .. with Eileen Jackson

Announcement is made by Mrs. William H. Koenig, Los Angeles, of the marriage today of her daughter, Madie Koenig, to Edgar N. Gott, San Diego, and Washington, D. C. The ceremony will take place at noon at the home of Col. and Mrs. John H. Jouett, 3524 Edmonds st., N. W., Washington, D. C., with about 30 persons attending.

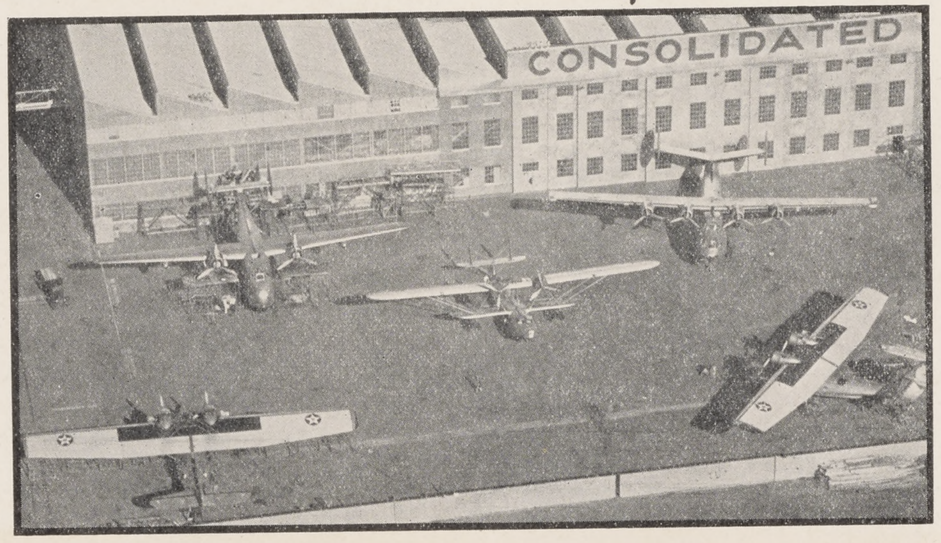
The bride was born in Omaha, Neb., and after attending schools in America and Dresden, Germany, graduated from Vassar college in 1922. Shortly thereafter Miss Kienig went to Vienna, which was her residence until 1938. She was president for eight years of the American Women's Club of Vienna and vice president of the Federation of American Women's Clubs Overseas. At present she is a member of the Ebell club and Assistance League of Los Angeles. She has lectured extensively on the west coast, telling her experiences in escaping from Vienna after Hitler's annexation of Austria and has just returned from an extensive tour of South America with her mother.

Maj. Gen. Henry H. Arnold, chief of the air corps, U. S. army, will serve as best man; and Miss Stephanie Gott, daughter of the bridegroom, will act as maid of honor.

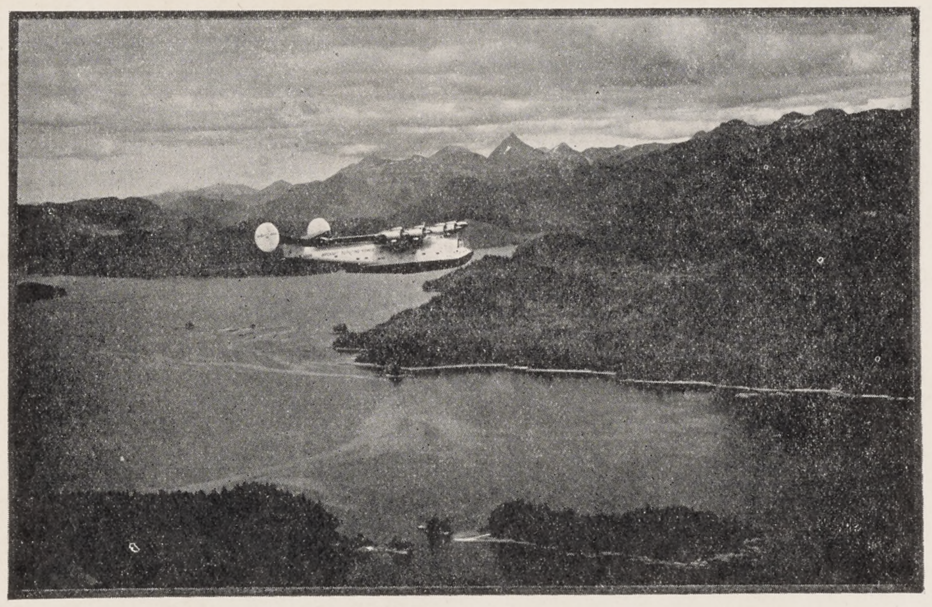
Mr. Gott is vice president of Consolidated Aircraft Corp. of San Diego, and is a graduate of the University of Michigan. He is a member of the Chi Psi fraternity and has been prominent as a pioneer of aviation circles for many years, having been president of Boeing Airplane Co., Keystone Aircraft Corp. and vice president of Fokker Aircraft Corp. before assuming his present duties.

After a motor trip through the Blue Ridge mountains and the Carolinas, Mr. and Mrs. Gott will make their home at San Diego.

April, 1940



In the photo above taken of the plant yard of the Consolidated Aircraft Corp. you will notice at the upper left, the Model 31, Consolidated's latest boat and the plane that boasts the two most powerful radial air-cooled engines ever to be installed in an aircraft. To the upper right is the U. S. Navy's four-engined XPB2Y-1, the plane which has hopped across the continent and back covering the entire distance over land and without benefit of gear for descent upon land. In the center is one of the old timers, a Consolidated P2Y, one of the type which, in a formation of six planes, made the first massed flight from San Francisco to Honolulu (2,414 miles—Jan., 1934). At the bottom, left is a PBY being fitted for special work and to the right the world's largest Amphibian, the XPBY-5A, recently flown to Washington.



A Consolidated Model No. 29 four engined flying boat.—Photo shows the plane in flight near Sitka, Alaska on a recent flight to that territory.

THE UNITED STATES FLEET MAGAZINE

Consolidated Air

Romeike & Curtice Ltd

Telephone
CENTRAL 2781
(2 Lines.)

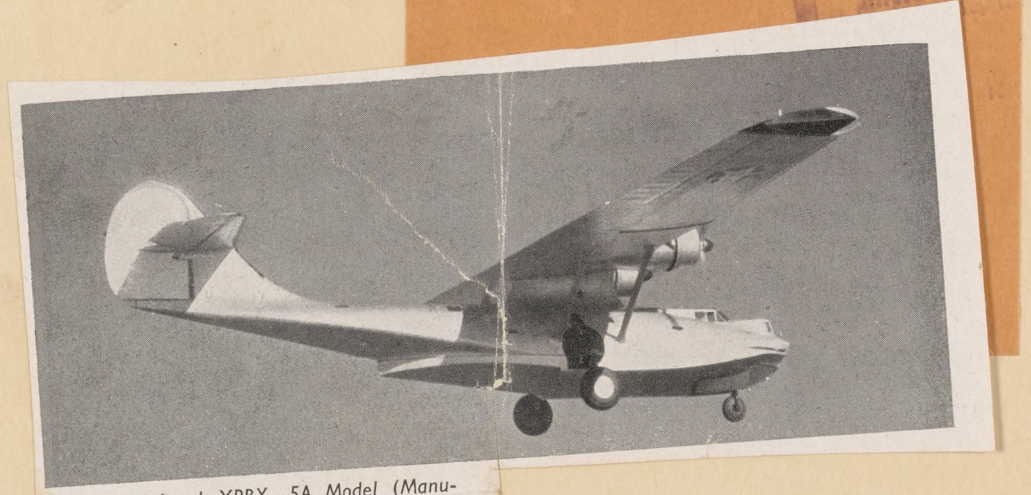
R&C

35. Shoe Lane.
LONDON.
E.C.4.

EXTRACT FROM

Aeronautics

MAR 1940



A Consolidated XPBY—5A Model (Manufacturer's number 28-5A) amphibian. The landing gear is of tricycle type and is fully retractable.

AVIATION - April 1940

Consolidated Aircraft directors have decided not to make a dividend payment for the present, in order to retain company funds within the business and avoid issuance of additional stock. Unannounced foreign orders amounting to $7,000,000 were recently received for an export version of the "PBY" bomber used by the Navy. Backlog includes $20,000,000 in flying boats for the Navy, and $12,000,000 in four-engine bombers for the Air Corps.

.. **H. E. Weihmiller,** Consolidated Aircraft's v. p., since 1937, resigns; was at one time Washington representative of the company.

Pohlman, G. A., Jan. 1, 41

t You
iends

Just Tell 'Em That You Saw It In

The Ramona Sentinel

It Pays to PATRONIZE Those Who ADVERTISE in --The Sentinel

ABOVE THE FOG LINE, BELOW THE SNOW LINE, HEART OF THE HEAVEN ON EARTH COUNTRY, RAMONA IS SOUTHERN CALIFORNIA'S FASTEST GROWING COMMUNITY

VOL. LI RAMONA, CALIFORNIA, THURSDAY, APRIL 18, 1940 NO. 7

Joint Farm Bu. Chamber Meet Proves Success

The joint Farm Bureau and Chamber of Commerce dinner meeting held in the Ramona Woman's clubhouse Wednesday night proved a success, and many interesting features were included in the four-hour long program, which began with a splendid dinner served by the Farm Home department and ended with a motion picture tour through the Consolidated Aircraft plant in San Diego, where the PBY bombers were built for the navy.

Anton Pohlman, Farm Bureau unit chairman, presided at the meeting, except for a short chamber of commerce session which was presided over by Don Brown, vice president, in the absence of President Schroeder.

Amer. Aviation
2-15-40

3 San Diego Mfrs. Seek 3,000 Workers; Consair Orders 600

Shortly after news was revealed that Consolidated Aircraft Corp., San Diego, Cal., had agreed to hire 600 graduates of Missouri Aviation Institute, Kansas City, Mo., one source on the west coast estimated that 3,000 factory workers will be added to payrolls of San Diego aircraft plants during the balance of the year in order to meet production schedules called for in filling more than $50,000,000 in back plane orders.

The San Diego aircraft employment situation was outlined in this manner at a recent meeting of personnel managers of Consolidated, Ryan Aeronautical Co. and Solar Aircraft Co., all located at Lindbergh Field, San Diego.

Homer L. Bredouw, head of Bredouw Aeromotive Corp. in Kansas City, operator of Missouri Aviation Institute, recently agreed with Don Frye, Consair's personnel director, to furnish the latter with 25 to 40 graduates weekly for 16 weeks.

The Consolidated order means expansion for the Kansas City mechanics' school. Bredouw said he planned to lease 12,000 sq. ft. of space comprised in a plant adjacent to Kansas City Municipal Air Terminal. The institute's former floor space total was 25,000 sq. ft.

Consolidated Aircraft Corporation

Aeronautical Review

All physical assets, as well as the name and good will of the Hall-Aluminum Aircraft Corporation of Bristol, Penna., have been merged through purchase with Consolidated Aircraft Corporation. Thus tersely may be stated the fact that Hall-Aluminum Corporation is now a part of Consolidated Aircraft Corporation.

Hall-Aluminum Aircraft Corporation had its beginning in Charles Ward Hall, Inc., in 1916. Since that time and until the formation of Hall-Aluminum Aircraft Corporation, Inc., in 1927, Charles Ward Hall, President and sole stockholder had been continuously engaged in research in the use of aluminum alloys in connection with the design and construction of aircraft. Mr. Hall applied for and was granted numerous basic patents relating to this field.

In 1927 Hall-Aluminum Aircraft Corporation was incorporated through the purchase from the late Charles Ward Hall of all assets belonging to Charles Ward Hall, Inc. The new company until its acquisition by Consolidated Aircraft Corporation has been engaged in the design and manufacture of aircraft, particularly flying boats and seaplanes, aircraft parts and sections, and in overhaul and repair work.

Throughout this period and to the present time the corporation produced and supplied parts and standardized aircraft sections to all principal manufacturers and producers in the United States and Canada. Besides supplying the U.S. Navy with many of its aircraft the company has also supplied the Coast Guard with numerous craft.

Just Tell 'Em That You Saw It In

The Ramona Sentinel

It Pays to PATRONIZE Those Who ADVERTISE in --The Sentinel

ABOVE THE FOG LINE, BELOW THE SNOW LINE, HEART OF THE HEAVEN ON EARTH COUNTRY, RAMONA IS SOUTHERN CALIFORNIA'S FASTEST GROWING COMMUNITY

VOL. LI RAMONA, CALIFORNIA, THURSDAY, APRIL 4TH, 1940 NO. 5

Farm Bureau to Put On Next C of C Program

The Ramona unit of the Farm Bureau, through its center chairman, Anton Pohlman, will present a fine educational and entertainment program as the main event of the next regular meeting of the Ramona Chamber of Commerce to be held Wednesday night, April 17th in the Ramona Woman's clubhouse, President C. Fred Schroeder announced. The Farm Bureau program will follow a short business session of the chamber of commerce and will consist of a round table discussion by leading county officers and a motion picture.

The following county officers, Wm. Hart, supervisor; Crowell Eddy, county assessor; Sam Claggett, tax collector; Robert Getty, county auditor, will participate in the program Mr. Pohlman announces.

As is usual this will be a dinner meeting. Dinner will be served at 6:30, under the auspices of the Ramona Farm Home department.

The feature of the meeting, according to Mr. Pohlman, will be the showing of a sound movie on the construction of one of the P.B.Y. bombers, made by the Consolidated Aircraft corporation of San Diego. This picture not only shows the interior of the Consolidated plant, but the construction of the P.B.Y. flying boat from blueprint stage until it is rolled down into the bay.

American Aviation 1-1-40

Consolidated Gets $20,000,000 Navy Order; Largest U.S. Airplane Contract

The Navy Dept. signed Nov. 19 a contract with Consolidated Aircraft Corp., San Diego, for an undisclosed number of PBY-5 flying patrol boats amounting to $20,000,000 the largest single aircraft order ever placed either by the Navy or the Army.

Signing of the contract set in motion immediately a 92% expansion plan for the company, according to Maj. R. H. Fleet, president. Additional ground has been leased from the City of San Diego immediately north of the present plant on Lindberg Feld.

Consolidated also has received a $4,700,000 order for patrol boats from an undisclosed foreign purchaser, it has been revealed, while the company's backlog of unfilled orders has risen from $17,900,000 in November to slightly more than $50,000,000. Most of these orders are for various models of the well known PBY's built originally for the Navy and which have been consistently in production. Included in the backlog is the $8,485,000 Army Air Corps order announced last August for XB-24 four-engine landplane bombers, first of which was to have flown by the first of the year.

Engines are not being furnished except for one small contract, otherwise the Consolidated backlog of $50,000,000 could be considered at about $65,000,000 on the same standards that most other industry backlogs are being estimated.

American Aviation 4-15-40

NEW YORK STOCK EXCHANGE

	Week Ended Mar. 30				Week Ended Apr. 6			
	High	Low	Net Change	Sales	High	Low	Net Change	Sales
American Airlines	64⅜	61	+ ¼	17,200	69⅝	62½	+6¼	20,200
Aviation Corp.	7¼	6⅞	— ¼	39,700	8	6⅞	+ ⅞	95,200
Bendix Aviation	35¼	33¼	+ ½	49,300	35⅞	34⅜	+ ⅝	32,800
Boeing Airplane	24	21½	+1	13,200	27¾	22⅝	+3⅞	60,900
Consolidated Aircraft ..	28⅞	26	+1⅜	9,400	30⅝	27¼	+2¼	24,400
Continental Motors	4⅛	3¾	— ⅛	19,600	4⅛	3¾	....	30,600
Curtiss-Wright	10¾	10⅛	— ¼	100,000	10⅜	9¾	— ⅛	96,100
Curtiss-Wright A	29¼	27⅝	— ¼	53,400	28⅞	27⅝	— ½	29,100
Douglas Aircraft	86⅝	82¼	+2	11,700	88	83	+2¾	19,900
Eastern Air Lines	38⅝	37	— ⅝	13,700	41	38¼	+2¼	29,100
Ex-Cell-O	27⅞	25⅞	+1⅝	9,000	29	27¼	+1⅜	8,600
Lockheed Aircraft	35½	30½	+4⅛	122,800	38⅞	34	+2⅞	135,400
Glenn L. Martin	45⅞	42½	+1½	43,900	46¼	43¼	+ ⅝	45,300
Natl. Aviation Corp. ..	15⅛	14⅛	+ ⅝	40,900	15⅞	14½	+ ¾	42,600
N. American Aviation ..	25⅜	23⅜	— ¼	30,600	25⅞	23⅝	+ ⅞	51,500
Pan American Airways .	22½	21	+ ⅜	98,800	25¼	21⅞	+2⅝	108,300
Sperry Corp.	43¾	42¼	+ ¾	10,900	46½	42¾	+3⅜	26,500
Thompson Products ...	35⅛	33½	+1⅛	6,000	36⅛	34¾	+ ½	8,300
TWA	20	18¾	+ ¾	28,400	21⅞	19⅞	+1⅛	43,000
United Aircraft	48½	47	+ ¼	22,700	50⅛	47½	+2⅜	45,700
United Air Lines	21½	19⅞	+ ⅞	100,700	23¾	20¾	+1¾	110,300
Wright Aeronautical ..	126	118⅛	+7½	910	127	119	+3	540

The Aeroplane 4/26/40

Supplies from America

MANY KITES are being flown in the United States since the head of the Allied Purchasing Commission announced last week that contracts would soon be signed for "five types which the United States Government released for sale last week." Curtiss P-40 fighters and Douglas B-20A. light bombers are known to have been ordered. Speculation as to the other types is running its usual course and ranges from the big, four-engined Consolidated bomber to the unorthodox and poorly armed Bell Airacobra fighter.

Between these, Lockheed fighters, Martin bombers and Lockheed light bombers are mentioned, to say nothing of Consolidated flying-boats. General agreement seems to have been reached on the subject of numbers. The Allies are expected to take 5,000 aeroplanes in the course of the next eighteen months. That is a much more likely figure than those estimates which were being circulated a few weeks ago. The choice of types may also prove in the event to be much different from the forecasts. In this matter the Allies will presumably leave the field to the tipsters. Their policy at home is not to announce the nature of the orders placed and the same policy will probably be followed abroad.

We shall be greatly surprised if the Commission elects to order Airacobras. With their untried engine, their unorthodox placing of the engine and their relatively inadequate armament, these seem to offer a maximum of potential troubles in exchange for a few miles an hour more in speed. The same engine, it is true, is used in the Curtiss P-40, and in the twin-engined Lockheed P-38, and none of the American fighters which use radial engines can offer the same performance. Thus the Allies appear to be tempted to take the performance and hope that the snags have been got out of the engine.

Using a new engine a long way from its home has the appearance of rashness. And there has been no hint yet that a British engine can take the place of the Allison in these types. But for this unknown quantity, we could welcome the prospect of high performance machines from America. They will probably arrive while new British types are in production, and from the home and overseas sources the Allies will have a good supply of new machines to oppose to any surprises the German industry is preparing. But if some of the American aircraft should present us with engine problems, half the advantage of the higher performance will have been lost.

Aircraft News 9/16

CONSOLIDATED BOMBER IN MANY TESTS

The new Consolidated Model 32 four-engined land bomber is now undergoing tests at San Diego. Release data on this new plane for the U. S. Army Air Corp has been kept well in hand by the war department as heretofor only a few ground pictures have been officially permitted.

Designated by the Army as the XB-24, the plane marks Consolidated Aircraft Corporation's reentry into the land plane manufacturing field, breaking a virtual specialiaztion which has brought Consolidated the distinction of being the world's largest manufacturer of flying boats. The years of valuable experience garnered from the building of thousands of smaller land planes, and the advanced manufacturing methods evolved in the production of large flying boats, have been poured into this powerful new land plane for our armed forces.

The Model 32 is a full cantilever, all-metal plane, powered with four Pratt & Whitney 14-cylinder twin row radial air-cooled engines rated at 1200 h.p. each, giving the plane 4800 available horsepower in flight to hurtle it through the air. The propellors are Hamilton standards of the three-bladed hydroma-

Consolidated Bomber In Many Tests

(Continued from Page 1)

tic constant speed type, 12 feet in diameter. Fowler flaps extend inboard of the ailerons in the wing of high aspect ratio, with the engine nacelles mounted flush with the upper surface of the center section.

The approximate gross weight of the airplane is 40,000 pounds, wing span, 110 feet; length of fuselage, 64fe et, and over-all height, 19 feet. Tactical requirements are for a crew of from six to nine persons, depending upon the mission to be performed.

Control surfaces are fabric covered and fully counterweighted. A full cantilever horizontal stabilizer has twin fins and rudders mounted at the tips. The all-metal stressed skin fuselage is equipped with hatches and windows in the nose, tail, turtledeck, back and bottom. The landing gear is of the tricycle type with single wheel forward. This retracts into the fuselage. The rear, or main landing wheels retract int the wing wells.

While the performance figures are strictly confidential, an official release states: "This airplane, from preliminary examinations, gives evidence of living up to the advancements in aerodynamic and performance characteristics predicted. These include a speed of over 300 miles per hour, a range of approximately 3000 miles and a bomb carrying capacity of approximately four tons."

BeeHive - March 1940

Pratt & Whitney engines and Hamilton Standard propellers have been specified for two new planes recently delivered to the U. S. Army.

One, the North American AT-6 advanced trainer, is a two-place, all-metal, monoplane, equipped with a nine-cylinder Pratt & Whitney engine and a Hamilton Standard constant speed propeller.

The second plane is the four-motored Consolidated XB-24. Powered by Pratt & Whitney 1,200 horsepower Twin Wasps and equipped with three-bladed Hamilton Standard Hydromatic propellers, the sleek new bomber is said to have a bomb-carrying capacity of about four tons.

American Aviation 6/1/40

GOVERNMENT CONTRACTS

(Awards of $10,000 and Over)
Release Date Shown

AIRCRAFT

Lockheed Aircraft Corp., Burbank, Cal., 4/19, airplane, $58,286.75 (Navy Supplies & Accounts).

ENGINES, PARTS, ACCESSORIES

Consolidated Aircraft Corp., San Diego, Cal., 4/19, airplane parts $21,675.39 (Navy).

Goodyear Tire & Rubber Co. Inc., Akron, O., 4/19, landing wheel inner tubes, $16,274.06 (Air Corps).

Bendix Products Div., Bendix Aviation Corp., South Bend Ind., 4/23 landing gear wheels, $15,630 (Navy Supplies & Accounts).

Pratt & Whitney Aircraft Div., United Aircraft Corp., E. Hartford, Conn. 4/23, maintenance parts for engines, $591,151.21 (Air Corps).

Consolidated Aircraft Corp., San Diego, Cal., 4/25, spare parts for airplanes, $26,221.96 (Navy Supplies & Accounts).

Vought-Sikorsky Aircraft Div., United Aircraft Corp., Stratford, Conn., 4/26, spare parts for airplanes, $59,259.67 (Navy).

Consolidated Aircraft Corp., San Diego, Cal., 4/26, airplane parts $41,098.16 (Navy).

Pratt & Whitney Aircraft Div., United Aircraft Corp., E. Hartford Conn., 4/26, ball bearings $15,269.45 (Philadelphia Navy Yard).

Grumman Aircraft Engineering Corp., Bethpage, N. Y., 4/26, parts for airplanes, $11,827.47 (Navy).

Fairchild Aviation Corp., Jamiaca, N. Y., 5/2, computer assemblies, $30,216 (Air Corps).

Liquidometer Corp., Long Island City, N. Y., 4/23, fuel gage indicator & compensator assemblies, $19,354.63 (Air Corps).

Vought-Sikorsky Aircraft Div., United Aircraft Corp., Stratford, Conn., 5/7, spare parts for airplanes, $14,425.41 (Navy).

Wright Aeronautical Corp., Paterson, N. J., 5/17, automatic strainer assembly, $15,200 (Air Corps).

Trib 5/24/40

State Chamber of Commerce Directors Arrive for Conference With San Diego Group

Directors of the state chamber of commerce, who arrived here today from the north for a meeting at the local chamber, are, left to right, above, R. K. Davies, San Francisco; C. C. Teague, Santa Paula; Col. William M. Garland, Los Angeles; Harrison S. Robinson, Oakland; Joseph R. Knowland, Oakland; Preston Hotchkis, Los Angeles; A. C. Mattei, San Francisco; D. P. Boothe, Modesto; W. C. Mullendore, Los Angeles; A. E. Roth, San Francisco; Hal Hotchkiss, San Diego; Harry Chandler, Los Angeles; R. B. Hale, San Francisco; A. T. Spencer, Gerber; Maj. R. H. Fleet, San Diego; M. B. Silberberg, Los Angeles; Parker Frisselle, Kearney Park.

RELIEF HELD KEY TO TAXES; NEW OFFICERS ELECTED

Disposition by the legislature of the relief situation continues to be the keynote to the tax situation, directors of the state chamber of commerce were told today at a meeting in the local chamber.

The directors arrived at Lindbergh field today aboard a giant Western Air Express mainliner. They were met by Maj. R. H. Fleet and Hal Hotchkiss, local members of the board; Maj. T C. Macaulay, executive manager of the local

(Continued on Page 4A, Col. 2)

RELIEF [illegible] KEY TO TA[illegible]; NEW OFFICERS ELECTED

CONTINUED FROM PAGE ONE

chamber, and other chamber officials.

Inspect Plane Plant

After a morning meeting at the chamber they were guests of Fleet, president of Consolidated Aircraft Corp., at luncheon, and then inspected the huge aircraft plant. They were to return north by plane late this afternoon.

Preston Hotchkiss, executive vice president of the Pacific Indemnity Co., Los Angeles, elected first vice president of the state chamber today, presided at the morning meeting in the absence of Alfred J. Lundberg, Oakland industrialist, elected president. A. E. Roth, president of the San Francisco Employers' council, became second president. Lundberg succeeded A. J. McFadden, Santa Ana orchardist, as president.

McFadden and James Mussatti, San Francisco, general manager of the state chamber, and E. W. Murphy, Los Angeles, a director, drove here for the meeting.

A report of the state-wide tax committee to the board said in part:

"If the limited appropriative measure is finally approved in its present form, relief appropriations for the present biennium will have amounted to the following: By 1939 January session, $35,525,000; by special session of February, 1940, $13,800,000; by special session May, 1940, $24,347,091; total, $73,682,091.

"This would leave an appropriation for the last quarter of the biennium—April, May and June, 1941—still to be made, which, if in line with the rate of past and present appropriations, would bring the biennial total up to about $82,500,000 as compared to expenditures of $75,729,355 the previous biennium."

"California Trade Good"

"This outcome, while extremely gratifying from many viewpoints, still leaves in abeyance the basic problem of relief administration and financing, regarding which our committee will submit further recommendations to this board at its next meeting. All administration proposals for new taxes are still pending in committees of both houses."

The research department report on economic conditions stated: "Recent business statistics for California and the nation have been more encouraging, indicating that the minor recession, the first quarter of this year, reached bottom last month. The present European situation, however, has caused sharp declines in some commodity and stock prices, and has engendered general nervousness, despite stimulus of an expensive national rearmament and preparedness program that wil lspeed up operations in many industries and stimulate business generally.

"A comparison of California business indexes with similar national indexes shows the decline in business the first quarter was less severe in California than for the United States as a whole. Further analysis reveals the present level of California business is from 10 to 15 percent above the level of a year ago.

Building Increase Cited

"California employment and payrool statistics reflect a moderate increase in total manufacturing activity from March to April and a gain of more than 15 percent over April last year. As for the individual industries or groups of industries, the percentage changes varied considerably. The aircraft, pulp and paper, plywood, and those producing parts and accessories continue to operate at capacity levels.

"New residential building was the bright spot in the building industry during April. While the seasonally corrected index for total value of permits dropped about 4 percent from March to April, the adjusted index for new homes advanced nearly 13 percent, indicating a substantial decline in nonresidential building. The residential index advanced 20 percent since April, 1939.

"Retail distribution since Jan. 1 has shown no material change beyond normal seasonal fluctuations. Sales of independent stores the first four months this year aggregated 4½ percent more than for the same period last year. Demand for motor vehicles, furniture and building supplies was especially strong, whereas sales of department and apparel stores was less favorable.

"Farm income in California continues above the level of a year ago by slightly more than 15 percent. Planting of truck crops, haying, thinning of deciduous fruits, shearing of sheep, and harvests of vegetables, strawberries, cherries and Valencia oranges progressed. Pastures and ranges remained in good condition, but were drying rapidly in southern districts. Cotton, home gardens and livestock remanied in good condition."

Union - 6-7-40

FLEET SUGGESTS LONGER WEEK FOR AIRPLANE PLANTS

The United States could "accelerate" plane deliveries "by increasing the work week to include a full working day Saturday," Maj. Reuben H. Fleet, head of Consolidated Aircraft Corp., told a Buffalo Aero club dinner group, The Associated Press reported yesterday.

Fleet reported 684 men at work in the Fleet Aircraft Co.'s plant at Ft. Erie, Ont., and added he noted 13 planes ready for delivery to the Canadian air force.

Consolidated Aircraft here is on a 40-hour work week, three shifts employed to extend around the 24-hour period each day, it was reported. This schedule "will be maintained until the government wants to permit a 48-hour work week," a Consair official said.

Union 6-7-40

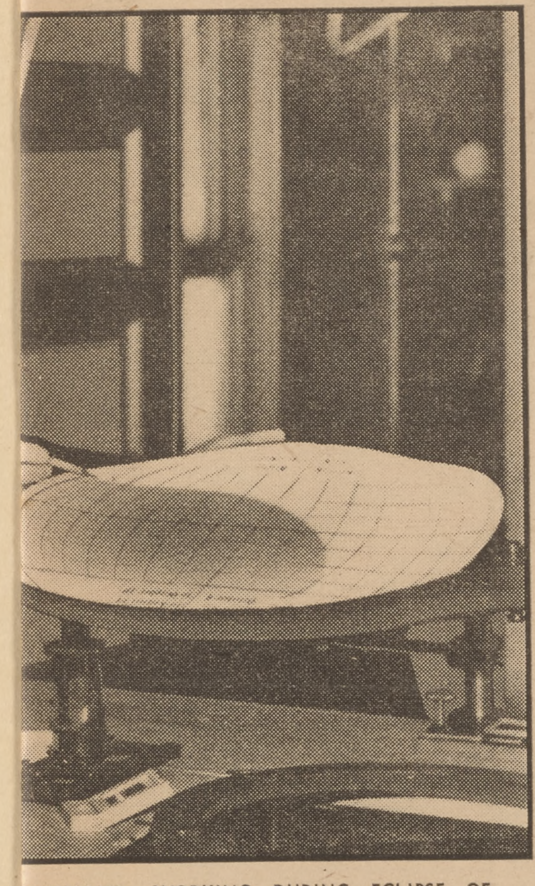
* * *

Referring to the growth of the Consolidated Aircraft the Corner suggested that, in view of the acres of buildings being added, the company adopted the old slogan "Watch us grow!"

C. N. T. drops us a line and suggests a better one—"Watch us fly."

* * *

E WORLD OF SCIENCE
WILLIAM S. BARTON



TRONOMER, WORKING DURING ECLIPSE OF OF MT. WILSON'S 150-FOOT-TOWER SUN AGE OF SUNSPOT CAST ON THE PAPER SCREEN WITH OTHER HAND BENEATH SOLAR TELESCOPE FEW MINUTES BEFORE CLIMAX OF ECLIPSE

en
he
en-
ng
tal
he
ow
of
m-
ck
he
300

ely
G.
It
has
ells
the
was
in
rn-
to
ac-
er-
ed
ble
be-
en
The
ory

that most cases of hysteria are the indirect result of shocks, emotional and usually sexual in nature. Memories, fears and desires, he felt, may be suppressed and pushed into the subconscious only to find eventual expression in dreams or hysteria. He was [illegible] factor the wish gratified in the dream is the one that has been left unsatisfied in the daytime. He insisted that a newly married couple never dream of each other and that no person dreams of his work unless he has been thwarted in some part of it. To Freud virtually every dream is related to hateful wishes or to the interference of other persons with our sex wishes. Many scientists admit that Freud's theories, while stimulating, are merely impressionistic pictures of the truth and cannot be accepted as authentic generalities.

No LESS than 600,000,000 lives have been lost in a catastrophe that recently swept that many little shellfish to oblivion along the English coast. Biologists who visited the scene of death report they measured a pile of the shellfish remains that was nine miles long, six feet wide and ten inches deep. A single cubic foot of this continuous melancholy mound contained 3600 dead. An "unusual" combination of tides and winds is blamed for the carnage which scientists fear will result in a serious shortage of food for other sea dwellers in that locality.

RANK flavors in milk can be prevented if cows are fed food that contains plenty of carotene, the plant pigment which is the source of Vitamin A, the University of California College of Agriculture reports. Carotene concentrate, carrots, green feeds, and even alfalfa that is so cured that it retains its green color, makes milk taste better and increases its nutritional value to human beings.

QUESTIONS:

1.—How old are the oldest known human bones?

2.—When did man first harness fire?

3.—Are old people stupid?

4.—Why were early New England brides once married in borrowed sheets?

5.—Why does the Pasadena screech owl live longer than other birds of prey?

ANSWERS:

1.—The Sinanthropus skull found in China is believed to be upward of a million years old.

2.—There is some evidence, including deeply buried ashes, that man has used fire for almost a million years.

3.—In a University of California test of the intelligences of 2331 persons, some of the best scores were made by those over 70. The average of those over 70 was half a point higher than that for the whole group. Two persons over 85 made scores only one or two points below the general average.

4.—If a bride was married while in possession of any property of her own, even clothing, her husband, because of a legal technicality, became liable and might be jailed for his wife's debts.

5.—A University of California report discloses that the "Pasadena screech owl is known to attain the age of 13 years, whereas sparrow hawks and Pacific horned owls live about two years." The research conclusion is that the screech owl knows how to hide from "the small boy with his .22 rifle."

Dickerson
VERIFIED
FOOTWEAR

Get summer-ready with cool, white

DICKERSON
ARCH-RELIEF
FOOTWEAR

Yes, it's white shoe time, and that means it's high time to get your smartly styled, comfort-giving Dickerson white shoes. The metatarsal arch-relief cushion not only gives gentle support, but relieves your aching arches. The fiberglas insulated innersole protects your feet from hot pavements. Here exclusively, pair
10.75

Other styles 10.75 and 11.75

Dickerson Footwear Street Floor
IN DOWNTOWN LOS ANGELES

The BROADWAY
Broadway, Fourth and Hill
Telephone MUtual 9311

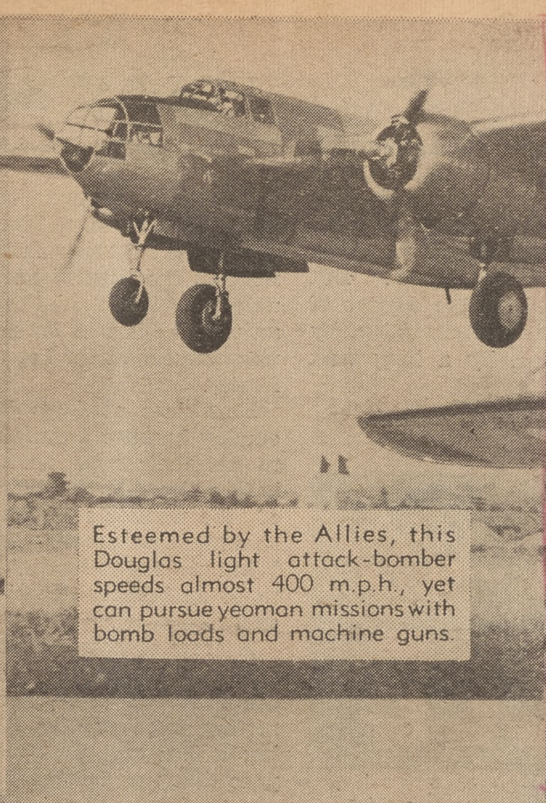
IN HOLLYWOOD . .
The BROADWAY-HOLLYWOOD
Footwear
Hollywood Blvd. at Vine
Mezzanine—HO. 6111

---

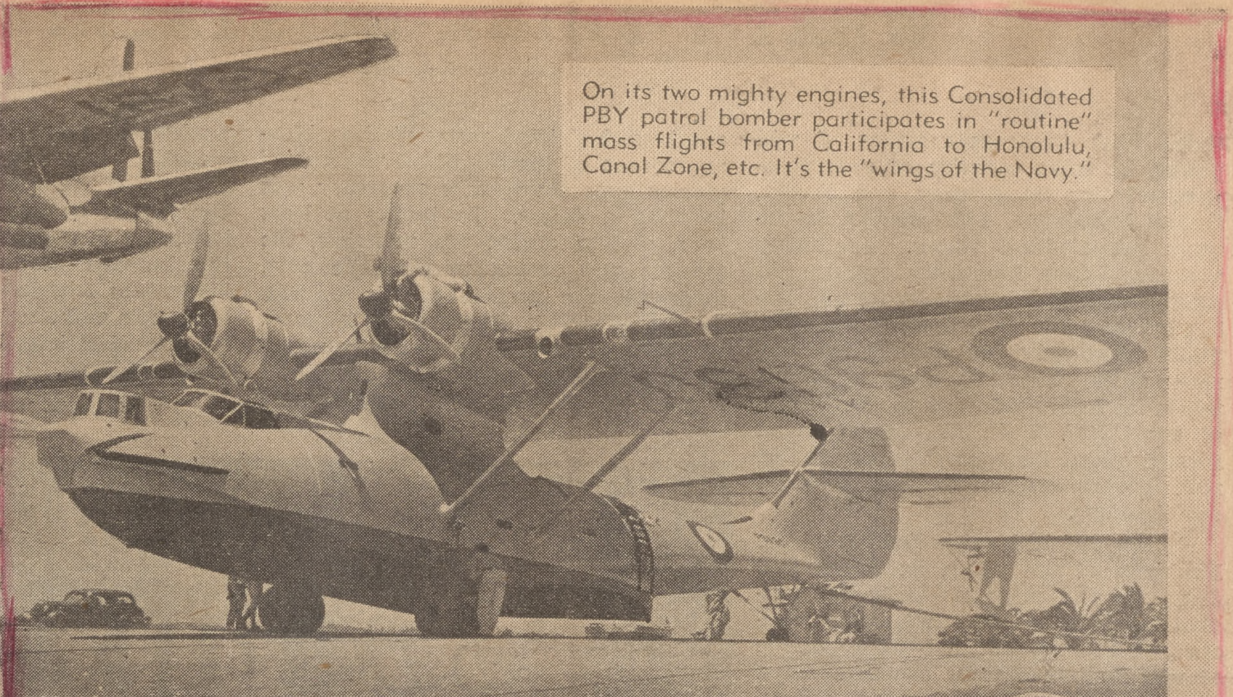
rnia

htiest sky fleet
ern California
om its thriving
craft in 1940.
the time you

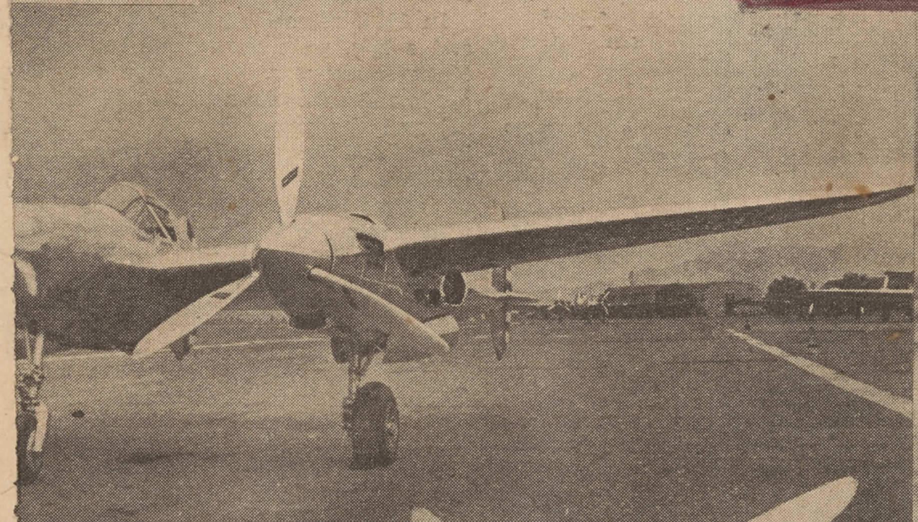
bombers, fast-
g. It is fact.
rica's onetime
h 17,000 ships
rn California,
es to acquire
mbers before
bombers that
harges.
these breath-
capacity—
g and ready.



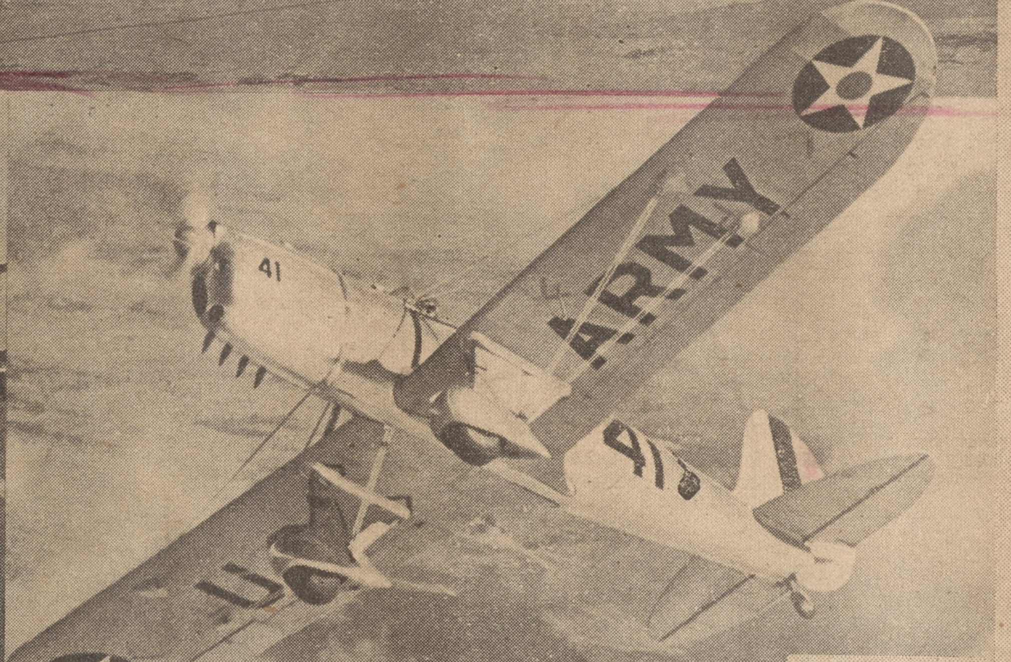
Esteemed by the Allies, this Douglas light attack-bomber speeds almost 400 m.p.h., yet can pursue yeoman missions with bomb loads and machine guns.



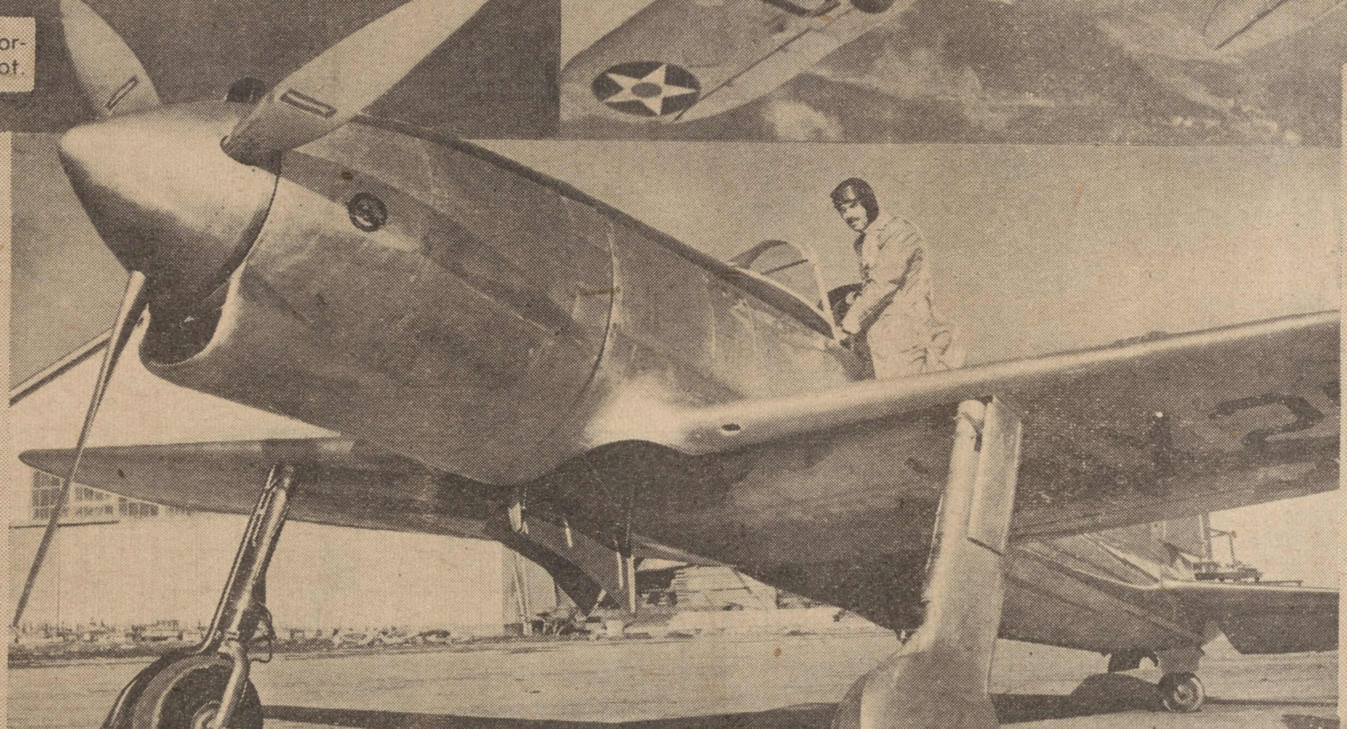
On its two mighty engines, this Consolidated PBY patrol bomber participates in "routine" mass flights from California to Honolulu, Canal Zone, etc. It's the "wings of the Navy."



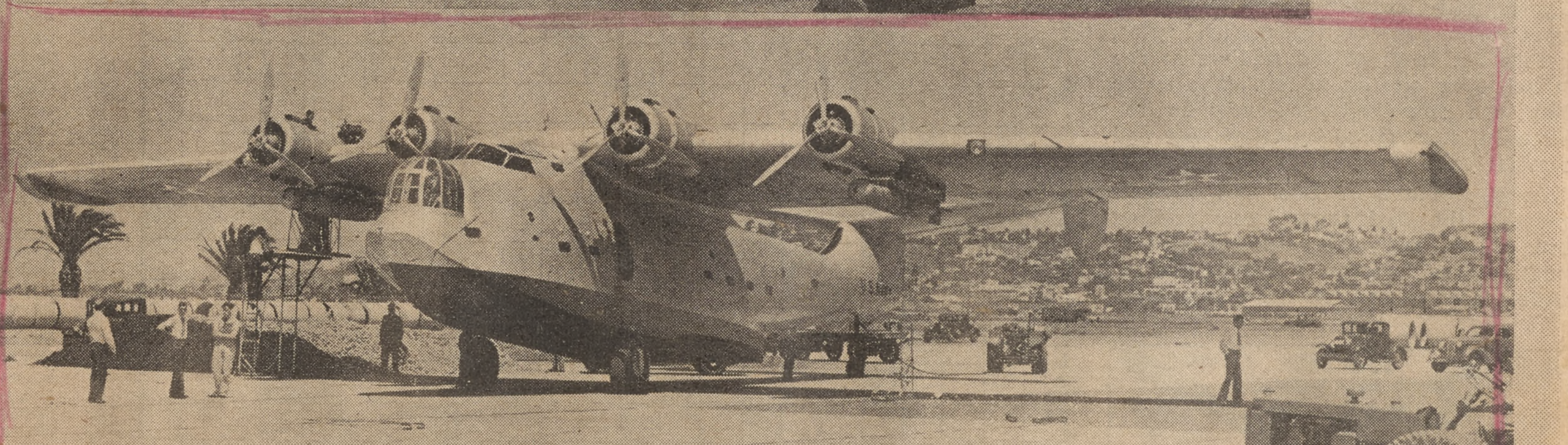
world, this Lockneed interceptor-
arries cannon, one bold pilot.



For the first time, Army cadets now are learning military flight rudiments in metal monoplanes. This Ryan primary trainer is "it."



Bulletnosed, this Vultee Vanguard pursuit almost touches 400 m.p.h. and can attack marauding bombers with cannon, guns, small bombs.



Consolidated Aircraft's mighty 25-ton PB-2-Y-1 "flying dreadnaught." Same type that will be flagship at Pearl Harbor. Four-engined has 5000-mile range, carries guns in tail, flies 240 m.p.h., has 155-foot wingspan.

~~Aircraft News~~

CONSOLIDATED BOMBER IN MANY TESTS

5/16

The new Consolidated Model 32 four-engined land bomber is now undergoing tests at San Diego. Release data on this new plane for the U. S. Army Air Corp has been kept well in hand by the war department as heretofor only a few ground pictures have been officially permitted.

Designated by the Army as the XB-24, the plane marks Consolidated Aircraft Corporation's reentry into the land plane manufacturing field, breaking a virtual specialiaztion which has brought Consolidated the distinction of being the world's largest manufacturer of flying boats. The years of valuable experience garnered from the building of thousands of smaller land planes, and the advanced manufacturing methods evolved in the production of large flying boats, have been poured into this powerful new land plane for our armed forces.

The Model 32 is a full cantilever, all-metal plane, powered with four Pratt & Whitney 14-cylinder twin row radial air-cooled engines rated at 1200 h.p. each, giving the plane 4800 available horsepower in flight to hurtle it through the air. The propellors are Hamilton standards of the three-bladed hydroma-

Consolidated Bomber In Many Tests

(Continued from Page 1)

tic constant speed type, 12 feet in diameter. Fowler flaps extend inboard of the ailerons in the wing of high aspect ratio, with the engine nacelles mounted flush with the upper surface of the center section.

The approximate gross weight of the airplane is 40,000 pounds, wing span, 110 feet; length of fuselage, 64fe et, and over-all height, 19 feet. Tactical requirements are for a crew of from six to nine persons, depending upon the mission to be performed.

Control surfaces are fabric covered and fully counterweighted. A full cantilever horizontal stabilizer has twin fins and rudders mounted at the tips. The all-metal stressed skin fuselage is equipped with hatches and windows in the nose, tail, turtledeck, back and bottom. The landing gear is of the tricycle type with single wheel forward. This retracts into the fuselage. The rear, or main landing wheels retract int the wing wells.

While the performance figures are strictly confidential, an official release states: "This airplane, from preliminary examinations, gives evidence of living up to the advancements in aerodynamic and performance characteristics predicted. These include a speed of over 300 miles per hour, a range of approximately 3000 miles and a bomb carrying capacity of approximately four tons."

Beehive - March 1940

Pratt & Whitney engines and Hamilton Standard propellers have been specified for two new planes recently delivered to the U. S. Army.

One, the North American AT-6 advanced trainer, is a two-place, all-metal, monoplane, equipped with a nine-cylinder Pratt & Whitney engine and a Hamilton Standard constant speed propeller.

The second plane is the four-motored Consolidated XB-24. Powered by Pratt & Whitney 1,200 horsepower Twin Wasps and equipped with three-bladed Hamilton Standard Hydromatic propellers, the sleek new bomber is said to have a bomb-carrying capacity of about four tons.

American Aviation 6/1/40

GOVERNMENT CONTRACTS

(Awards of $10,000 and Over)

Release Date Shown

AIRCRAFT

Lockheed Aircraft Corp., Burbank, Cal., 4/19, airplane, $58,286.75 (Navy Supplies & Accounts).

ENGINES, PARTS, ACCESSORIES

Consolidated Aircraft Corp., San Diego, Cal., 4/19, airplane parts $21,675.39 (Navy).

Goodyear Tire & Rubber Co. Inc., Akron, O., 4/19, landing wheel inner tubes, $16,274.06 (Air Corps).

Bendix Products Div., Bendix Aviation Corp., South Bend Ind., 4/23 landing gear wheels, $15,630 (Navy Supplies & Accounts).

Pratt & Whitney Aircraft Div., United Aircraft Corp., E. Hartford, Conn. 4/23, maintenance parts for engines, $591,151.21 (Air Corps).

Consolidated Aircraft Corp., San Diego, Cal., 4/25, spare parts for airplanes, $26,221.96 (Navy Supplies & Accounts).

Vought-Sikorsky Aircraft Div., United Aircraft Corp., Stratford, Conn., 4/26, spare parts for airplanes, $59,259.67 (Navy).

Consolidated Aircraft Corp., San Diego, Cal., 4/26, airplane parts $41,098.16 (Navy).

Pratt & Whitney Aircraft Div., United Aircraft Corp., E. Hartford Conn., 4/26, ball bearings $15,269.45 (Philadelphia Navy Yard).

Grumman Aircraft Engineering Corp., Bethpage, N. Y., 4/26, parts for airplanes, $11,827.47 (Navy).

Fairchild Aviation Corp., Jamiaca, N. Y., 5/2, computer assemblies, $30,216 (Air Corps).

Liquidometer Corp., Long Island City, N. Y., 4/23, fuel gage indicator & compensator assemblies, $19,354.63 (Air Corps).

Vought-Sikorsky Aircraft Div., United Aircraft Corp., Stratford, Conn., 5/7, spare parts for airplanes, $14,425.41 (Navy).

Wright Aeronautical Corp., Paterson, N. J., 5/17, automatic strainer assembly, $15,200 (Air Corps).

Trib 5/24/40

State Chamber of Commerce Directors Arrive for Conference With San Diego Group

Directors of the state chamber of commerce, who arrived here today from the north for a meeting at the local chamber, are, left to right, above, R. K. Davies, San Francisco; C. C. Teague, Santa Paula; Col. William M. Garland, Los Angeles; Harrison S. Robinson, Oakland; Joseph R. Knowland, Oakland; Preston Hotchkis, Los Angeles; A. C. Mattei, San Francisco; D. P. Boothe, Modesto; W. C. Mullendore, Los Angeles; A. E. Roth, San Francisco; Hal Hotchkiss, San Diego; Harry Chandler, Los Angeles; R. B. Hale, San Francisco; A. T. Spencer, Gerber; Maj. R. H. Fleet, San Diego; M. B. Silberberg, Los Angeles; Parker Frisselle, Kearney Park.

RELIEF HELD KEY TO TAXES; NEW OFFICERS ELECTED

Disposition by the legislature of the relief situation continues to be the keynote to the tax situation, directors of the state chamber of commerce were told today at a meeting in the local chamber.

The directors arrived at Lindbergh field today aboard a giant Western Air Express mainliner. They were met by Maj. R. H. Fleet and Hal Hotchkiss, local members of the board; Maj. T C. Macaulay, executive manager of the local

(Continued on Page 4A, Col. 2)

RELIEF [illegible] KEY TO TA[illegible]; NEW OFFICERS ELECTED

CONTINUED FROM PAGE ONE

chamber, and other chamber officials.

Inspect Plane Plant

After a morning meeting at the chamber they were guests of Fleet, president of Consolidated Aircraft Corp., at luncheon, and then inspected the huge aircraft plant. They were to return north by plane late this afternoon.

Preston Hotchkiss, executive vice president of the Pacific Indemnity Co., Los Angeles, elected first vice president of the state chamber today, presided at the morning meeting in the absence of Alfred J. Lundberg, Oakland industrialist, elected president. A. E. Roth, president of the San Francisco Employers' council, became second president. Lundberg succeeded A. J. McFadden, Santa Ana orchardist, as president.

McFadden and James Mussatti, San Francisco, general manager of the state chamber, and E. W. Murphy, Los Angeles, a director, drove here for the meeting.

A report of the state-wide tax committee to the board said in part:

"If the limited appropriative measure is finally approved in its present form, relief appropriations for the present biennium will have amounted to the following: By 1939 January session, $35,525,000; by special session of February, 1940, $13,800,000; by special session May, 1940, $24,347,091; total, $73,682,091.

"This would leave an appropriation for the last quarter of the biennium—April, May and June, 1941—still to be made, which, if in line with the rate of past and present appropriations, would bring the biennial total up to about $82,500,000 as compared to expenditures of $75,729,355 the previous biennium."

"California Trade Good"

"This outcome, while extremely gratifying from many viewpoints, still leaves in abeyance the basic problem of relief administration and financing, regarding which our committee will submit further recommendations to this board at its next meeting. All administration proposals for new taxes are still pending in committees of both houses."

The research department report on economic conditions stated: "Recent business statistics for California and the nation have been more encouraging, indicating that the minor recession, the first quarter of this year, reached bottom last month. The present European situation, however, has caused sharp declines in some commodity and stock prices, and has engendered general nervousness, despite stimulus of an expensive national rearmament and preparedness program that wil lspeed up operations in many industries and stimulate business generally.

"A comparison of California business indexes with similar national indexes shows the decline in business the first quarter was less severe in California than for the United States as a whole. Further analysis reveals the present level of California business is from 10 to 15 percent above the level of a year ago.

Building Increase Cited

"California employment and payrool statistics reflect a moderate increase in total manufacturing activity from March to April and a gain of more than 15 percent over April last year. As for the individual industries or groups of industries, the percentage changes varied considerably. The aircraft, pulp and paper, plywood, and those producing parts and accessories continue to operate at capacity levels.

"New residential building was the bright spot in the building industry during April. While the seasonally corrected index for total value of permits dropped about 4 percent from March to April, the adjusted index for new homes advanced nearly 13 percent, indicating a substantial decline in nonresidential building. The residential index advanced 20 percent since April, 1939.

"Retail distribution since Jan. 1 has shown no material change beyond normal seasonal fluctuations. Sales of independent stores the first four months this year aggregated 4½ percent more than for the same period last year. Demand for motor vehicles, furniture and building supplies was especially strong, whereas sales of department and apparel stores was less favorable.

"Farm income in California continues above the level of a year ago by slightly more than 15 percent. Planting of truck crops, haying, thinning of deciduous fruits, shearing of sheep, and harvests of vegetables, strawberries, cherries and Valencia oranges progressed. Pastures and ranges remained in good condition, but were drying rapidly in southern districts. Cotton, home gardens and livestock remanied in good condition."

UNION - 6-7-40

FLEET SUGGESTS LONGER WEEK FOR AIRPLANE PLANTS

The United States could "accelerate" plane deliveries "by increasing the work week to include a full working day Saturday," Maj. Reuben H. Fleet, head of Consolidated Aircraft Corp., told a Buffalo Aero club dinner group, The Associated Press reported yesterday.

Fleet reported 684 men at work in the Fleet Aircraft Co.'s plant at Ft. Erie, Ont., and added he noted 13 planes ready for delivery to the Canadian air force.

Consolidated Aircraft here is on a 40-hour work week, three shifts employed to extend around the 24-hour period each day, it was reported. This schedule "will be maintained until the government wants to permit a 48-hour work week," a Consair official said.

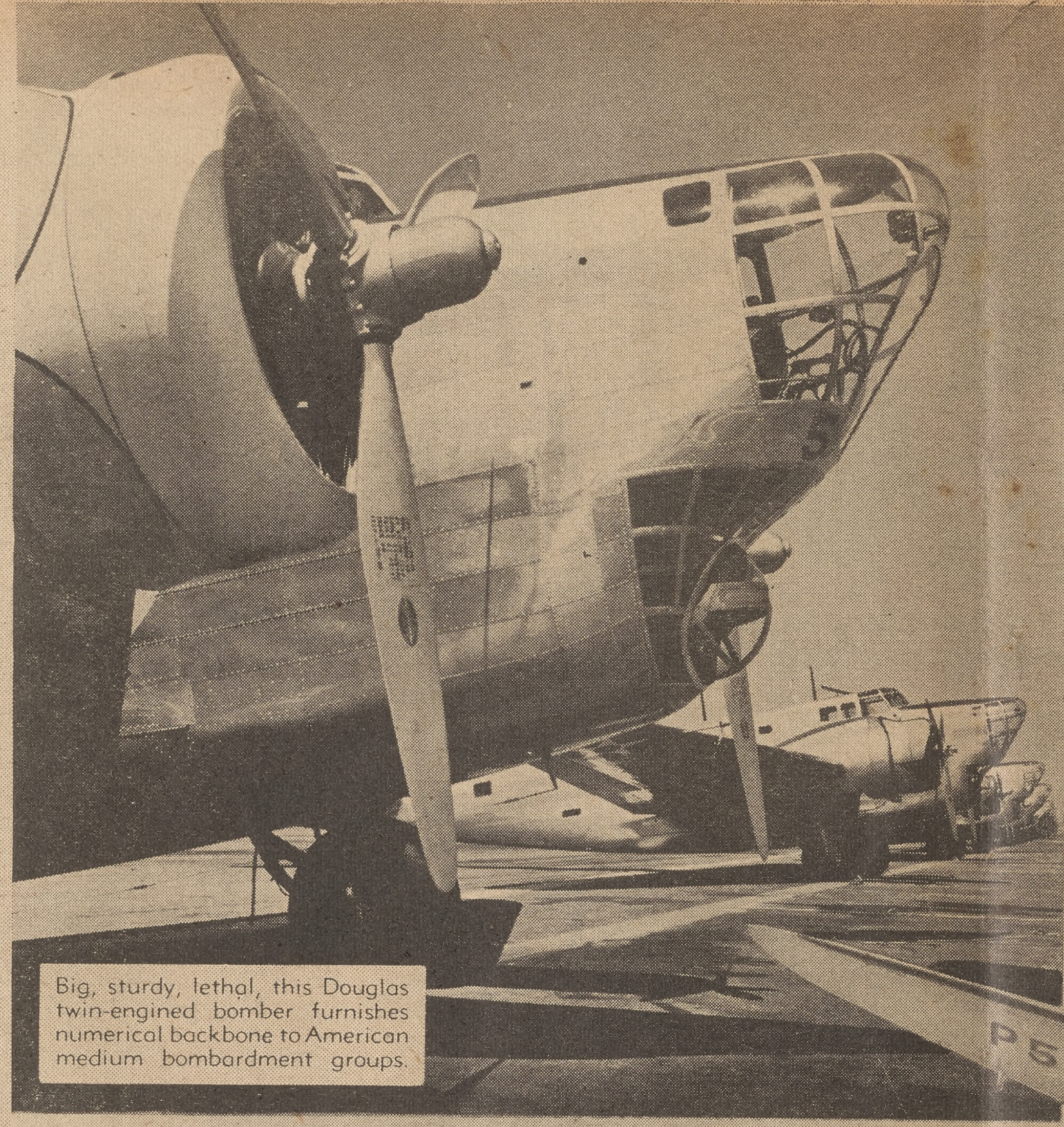
UNION 6-7-40

* * *

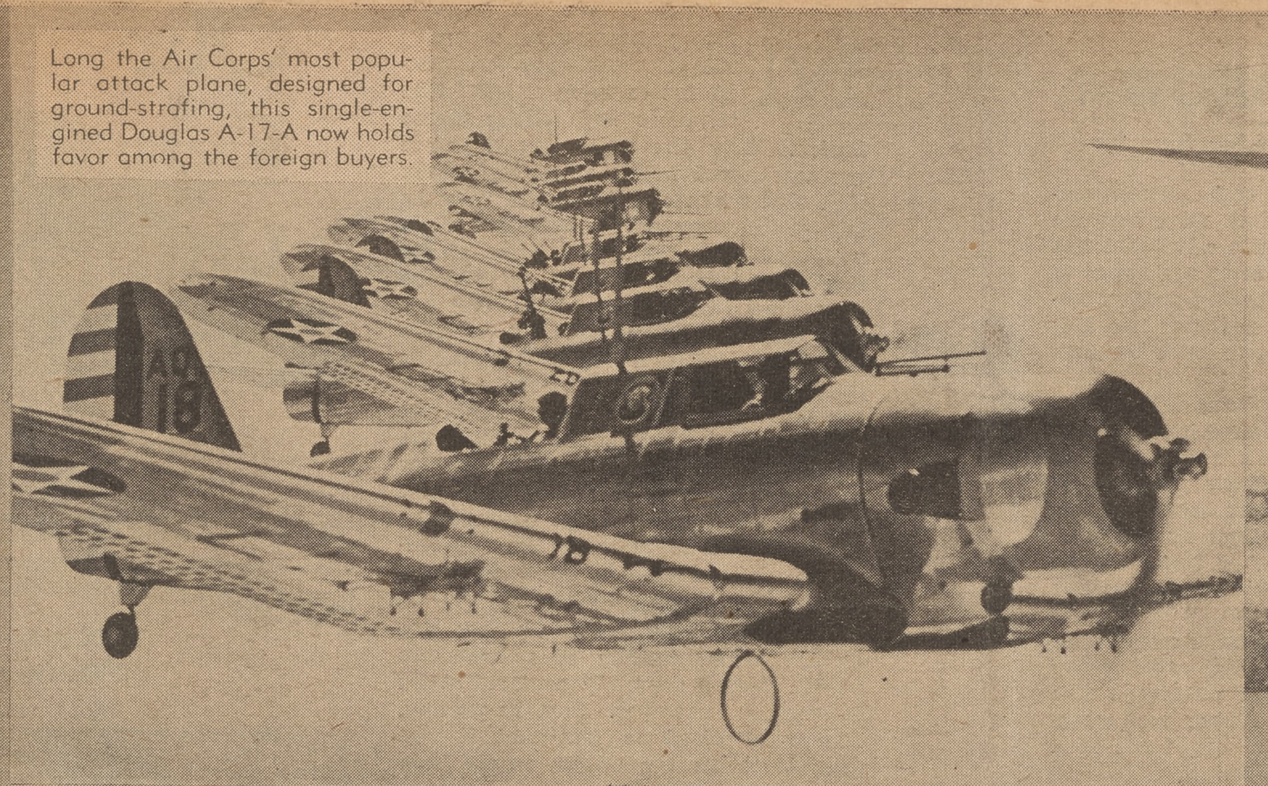
Referring to the growth of the Consolidated Aircraft the Corner suggested that, in view of the acres of buildings being added, the company adopted the old slogan "Watch us grow!"

C. N. T. drops us a line and suggests a better one—"Watch us fly."

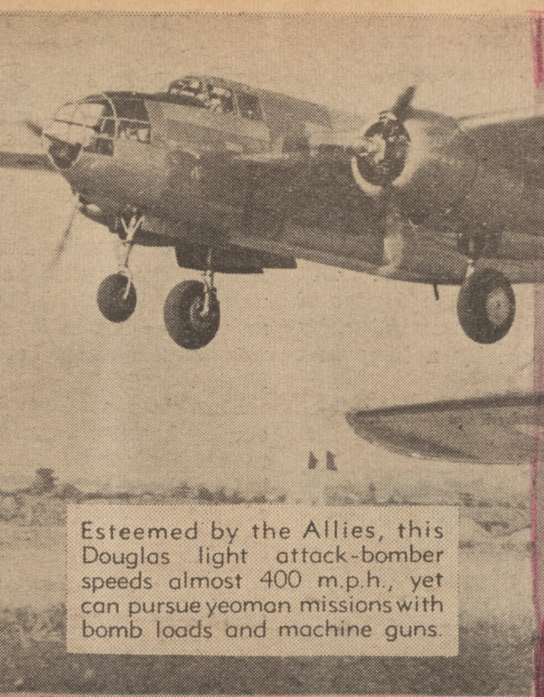
* * *



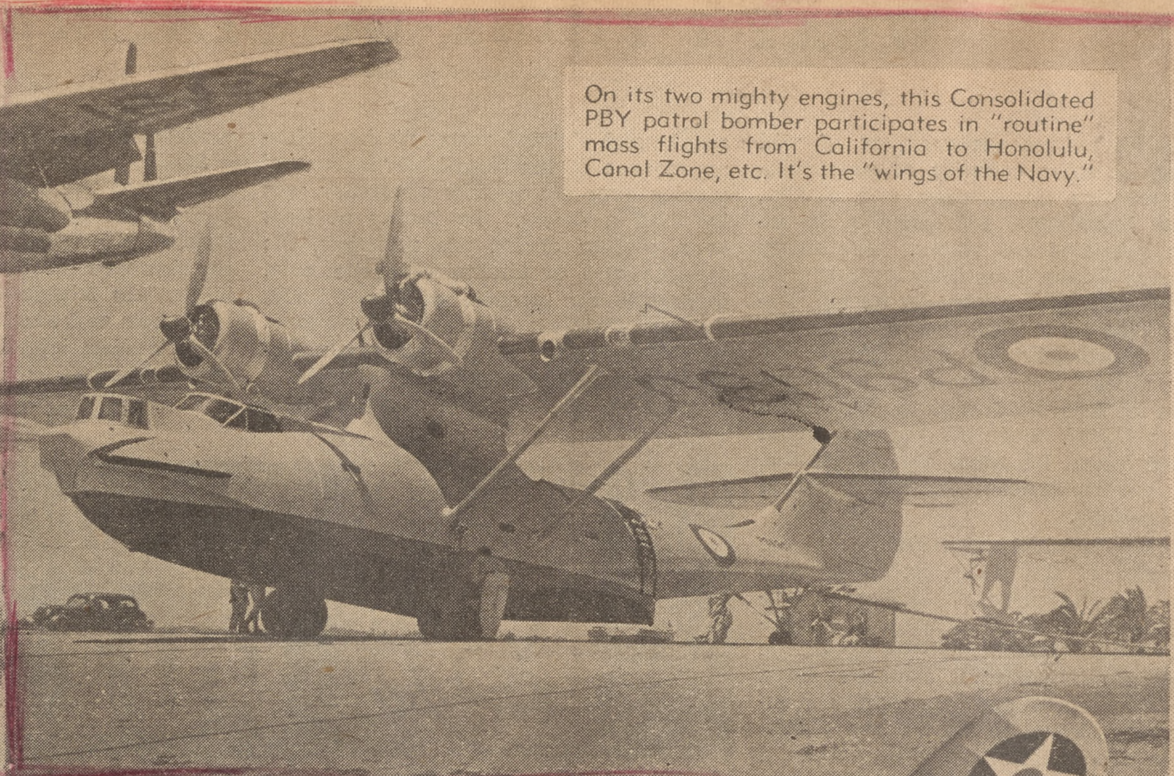
Big, sturdy, lethal, this Douglas twin-engined bomber furnishes numerical backbone to American medium bombardment groups.



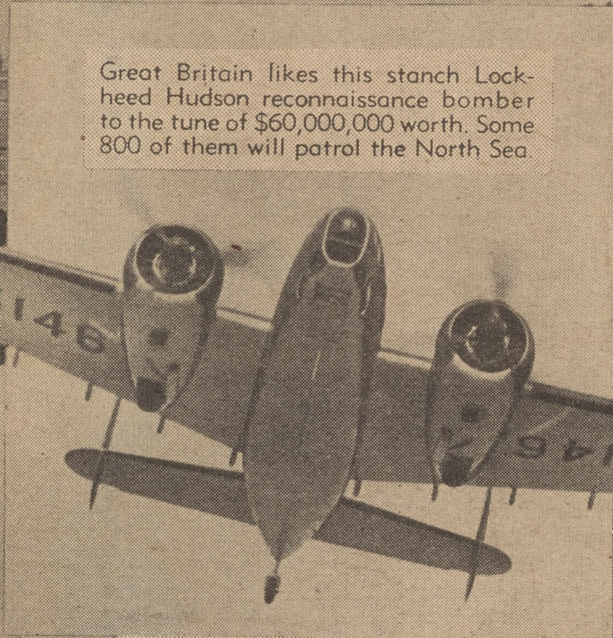
Long the Air Corps' most popular attack plane, designed for ground-strafing, this single-engined Douglas A-17-A now holds favor among the foreign buyers.



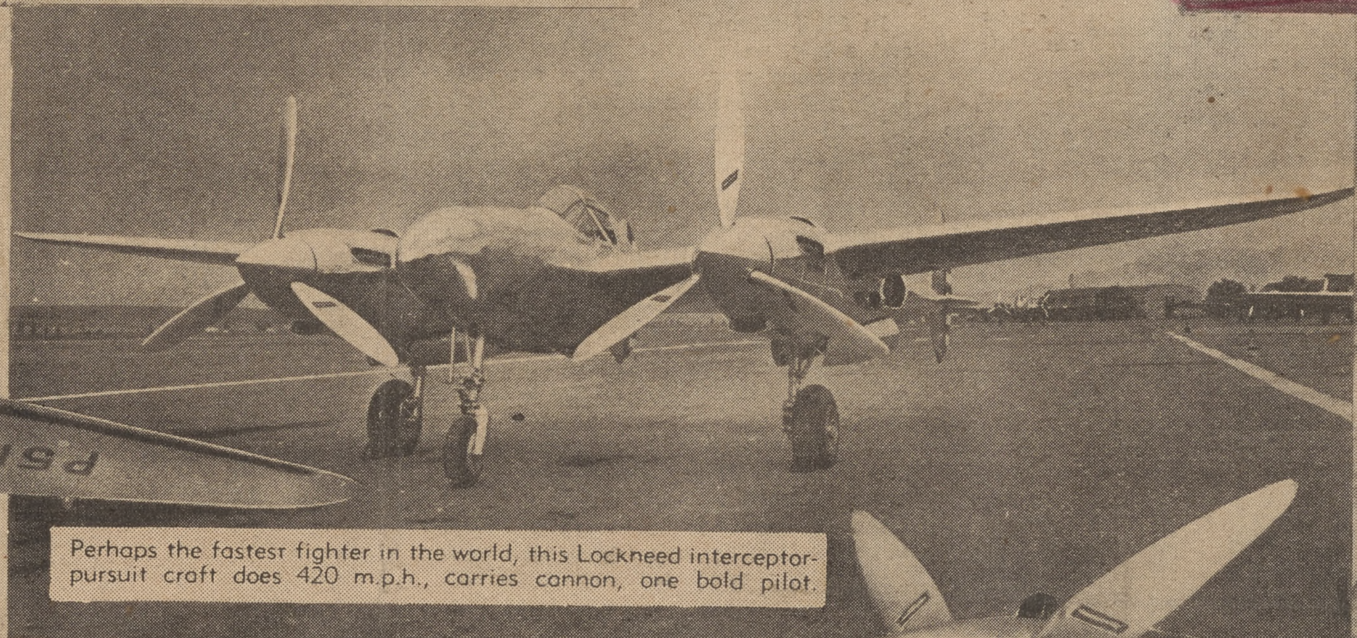
Esteemed by the Allies, this Douglas light attack-bomber speeds almost 400 m.p.h., yet can pursue yeoman missions with bomb loads and machine guns.



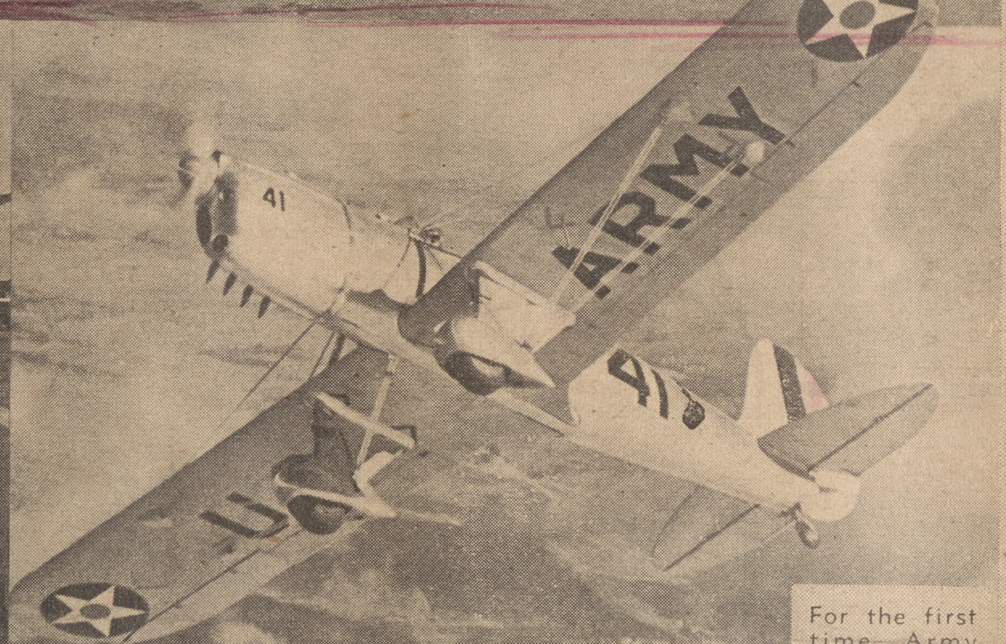
On its two mighty engines, this Consolidated PBY patrol bomber participates in "routine" mass flights from California to Honolulu, Canal Zone, etc. It's the "wings of the Navy."



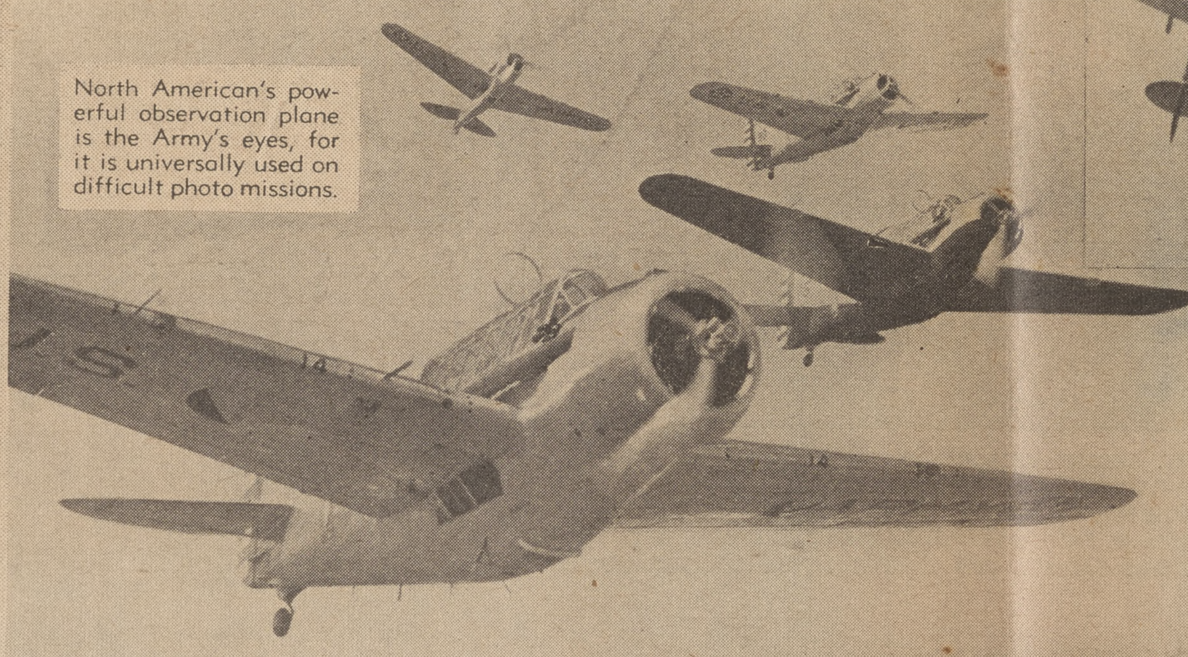
Great Britain likes this stanch Lockheed Hudson reconnaissance bomber to the tune of $60,000,000 worth. Some 800 of them will patrol the North Sea.



Perhaps the fastest fighter in the world, this Lockneed interceptor-pursuit craft does 420 m.p.h., carries cannon, one bold pilot.



For the first time, Army cadets now are learning military flight rudiments in metal monoplanes. This Ryan primary trainer is "it."



North American's powerful observation plane is the Army's eyes, for it is universally used on difficult photo missions.

Made in Southern California

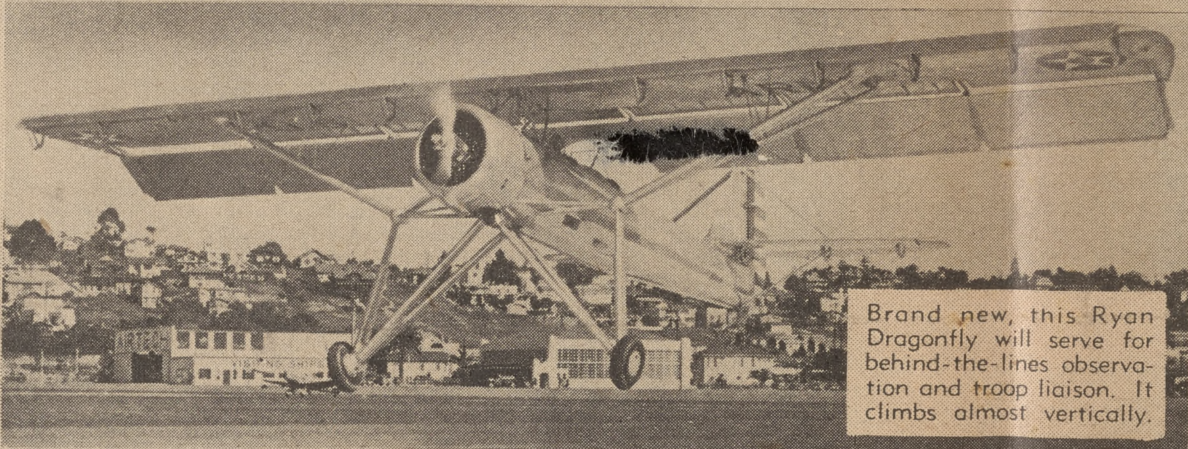
● Military experts agree that the nation with the mightiest sky fleet holds the whip hand in modern warfare. Thus Southern California is one of the greatest whip makers in the world. For from its thriving factories will pour $100,000,000 worth of export fighting craft in 1940.

Its backlog of $250,000,000—probably $450,000,000 by the time you read this—stands predominantly military.

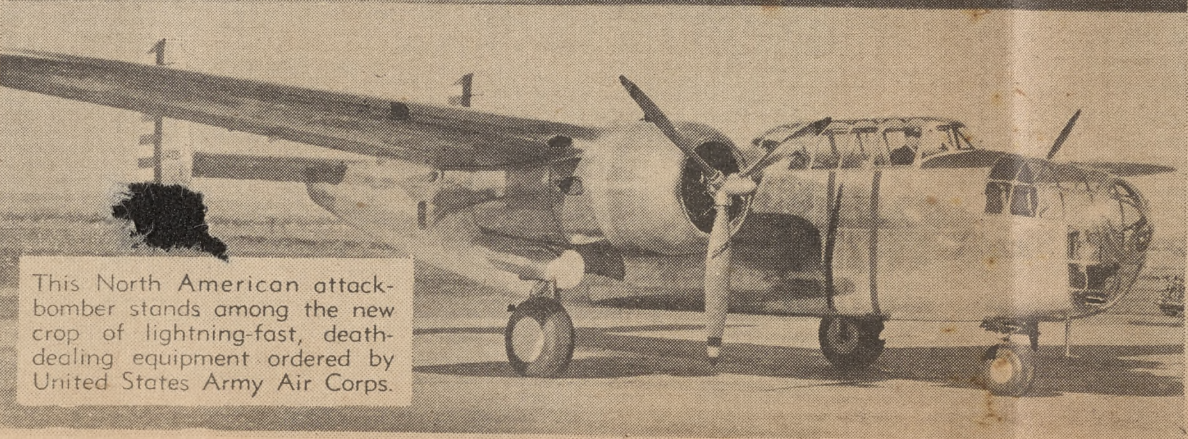
In Southern California are built the world's biggest bombers, fastest pursuit ships, swiftest seaplanes. This isn't boasting. It is fact.

Best customers are Great Britain and France. America's onetime allies know that United States production will soon touch 17,000 ships a year. They want most of these. So they look to Southern California, center of half this gigantic output. For here England hopes to acquire the 400-m.p.h. fighters capable of intercepting raiding bombers before they reach London. France wants twin-engined attack bombers that spray death with machine guns and drop demolition charges.

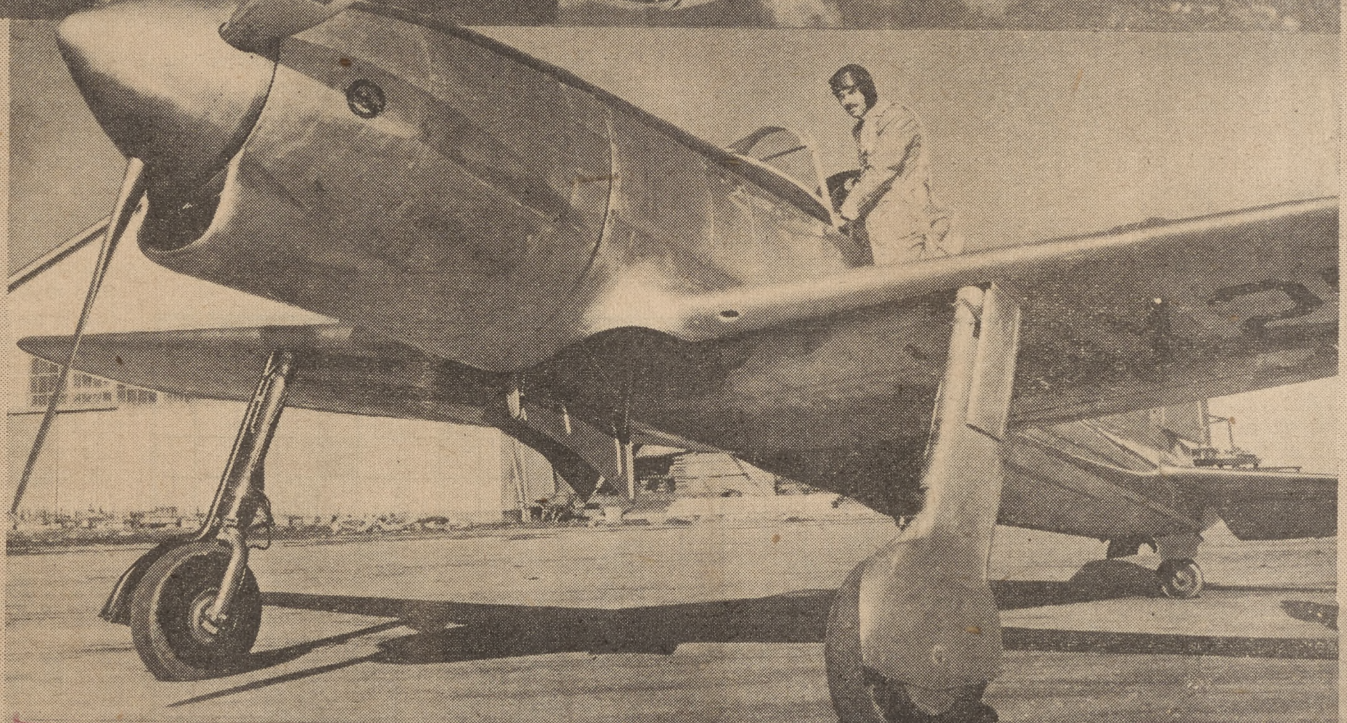
But as the industry mushrooms, leaders declare that these breathtaking foreign sales boost America's own production capacity—against M-Day when our own sinews of war must be strong and ready.



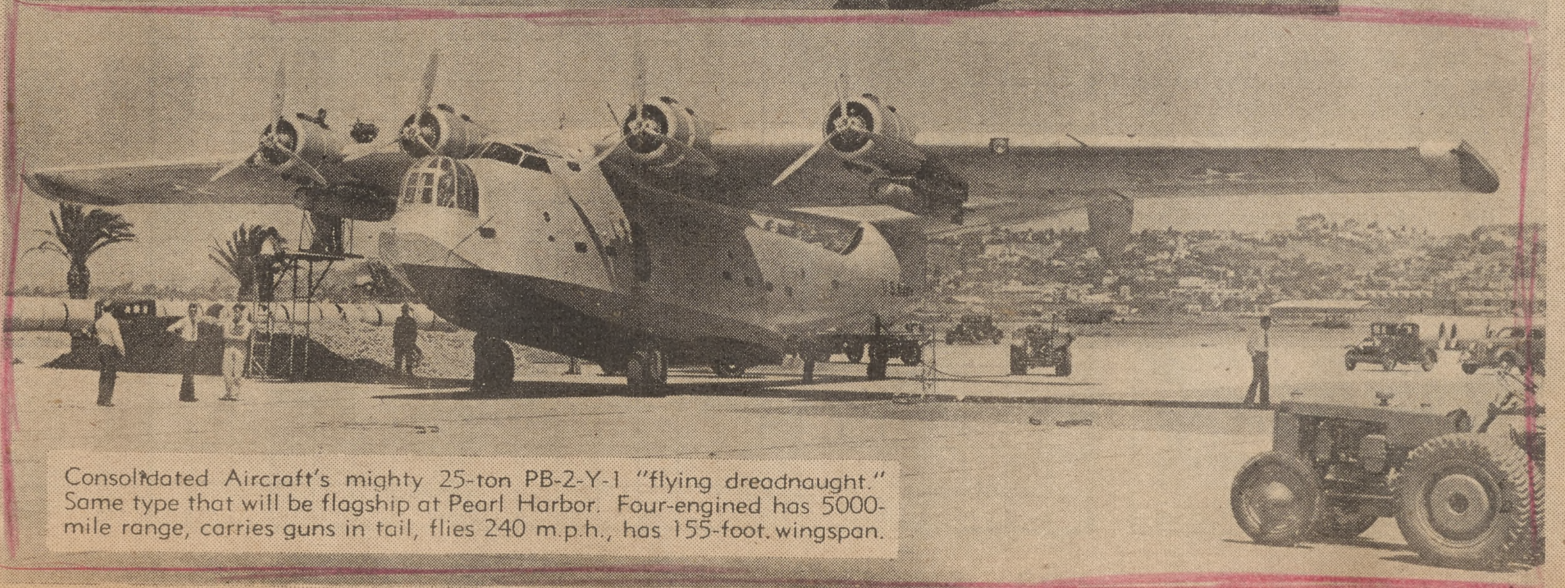
Brand new, this Ryan Dragonfly will serve for behind-the-lines observation and troop liaison. It climbs almost vertically.



This North American attack-bomber stands among the new crop of lightning-fast, death-dealing equipment ordered by United States Army Air Corps.



Bulletnosed, this Vultee Vanguard pursuit almost touches 400 m.p.h. and can attack marauding bombers with cannon, guns, small bombs.



Consolidated Aircraft's mighty 25-ton PB-2-Y-1 "flying dreadnaught." Same type that will be flagship at Pearl Harbor. Four-engined has 5000-mile range, carries guns in tail, flies 240 m.p.h., has 155-foot wingspan.

Sunday April 28th 1940.

AIRFAX

By Derek White

Military activity gets the headlines, but commercial operations forge ahead, and will continue to at increasing speed. More thousands of men are learning to fly than the public realizes. In addition to the 95,000 civilian pilots being trained at Government cost, other thousands are learning at their own expense. One-third of these will buy airplanes . . . Within the next two years 15,000 commercial airplanes will be built and sold, ranging from 40 h. p. light planes to $25,000 luxury ships . . . In addition, 17,000 commercial aircraft engines, 64,000 airplane tires and 22,000,000 gallons of gasoline will be bought by commercial and pleasure flyers.

BITS OF NEWS: General Motors, in addition to other aircraft holdings, will manufacture airplanes under their own name . . . A Dayton aircraft accessory manufacturer will consolidate with a Los Angeles builder of precision parts . . . Don't be surprised if North American gets an order for 500 pursuits . . . Glenn L. Martin earned $4,110,605 last year . . . Stinson Aircraft will move to Nashville, Tenn. . . . Alaskan Airlines transported 4,000,000 pounds of freight, 500,000 pounds of mail and 30,000 passengers during the past 12 months . . . Rearwin Aircraft will enter the light plane market . . . The new mystery Douglas bomber, with 220-foot wing span, will be tested within 30 days . . . First Los Angeles-built light plane will be marketed by Interstate Aircraft and Engineering under another name.

A FEW FIGURES: Total plant area of all U. S. airplane and engine factories is 12,250,000 square feet. Total number of employees now engaged in building planes and motors is 105,000. With present plants and personnel it would take three years to build the airplanes now on order by the Allies, but delivery by July of 1941 is specified . . . Germany now is said to have an air force of 31,000 planes; England 15,000 and France 6000. Of these, one-half are bombing and combat ships, the balance transport, reserve and training models . . . In other words 25,000 ships, on both sides in the present war, are available for fighting. With total war, 30 per cent will be destroyed per month, according to favored military estimates. One authority has estimated destruction at 55 per cent per month. The lower estimate means destruction of 96,000 ships per year . . . With present plants and personnel working day and night, France, England and the United States can produce 30,000 airplanes per year . . . Where will the other 60,000 come from?

THE ANSWER: One year from today airplane and engine plants in the U. S. will cover 25,000,000 square feet; total number of aircraft workers will be 250,000. Any aircraft executive knows this, but few will admit it if you ask.

SWIFT AND SURE: During a recent 60-day period this writer flew more than 9000 miles, mostly at night, which is farther than his father travelled in his entire life . . . More men are flying now because wives have been convinced that flying is safe . . . Airlines have completed 13 consecutive months of flying without a single accident. Even the 1938 record of five accidents, made flying safer than staying at home, because during the past five years accidents in homes killed 167,000 persons.

TRENDS TODAY: First three-wheeled landing gears were adopted in 1910, later abandoned, and are now almost standard on newest planes . . . First successful planes used pusher propellers, which are more efficient. They were abandoned for tractor propellers in 1915. New Bell twin-engined Airacuda has pusher propellers. You will see more in the future . . . First aircraft engines were liquid cooled, then abandoned for air-cooled motors. Most powerful engine today is the Allison, which is liquid cooled. The first manufacturer who brings out a reliable, low-priced liquid-cooled aircraft engine in the 150 to 200 h. p. class will skim the cream of the motor business and make a fortune.

AIRPLANE COSTS: How much does it cost to produce a new type airplane? Most costly was Douglas DC4 which cost $1,800,000 and required nearly three years for engineering and building. First Boeing Flying Fortress was designed and built in six months at cost of $500,000. A single-engined attack-bomber cost $175,000 for engineering and construction; another of the same size and approximate speed was engineered and built for $22,000. The cost of a new type seems to depend upon the amount of money available and the men responsible.

SEEN HERE AND THERE: Claude Ryan, head of Ryan Aeronautical Company, in Los Angeles on business . . . Jack West, who writes more aero advertising than any other Los Angeles man, out after a new account . . . Hal Curtis, best informed man in America on stainless steel aircraft construction . . . Leroy Prinz, Hollywood director, who will go on the board of a Los Angeles Aircraft Company . . . Norman Davidson, assistant to E. N. Gott, vice president of Consolidated Aircraft, who would not admit that his company is on the verge of a large bomber contract . . . Ben O. Howard, air-racer and manufacturer, talking about a proposed air freight line . . . Harvey Martin, airplane distributor, who has bought the factory building of American Aircraft, in which he will open a school on June 1 . . B. L. Ball, financier, who may back both an aircraft manufacturing company and an airline.

Aircraft Plant Adds 100 Workers Weekly

4800 HORSEPOWER makes this Consolidated Aircraf model the greatest naval patrol bomber in the air today, ex perts agree. The XPB2Y shown above the San Diego plan

Recorders Group Picks Officers

State Association Meets Next Year at San Jose

Ending their three-day annual convention at the Biltmore the County Recorders' Association of California yesterday chose Ralph Cunningham of Martinez as their new president and San Jose as their 1941 meeting place.

Others elected were Charles A. Payne of San Jose, first vice president; Roger N. Howe, San Diego, second vice president, and Mrs. Verda Smith Roberts, Quincy, secretary-treasurer.

Next year's meeting will be held some time in February, the exact date to be determined later.

Flying Boat
10,000 E
End

By I

Just 40 minutes by air so
of Los Angeles, on San Di
Bay, is the plant of the Cons
dated Aircraft Corporati
builders of giant Naval Pat
flying boats. The company
now engaged in an expansion
end all expansions, in expe
tion of additional orders wh
will dwarf their present back
of more than $50,000,000.

Present plant area is 447,
square feet. This is being
creased by 87 per cent, wh
will bring total floor area
843,332 square feet. Appro
mately 5000 employees are n
on the payroll, but men are
ing added at the rate of m
than 100 per week so that wh
the new plant is completed, e
ployees will total 7500. Appro
mately 10,000 men will be e
ployed by the end of this year

Consolidated Aircraft has be
built for an initial capital
only $25,000, mainly through t
efforts of Major Reuben H. Fle
president. The company, large
builders of commercial and na
flying boats in the world, w
organized in 1923 in East Gre
wich, Conn., and first operatio
were carried on in rented spa
only 100 feet by 150 feet in si

START IN BUFFALO

First order received was for
two-place tandem trainers. Qu
ters then occupied were too sm
to permit construction of the
ships, so the company moved
Buffalo, N. Y., where 28,0
square feet of space was rent
in an empty factory buildi
which contained plenty of ad
tional room for expension.
the company grew, addition
space was added, until by Fe
ruary, 1934, plant area cover
197,298 square feet.

During first years of ope
tions, the company devoted mu
time to the development of lar
flying boats, one of these ear
types being the Commodore, t
prototype of which was the fi
monotype flying boat in t
world. Fourteen Commodor
were built, of which 13 are s
flying, one having been burn
in a hangar fire.

ROMEIKE & CURTICE LTD.
The Press Clipping Bureau
35 Shoe Lane
LONDON, E.C.4
Telephone: Central 2781

Consolidated
Air 1M

EXTRACT FROM
FLIGHT
The First Aero Weekly in the World
EVERY THURSDAY **6d.**
Flight Publishing Co. Ltd.
Dorset House, Stamford Street, London, S.E.

HALF OF EVERYTHING

An American's Survey of Orders Placed in the United States

By **LEONARD ENGEL**

WASHINGTON.

AT a time when what is happening in London is so obviously more meaningful, I have as little desire to write as you have to read about British plane orders in the United States. But American military planes are becoming increasingly important to the United Kingdom, and a survey of the American aircraft industry, particularly as it relates to aid to Britain, is once more urgent. The last three months over here have been both hectic and confusing.

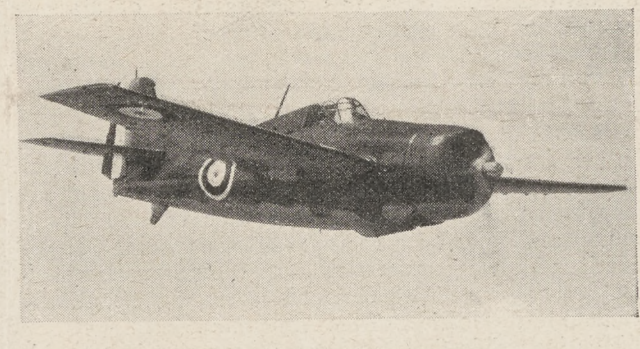
Here is as clear a picture as it is possible to paint at this time. Remember, if some of the facts and figures given are only approximate, that there is not only the censorship in England, but what amounts now to an informal one almost equally severe in the United States, so far as military matters are concerned.

Total U.S. production is fluctuating between 800 and 1,000 a month, light and private planes excepted, of course, but with big transports included along with military machines. In July it was 895, of which 236, according to a published statement by William S. Knudsen, General Motors president who is now in charge of production for the National Defence Advisory Commission, were for the British Purchasing Commission account. August figures show British shipments of 289 planes, although total production was down to less than 850. The September total U.S. output may be somewhat lower still; the American industry is now passing through the stages the British industry went through a year and a half to two years ago. Deliveries to England will range between 300 and 350 monthly for the next two months, rising to 550 monthly early in 1941. It is not expected that they will reach the thousand-per-month level until late next year.

British aircraft orders, which have long since passed the $1,200,000,000 mark, cover just about every usable military type available. Curtiss P-36s. (Cyclones or Twin Wasp engines) are still being taken (they were originally ordered by the French), but completion of the order is due almost at once. Curtiss Tomahawks or P-40s (Allison V-1710), some of which are being delivered, and P-46s (an improved near-400-mile-an-hour P-40) are on order. Deliveries of the P-46 are due to begin toward the end of the year in place of the present P-40s. Lockheed's twin-engined P-38 (Allisons), which does 410 miles an hour despite the semi-official 500 m.p.h. ballyhoo, is also expected to begin rolling in December, from a new Lockheed plant specially built for its production. Several hundred were ordered by the Purchasing Commission.

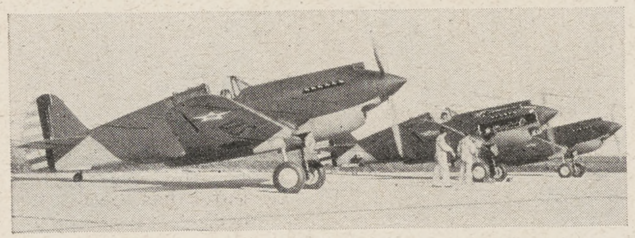
Currently being delivered are export versions of the U.S. Navy's Grumman F4F-3 and Brewster F2A-1 monoplane fighters (both about 320 miles an hour). Not more than a hundred of each type are, however, involved.

The R.A.F. is also likely to wind up with 120 Vultee Vanguards (with Twin Wasp rather than the Double Wasp engines tried in the prototype). The Vanguards were ordered and paid for by Sweden. But, following the invasion of Norway and for fear the planes would fall into German hands, the State Department cancelled the Swedish export licence covering the planes. Now the Swedes would like to sell them. But London is the only



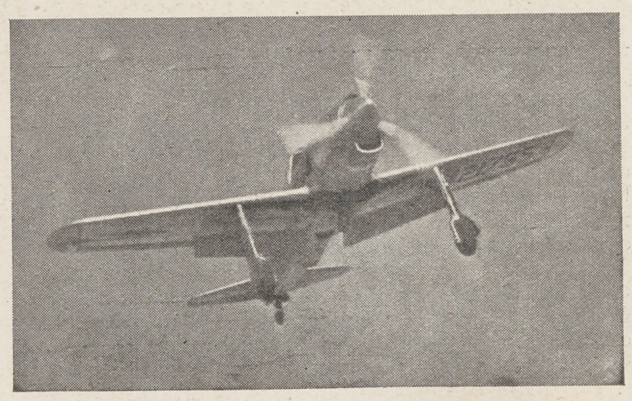
The Grumman F4F-3 has been ordered in small numbers.

The British name for the Brewster F2A-1 is the Buffalo.



Curtiss P-40 Tomahawks, with Allison engines, are now being delivered.

The Lockheed P-38 (Allisons) does 410 m.p.h.



The Vultee Vanguards for the R.A.F. will have Twin Wasp engines. Note wide track.

Sunday April 28-40

Flying Boat Plants Adding 100 Employees Each Week

Total of 10,000 Expected at Consolidated

By Derek White

Just 40 minutes by air south of Los Angeles, on San Diego Bay, is the plant of the Consolidated Aircraft Corporation, builders of giant Naval Patrol flying boats. The company is now engaged in an expansion to end all expansions, in expectation of additional orders which will dwarf their present backlog of more than $50,000,000.

Present plant area is 447,332 square feet. This is being increased by 87 per cent, which will bring total floor area to 843,332 square feet. Approximately 5000 employees are now on the payroll, but men are being added at the rate of more than 100 per week so that when the new plant is completed, employees will total 7500. Approximately 10,000 men will be employed by the end of this year.

Consolidated Aircraft has been built for an initial capital of only $25,000, mainly through the efforts of Major Reuben H. Fleet, president. The company, largest builders of commercial and naval flying boats in the world, was organized in 1923 in East Greenwich, Conn., and first operations were carried on in rented space only 100 feet by 150 feet in size.

START IN BUFFALO

First order received was for 50 two-place tandem trainers. Quarters then occupied were too small to permit construction of these ships, so the company moved to Buffalo, N. Y., where 28,000 square feet of space was rented in an empty factory building which contained plenty of additional room for expension. As the company grew, additional space was added, until by February, 1934, plant area covered 197,298 square feet.

During first years of operations, the company devoted much time to the development of large flying boats, one of these early types being the Commodore, the prototype of which was the first monotype flying boat in the world. Fourteen Commodores were built, of which 13 are still flying, one having been burned in a hangar fire.

These first boats were built so strongly that one, having occasion to make a forced landing in Cuba, landed safely without injuring a passenger and was easily repaired.

MOVE TO SAN DIEGO

From the Commodore series was evolved the Navy model P2Y. By 1935 the company's principal business was the building of large flying boats for the U. S. Navy. Testing of these boats at Buffalo was almost impossible during six months of the year, because of ice on Lake Erie, and it was for this reason that Consolidated moved to San Diego. This decision was one of the most important made by company executives.

Southern California weather conditions made year-round testing possible, and at the same time the move gave the company the opportunity to build a modern plant to fit their business, rather than continue to fit their business to existing buildings which prevented economical and fast production.

The first San Diego factory had floor area of 246,841 square feet, and was the newest and most modern airplane plant in existence. Manufacturing operations were started in San Diego in 1936, and during that year the Consolidated Company built and sold $4,085,978 worth of airplanes, as compared to sales of $593,000 just 10 years before.

BIG U. S. CONTRACT

In December of last year the company received a Government contract for $20,016,099 worth of airplanes, a single order larger than total business done by the corporation during the first 12 years of its existence.

Consolidated flying boats have made many extraordinary flights, but to company officials and to the U. S. Navy, they appear on the records as "routine." Among the more spectacular trips have been a number of transcontinental flights, the first of which was by Richard Archbold, from San Diego to New York in a flying boat, 2700 miles in 17 hours, three minutes. Archbold made two later transcontinental flights in Consolidated boats, both being from San Diego to Miami, Fla., 2300 miles non-stop. Other sensational overland flights were made by Commander Andrew Crinkley, who flew a four-engined Consolidated patrol boat from San Diego, via Salt Lake City, to Anacostia Naval Air Station, in 13 hours, then flew back to San Diego via Texas.

Many routine naval flights deserve mention, including a formation flight of 48 boats to Pearl Harbor, Hawaii, 2553 miles in 25 hours; another formation flight of 15 boats to Pearl Harbor in the record time of 16 hours; flights totaling 19,000 miles over the Arctic regions, and a 24,130-mile flight in a twin-engined flying boat from New Guinea to San Diego, by way of Australia, the Indian Ocean, Africa, across the Atlantic, and overland to San Diego.

"EYES OF NAVY"

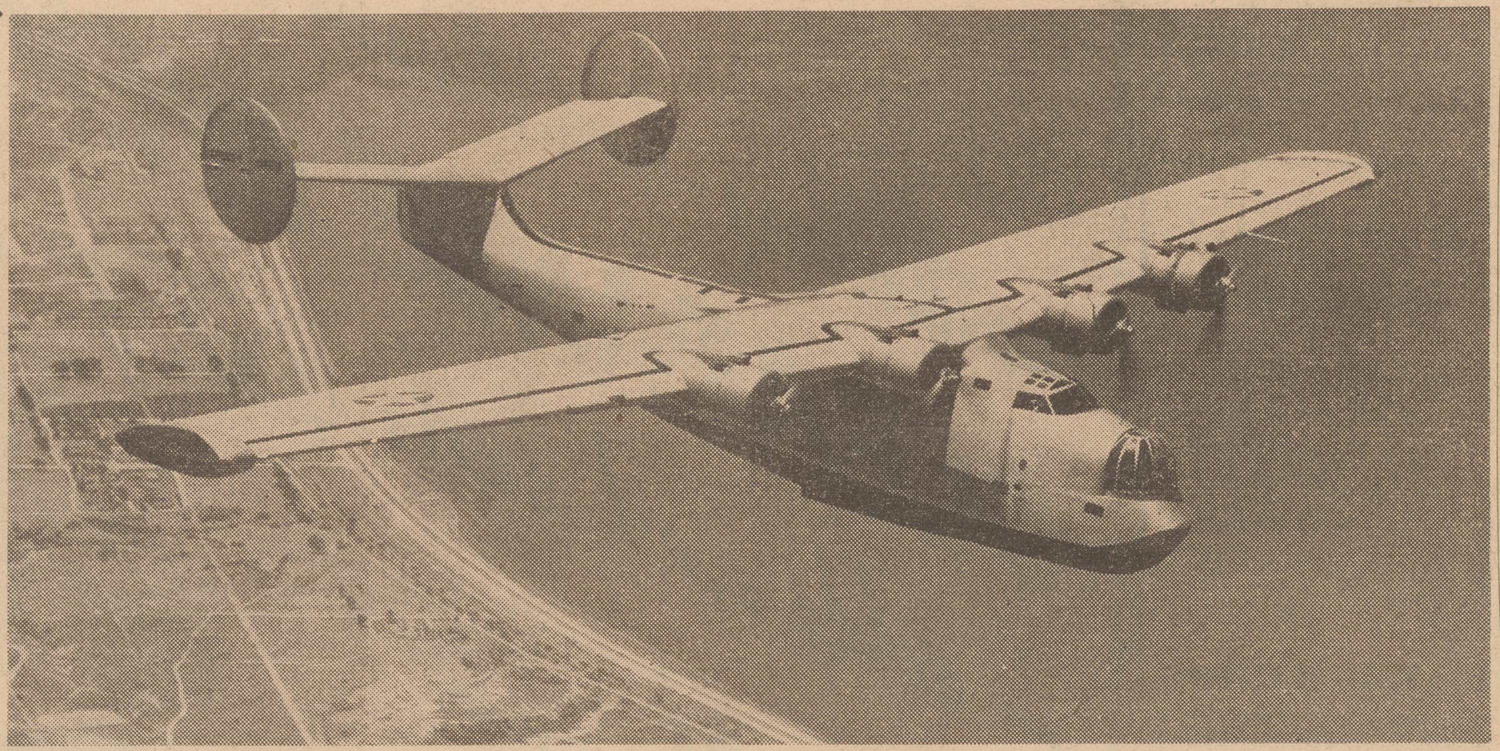
Consolidated flying boats can truthfully be called "the eyes of the Navy" as those now based and in use at various Atlantic and Pacific stations control 60,000,000 square miles of land and sea, an area equal to more than one-third the surface of the earth. These naval patrol boats have flight ranges of 4000 miles, more than sufficient for round-trip, non-stop, flights across the Atlantic. Twin-engined boats have wing spans of 104 feet and weigh 15 tons when fully loaded. Top speed is 199 miles per hour.

The latest consolidated naval flying boat, now in quantity production, is a four-engined ship, specifications of which have not been released by the U. S. Navy. A new commercial model, now being tested at San Diego, but not yet in production, is the first airplane of any kind, land or sea, to be fitted with the new 18-cylinder, 2000 h. p. Wright Cyclone engines.

This two-engined ship has a wing span of only 110 feet, but weighs 50,000 pounds loaded. The hull contains two complete decks with accommodations for 52 passengers for day operations, or sleeping accommodations for 28 persons. Speed is approximately 250 miles per hour.

A new U. S. Air Corps bombardment airplane has recently been put into production, marking Consolidated's first entry into the four-engined bombe field.

Mightiest of Naval Patrol Bombers



4800 HORSEPOWER makes this Consolidated Aircraft model the greatest naval patrol bomber in the air today, experts agree. The XPB2Y shown above the San Diego plant is powered by four twin-row, 14-cylinder motors, and is capable of round trip nonstop flights across the Atlantic with a 5-ton load of bombs. Specifications are kept secret.

BRITISH GET U. S. BOMBERS

Navy News 12/13/40

The first of 26 Consolidated Model 32 4-Engine Land Bombers, which would have become the United States Army's B-24's, are to be delivered to the English. Delivery is expected before March 1, 1941.

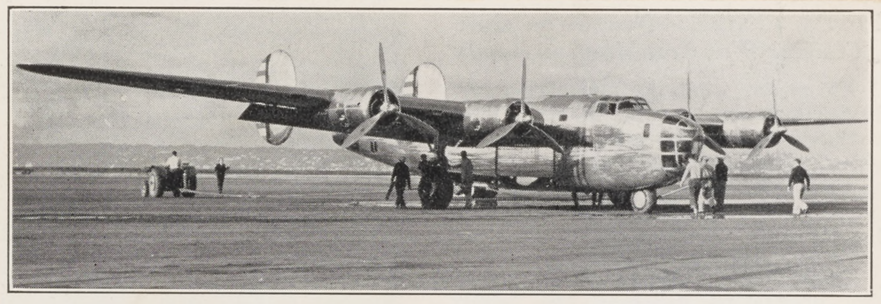
The bombers are similar to the Consolidated prototype Model 32, first flown late in 1939. Incorporated in them are the latest military features designed to meet the combat requirements learned from the present European conflict.

The planes probably exceed 300 miles per hour in speed, have a range of approximately 3,000 miles; and a bomb-carrying capacity of approximately 4 tons.

These planes are capable of carrying from England a full bomb load to almost any sector in the involved European area and return non-stop, or they can operate by shuttling between England and British bases. Their speed, and defense and attack armament give them adequate protection from all angles. The planes are full cantilever, 4-engine, all-metal, high-wing monoplanes, with high aspect ratio wings and retractable landing gear. Fowler flaps aid this high-speed aircraft in take-offs and landings. Their landing gear is of the tricycle type, with single wheel forward.

Approximate dimensions are: wing span—110 feet; fuselage length—64 feet; height—19 feet. The number of the crew varies with the mission to be performed.

THE GOODYEAR NEWS, *June, 1940*

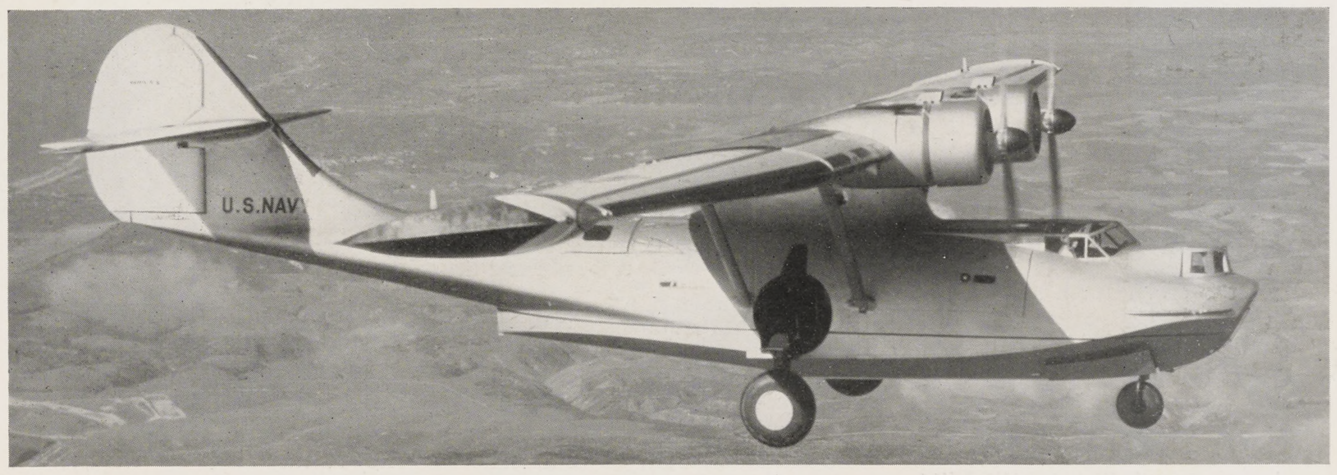


". . . turns tire blowouts . . . into slow leaks . . ."

New Aircraft

INTAVA WORLD March 1940

THE CONSOLIDATED MODEL 28-5A



The Consolidated Model 28-5A twin-engined Amphibian with wheels lowered.

THE Consolidated Aircraft Corpn. has delivered to the U.S. Navy an amphibious version of the well-known Model 28 (Naval PBY Series) flying-boat which is designated the Model 28–5A (XPBY-5A).

The landing gear is of the tricycle type with the main wheels retracting into wells in the sides of the hull and the nose wheel into a compartment in the bow, which is closed by automatically-operated hatches. All three wheels are operated by a central hydraulic drive, the power being derived from the main power-plant or from an auxiliary engine. Emergency hand gear is also provided.

There is no need for a beaching crew as the Model 28–5A can climb a ramp or beach under its own power and can descend in the same manner completely controlled by its brakes.

No special technique is needed for either take-off or return to land or water. The side wheels are above water when the machine rises on its step to take-off and water is automatically ejected from the bow wheel hatch before it is in the air, so that flying trim is not affected. When running up the engine on land the wheels may be locked, elevators pulled hard back and both engines given full take-off throttle without any possibility of the nose wheel rising from the ground. When landing the brakes may be put hard on without any adverse effect. In a side-wind landing the tendency is to straighten out.

AIRFAX

By Derek White

Military activity gets the headlines, but commercial operations forge ahead, and will continue to at increasing speed. More thousands of men are learning to fly than the public realizes. In addition to the 95,000 civilian pilots being trained at Government cost, other thousands are learning at their own expense. One-third of these will buy airplanes . . . Within the next two years 15,000 commercial airplanes will be built and sold, ranging from 40 h. p. light planes to $25,000 luxury ships . . . In addition, 17,000 commercial aircraft engines, 64,000 airplane tires and 22,000,000 gallons of gasoline will be bought by commercial and pleasure flyers.

BITS OF NEWS: General Motors, in addition to other aircraft holdings, will manufacture airplanes under their own name . . . A Dayton aircraft accessory manufacturer will consolidate with a Los Angeles builder of precision parts . . . Don't be surprised if North American gets an order for 500 pursuits . . . Glenn L. Martin earned $4,110,605 last year . . . Stinson Aircraft will move to Nashville, Tenn. . . . Alaskan Airlines transported 4,000,000 pounds of freight, 500,000 pounds of mail and 30,000 passengers during the past 12 months . . . Rearwin Aircraft will enter the light plane market . . . The new mystery Douglas bomber, with 220-foot wing span, will be tested within 30 days . . . First Los Angeles-built light plane will be marketed by Interstate Aircraft and Engineering under another name.

A FEW FIGURES: Total plant area of all U. S. airplane and engine factories is 12,250,000 square feet. Total number of employees now engaged in building planes and motors is 105,000. With present plants and personnel it would take three years to build the airplanes now on order by the Allies, but delivery by July of 1941 is specified . . . Germany now is said to have an air force of 31,000 planes; England 15,000 and France 6000. Of these, one-half are bombing and combat ships, the balance transport, reserve and training models . . . In other words 25,000 ships, on both sides in the present war, are available for fighting. With total war, 30 per cent will be destroyed per month, according to favored military estimates. One authority has estimated destruction at 55 per cent per month. The lower estimate means destruction of 96,000 ships per year . . . With present plants and personnel working day and night, France, England and the United States can produce 30,000 airplanes per year . . . Where will the other 60,000 come from?

THE ANSWER: One year from today airplane and engine plants in the U. S. will cover 25,000,000 square feet; total number of aircraft workers will be 250,000. Any aircraft executive knows this, but few will admit it if you ask.

SWIFT AND SURE: During a recent 60-day period this writer flew more than 9000 miles, mostly at night, which is farther than his father travelled in his entire life . . . More men are flying now because wives have been convinced that flying is safe . . . Airlines have completed 13 consecutive months of flying without a single accident. Even the 1938 record of five accidents, made flying safer than staying at home, because during the past five years accidents in homes killed 167,000 persons.

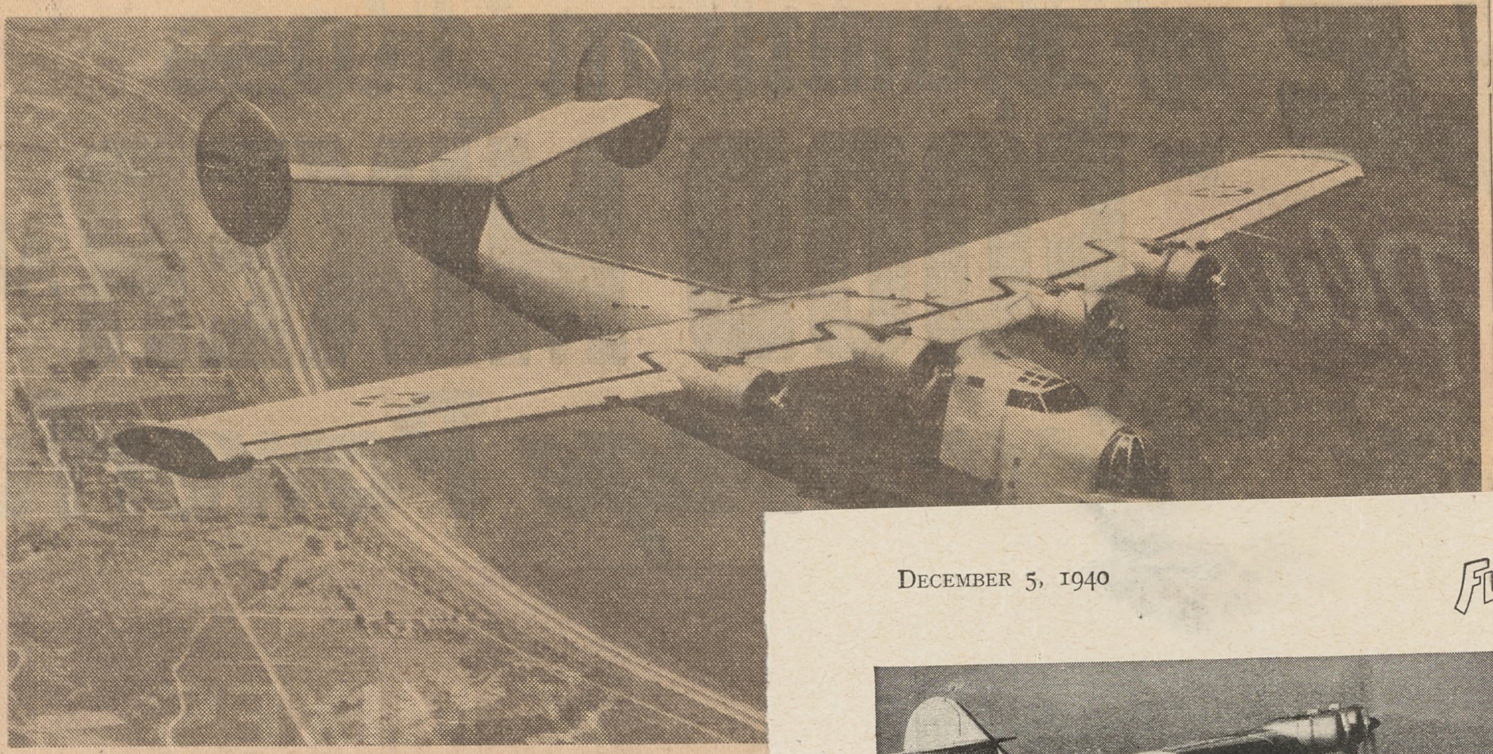
TRENDS TODAY: First three-wheeled landing gears were adopted in 1910, later abandoned, and are now almost standard on newest planes . . . First successful planes used pusher propellers, which are more efficient. They were abandoned for tractor propellers in 1915. New Bell twin-engined Airacuda has pusher propellers. You will see more in the future . . . First aircraft engines were liquid cooled, then abandoned for air-cooled motors. Most powerful engine today is the Allison, which is liquid cooled. The first manufacturer who brings out a reliable, low-priced liquid-cooled aircraft engine in the 150 to 200 h. p. class will skim the cream of the motor business and make a fortune.

AIRPLANE COSTS: How much does it cost to produce a new type airplane? Most costly was Douglas DC4 which cost $1,800,000 and required nearly three years for engineering and building. First Boeing Flying Fortress was designed and built in six months at cost of $500,000. A single-engined attack-bomber cost $175,000 for engineering and construction; another of the same size and approximate speed was engineered and built for $22,000. The cost of a new type seems to depend upon the amount of money available and the men responsible.

SEEN HERE AND THERE: Claude Ryan, head of Ryan Aeronautical Company, in Los Angeles on business . . . Jack West, who writes more aero advertising than any other Los Angeles man, out after a new account . . . Hal Curtis, best informed man in America on stainless steel aircraft construction . . . Leroy Prinz, Hollywood director, who will go on the board of a Los Angeles Aircraft Company . . . Norman Davidson, assistant to E. N. Gott, vice president of Consolidated Aircraft, who would not admit that his company is on the verge of a large bomber contract . . . Ben O. Howard, air-racer and manufacturer, talking about a proposed air freight line . . . Harvey Martin, airplane distributor, who has bought the factory building of American Aircraft, in which he will open a school on June 1 . . B. L. Ball, financier, who may back both an aircraft manufacturing company and an airline.

Sunday april 28th 1940.

Aircraft Plant Adds 100 Workers Weekly



4800 HORSEPOWER makes this Consolidated Aircraft model the greatest naval patrol bomber in the air today, experts agree. The XPB2Y shown above the San Diego plant

Recorders Group Picks Officers

State Association Meets Next Year at San Jose

Ending their three-day annual convention at the Biltmore the County Recorders' Association of California yesterday chose Ralph Cunningham of Martinez as their new president and San Jose as their 1941 meeting place.

Others elected were Charles A. Payne of San Jose, first vice president; Roger N. Howe, San Diego, second vice president, and Mrs. Verda Smith Roberts, Quincy, secretary-treasurer.

Next year's meeting will be held some time in February, the exact date to be determined later.

Flying Boat Co
10,000 Emp
End of

By Derek

Just 40 minutes by air south of Los Angeles, on San Diego Bay, is the plant of the Consolidated Aircraft Corporation, builders of giant Naval Patrol flying boats. The company is now engaged in an expansion to end all expansions, in expectation of additional orders which will dwarf their present backlog of more than $50,000,000.

Present plant area is 447,332 square feet. This is being increased by 87 per cent, which will bring total floor area to 843,332 square feet. Approximately 5000 employees are now on the payroll, but men are being added at the rate of more than 100 per week so that when the new plant is completed, employees will total 7500. Approximately 10,000 men will be employed by the end of this year.

Consolidated Aircraft has been built for an initial capital of only $25,000, mainly through the efforts of Major Reuben H. Fleet, president. The company, largest builders of commercial and naval flying boats in the world, was organized in 1923 in East Greenwich, Conn., and first operations were carried on in rented space only 100 feet by 150 feet in size.

START IN BUFFALO

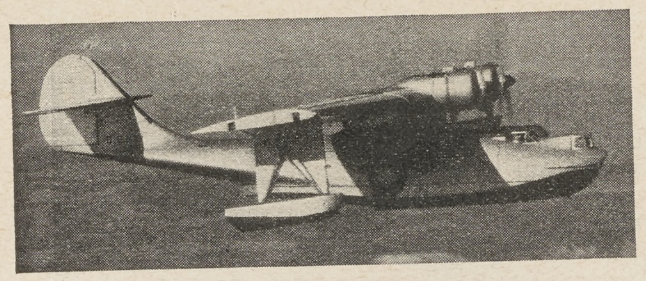
First order received was for 50 two-place tandem trainers. Quarters then occupied were too small to permit construction of these ships, so the company moved to Buffalo, N. Y., where 28,000 square feet of space was rented in an empty factory building which contained plenty of additional room for expension. As the company grew, additional space was added, until by February, 1934, plant area covered 197,298 square feet.

During first years of operations, the company devoted much time to the development of large flying boats, one of these early types being the Commodore, the prototype of which was the first monotype flying boat in the world. Fourteen Commodores were built, of which 13 are still flying, one having been burned in a hangar fire.

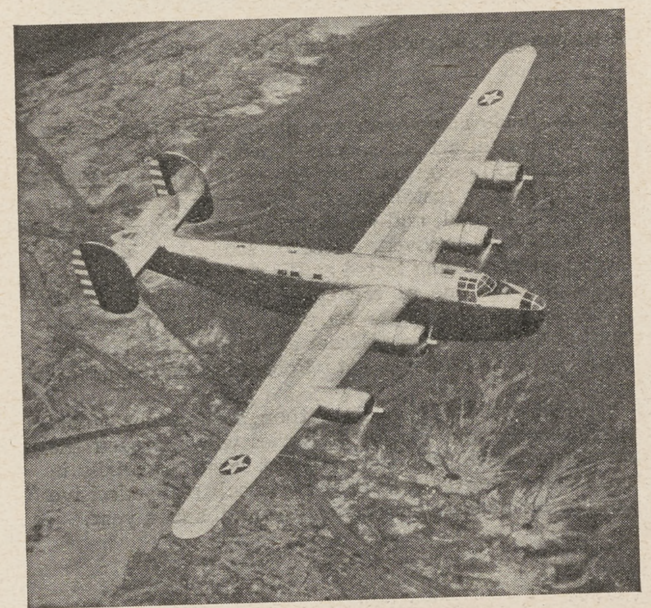
ROMEIKE & CURTICE LTD.
The Press Clipping Bureau
35 Shoe Lane
LONDON, E.C.4
Telephone: Central 2781

Consolidated
Air 1M

EXTRACT FROM
FLIGHT
The First Aero Weekly in the World
EVERY THURSDAY 6d.
Flight Publishing Co. Ltd.
Dorset House, Stamford Street, London, S.E.



Deliveries of the Consolidated PBY will begin about the end of the year.



The Consolidated B-24s are not due until 1941.

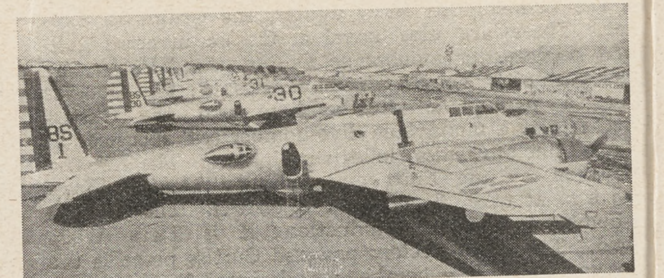
purchaser and Sweden is scared of Berlin. After all, Nazi-occupied Norway does lie between Britain and Sweden. The planes will probably be turned back to the manufacturer, who will then sell them to Canada or England, anyway. The Wasp-powered Vanguard is in the same class as the P-36, the Grumman and the Brewster.

Lockheed is currently delivering at a 30-to-40-a-month rate an improved version of the Hudson bomber. The new type, somewhat larger, is derived from the Lockheed Lodestar transport in the same way the Hudson comes from the 14. The Lodestar's top speed is about 265 miles an hour. The current improved Hudson order calls for 250 planes altogether.

Delivery of Consolidated PBY twin-engined flying boats, similar to the 28-5 bought by the Air Ministry last year for test purposes, will begin about the end of the year. A very large number of these is on order.

The Purchasing Commission took over a French order for 120 Consolidated B-24 four-motored bombers, but they are not due until 1941. A couple of minor hitches have developed in connection with the large high-winged Consolidated—which has the thin-section, narrow-chord Davis wing—and may have been responsible for some delay. As designed originally for the U.S. Army Air Corps, it involved three different types of power-driven turrets developed by the General Electric Company and Martin. The commission balked at this pointless variety. (Yes, the United States is getting around to power turrets at last. Army officials are reported here to be considering a British offer of manufacturing rights on the Boulton-Paul turret, as well as sponsoring development of American types.)

Deliveries of Douglas and Martin attack bombers are running to 15 to 20 a month each, and should increase rapidly in the near future. Three slightly different planes are involved in the Douglas orders: 270 Douglas B-7s (two Twin Wasps, 320 m.p.h.), all delivered to France and the order completed; 100 D-B7As, the same plane with G-1200 Cyclones and a little better performance, ordered by France, but now in process of delivery to the R.A.F.; and the D-B7B. The last is an export version of the Army's A-20 light bomber, minus the new General Electric exhaust-driven turbo-supercharger. The DB7B will have a top speed of 350 miles an hour. (The turbo-supercharged Army plane is supposed to reach 390 miles an hour at 25,000ft.) Nearly 1,000 DB7Bs are on order. About one-third are to be built by the Boeing Aircraft Company under licence. Deliveries of DB7Bs, as well as of Boeing Flying Fortresses, also ordered by the Commission, are not due for some months.



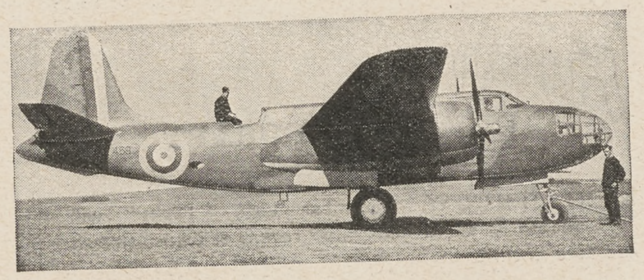
New armament will, presumably, be fitted in the Boeing "Flying Fortress." This picture shows the original American version.

Despite the criticism of the Bell P-39 or Airacobra, the rear-engined tractor single-seater, in *Flight*, and the mechanical difficulties that plague it in the United States, a large order for this model was placed three months ago by the commission.

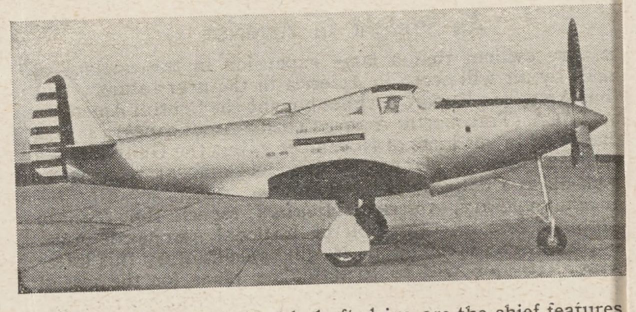
Deliveries of this will be slow, and for a reason that affects other planes on order as well. The Allison Engineering Company is still beset by the difficulties which have delayed the start of quantity production of the Allison V-170 engine for more than a year.

Dozens of Curtiss P-40 Tomahawks, built both for the R.A.F. and the Army Air Corps, are sitting idle in the Curtiss Buffalo plant, waiting for the engines which come slowly when they come at all.

September production of P-40s, for both customers, is supposed to reach 170. But, in the first ten days of the month, deliveries were at least 75 per cent. below the quota. Although the Curtiss single-seater has been on order for the Army since last fall, so far the Army has been able to equip only three squadrons with the machine



Boston is the British name for the Douglas DB-7. Like the fighter on the right, it is equipped with tricycle undercarriage.



Tricycle undercarriage and shaft drive are the chief features of the Bell Airacobra.

ITALY AS A TARGET (CONTINUED)

racks, close to the grounds of the Villa Cavoia, and easily orientated by a bend in the river and the racecourse of the Villa Glori. Is this barracks empty?

Rome was one of the four Italian mainland zones for air organisation. Has this centralisation of air-zone organisation been removed from Rome?

About Rome lie a number of aerodromes. There are the military aerodromes of Centocelle and Ciampino-Nord, and the military seaplane station of Ostia, near the mouth of the river. There are the civil airports of Littorio for landplanes and Lido di Roma for seaplanes. Are they still used for civil aircraft? If not, what are they used for? Not far out from Rome is the experimental and military aerodrome of Montecelio. Alongside it is Italy's Farnborough—the laboratory aeronautical establishment of Guidonia—standing beautifully situated in the shadow of the Appenines.

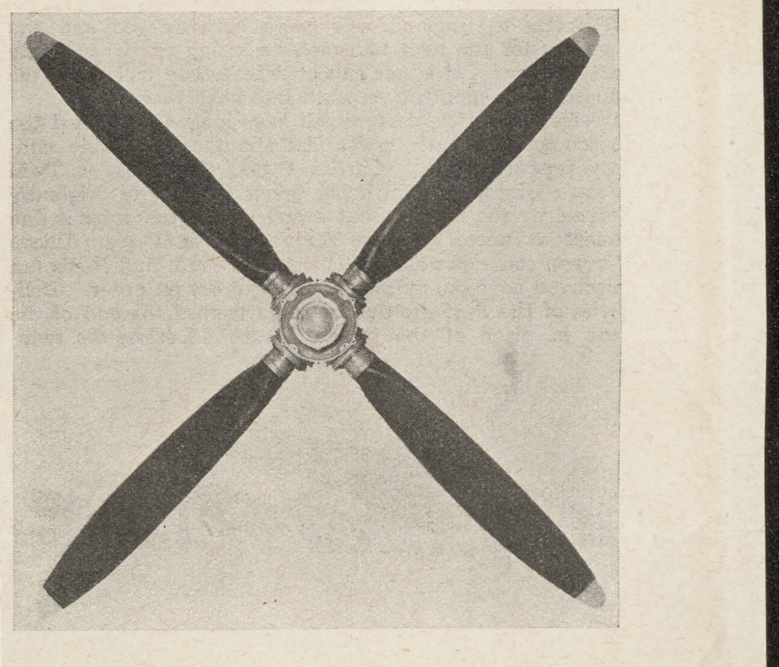
It is incredible that these aerodromes can be unused. They must play a part, and a not unimportant part, in the Italian air-war effort. Bombing these aerodromes would not be bombing Rome, but the noise of an attack with heavy bombs against these aerodromes would be heard in Rome. It would give the Roman citizen the knowledge that the Royal Air Force were in proximity to his city. That fact might hasten the Italian Government in reaching a decision in regard to a convention defining zones scheduled as immune from bombing.

Rome lies 860 miles from the nearest part of the English coast. That is a long way to carry the heaviest calibre bombs. But Rome lies at the southern end of the three zones into which I divided Italy for target purposes in the article which appeared in *Flight* last week. And that brings Rome and its environs within comfortable striking range of aircraft based on Greek territory. It is 510 miles from one Greek aerodrome, which is not even the most advanced aerodrome on Greek soil. That makes attack on Rome relatively easy. That possibility is one part of the price which Mussolini must have considered (surely with his wisdom?) when he sanctioned or ordered the attack on Greece.

It may be that we have to consider Athens, and the risk of reprisals against the Greek capital, in regard to any attack on Rome. But already the Italians have attacked Tatoi, the Athenian military aerodrome. That allows us to attack the aerodromes around Rome, surely? And as I have endeavoured to show, there are other military targets within Rome itself, unless they have been all evacuated. Surely we ought to seek first to demand that there shall be scheduled zones, for Britain and Italy; but if we cannot reach agreement, how can the Italians expect us to respect their ancient monuments when they have no regard for ours?

FOR GREATER EFFICIENCY

New Rotol Four-bladed Airscrew Introduced : 35-deg. or Feathering



In the early days of flying the four-bladed airscrew was a fairly common sight, especially on those aeroplanes fitted with engines that had reduction gears. On the direct-drive engines the two-blader was the usual airscrew. The reason for the four-blader was that better efficiency could be obtained with a smaller diameter, and, as undercarriages were fixed in those days, aircraft designers were helped by the four-blader to the extent that a lower undercarriage could be used, thus saving a certain amount of drag.

It might have been thought that in modern times, with retractable undercarriages almost universal, there would not be the same need for four-bladed airscrews. Actually there is, but for rather different reasons. The power of engines has gone up a great deal, and promise to increase still further. The problem of absorbing efficiently the extra power is a very real one. It can be done by increasing the diameter and the blade width, but a limit is set to this line of development by the question of tip speeds. Consequently there is good reason for the four-bladed airscrew for modern high-power engines.

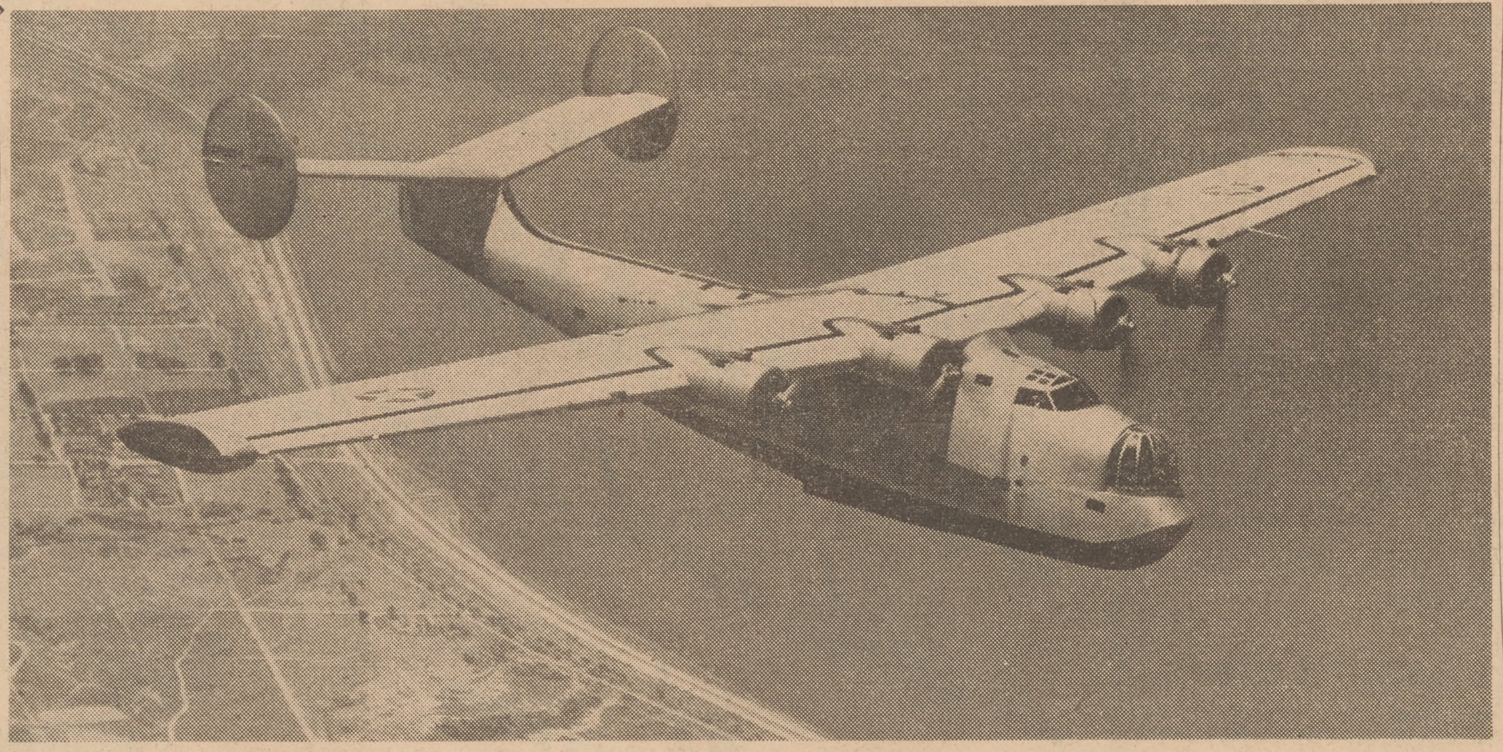
Rotol Airscrews, Ltd., is the first British firm to introduce a variable-pitch airscrew of modern design. In design and operating principle the new four-blader is similar to the well-known Rotol three-bladed airscrews of the 35 deg. and feathering series. That is to say, the pitch of the blades is changed by means of a double-acting cylinder mechanism located externally on the front of the hub. The operation is governed by a constant-speed unit which takes its oil and drive from the engine. This unit is sensitive to variations in engine r.p.m., and, by means of a balance-weight governor and a specially-designed piston valve, controls the flow of boosted pressure oil to the cylinder which moves over a stationary piston.

The blades of the new Rotol may be of improved wood, or of light alloy. The hub is designed on the same lines as that of the three-blader. The blades are mounted in a double-row thrust ball bearing, and pre-load is applied through an additional row of balls, the race of which is integral with the upper thrust race. This arrangement differs from that of the Rotol three-blader, in which the blades are borne in four-race stacks.

A pitch-angle range of 35 deg. is obtainable, the makers contending that this is sufficient for the fastest fighter, i.e., for the aircraft with the widest speed range. A long-stroke cylinder is, however, available, which will give any desired angle, up to feathering. At present a range of 35 deg. from the fine-pitch setting has been found sufficient to prevent "over-revving" in the fastest dive, during which the blade angle will steadily grow coarser to keep the engine speed at its predetermined lever setting

Flying Boat Plants Adding 100 Employees Each Week

Mightiest of Naval Patrol Bombers



4800 HORSEPOWER makes this Consolidated Aircraft model the greatest naval patrol bomber in the air today, experts agree. The XPB2Y shown above the San Diego plant is powered by four twin-row, 14-cylinder motors, and is capable of round trip nonstop flights across the Atlantic with a 5-ton load of bombs. Specifications are kept secret.

Total of 10,000 Expected at Consolidated

By Derek White

Just 40 minutes by air south of Los Angeles, on San Diego Bay, is the plant of the Consolidated Aircraft Corporation, builders of giant Naval Patrol flying boats. The company is now engaged in an expansion to end all expansions, in expectation of additional orders which will dwarf their present backlog of more than $50,000,000.

Present plant area is 447,332 square feet. This is being increased by 87 per cent, which will bring total floor area to 843,332 square feet. Approximately 5000 employees are now on the payroll, but men are being added at the rate of more than 100 per week so that when the new plant is completed, employees will total 7500. Approximately 10,000 men will be employed by the end of this year.

Consolidated Aircraft has been built for an initial capital of only $25,000, mainly through the efforts of Major Reuben H. Fleet, president. The company, largest builders of commercial and naval flying boats in the world, was organized in 1923 in East Greenwich, Conn., and first operations were carried on in rented space only 100 feet by 150 feet in size.

START IN BUFFALO

First order received was for 50 two-place tandem trainers. Quarters then occupied were too small to permit construction of these ships, so the company moved to Buffalo, N. Y., where 28,000 square feet of space was rented in an empty factory building which contained plenty of additional room for expension. As the company grew, additional space was added, until by February, 1934, plant area covered 197,298 square feet.

During first years of operations, the company devoted much time to the development of large flying boats, one of these early types being the Commodore, the prototype of which was the first monotype flying boat in the world. Fourteen Commodores were built, of which 13 are still flying, one having been burned in a hangar fire.

These first boats were built so strongly that one, having occasion to make a forced landing in Cuba, landed safely without injuring a passenger and was easily repaired.

MOVE TO SAN DIEGO

From the Commodore series was evolved the Navy model P2Y. By 1935 the company's principal business was the building of large flying boats for the U. S. Navy. Testing of these boats at Buffalo was almost impossible during six months of the year, because of ice on Lake Erie, and it was for this reason that Consolidated moved to San Diego. This decision was one of the most important made by company executives.

Southern California weather conditions made year-round testing possible, and at the same time the move gave the company the opportunity to build a modern plant to fit their business, rather than continue to fit their business to existing buildings which prevented economical and fast production.

The first San Diego factory had floor area of 246,841 square feet, and was the newest and most modern airplane plant in existence. Manufacturing operations were started in San Diego in 1936, and during that year the Consolidated Company built and sold $4,085,978 worth of airplanes, as compared to sales of $593,000 just 10 years before.

BIG U. S. CONTRACT

In December of last year the company received a Government contract for $20,016,099 worth of airplanes, a single order larger than total business done by the corporation during the first 12 years of its existence.

Consolidated flying boats have made many extraordinary flights, but to company officials and to the U. S. Navy, they appear on the records as "routine." Among the more spectacular trips have been a number of transcontinental flights, the first of which was by Richard Archbold, from San Diego to New York in a flying boat, 2700 miles in 17 hours, three minutes. Archbold made two later transcontinental flights in Consolidated boats, both being from San Diego to Miami, Fla., 2300 miles non-stop. Other sensational overland flights were made by Commander Andrew Crinkley, who flew a four-engined Consolidated patrol boat from San Diego, via Salt Lake City, to Anacostia Naval Air Station, in 13 hours, then flew back to San Diego via Texas.

Many routine naval flights deserve mention, including a formation flight of 48 boats to Pearl Harbor, Hawaii, 2553 miles in 25 hours; another formation flight of 15 boats to Pearl Harbor in the record time of 16 hours; flights totaling 19,000 miles over the Arctic regions, and a 24,130-mile flight in a twin-engined flying boat from New Guinea to San Diego, by way of Australia, the Indian Ocean, Africa, across the Atlantic, and overland to San Diego.

"EYES OF NAVY"

Consolidated flying boats can truthfully be called "the eyes of the Navy" as those now based and in use at various Atlantic and Pacific stations control 60,000,000 square miles of land and sea, an area equal to more than one-third the surface of the earth. These naval patrol boats have flight ranges of 4000 miles, more than sufficient for round-trip, non-stop, flights across the Atlantic. Twin-engined boats have wing spans of 104 feet and weigh 15 tons when fully loaded. Top speed is 199 miles per hour.

The latest consolidated naval flying boat, now in quantity production, is a four-engined ship, specifications of which have not been released by the U. S. Navy. A new commercial model, now being tested at San Diego, but not yet in production, is the first airplane of any kind, land or sea, to be fitted with the new 18-cylinder, 2000 h. p. Wright Cyclone engines.

This two-engined ship has a wing span of only 110 feet, but weighs 50,000 pounds loaded. The hull contains two complete decks with accommodations for 52 passengers for day operations, or sleeping accommodations for 28 persons. Speed is approximately 250 miles per hour.

A new U. S. Air Corps bombardment airplane has recently been put into production, marking Consolidated's first entry into the four-engined bombe field.

BRITISH GET U. S. BOMBERS

Navy News 12/13/40

The first of 26 Consolidated Model 32 4-Engine Land Bombers, which would have become the United States Army's B-24's, are to be delivered to the English. Delivery is expected before March 1, 1941.

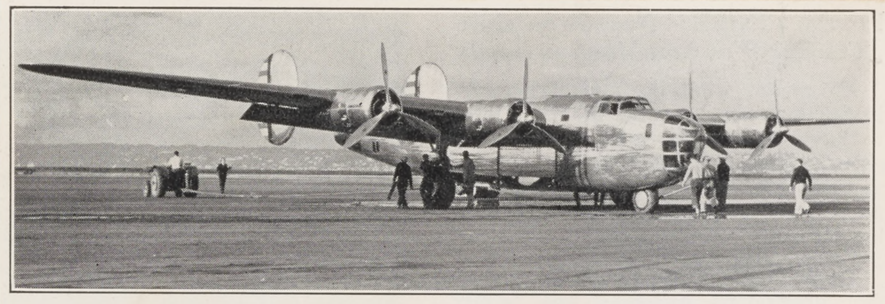
The bombers are similar to the Consolidated prototype Model 32, first flown late in 1939. Incorporated in them are the latest military features designed to meet the combat requirements learned from the present European conflict.

The planes probably exceed 300 miles per hour in speed, have a range of approximately 3,000 miles; and a bomb-carrying capacity of approximately 4 tons.

These planes are capable of carrying from England a full bomb load to almost any sector in the involved European area and return non-stop, or they can operate by shuttling between England and British bases. Their speed, and defense and attack armament give them adequate protection from all angles. The planes are full cantilever, 4-engine, all-metal, high-wing monoplanes, with high aspect ratio wings and retractable landing gear. Fowler flaps aid this high-speed aircraft in take-offs and landings. Their landing gear is of the tricycle type, with single wheel forward.

Approximate dimensions are: wing span—110 feet; fuselage length—64 feet; height—19 feet. The number of the crew varies with the mission to be performed.

The Goodyear News, *June, 1940*

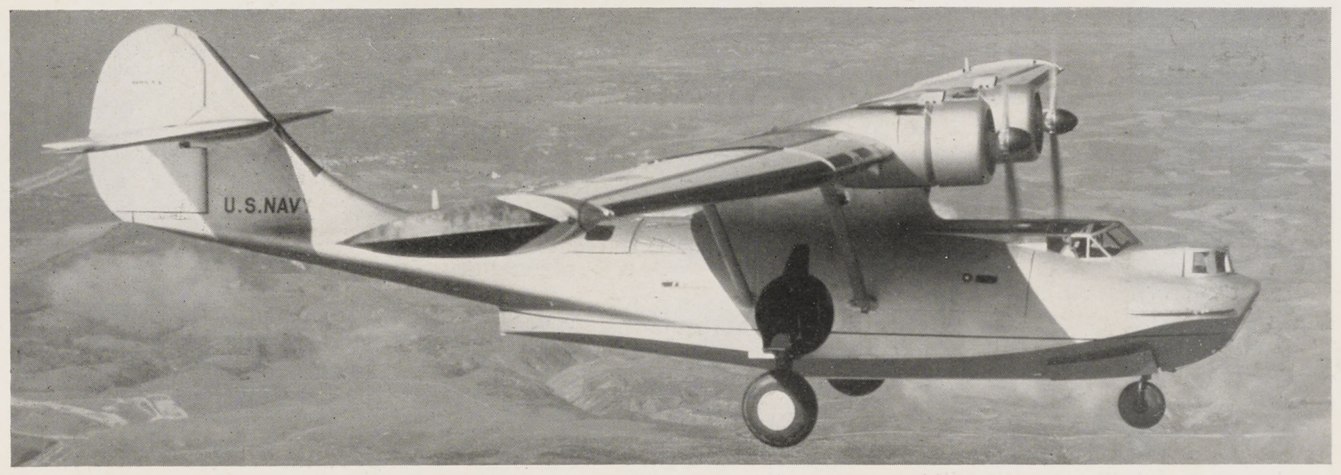


"... turns tire blowouts ... into slow leaks ..."

New Aircraft

INTAVA WORLD March 1940

THE CONSOLIDATED MODEL 28-5A



The Consolidated Model 28-5A twin-engined Amphibian with wheels lowered.

THE Consolidated Aircraft Corpn. has delivered to the U.S. Navy an amphibious version of the well-known Model 28 (Naval PBY Series) flying-boat which is designated the Model 28–5A (XPBY-5A).

The landing gear is of the tricycle type with the main wheels retracting into wells in the sides of the hull and the nose wheel into a compartment in the bow, which is closed by automatically-operated hatches. All three wheels are operated by a central hydraulic drive, the power being derived from the main power-plant or from an auxiliary engine. Emergency hand gear is also provided.

There is no need for a beaching crew as the Model 28–5A can climb a ramp or beach under its own power and can descend in the same manner completely controlled by its brakes.

No special technique is needed for either take-off or return to land or water. The side wheels are above water when the machine rises on its step to take-off and water is automatically ejected from the bow wheel hatch before it is in the air, so that flying trim is not affected. When running up the engine on land the wheels may be locked, elevators pulled hard back and both engines given full take-off throttle without any possibility of the nose wheel rising from the ground. When landing the brakes may be put hard on without any adverse effect. In a side-wind landing the tendency is to straighten out.

Sunday April 28th 1940.

AIRFAX

By Derek White

Military activity gets the headlines, but commercial operations forge ahead, and will continue to at increasing speed. More thousands of men are learning to fly than the public realizes. In addition to the 95,000 civilian pilots being trained at Government cost, other thousands are learning at their own expense. One-third of these will buy airplanes . . . Within the next two years 15,000 commercial airplanes will be built and sold, ranging from 40 h. p. light planes to $25,000 luxury ships . . . In addition, 17,000 commercial aircraft engines, 64,000 airplane tires and 22,000,000 gallons of gasoline will be bought by commercial and pleasure flyers.

BITS OF NEWS: General Motors, in addition to other aircraft holdings, will manufacture airplanes under their own name . . . A Dayton aircraft accessory manufacturer will consolidate with a Los Angeles builder of precision parts . . . Don't be surprised if North American gets an order for 500 pursuits . . . Glenn L. Martin earned $4,110,605 last year . . . Stinson Aircraft will move to Nashville, Tenn. . . . Alaskan Airlines transported 4,000,000 pounds of freight, 500,000 pounds of mail and 30,000 passengers during the past 12 months . . . Rearwin Aircraft will enter the light plane market . . . The new mystery Douglas bomber, with 220-foot wing span, will be tested within 30 days . . . First Los Angeles-built light plane will be marketed by Interstate Aircraft and Engineering under another name.

A FEW FIGURES: Total plant area of all U. S. airplane and engine factories is 12,250,000 square feet. Total number of employees now engaged in building planes and motors is 105,000. With present plants and personnel it would take three years to build the airplanes now on order by the Allies, but delivery by July of 1941 is specified . . . Germany now is said to have an air force of 31,000 planes; England 15,000 and France 6000. Of these, one-half are bombing and combat ships, the balance transport, reserve and training models . . . In other words 25,000 ships, on both sides in the present war, are available for fighting. With total war, 30 per cent will be destroyed per month, according to favored military estimates. One authority has estimated destruction at 55 per cent per month. The lower estimate means destruction of 96,000 ships per year . . . With present plants and personnel working day and night, France, England and the United States can produce 30,000 airplanes per year . . . Where will the other 60,000 come from?

THE ANSWER: One year from today airplane and engine plants in the U. S. will cover 25,000,000 square feet; total number of aircraft workers will be 250,000. Any aircraft executive knows this, but few will admit it if you ask.

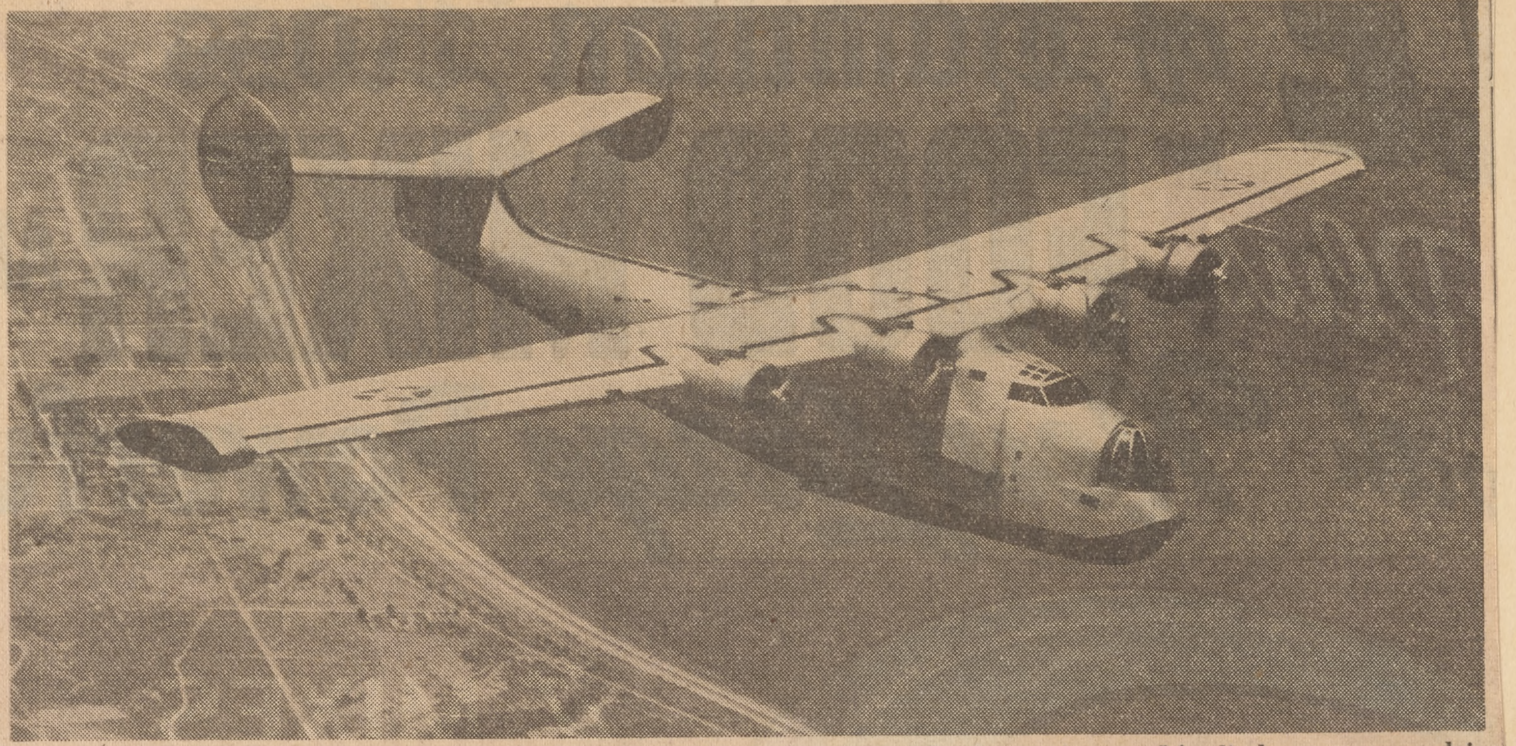
SWIFT AND SURE: During a recent 60-day period this writer flew more than 9000 miles, mostly at night, which is farther than his father travelled in his entire life . . . More men are flying now because wives have been convinced that flying is safe . . . Airlines have completed 13 consecutive months of flying without a single accident. Even the 1938 record of five accidents, made flying safer than staying at home, because during the past five years accidents in homes killed 167,000 persons.

TRENDS TODAY: First three-wheeled landing gears were adopted in 1910, later abandoned, and are now almost standard on newest planes . . . First successful planes used pusher propellers, which are more efficient. They were abandoned for tractor propellers in 1915. New Bell twin-engined Airacuda has pusher propellers. You will see more in the future . . . First aircraft engines were liquid cooled, then abandoned for air-cooled motors. Most powerful engine today is the Allison, which is liquid cooled. The first manufacturer who brings out a reliable, low-priced liquid-cooled aircraft engine in the 150 to 200 h. p. class will skim the cream of the motor business and make a fortune.

AIRPLANE COSTS: How much does it cost to produce a new type airplane? Most costly was Douglas DC4 which cost $1,800,000 and required nearly three years for engineering and building. First Boeing Flying Fortress was designed and built in six months at cost of $500,000. A single-engined attack-bomber cost $175,000 for engineering and construction; another of the same size and approximate speed was engineered and built for $22,000. The cost of a new type seems to depend upon the amount of money available and the men responsible.

SEEN HERE AND THERE: Claude Ryan, head of Ryan Aeronautical Company, in Los Angeles on business . . . Jack West, who writes more aero advertising than any other Los Angeles man, out after a new account . . . Hal Curtis, best informed man in America on stainless steel aircraft construction . . . Leroy Prinz, Hollywood director, who will go on the board of a Los Angeles Aircraft Company . . . Norman Davidson, assistant to E. N. Gott, vice president of Consolidated Aircraft, who would not admit that his company is on the verge of a large bomber contract . . . Ben O. Howard, air-racer and manufacturer, talking about a proposed air freight line . . . Harvey Martin, airplane distributor, who has bought the factory building of American Aircraft, in which he will open a school on June 1 . . B. L. Ball, financier, who may back both an aircraft manufacturing company and an airline.

Aircraft Plant Adds 100 Workers Weekly



4800 HORSEPOWER makes this Consolidated Aircraft model the greatest naval patrol bomber in the air today, experts agree. The XPB2Y shown above the San Diego plant is powered by four twin-row, 14-cylinder motors, and is capable of round trip nonstop flights across the Atlantic with a 5-ton load of bombs. Specifications are kept secret.

Recorders Group Picks Officers

State Association Meets Next Year at San Jose

Ending their three-day annual convention at the Biltmore the County Recorders' Association of California yesterday chose Ralph Cunningham of Martinez as their new president and San Jose as their 1941 meeting place.

Others elected were Charles A. Payne of San Jose, first vice president; Roger N. Howe, San Diego, second vice president, and Mrs. Verda Smith Roberts, Quincy, secretary-treasurer.

Next year's meeting will be held some time in February, the exact date to be determined later.

Flying Boat Company Plans 10,000 Employees by End of Year

By Derek White

Just 40 minutes by air south of Los Angeles, on San Diego Bay, is the plant of the Consolidated Aircraft Corporation, builders of giant Naval Patrol flying boats. The company is now engaged in an expansion to end all expansions, in expectation of additional orders which will dwarf their present backlog of more than $50,000,000.

Present plant area is 447,332 square feet. This is being increased by 87 per cent, which will bring total floor area to 843,332 square feet. Approximately 5000 employees are now on the payroll, but men are being added at the rate of more than 100 per week so that when the new plant is completed, employees will total 7500. Approximately 10,000 men will be employed by the end of this year.

Consolidated Aircraft has been built for an initial capital of only $25,000, mainly through the efforts of Major Reuben H. Fleet, president. The company, largest builders of commercial and naval flying boats in the world, was organized in 1923 in East Greenwich, Conn., and first operations were carried on in rented space only 100 feet by 150 feet in size.

START IN BUFFALO

First order received was for 50 two-place tandem trainers. Quarters then occupied were too small to permit construction of these ships, so the company moved to Buffalo, N. Y., where 28,000 square feet of space was rented in an empty factory building which contained plenty of additional room for expension. As the company grew, additional space was added, until by February, 1934, plant area covered 197,298 square feet.

During first years of operations, the company devoted much time to the development of large flying boats, one of these early types being the Commodore, the prototype of which was the first monotype flying boat in the world. Fourteen Commodores were built, of which 13 are still flying, one having been burned in a hangar fire.

These first boats were built so strongly that one, having occasion to make a forced landing in Cuba, landed safely without injuring a passenger and was easily repaired.

From the Commodore series was evolved the Navy model P2Y. By 1935 the company's principal business was the building of large flying boats for the U. S. Navy. Testing of these boats at Buffalo was almost impossible during six months of the year, because of ice on Lake Erie, and it was for this reason that Consolidated moved to San Diego. This decision was one of the most important made by company executives.

Southern California weather conditions made year-round testing possible, and at the same time the move gave the company the opportunity to build a modern plant to fit their business, rather than continue to fit their business to existing buildings which prevented economical and fast production.

The first San Diego factory had floor area of 246,841 square feet, and was the newest and most modern airplane plant in existence. Manufacturing operations were started in San Diego in 1936, and during that year the Consolidated Company built and sold $4,085,978 worth of airplanes, as compared to sales of $593,000 just 10 years before.

In December of last year the company received a Government contract for $20,016,099 worth of airplanes, a single order larger than total business done by the corporation during the first 12 years of its existence.

Consolidated flying boats have made many extraordinary flights, but to company officials and to the U. S. Navy, they appear on the records as "routine." Among the more spectacular trips have been a number of transcontinental flights, the first of which was by Richard Archbold, from San Diego to New York in a flying boat, 2700 miles in 17 hours, three minutes. Archbold made two later transcontinental flights in Consolidated boats, both being from San Diego to Miami, Fla., 2300 miles non-stop. Other sensational overland flights were made by Commander Andrew Crinkley, who flew a four-engined Consolidated patrol boat from San Diego, via Salt Lake City, to Anacostia Naval Air Station, in 13 hours, then flew back to San Diego via Texas.

Many routine naval flights deserve mention, including a formation flight of 48 boats to Pearl Harbor, Hawaii, 2553 miles in 25 hours; another formation flight of 15 boats to Pearl Harbor in the record time of 16 hours; flights totaling 19,000 miles over the Arctic regions, and a 24,130-mile flight in a twin-engined flying boat from New Guinea to San Diego, by way of Australia, the Indian Ocean, Africa, across the Atlantic, and overland to San Diego.

Consolidated flying boats can truthfully be called "the eyes of the Navy" as those now based and in use at various Atlantic and Pacific stations control 60,000,000 square miles of land and sea, an area equal to more than one-third the surface of the earth. These naval patrol boats have flight ranges of 4000 miles, more than sufficient for round-trip, non-stop, flights across the Atlantic. Twin-engined boats have wing spans of 104 feet and weigh 15 tons when fully loaded. Top speed is 199 miles per hour.

The latest consolidated naval flying boat, now in quantity production, is a four-engined ship, specifications of which have not been released by the U. S. Navy. A new commercial model, now being tested at San Diego, but not yet in production, is the first airplane of any kind, land or sea, to be fitted with the new 18-cylinder, 2000 h. p. Wright Cyclone engines.

This two-engined ship has a wing span of only 110 feet, but weighs 50,000 pounds loaded. The hull contains two complete decks with accommodations for 52 passengers for day operations, or sleeping accommodations for 28 persons. Speed is approximately 250 miles per hour.

A new U. S. Air Corps bombardment airplane has recently been put into production, marking Consolidated's first entry into the four-engined bomber field.

ROMEIKE & CURTICE LTD.

The Press Clipping Bureau

Consolidated Air 7M

35 Shoe Lane
LONDON, E.C.4
Telephone: Central 2781

EXTRACT FROM

FLIGHT

The First Aero Weekly in the World

EVERY THURSDAY 6d.

Flight Publishing Co. Ltd.
Dorset House, Stamford Street, London, S.E.

DATE 5 D

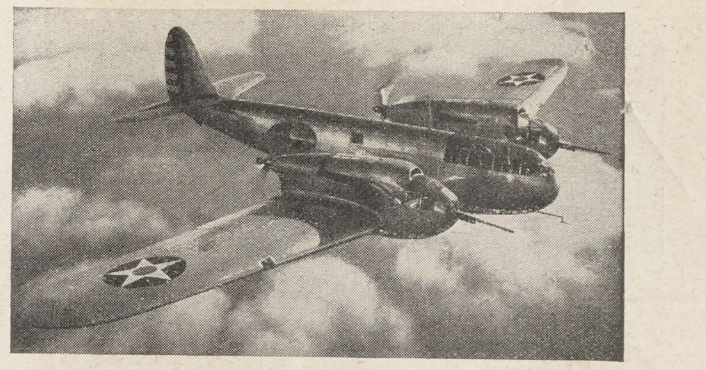
ALF OF EVERYTHING (CONTINUED)

On top of that, production model Allisons are not turn-
g up the designed power, which is 1,000 h.p. for take-
f. It delivers about 100 horse-power less. The designed
eed of the P-40, with the Allison expected to turn out
e thousand horse, is 360 m.p.h. The plane's partisans
aim it reaches 330. Army pilots who have flown it say
is hardly faster than the P-36.

These same difficulties apply, of course, to the Lockheed
38 and the Bell Airacobra. I suppose the Allison diffi-
lties will be resolved. But time is of the essence.

New Types

Only four new models of importance have turned up
ce the twin-engined Navy fighter, the Grumman Sky-
ket. Three are also naval craft: an inverted gull-
nged single-seater monoplane fighter, the XF4U-1, by
ited Aircraft's Vought-Sikorsky division; the Douglas
D-1, a monoplane dive-bomber; and the Curtiss
B2C-1, also a monoplane dive-bomber and successor to
famed line of Curtiss Helldriver biplanes. The XF4U-1
powered by the Pratt and Whitney Double Wasp
850 h.p. at take-off, 1,600 at 20,000ft.). The Douglas
e-bomber is now in production; it is Twin Wasp
ined. The Twin Cyclone-po[illegible] Curtiss plane is the
est and fastest dive-bomber e[illegible] designed for the Navy;
top speed exceeds 300 m.p.h., in level flight, of course.
The basic Seversky (now Republic) single-seat pursuit
ign has undergone another modification, and with a
uble Wasp now appears as the P-47, in which the British
chasing Commission appears to be taking considerable
rest. It may order, particularly if one of the turbo-
erchargers now under development for high altitude use is made available along with the plane. The U.S. Army has just let a contract for several hundred P-47s.



The ten-ton Bell Airacuda has been revived in three distinct versions.

The 10-ton twin-engined Bell Airacuda fighter (Allison V-1710's in pusher installations), with which many difficulties have been had, and which had been dropped by the Army, has been revived. Three somewhat different Airacudas are now being tested at Wright Field, and a production order for one of the types is anticipated. The Airacuda was the first plane on which 37 mm. guns, two of them, each firing forward from an engine nacelle, were mounted. Additional armament: Four rifle-calibre machine guns.

In sum, it would appear that, though enormous orders are on the books and British deliveries will approach the thousand-per-month rate, they will not climb materially in the next three months, and will not reach really decisive proportions for at least another eight months to a year.

Further Aid for Roof Spotters

HE Minister of Home Security announces that he is
arranging a scheme for supplementing existing arrange-
ts whereby information gained by the Observer Corps about
presence of enemy aircraft is to be made available to roof
ters at selected factories. It is emphasised that the new
ngement should give additional protection and encourage-
t to workers to carry on after the sounding of the "alert."
are asked to point out that application to be connected with
new service should not be made. Selected firms will be
fied as soon as possible.

Aircraft Production

IE December issue of *Aircraft Production* includes the
final instalment of a long article dealing with the building
e Airspeed "Oxford" twin-engined trainer, with many
iled illustrations showing its construction. There is also
ll-page description of the world's largest bomber, the
glas B.19, which weighs 164,000 lb. and took 2,000,000
-hours in its planning and construction. The novel
od of mounting the 2,000 h.p. radial engines flexibly in
acelles is something entirely new in aircraft construction.
protection of magnesium metals is the subject of a tech-
review, and other articles include the use of cork in
aft, fluxes for soft soldering, a modern works canteen,
the usual illustrated review of machine tools and shop
ment. *Aircraft Production* is published each month,
1s. 6d.

Air Freight in America

s very evident that a large expansion in the carriage of
ods by air will occur in America in the near future. Not
has American Export Airlines bought the Central American
e TACA (Transportes Aeroes Centros Americanos), as was
hadowed in our issue of November 7, but the United States
ht Company is planning a big development relating to
ick-up and delivery of air freight.
r contemporary, *American Aviation*, reports that Captain
Robb Wilson, president of the National Aeronautic Asso-
n, has been appointed air freight consultant by this latter
any. His job will be to formulate plans for the use of
reight companys truck fleet in ground transport of the
carried by air. At present the Railway Express Agency
all this work.

American Export's entry into the Central American field is for two reasons. First, TACA is a very large freighting concern, and, secondly, the acquisition of the company gives Export a flying start in its campaign of competition with Pan American in this area and South America for passenger transport. TACA was started in 1931 by Lowell Yerex, a New Zealand war pilot. During 1940 the company will transport about 30,000,000 lb. of freight, 5,000,000 lb. of mail, and 125,000 passengers. It has 235 airports, with scheduled stops at 125 of them, and operates 40 radio stations. Its staff amounts to 700. It is still using some of the three-engined Fords, but recently bought some Lockheed 14s.

The Automobile Engineer

ALTHOUGH large sections of the British automobile industry are now engaged on aircraft and other work, the personnel is not losing sight of the post-war years, when a return to ordinary conditions will have to be considered. The annual review number of *The Automobile Engineer*, which has just been published, deals to some extent with the war activities of the automobile industry, but it also looks to the future in an important article on design development. Of particular interest is an account of the investigations now being carried out at the research laboratories of the Institution of Automobile Engineers, and engineers will be impressed by the description of the foundry organisation of Morris Motors, Ltd., whose cylinder blocks and heads are produced by the all-core method.

Copies are obtainable from Dorset House, Stamford St., S.E.1, at 2s. 6d.

FLIGHT

BRITISH AIRCRAFT NUMBER

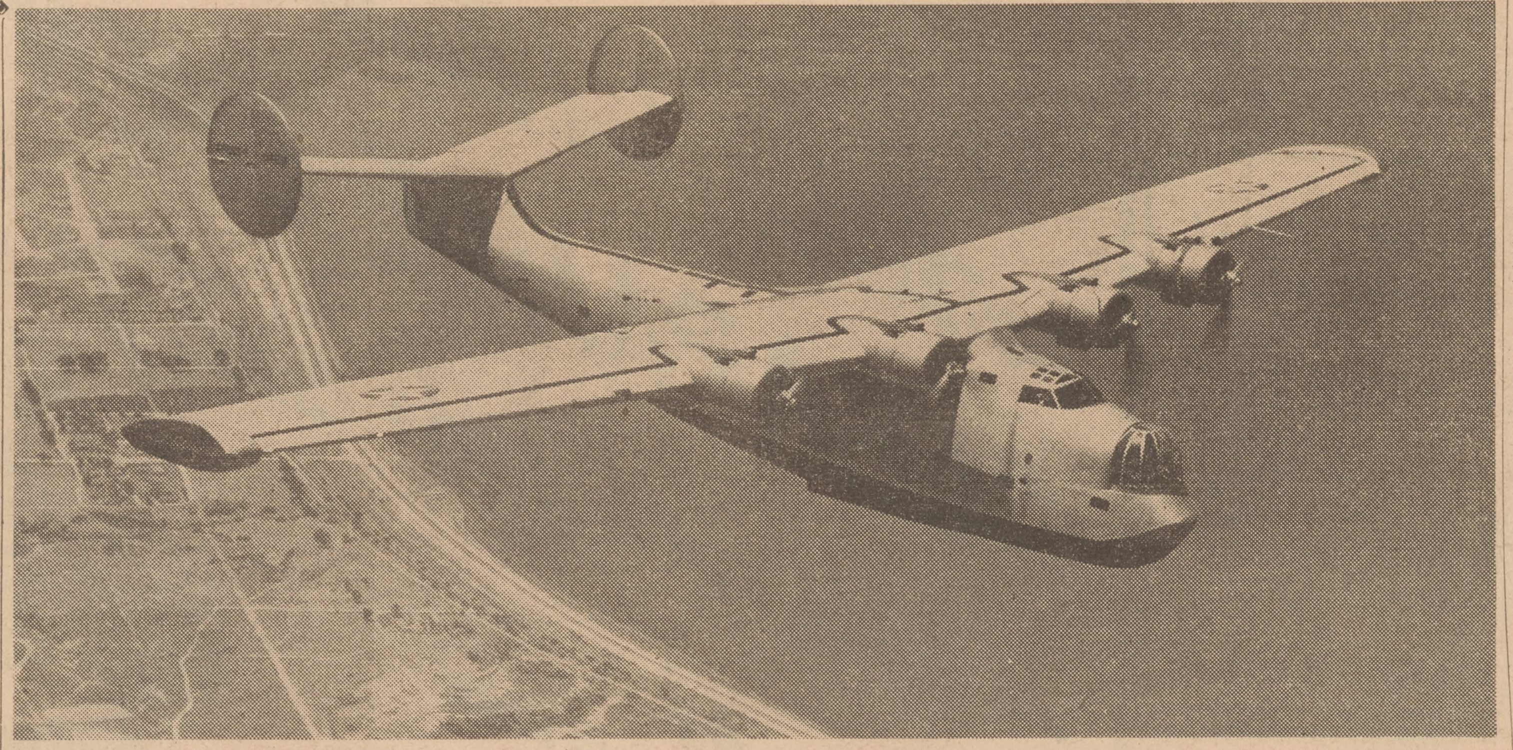
NEXT THURSDAY, December 12th, "Flight" will publish its annual illustrated review of British aircraft and aero engines.

A definite order should be placed immediately with your newsagent.

Sunday April 28-40

Flying Boat Plants Adding 100 Employees Each Week

Mightiest of Naval Patrol Bombers



4800 HORSEPOWER makes this Consolidated Aircraft model the greatest naval patrol bomber in the air today, experts agree. The XPB2Y shown above the San Diego plant is powered by four twin-row, 14-cylinder motors, and is capable of round trip nonstop flights across the Atlantic with a 5-ton load of bombs. Specifications are kept secret.

Total of 10,000 Expected at Consolidated

By Derek White

Just 40 minutes by air south of Los Angeles, on San Diego Bay, is the plant of the Consolidated Aircraft Corporation, builders of giant Naval Patrol flying boats. The company is now engaged in an expansion to end all expansions, in expectation of additional orders which will dwarf their present backlog of more than $50,000,000.

Present plant area is 447,332 square feet. This is being increased by 87 per cent, which will bring total floor area to 843,332 square feet. Approximately 5000 employees are now on the payroll, but men are being added at the rate of more than 100 per week so that when the new plant is completed, employees will total 7500. Approximately 10,000 men will be employed by the end of this year.

Consolidated Aircraft has been built for an initial capital of only $25,000, mainly through the efforts of Major Reuben H. Fleet, president. The company, largest builders of commercial and naval flying boats in the world, was organized in 1923 in East Greenwich, Conn., and first operations were carried on in rented space only 100 feet by 150 feet in size.

START IN BUFFALO

First order received was for 50 two-place tandem trainers. Quarters then occupied were too small to permit construction of these ships, so the company moved to Buffalo, N. Y., where 28,000 square feet of space was rented in an empty factory building which contained plenty of additional room for expension. As the company grew, additional space was added, until by February, 1934, plant area covered 197,298 square feet.

During first years of operations, the company devoted much time to the development of large flying boats, one of these early types being the Commodore, the prototype of which was the first monotype flying boat in the world. Fourteen Commodores were built, of which 13 are still flying, one having been burned in a hangar fire.

These first boats were built so strongly that one, having occasion to make a forced landing in Cuba, landed safely without injuring a passenger and was easily repaired.

MOVE TO SAN DIEGO

From the Commodore series was evolved the Navy model P2Y. By 1935 the company's principal business was the building of large flying boats for the U. S. Navy. Testing of these boats at Buffalo was almost impossible during six months of the year, because of ice on Lake Erie, and it was for this reason that Consolidated moved to San Diego. This decision was one of the most important made by company executives.

Southern California weather conditions made year-round testing possible, and at the same time the move gave the company the opportunity to build a modern plant to fit their business, rather than continue to fit their business to existing buildings which prevented economical and fast production.

The first San Diego factory had floor area of 246,841 square feet, and was the newest and most modern airplane plant in existence. Manufacturing operations were started in San Diego in 1936, and during that year the Consolidated Company built and sold $4,085,978 worth of airplanes, as compared to sales of $593,000 just 10 years before.

BIG U. S. CONTRACT

In December of last year the company received a Government contract for $20,016,099 worth of airplanes, a single order larger than total business done by the corporation during the first 12 years of its existence.

Consolidated flying boats have made many extraordinary flights, but to company officials and to the U. S. Navy, they appear on the records as "routine." Among the more spectacular trips have been a number of transcontinental flights, the first of which was by Richard Archbold, from San Diego to New York in a flying boat, 2700 miles in 17 hours, three minutes. Archbold made two later transcontinental flights in Consolidated boats, both being from San Diego to Miami, Fla., 2300 miles non-stop. Other sensational overland flights were made by Commander Andrew Crinkley, who flew a four-engined Consolidated patrol boat from San Diego, via Salt Lake City, to Anacostia Naval Air Station, in 13 hours, then flew back to San Diego via Texas.

Many routine naval flights deserve mention, including a formation flight of 48 boats to Pearl Harbor, Hawaii, 2553 miles in 25 hours; another formation flight of 15 boats to Pearl Harbor in the record time of 16 hours; flights totaling 19,000 miles over the Arctic regions, and a 24,130-mile flight in a twin-engined flying boat from New Guinea to San Diego, by way of Australia, the Indian Ocean, Africa, across the Atlantic, and overland to San Diego.

"EYES OF NAVY"

Consolidated flying boats can truthfully be called "the eyes of the Navy" as those now based and in use at various Atlantic and Pacific stations control 60,000,000 square miles of land and sea, an area equal to more than one-third the surface of the earth. These naval patrol boats have flight ranges of 4000 miles, more than sufficient for round-trip, non-stop, flights across the Atlantic. Twin-engined boats have wing spans of 104 feet and weigh 15 tons when fully loaded. Top speed is 199 miles per hour.

The latest consolidated naval flying boat, now in quantity production, is a four-engined ship, specifications of which have not been released by the U. S. Navy. A new commercial model, now being tested at San Diego, but not yet in production, is the first airplane of any kind, land or sea, to be fitted with the new 18-cylinder, 2000 h. p. Wright Cyclone engines.

This two-engined ship has a wing span of only 110 feet, but weighs 50,000 pounds loaded. The hull contains two complete decks with accommodations for 52 passengers for day operations, or sleeping accommodations for 28 persons. Speed is approximately 250 miles per hour.

A new U. S. Air Corps bombardment airplane has recently been put into production, marking Consolidated's first entry into the four-engined bombe field.

BRITISH GET U. S. BOMBERS

Navy News 12/15/40

The first of 26 Consolidated Model 32 4-Engine Land Bombers, which would have become the United States Army's B-24's, are to be delivered to the English. Delivery is expected before March 1, 1941.

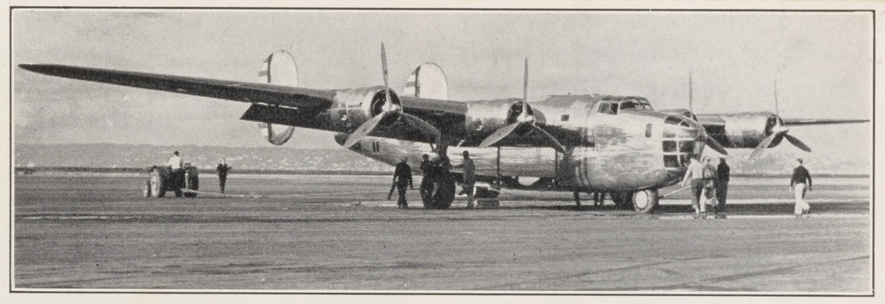
The bombers are similar to the Consolidated prototype Model 32, first flown late in 1939. Incorporated in them are the latest military features designed to meet the combat requirements learned from the present European conflict.

The planes probably exceed 300 miles per hour in speed, have a range of approximately 3,000 miles; and a bomb-carrying capacity of approximately 4 tons.

These planes are capable of carrying from England a full bomb load to almost any sector in the involved European area and return non-stop, or they can operate by shuttling between England and British bases. Their speed, and defense and attack armament give them adequate protection from all angles. The planes are full cantilever, 4-engine, all-metal, high-wing monoplanes, with high aspect ratio wings and retractable landing gear. Fowler flaps aid this high-speed aircraft in take-offs and landings. Their landing gear is of the tricycle type, with single wheel forward.

Approximate dimensions are: wing span—110 feet; fuselage length—64 feet; height—19 feet. The number of the crew varies with the mission to be performed.

THE GOODYEAR NEWS, *June, 1940*

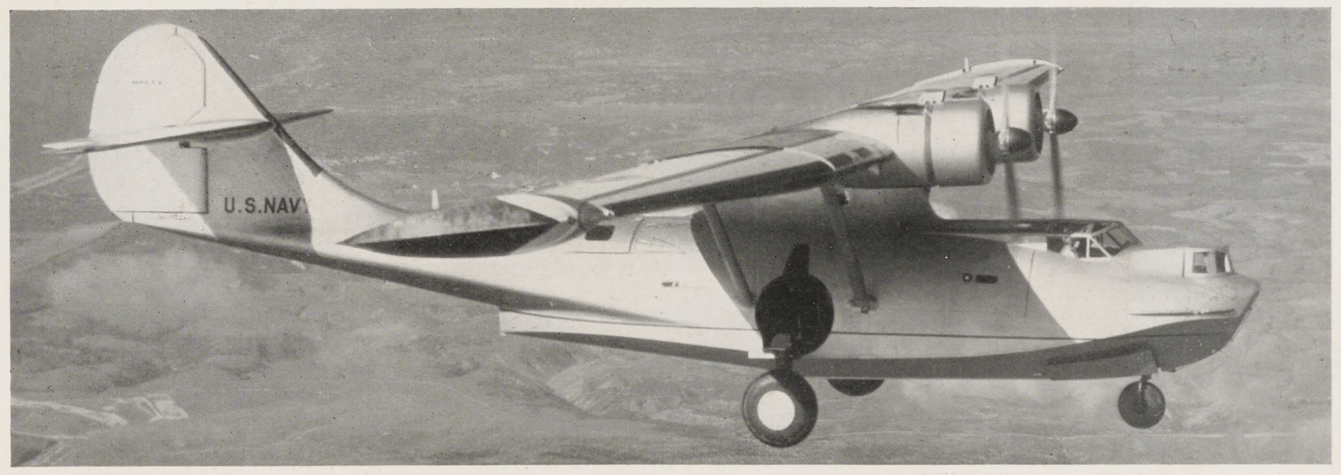


". . . turns tire blowouts . . . into slow leaks . . ."

New Aircraft

INTAVA WORLD
March 1940

THE CONSOLIDATED MODEL 28-5A



The Consolidated Model 28-5A twin-engined Amphibian with wheels lowered.

THE Consolidated Aircraft Corpn. has delivered to the U.S. Navy an amphibious version of the well-known Model 28 (Naval PBY Series) flying-boat which is designated the Model 28–5A (XPBY-5A).

The landing gear is of the tricycle type with the main wheels retracting into wells in the sides of the hull and the nose wheel into a compartment in the bow, which is closed by automatically-operated hatches. All three wheels are operated by a central hydraulic drive, the power being derived from the main power-plant or from an auxiliary engine. Emergency hand gear is also provided.

There is no need for a beaching crew as the Model 28–5A can climb a ramp or beach under its own power and can descend in the same manner completely controlled by its brakes.

No special technique is needed for either take-off or return to land or water. The side wheels are above water when the machine rises on its step to take-off and water is automatically ejected from the bow wheel hatch before it is in the air, so that flying trim is not affected. When running up the engine on land the wheels may be locked, elevators pulled hard back and both engines given full take-off throttle without any possibility of the nose wheel rising from the ground. When landing the brakes may be put hard on without any adverse effect. In a side-wind landing the tendency is to straighten out.

Smokestacks or Geraniums?—San Diego Achieves Happy Combination of Both

Posies Win—Well, San Diego Is Both Aesthetic and Practical

Special to The Christian Science Monitor

SAN DIEGO, Calif.—"Smokestacks or geraniums!"

That was the battle cry in San Diego during the administration of Mayor Louis Wilde, 1917-21.

On one side of the political fence were the advocates of "smokestacks" or an industrialized city.

Arrayed against this theory of factory expansion were those who believed that San Diego should be developed along cultural lines, with the "geranium" side accentuated.

The contest lasted for a number of years, and ended in a technical stalemate—because today San Diego is rapidly becoming industrialized without smokestacks, and yet retaining the "geranium" feature.

Things Start With Lindbergh

This transformation has taken place since May 10, 1927, when a tall lanky youth named Charles Lindbergh lifted his San Diego-built monoplane from the bumpy runway of Rockwell Field on North Island just across the bay from San Diego.

As a result of the impetus placed on aircraft development since Lindbergh flew the "Spirit of St. Louis" to Paris, this city today claims the title, "Air Capital of the West."

"And we believe we can substantiate that claim because we estimate that there is more flying in San Diego per year than in any other American city," declares Thomas Bomar, industrial manager of the local Chamber of Commerce. "This is the nation's and probably the world's, largest naval aviation center, and we also have the Consolidated Aircraft plant, the world's largest manufacturer of flying boats."

In San Diego, also, are situated the plants of the Ryan Aeronautical Company, makers of planes, aircraft parts, and operators of a large student flying school, and the Solar Aircraft Company, reputed to be the world's largest makers of exhaust manifolds for aircraft engines.

The aircraft industry, which now is challenging the United States Navy's claim as the city's largest single pay roll, was slow in its development.

T. Claude Ryan, who sold out to the Mahoney company which built Lindbergh's monoplane, was in the business of carrying passengers between here and Los Angeles as early as 1925.

The "Spirit of St. Louis" was built in an abandoned fish and fruit cannery at the foot of Laurel Street on the edge of Lindbergh Field. It is now the factory of the Solar Aircraft Company.

Then a Municipal Airport

The plan of a municipal airport near the heart of the city was considered by a Chamber of Commerce committee as early as 1925. but it was not until after Lindbergh flew to Paris that the voters stamped their approval on a $650,000 bond issue for Lindbergh Field. The land was reclaimed from the bottom of the bay for the 112-acre airport.

Mr. Ryan again entered the plane-manufacturing business about 1933, producing a light sport plane. His factory was moved to Lindbergh Field, which then became the center of the city's aircraft industry.

Meanwhile, the Solar Aircraft Company was organized in 1927 to manufacture an all-metal plane. However, the depression knocked the bottom out of the aircraft industry, and this company turned to the manufacture of a custom-built exhaust manifold for which it later became famous.

San Diego became an important aircraft center in 1935 when the Consolidated Aircraft Company moved its plant from Buffalo, N. Y., because of the equable weather conditions, and the proximity to the naval air station at North Island for which it has developed hundreds of the giant PBY flying boats.

During the past year, the city's aircraft plants have been swamped with orders, mostly in connection with Uncle Sam's new national defense program.

Huge Aircraft Orders

The combined backlog of unlled orders for Consolidated, Ryan, and Solar is sufficient to keep the factories working day and night until the fall of 1941, or longer, it is estimated.

Of this total of unfilled orders, Consolidated has many millions of dollars of planes to be built as quickly as possible. The order from the Navy Department for $20,016,699 of aircraft forced officials of Consolidated to order an immediate expansion of facilities.

The expansion program, now under way, calls for additions for final assembly, final finish, paint shop, wood mill, experimental, maintenance and office departments, which will cover 396,000 square feet. In addition to the buildings, all factory yard areas will be paved, where final operations can be carried on virtually throughout the year.

Ryan has recently completed a new $150,000 factory on the western edge of Lindbergh Field, while Solar has also expanded through the addition of a large factory annex.

Consolidated employs about 4,300 men, and is adding about 100 men a week; Ryan now has 900 employees and Solar approximately 475. The combined pay roll is around $700,000 monthly, and the value of aircraft planes and parts totals about $25,000,000 yearly.

It is the plan to increase the number of factory workers to 7,500 by Jan. 1, which will bring the aircraft monthly pay roll to between $1,500,000 and $2,000,000, or equal to the Navy's pay roll in this area.

Labor-Training Active

In order to meet this unprecedented demand for skilled men in the aircraft factories, San Diego is preparing her own young men in three tax-supported institutions, the new Vocational School in San Diego; at the Sweetwater Union High School in Chula Vista, and at the Vista Civilian Conservation Corps school, under sponsorship of the Escondido high school district.

In an effort to train skilled technicians to become riveters and sheet-metal workers in the three factories, the aircraft manufacturers are co-operating with the city school system and have released 19 of their best craftsmen to train the youngsters in the preliminary work of plane-making.

The personnel directors of the factories meet occasionally and interview the applicants as to their adaptability, and other necessary qualifications.

The graduates of the schools are placed as fast as jobs become available, it was explained.

Incidentally, the size of Lindbergh Field has been increased to 350 acres, and soon will be 500-acres in size, with the completion of the current dredging operations.

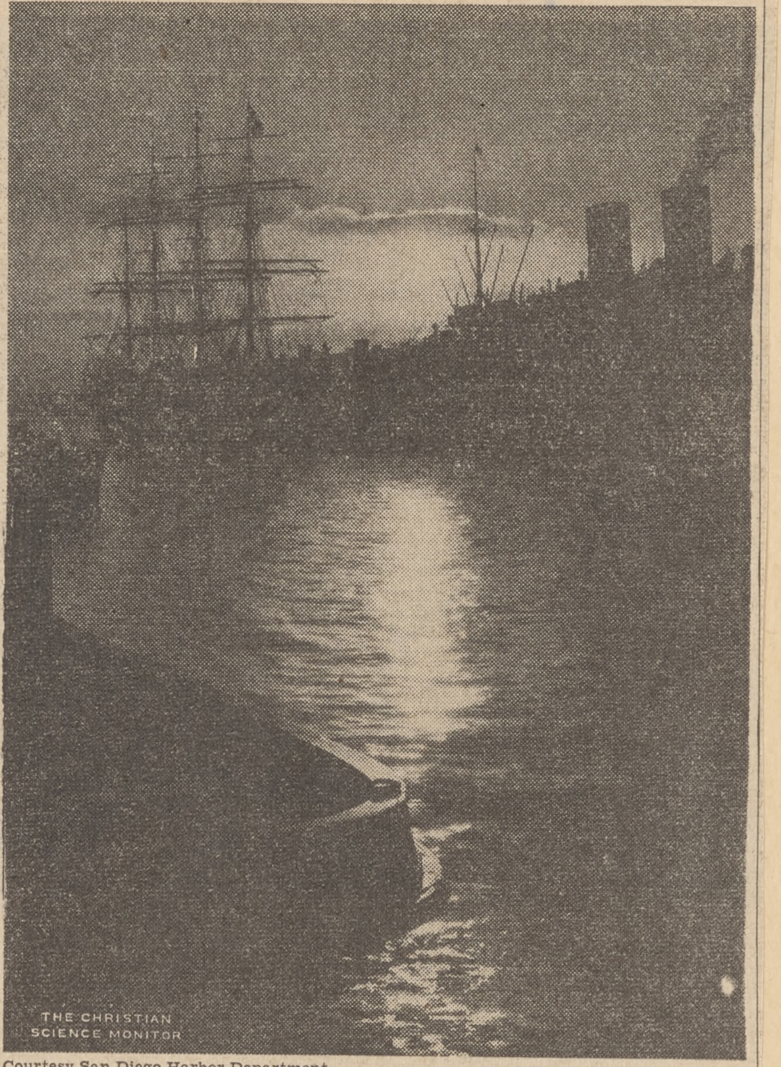
So, today, San Diego has both "geraniums" and "smokestacks" in the figurative sense. It has become industrialized without the costly smoke of some other cities. Yet even at the aircraft factories the "geranium" theme is being carried out in shady, quiet patios filled with flowers, and lined with palm trees.

THE CHRISTIAN SCIENCE MONITOR

Consolidated Aircraft Corporation

Patio in a San Diego Factory

This view of a patio at the Consolidated Aircraft plant in San Diego shows that the "geranium" theme can still be carried out along with the "smokestack" motif.



Courtesy San Diego Harbor Department

San Diego's Harbor Is Great Among Its Assets

Twilight at one of the municipal piers in San Diego, showing a swift ocean liner docked next to an old four-master. In the distance can be seen two Navy cruisers and Point Loma.

Union 5/10/40.

CONSOLIDATED AT TOP SPEED THROUGH 1941, SAYS FLEET

Consolidated Aircraft Corp. has sufficient contracts on hand to keep the huge municipal airport plant working at top speed until the end of 1941, Maj. Reuben Fleet, president, yesterday informed Harbor Commissioners R. H. Van Deman, Emil Klicka and William E. Harper.

Fleet intimated that no further additions to the plant will be made following completion of the $2,000,000 construction program this month. He said steel work on virtually all the new buildings is about finished and that work will be started immediately in laying floors in the new experimental building.

Fleet appeared before the harbor commission primarily to plead for more vigorous action in beautifying Pacific highway from Broadway to Harasthy st. He said Consolidated is expending and has expended many thousands of dollars in planting trees and shrubbery along the highway front of the aircraft plant, a total length of one mile on both sides of the thoroughfare. He declared a check disclosed 27,000 cars pass the Consolidated factory daily and asserted if Pacific highway is the city's front door it should be made presentable. He was accompanied before the commission by Milton Sessions of the park board.

The harbor commission advised Fleet they were taking excellent care of trees and shrubbery planted on tidelands under jurisdiction of the harbor department but that the park board was responsible for other sections.

Union 5/10/40.

New Naval Aviation Post At San Diego Announced

Creation of a new navy post at San Diego, that of general inspector of naval aviation for the western district, was announced yesterday by the navy department.

Ordered to assume charge of the new post was Comdr. Samuel J. Zeigler, now attached to the staff of Vice Adm. Charles Blakely, battle force aircraft commander.

Union - 5/17/40

Highway Beauty Meeting Called

Financing of the proposed long-term Pacific highway beautification program from the Orange county line south, will be discussed at a meeting in the office of Glenn Rick, city planning engineer, at 2 p. m. today.

The conference, said Rick, was called by George Marston, at whose suggestion the program was drafted, and is to be attended by L. Deming Tilton, state planning director; Dana Bowers, state landscape architect; E. E. Wallace, district engineer, state division of highways; Philip Gildred, chairman, and Hugh Strong, secretary, of the Pacific highway committee; Lorin Deewall, county planning engineer, and Rick.

FUND SOUGHT

Fred Rhodes, city manager, has recommended to the council that $2500 be sought from the city's next allotment of state gasoline tax funds to get the program under way within the municipality. From other sources, however, it has been indicated that state division of highways might not approve this plan unless the city agrees to put up some of its own funds.

The beautification committee also has asked county supervisors to provide funds in their 1940-41 budget to start the beautification outside the city limits.

CARE OF TREES

Meantime, the harbor commission, through its secretary, Joe Brennan, port director, filed a letter with the council yesterday asking it to work out a plan to care for trees planted along Pacific highway from Barnett ave. to Broadway. Brennan reported that Maj. R. H. Fleet of Consolidated Aircraft Corp., and Milton Sessions, park commissioner, recently appeared before the harbor commission.

Maj. Fleet said his company had spent thousands of dollars in planting and maintaining trees on its lease. The harbor commission tends to the trees in the Lindbergh field area, and Civic Center maintainence crews take care of those in front of that building. The park department, with the number of men available, cannot care for all of the balance, Sessions reported, and many are being neglected.

WESTERN FLYING
May, 1940

Martin Contract Gained by Solar

A $150,000 order from the Glenn L. Martin Co., Baltimore, for manifolds, tail pipes and preheaters during March was announced by Edmund T. Price, president of Solar Aircraft Co., San Diego. The parts represent the latest type equipment, and will be installed in military planes for the U.S. Air Corps.

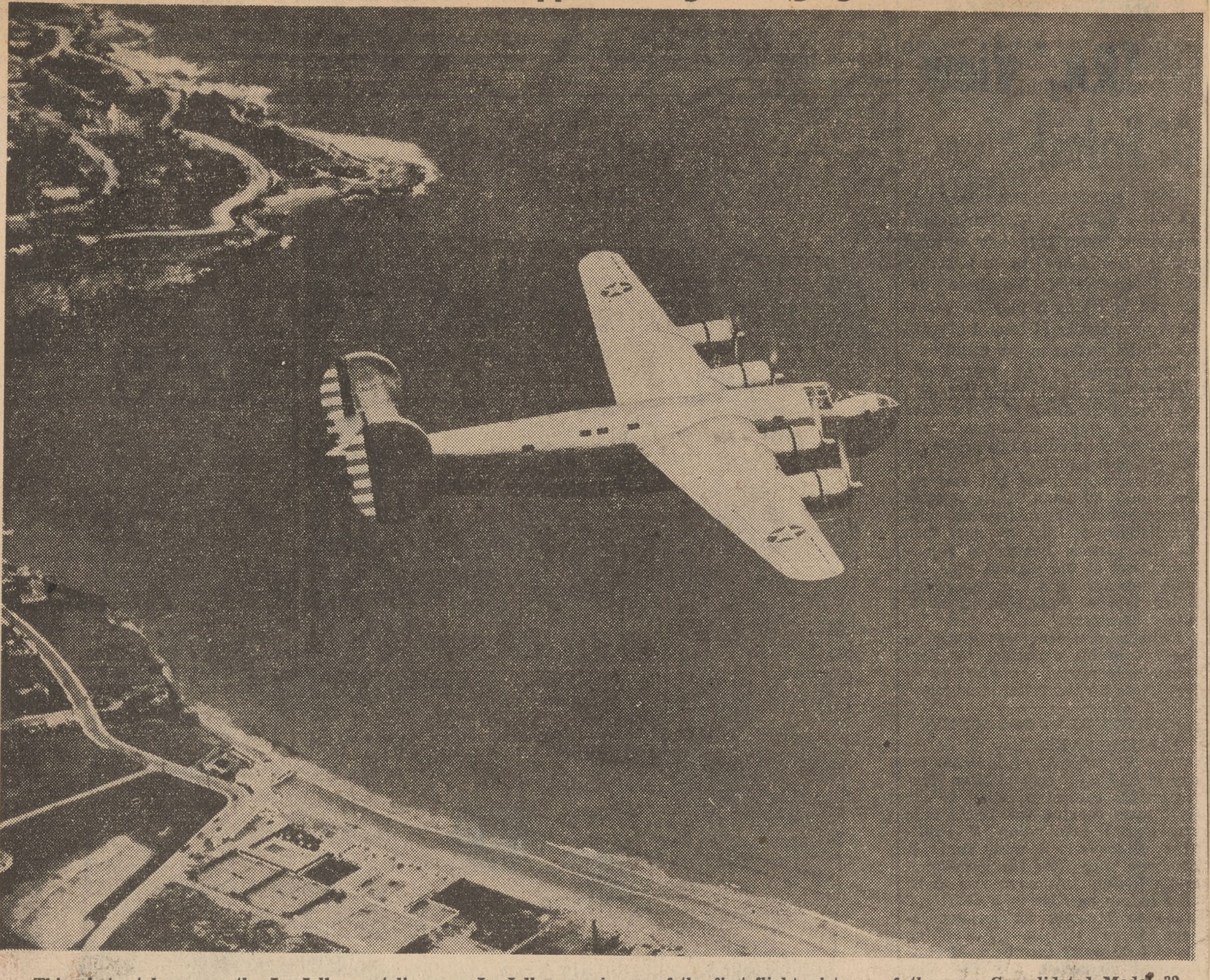
The Martin order, and the $180,000 order recently received from Consolidated Aircraft Corp., are the two largest in Solar's history. Mr. Price said both carry options for considerable quantities which may be exercised during the year.

As a result of the two bookings, Solar's backlog is reported nearing the $1,500,000 mark.

THE TRIBUNE-SUN,

Uncle Sam's Latest Consair Bomber Snapped in Flight Winging Over La Jolla Shores

5/10
1940



This photo, taken over the La Jolla coast line near La Jolla cove, is one of the first flight pictures of the new Consolidated Model 32 four-engined land bomber, which is undergoing tests at San Diego. Designated by the army as the XD-24, the plane weighs 40,000 pounds, has a speed of more than 300 miles an hour, a range of approximately 3000 miles and a bomb-carrying capacity of approximately four tons. It has a wing span of 110 feet. Its fuselage length is 64 feet and its over-all height, 19 feet. It carries a crew of from six to nine.

THE SAN DIEGO UNION:

ARCHBOLD HONORED FOR FLIGHT IN CONSOLIDATED SHIP

MAJ. R. H. FLEET RICHARD ARCHBOLD EARL PRUDDEN
. . . Aero club presented a handsome gold trophy at dinner for noted flier.

Union - 5/15/40

Youth Said No Bar to Jobs At Aircraft Factory

A report that Consolidated Aircraft Corp. was declining to take on any more men between the ages of 18 and 25 because they would be the first to be drafted in the event of war was emphatically denied at the plant late yesterday.

Donald Frye, plant personnel director, characterized the rumor as "absolutely false," and said the company was continuing to employ men of that age when they could meet the concern's requirements.

Union - 5/20,40

CONSAIR PLANE DESCRIBED

The new Consolidated 7B-24, now undergoing flight tests, has "a speed over 300 miles an hour, a range of approximately 3000 miles, and bomb carrying capacity of approximately four tons." In addition, the plane has a tail turret.

AIRCRAFT NEWS - 5/2/40

New Type U.S. Bomber May Be Sold Abroad

WASHINGTON — The army is permitting aircraft manufacturers to negotiate with foreign governments for possible sale of a new type four-engined 17-ton bomber with a cruising radius of approximately 4000 miles, it was learned several days ago.

The plane, known as the B-24, is manufactured by Consolidated Aircraft Corp., San Diego, Calif., and reputedly can travel more than 300 miles per hour. The army ordered about 40 of these planes last fall as part of its air expansion program.

N. Y. C., TIMES
MAY 17, 1940

SAN DIEGO, Calif., May 16 (UP)—Production facilities of existing aircraft plants must be greatly enlarged if President Roosevelt's demand for 50,000 fighting planes is to be filled, Major Reuben H. Fleet, president of Consolidated Aircraft, said today.

"We must know ahead of time what orders might be expected in order to produce in any such emergency," he explained.

American Aviation
7/1/40

NEW YORK STOCK EXCHANGE

	Week Ended June 8				Week Ended June 15				Week Ended June 22			
	High	Low	Net Change	Sales	High	Low	Net Change	Sales	High	Low	Net Change	Sales
American Airlines	53¼	50¼	—1⅜	3,500	57½	49¼	+5½	9,700	63	54¼	+1¾	11,200
Aviation Corp.	5¾	5¼	— ⅛	12,500	6	5	.....	34,200	5½	5	— ⅛	19,900
Bendix Aviation	27⅝	25	— ⅞	11,300	30¼	25	2⅞	22,500	29⅞	27⅝	— ¾	11,100
Boeing Airplane	15½	13⅝	—1⅜	25,200	15⅞	12⅞	+ ⅞	42,800	14⅞	13¾	— ⅝	22,600
Consolidated Aircraft	22¼	20	—1⅛	4,700	23	17⅝	+ ¾	13,100	21½	17¾	—1½	6,800
Continental Motors	3⅜	3	.....	18,000	3⅝	2⅞	— ⅛	34,000	3⅛	2⅞	— ¼	19,500
Curtiss-Wright	8⅜	7⅝	— ⅜	48,800	8⅝	7⅛	+ ⅜	111,900	8	7¼	— ½	56,200
Curtiss-Wright A	25	23½	+ ⅛	8,100	26⅞	23	+1¼	20,300	25¾	23¾	.....	9,200
Douglas Aircraft	77	73½	— ½	6,500	81⅜	72⅛	+1	16,500	76¾	70	—5	14,200
Eastern Air Lines	29½	26½	— ¼	14,800	30¾	25¾	+1⅝	24,800	32½	28¼	+ ½	38,600
Ex-Cell-O	31¾	29¼	—1¼	6,000	33	28⅝	+1⅞	19,700	31½	30	.....	7,100
Grumman Airc'ft Eng.	18	16	—1	7,400	18⅝	15⅜	.....	6,700	17⅜	15½	— ⅞	4,200
Lockheed Aircraft	29¾	27⅜	— ¼	23,500	30⅛	25⅛	— ½	58,900	27¾	25¾	—2	31,900
Glenn L. Martin	33¾	31	—1½	11,100	34½	29¼	— ⅛	28,200	30½	27⅞	—2⅝	21,400
Natl. Aviation Corp.	10¾	9¾	+ ⅛	2,500	11¼	9	— ⅜	4,500	10½	9¾	.....	3,900
N. American Aviation	18⅜	16½	+ ½	19,400	19½	16⅛	+ ⅜	40,900	17¾	16⅛	— ⅛	24,000
Pan American Airways	13⅞	12¼	+ ⅛	10,500	14½	12	+ ⅛	16,800	15¾	12¾	+ ½	22,700
Sperry Corp.	39½	37¼	.....	7,500	42⅛	35¾	+2	17,600	40⅜	37⅜	—3	9,400
Thompson Products	28⅝	27½	— ⅛	1,800	33½	27½	+4½	4,100	33½	30	.....	2,500
TWA	15¾	13¼	+ ¼	7,700	16	13½	+ ⅞	16,400	17½	15¼	+1⅜	9,400
United Aircraft	43⅜	40⅝	+ ¼	16,100	44¾	39¾	— ½	33,400	41½	37¾	—3¼	27,700
United Air Lines	15⅛	12⅞	+1	12,700	15½	12¾	+ ¼	29,800	17⅜	14⅛	+1¾	36,200
Wright Aeronautical	....	....	.....	.....	103	91	—1	160	98	95	—5	30

CONSOLIDATED FACTORY EXPANSION

May 1940

ANNOUNCEMENT was made by the Navy Department on December 20th, 1938, that the Consolidated Aircraft Corporation had been awarded a contract for $20,016,699. This is the largest single order for airplanes ever placed by the United States Government, and it increased the backlog of Consolidated to over $40,000,000. With work on other contracts occupying most of the production capacity, the new record order has made it necessary for the company to add new plant facilities to meet the deliveries required by the contract.

The present plant of Consolidated is one of the finest and best integrated airplane manufacturing plants in the United States. When the company erected its new plant at San Diego the buildings were designed and constructed to meet the most advanced type of airplane manufacturing facilities. The original factory buildings are less than five years old and the large experimental building, the photo, physical, and chemical laboratory; paint storage and tool storage buildings are just over three years old.

Prior to the expansion now under way, Consolidated had under lease 24.7 acres on which the factory buildings are located, and an additional 7.6 acres under option. New leases and options now cover an area of 64 acres. This area is all located on Lindbergh Field, San Diego's municipal airport.

The building expansion, comprising additions to final assembly, final finish, paint shop, wood mill, experimental, maintenance and office departments will aggregate approximately 396,000 square feet, or an increase in the present area of 87%. The largest single area to be roofed is the new final assembly building measuring 360 feet by 720 feet. This has a clear span of 120 feet and a clearance from floor to roof truss bottoms of 36 feet. Sawtooth roof construction similar to the existing buildings will be used.

In addition to the buildings, all factory yard areas will be paved with asphaltic concrete. These areas, due to the mild southern California climate, can be used virtually the entire year around for final assembly operations. Many maintenance activities likewise may be practically completed out of doors and then transferred to the plant with a minimum of interference with production.

In undertaking the plant expansion which will enable the delivery requirements of the $20,016,699 contract to be met, a closing agreement between Consolidated Aircraft and the United States Treasury Department was entered into. This agreement provides that the cost of certain additional excess production facilities, less depreciation, required to meet deliveries may be charged to the cost of performing contracts received by the company.

THE UNITED STATES FLEET MAGAZINE

Sentence Tool Thief

Tribune - 5/24

Convicted of stealing parts of a machine tool from the Consolidated Aircraft Corp. plant, Bronson Parrett, 29, today was sentenced to 30 days in the county jail by Municipal Judge Howell Howe. Parrett said he wanted to use the parts to construct a vise.

---

* * *

5/14

10-Day World Air Cruises Seen

"If the world does not destroy itself through the use of aircraft in the present war, cruises around the world in luxurious flying boats, requiring only from 5 to 10 days, will be a travel feature of peacetimes."

So predicted Richard Archbold, explorer, aviator and research associate in mammology of the American Museum of Natural History, at a dinner in his honor last night in Hotel San Diego.

Archbold received a scroll from the National Aeronautic association outlining his aerial achievements in the Consolidated flying boat Guba, and the San Diego Aero club, local chapter of the national organization, gave him a handsome gold trophy.

CITATIONS INSCRIBED

Inscribed on the awards, with the names of the Guba's crew, were citations for the following feats: First navigation of the world by flying boat; first navigation of the world at its maximum diameter; first plane to fly across the Indian ocean, and first non-stop flight across Australia.

Members of the Guba's crew were Russell Rogers, chief pilot; Gerald Brown and Stephen Barrinka, engineers; Raymond Booth, radioman, and the late Capt. Lewis Yancey, navigator.

The N.A.A. scroll was presented by Maj. R. H. Fleet, Consolidated Aircraft corp. president and life member of N.A.A., while the Aero club trophy was presented by Earl Prudden, president.

HOPPED 3190 MILES

The Guba was used to transport personnel, supplies and scientific equipment for 11 months in The Netherlands New Guienea jungles, where Archbold led an American Museum of Natural History expedition. The big craft later was used in a survey flight for the Australian government across the Indian ocean, spanning the "down-under" continent en route. From Mombasa, Africa, where the survey flight ended, the Guba crossed that continent in easy stages and flew from Dakar to St. Thomas, Virgin islands, a distance of 3190 miles, in 19 hours, 33 minutes, believed to be the longest overwater flight on record. From St. Thomas, the trip continued to New York and thence to San Diego, completing its circle of the globe.

In his address of acceptance, Archbold cited the superiority of the air boat to the land plane in international travel, and showed movies of his epic flight. He came here for the dinner from Tucson, where he is conducting a plant and animal study.

Tribune- 5/17/40

Consair, Other Coast Plants Ready To Open Throttle, Build 50,000 Planes

By WILLIAM TYREE

LOS ANGELES, May 17 (U.P.)—Aircraft manufacturers, with an eye to new business and bulging backlogs of more than $300,000,000, said today the momentum given plane construction by the European war could be used to meet President Roosevelt's congressional request for a 50,000-plane defense program.

The southern California factories, which build 65 percent of the nation's large planes, reacted wholeheartedly to the president's proposal. Business leaders telegraphed senators, army, navy and cabinet officials their support. Job lines swelled proportionately.

"We can do it," Donald W. Douglas, youthful president of Douglas Aircraft Co., largest plant in the United States, said in offering his organization.

Will Meet Challenge

"It will take a three-fold expansion program of facilities now available," said Richard W. Millar, president of Vultee Aircraft, Inc. "Accomplishments in the past 12 months, however, can leave no doubt in the mind of the American public that this challenge can and will be met."

"If President Roosevelt wants to open the throttle for a 50,000 plane take-off, the American plane industry is ready to go—and go right now," in the words of Robert E. Gross, of Lockheed Corp.

North American Consolidated, at San Diego, and Boeing, at Seattle, agreed they were ready to push the program at maximum speed.

All of the plane factories have been spurred by the all-time high in orders for speedy pursuit planes, bombers, trainers and even commercial ships to expand into new factory space, increased payrolls and employes.

April Record Zooms

Exclusive of a reported order for 2000 planes at $200,000,000 for the Allies, the industry pointed to this zooming record for April:

Backlog—$300,000,000, up more than $40,000,000 from April 1.

Employes—33,030, up more than 3600 from April 1.

Monthly payroll—$4,400,000, up more than $252,000 from April 1.

April production—$9,000,000, up more than $715,000 from previous month production.

Gross, of Lockheed, said that despite the acceleration there was still much to be developed "inasmuch as few, if any, companies are working three shifts and the majority not even two full crews."

San Diego's three aircraft plants, Consolidated, Ryan and Solar, are "100 percent in back of President Roosevelt's defense plan," it was announced following the president's message to congress.

"Consolidated's business is to serve our country," said a spokesman at the plant, builder of navy long-range patrol planes and four-engined bombers for the army air corps. "We are prepared to push production at a maximum speed."

Expansion Noted

Consolidated has a backlog of approximately $70,000,000 as a result of a $20,000,000 order this month for planes for the Allies. The firm is expanding its plant at Lindbergh field.

The Ryan School of Aeronautics is prepared to expand its army air corps cadet training program almost three-fold as a result of the president's new program, it was understood. The company, which, since last July 1 has trained army cadets at the rate of 35 every six weeks, is ready to increase to 100 every six weeks. This applies both to training planes and instructors and to housing facilities, it is believed.

Edmund T. Price, president of Solar Aircraft Co., largest producer of exhaust manifolds in this country, stated today that Solar is ready to do its part in fulfilling the president's program announced yesterday calling for 50,000 new planes in the near future.

"Defense First Concern"

"Our country's defense requirements are the first concern of this organization, which has doubled its production in the last six months and has under way expansion for providing sufficient reserve capacity to again double the company's production," said Price.

The Ryan new two-story administration and engineering building is nearing completion on the west side of Lindbergh field, adjacent to the new Ryan aircraft factory. With the transfer of all personnel having to do with the manufacturing side of the company's business to the office and engineering building, the present administration building, located on Pacific blvd. at the airport, will be devoted entirely to offices for the Ryan School of Aeronautics and for governmental agencies, including the Civil Aeronautics Authority and the weather bureau.

Training Ships Delivered

The Ryan Aeronautical Co. last month delivered the last of the Ryan PT-20 low-wing primary training planes recently ordered by the army air corps. This marked completion of the third order from the air corps for this type trainer.

Now in production at the Ryan plant are a number of Ryan YO-51 "Dragonfly" observation planes for the air corps. The "Dragonfly" needs no regular landing field, as it can land and stop rolling in little more than its own length, and take off at a very steep angle in a limited distance. Also in production are a fleet of Ryan STM-2 military trainers for export.

Locally, no official word has been received by any aircraft plant authorities on President Roosevelt's suggestion that airplane manufacturers move their new plants away from exposed seaboard areas. About 18 months ago reports from Washington, D. C., said consideration was being given to a proposal of this nature, but so far no action has been taken. A suggestion came from Washington earlier this month that aircraft firms manufacturing seaplanes establish inland factories near waterways where areas for test flights would be available.

Consolidated Aircraft Corp. moved to San Diego in 1935 from Buffalo, N. Y. One of the principal reasons given for the transfer at the time was that San Diego's "all year" flying weather and this city's harbor facilities made San Diego a desirable location for a factory turning out planes of the type Consolidated manufactures.

Tribune May 14

Allied Order For Consair on 17th Birthday

New orders totaling approximately $20,000,000 for planes for the Allies, which The Associated Press reports from New York have been placed by the British and French governments with Consolidated Aircraft Corp., came as a "birthday present" for the firm, which this month is observing its 17th anniversary. The firm has been located at San Diego since September, 1935.

Prior to receiving the Allied order, the Consolidated backlog, which has been increasing rapidly the past year due to contracts for United States army and navy planes, totaled approximately $50,000,000. Unfilled orders now amount to $70,000,000, an all-time high for Consair.

Included in the new orders are an unannounced number of the "Liberator" model, a four-engined bomber which has a 300-miles-an-hour speed under heavy bomb load, it was reported from New York. This type recently was released for export by the state department.

Conferences Held in N. Y.

Conferences with representatives of England and France have been carried on for several weeks in the east by Consolidated officials, and C. A. Van Dusen, vice president and works manager, still is in New York, it was reported. Edgar N. Gott, assistant to Maj. Reuben H. Fleet, president, returned to San Diego yesterday.

With 5474 employes now at the plant, Consolidated is working day and night shifts. A $2,000,000 plant expansion, started early this year, is nearing completion. The largest new unit is a final assembly building, 360 feet by 720 feet, adjoining the plant to the north and fronting on Pacific blvd.

The four-motored bombers in the new order are reported similar to the new Consolidated army's B-24, which has an approximate gross weight of 40,000 pounds, a wing span of 110 feet and accommodations for a crew of from six to nine, with a bomb-carrying capacity of approximately four tons.

Indicative of the marked upswing in Consolidated business during the past 14 months is a report there were only slightly more than 1100 employed at the plant the latter part of March, 1939. By Dec. 1 last year this total jumped to 3200, increasing during the last six months to 5474.

Contracts Increase

The last big order for planes occurred in December, when the United States navy awarded a $20,016,699 contract for an unspecified number of patrol planes. This was followed in March by a foreign order of approximately $9,000,000 for navy planes of the PBY type. In March, 1939, the navy awarded a $4,699,000 contract to Consolidated, and in April last year the war department awarded the firm an order for an unannounced number of four-engined bombers totaling $2,880,000. The third order received in 1939 came on Aug. 10, when the war department awarded a contract for $8,485,000 for more four-engine bombers.

Consolidated Aircraft Corp. was incorporated May 29, 1923, and first was located at East Greenwich, R. I. In 1924, when Fleet and his associates were successful in an army competition and the firm was awarded a contract for the construction of 50 two-place tandem trainers, the plant was moved to Buffalo, N. Y., where factory space was leased over an 11-year period. The firm decided as early as 1933 to move to San Diego, and built its own plant here on Lindbergh field before transferring to the west coast.

The original San Diego factory building had approximately 10,000 square feet more than was occupied in Buffalo in the 1933 peak. In January, 1936, plans for building the present experimental building at the south end of the main factory were completed, and the experimental building was finished Nov. 15 that year.

Heavy Foreign Trade

During the past 17 years Consolidated planes have been sold to Brazil, Siam, Peru, Argentina, Mexico, Cuba, Canada, Colombia, China, Portugal, Turkey, Rumania, England and France. One plane, the flying boat Guba, was flown around the world by Richard Archbold, scientist, who used it in an expedition to New Guinea for the American Museum of Natural History.

Unofficial reports from Los Angeles state that a twin-motored, 15-ton plane, flown from San Diego to Felixstowe, England, last year, later was flown from England to Iceland, where the pilot was interned, having landed on the Danish-owned island after the outbreak of war in September. He is believed freed now, since England occupied Iceland this month.

Union 5/28

Consair Plans Improvements On Huge Bomber

Consolidated Aircraft Corp. officials said yesterday that improvements regarded as "highly advisable in light of recent war developments" were being made to the XB-24, rated as one of the world's largest and fastest bombers.

Although declining to disclose details of the improvements prompted by the European air warfare, company officials said no basic changes were being made.

The army air corps began tests of the 20-ton, four-motored bombers last February. Army officials had planned to fly the craft to Wright field, Dayton, O., after trial flights over a 10-day period.

Company officials said the bomber probably would go to Dayton after the "improvements have been made and further tests completed."

The bomber has a wing spread of 110 feet and flies at better than 300 miles an hour. It is powered by four 18-cylinder radial engines totaling 4800 horsepower. It has a cruising range exceeding 3000 miles carrying four tons of explosives.

The craft had been under construction more than a year at Consolidated under secret orders from the war department.

The army's new experimental observation plane, the Ryan-built Dragonfly, left here recently to participate in the army maneuvers in Louisiana. Mission of the plane, which can take off and land on a small area, will be to coordinate infantry movements and serve as a courier behind lines.

Make Changes In Consair Bomber

Tribune 5/28

Improvements regarded as "highly advisable in light of recent war developments" will be made at the Consolidated Aircraft Corp. plant to the firm's new four-motored army bomber XB-24, according to report by officials of the firm. They declined to give details of the changes, made necessary by European air warfare, but said no basic changes will be made.

The plane has been undergoing tests here since February, and is expected to be flown to Dayton, O., for final flights after the improvements are completed. The plane, with a bomb-carrying capacity of four tons, has a wing spread of 110 feet and a speed of more than 300 miles an hour.

The army's Ryan-built experimental "Dragonfly" observation plane left San Diego recently to participate in "courier" and "coordination" flights in the army maneuvers in Louisiana. The plane can take off and land on a small area.

THE TRIBUNE-SUN,

S. D. Aviation Executive Pioneer of U. S. Airmail Service

An early day mail carrying plane.

MAJ. R. H. FLEET

Credit Fleet With Starting Flights In 1918 From N. Y. to Capital

May 15

By HAROLD OSBORNE

America's smoothly functioning airmail service had its inauguration 22 years ago, when the first airmail was flown from New York to Washington, D. C., a distance of 218 miles, by Maj. Reuben H. Fleet, now president of Consolidated Aircraft Corp. Fleet made the flight May 15, 1918.

The airmail service began under the direction of the army, and Fleet, who saw flight service across the Atlantic in World war days, became the first airmail pilot over an extended run after having received army flight training at San Diego. A former Rockwell field flier, he trained at North Island and won the rating of junior military aviator at San Diego in 1917.

10-Mile Flight in 1911

Just 30 when the United States entered the World war, Fleet was the first man to land a passenger on the Kearny mesa, the passenger being Peter B. Kyne, the novelist, who then was a captain in the 144th field artillery. This flight was made in 1917.

Prior to Fleet's inauguration of the New York-Washington service, a 10-mile airmail flight was made back in 1911 by Pilot Earle Ovington. On that occasion Ovington was at Long Island and was given a small pouch of mail by Frank H. Hitchcock, postmaster general in President Taft's cabinet. He flew 10 miles to New York.

The airmail did not remain in the army's hands long after the May 15, 1918, flight. In less than three months' time, on Aug. 12, 1918, the postoffice took over the service, which was run under private contracts until early 1934, when the army again took charge for a short time as a result of cancellation of contracts. Later new contracts were awarded.

Early airmail flights were of the "hop-skip-jump" variety, the planes operating without emergency landing fields or night beacon lights. On July 1, 1919, a rebuilt single-motored wartime DeHaviland plane took off from Chicago to make the first flight of the Chicago-Cleveland-New York airmail route. The flight took nine hours.

On Transcontinental Basis

Airmail service across the continent started Sept. 8, 1920, from New York to San Francisco, with the mail being carried by plane during daylight hours and by train at night. Through ailmail service from coast to coast, with night flying, began July 1, 1924. Airway lighting and radio service went under the jurisdiction of the department of commerce July 1, 1927.

The first airmail left San Diego far Salt Lake City June 1, 1930, it was reported at the postoffice. Today there are four mail plane departures from here daily and four arrivals. The volume of San Diego's outgoing airmail for the 12-month period ending April 30, 1940, was 87,547 pounds.

AIRCRAFT NEWS

Bomber Design Improvement

5/29

Consolidated Aircraft officials in San Diego stated that improvements regarded as "highly advisable in the light of recent war developments" were being made to the XB-24, rated as one of the world's largest and fastest bombers.

Although declining to disclose details of the improvements prompted by the European air warfare, company officials said no basic changes were being made.

The Army Air Corps began tests of the 20-ton, four-motored bomber last February.

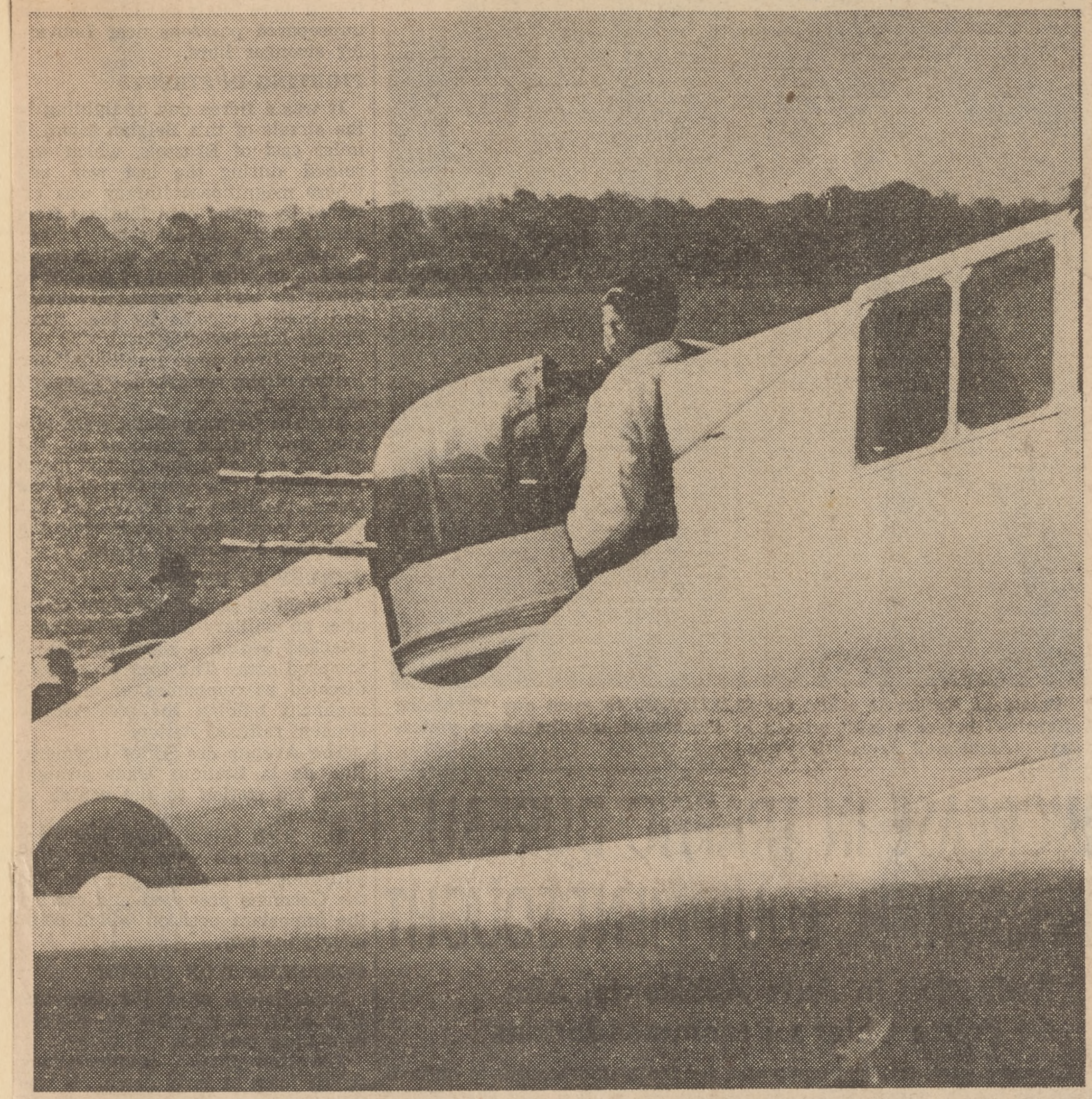
AIRCRAFT NEWS - 6-6-40

Consolidated Air Orders Regular

SAN DIEGO—Directors of Consolidated Aircraft Corporation have declared the regular quarterly dividend of 75 cents a share on the preferred stock, payable June 29 to stock of record June 14.

Aircraft Firms Accept Challenge

Union
5/17/40



Hope of repelling flocks of Nazi war birds rests largely in this new British fighter plane, the Defiant, with power-driven turret aft. Its sting so far has proved deadly. (Associated Press photo.)

Goal of 50,000 Held Feasible

SANTA MONICA, May 16 (U.P.)—A confident "we can do it" was the answer today of Douglas Aircraft, largest plane plant in the United States, to President Roosevelt's demand before congress for 50,000 warplanes for defense.

Donald W. Douglas, president of the company, said he believed all aircraft builders together could meet the needs of the government.

"No task is too great and no accomplishment impossible for a free people united in loyalty and love of its country," Douglas said.

"I am confident that the airplane industry of the United States can and will keep pace with needs and desires of the government.

"Every facility of our plants and every resource of our organization are at the service and call of our national defense, first, last and always.

"I know the American aircraft manufacturers, functioning under a free democratic system in the American way, and unhampered by politics and partisanship, can and will help the President and congress meet the challenge to everything this nation holds dear," he concluded.

The Douglas plant has a backlog of orders estimated at more than $100,000,000, has been turning out about $6,000,000 worth a month and has started construction of a new assembly building on a 10-acre site. Four other major southern California companies—Lockheed, North American, Vultee and Consolidated—have similar expansion programs.

U. S. Has 'First Call'

SEATTLE, May 16 (A.P.)—Philip G. Johnson, president of the Boeing Aircraft Co., said today he believed the American aircraft industry could expand sufficiently to fulfill President Roosevelt's plan for production of 50,000 planes a year.

"As far as we're concerned, the United States has first call on us always," he said. "Boeing is at all times ready to cooperate with the President in meeting the needs for national defense."

Held Simple Matter

NEW YORK, May 16 (A.P.)—Expansion of the American aircraft manufacturing industry to produce 50,000 military airplanes annually as suggested by President Roosevelt today "is relatively a simple matter" involving a three-fold personnel increase, the aeronautical chamber of commerce said in a statement tonight.

Expansion Needed

Production facilities of existing aircraft plants must be greatly enlarged if President Roosevelt's demand for 50,000 fighting planes is to be filled, Maj. Reuben H. Fleet, president of Consolidated Aircraft, said today.

"I agree with the President that we need the planes, but the existing plants must be augmented before we can produce any such number of planes. We must know ahead of time what orders might be expected in order to produce in any such emergency," he said.

The Consolidated plant specializes in the huge twin-motored PBY bombers which have augmented the navy's long-range scouting force.

AIRCRAFT NEWS

Huge Plane Orders Placed

5/16

Two Southern California aircraft companies yesterday shared heavily in a $150000000 Allied warplane order placed by the Anglo-French purchasing board reports from Washington stated.

Largest of the two contracts was believed to have been received by the Lockheed Aircraft Corp. of Burbank although company officials declined to affirm or deny the announcement which came from Rene Pleven French representative on the buying commission.

From San Diego came word that Consolidated Aircraft Corp. shared in the huge order to the extent of $20,000,000 — presumably for its new four-engined B-24 land bomber.

Consolidated executives would not elaborate although they indicated that their backlog, formerly $50,000,000, now stands at an all-time high of $70,000,00.

Lockheed and the Glenn L. Martin Co. of Balitmore apparently will split the remaining $130,000,000 of the total order disclosed by Pleven.

Union -- 6/21/40

Many Positions Open For Aircraft Workers

The state department of employment is seeking workers in the mechanical crafts for placement in the aircraft industry. Ray Mathewson, local manager, says he has orders for 317 mechanics, consisting of 15 draw bench mechanics, 66 sheet metal workers, 98 final assemblers, 23 spray painters and dope men, eight heat treaters, 24 machinists, 75 tool makers and jig builders, and eight tube benders. The positions are for aircraft workers or mechanics with training adaptable to aircraft needs.

The employer initiating this order, the Consolidated Aircraft Corp., through Don Frye, personnel director, set up the following specifications: Applicants should be local residents. They must be American citizens, with record of birth or completed final naturalization papers if not native born. They must be loyal to American ideals and free from subversive influences.

Because there has been such continuous demand the past year for metal trades craftsmen, the state department of employment finds its available files becoming depleted in required classifications and has requested WPA and SRA organizations to assist in furnishing available personnel from their projects or relief rolls for immediate referral and possible placement in aircraft industry.

This demand may continue at the rate of 200 men a week for several weeks, and indicates the rapid expansion of aircraft industry in San Diego.

WORLD'S LARGEST AMPHIBIAN

The Consolidated Aircraft Corporation's newest contribution to aeronautical progress, the Model 28-5A Amphibian, designated by the U. S. Navy for whom it was constructed as the XPBY-5A; has undergone its flight testing to become as a result, the largest amphibian plane in the world.

Basically the new Consolidated Amphibian is the Model 28 twin engined flying boat which the Navy knows as the PBY. This design of boat has already accumulated a remarkable total of massed flight records and reputation for sustained performance, and now there has been incorporated in the structure, the amphibian feature. The inherent advantages of the Model 28 boat have been retained, and the great advantage of land plane operation added. Thus the amphibian can operate from either land or sea, to land or water bases in remote localities, opening a vast new realm of utility.

The landing gear is of the tricycle type, with a single wheel forward and two aft, all of which are fully retractable. The side wheel and supporting mechanism, complete with oleo shock struts, retract into wells in the side of the hull. The nose wheel in the bow is completely closed over in the retracted position by automatically operated hatches so that no resistance to planing is encountered. All three wheels are operated by a central hydraulic power drive, and the operations are carried out in sequence automatically. A single lever controls both the extension and the retraction of the landing gear. Hydraulic pump power is derived from the main power plant or from an auxiliary engine, and may be operated by hand if necessary.

Flight characteristics of the Model 28 flying boat so highly perfected in the original design, have been unaffected by the incorporation of the landing gear, and several handling advantages have become apparent. Flight testing with the gear in all positions, and in combination with the retractable wing tip floats, failed to disclose any adverse effects. The same stable flying characteristics of the PBY are maintained, and there was found no loss of speed with the landing gear in the retracted position.

The advantages of the landing gear, aside from greatly extending the scope of utility for the Model 28, are many: For rough water taxying the extended gear serves as a sea anchor and greatly assists in control on rough open water, and in making an approach for mooring or ramp with an adverse wind. More engine power may be applied for short turns without undue acceleration. Turns on the water are achieved with far less skidding, and the danger of scraping the keel on the ramp is eliminated. There is no necessity for a beaching crew, as the ship can climb a ramp or beach under its own power, or descend in the same manner, completely controlled by the brakes. It may also operate from remote sand beaches without benefit of special ramps or facilities for handling.

The side wheels are above water when the ship rises on the step in making a takeoff, and automatic means have been provided to eject all water in the closed bow wheel hatch before the plane is in the air. Thus the flying trim is unaffected.

Repairs or routine servicing to the landing gear can be accomplished with a minimum of trouble. Normally, with a landplane of comparable size, the supporting of the plane's weight for repairs to the landing gear is an acute problem. In the Consolidated amphibian, the customary beaching gear lugs incorporated in all Model 28s are retained. All that is required for servicing of the landing gear is to attach a standard beaching gear and run the plane out of the water. The beaching gear lifts the landing gear clear off the ground where any servicing may be carried out. No special equipment is necessary, and since the beaching gear was designed for quick attachment and removal, the operation consumes a minimum of time.

In action the huge amphibian alights with a smooth absorption of its descending velocity, exhibiting no tendency to bounce or porpoise. When alighting on land, the ship's tendency in a side landing is to straighten out; and the brakes may be applied to the utmost without adverse effect. This technique simply increases the load on the nose wheel. No special procedure is needed for take-off or landing. The wheels may be locked, elevators pulled full back, and both engines given full take-off throttle without the possibility of the nose wheel rising from the ground. During recent testing, a landing was made in which a bump happened to be struck on the instant of contact with the brakes on. The accelerometer showed a very high reading, yet no trouble either structural or in handling, was encountered. With the familiar Model 28 wing tip floats extended, the drag is increased and the angle of glide is steepened.

(Continued on Page 30)

THE UNITED STATES FLEET MAGAZINE

Incorporation of the amphibian gear, as an integral part of the famous twin engined flying boat, without disturbing its basic flying qualities, makes the field of operations of the world's largest amphibian, the Consolidated Model 28-5A, virtually from anywhere to anywhere on the face of the globe.

May 1940

Make Changes In Consair Bomber

Tribune
5/28

Improvements regarded as "highly advisable in light of recent war developments" will be made at the Consolidated Aircraft Corp. plant to the firm's new four-motored army bomber XB-24, according to report by officials of the firm. They declined to give details of the changes, made necessary by European air warfare, but said no basic changes will be made.

The plane has been undergoing tests here since February, and is expected to be flown to Dayton, O., for final flights after the improvements are completed. The plane, with a bomb-carrying capacity of four tons, has a wing spread of 110 feet and a speed of more than 300 miles an hour.

The army's Ryan-built experimental "Dragonfly" observation plane left San Diego recently to participate in "courier" and "coordination" flights in the army maneuvers in Louisiana. The plane can take off and land on a small area.

AIRCRAFT NEWS

6/6/40

CONSOLIDATED TO HAVE HUGE PLANE FACTORY

Consolidated Aircraft Corporation's present expansion program, now being rushed to completion with full manufacturing facilities estimated as completed by August 1, brings this plant into full alignment with the President's recently announced emergency defense program for building a vastly expanded number of aircraft. When completed, Consolidated Aircraft Corporation will have the largest integrated aircraft plant in America, with 1,910,000 square feet of covered and uncovered manufacturing space and 954,000 square feet of contiguous airport land under option for further expansion if necessary. Ramp, airport and rail sidings are not included in these figures.

Consolidated Aircraft Corporation is unique in its possession of most favorable conditions surrounding its ascendancy as the largest aircraft plant in America.

The greater preponderance of its backlog now noted at over $70,000,000 consists of United States government work, with a smaller proportion of its contracts for foreign deliveries, leaving the company relatively free from any contingencies which might arise over the turn of events abroad.

In undertaking its present plant expansion to enable it to meet this volume of business, a closing agreement was entered into between Consolidated Aircraft Corporation and the United States Treasury Department. This agreement provides that the cost of certain addition excess production facilities, less depreciation, required to meet deliveries may be charged to the cost of performing contracts received by the company, in effect amortizing much of its expansion.

Through the naturally equitable climate of San Diego, site of the huge plant, fully 30 per cent of the manufacturing operations in building airplanes may be conducted out of doors. Provision has been made for this by paving the entire plant yard area and providing suitable outlets for power lines, etc., thus giving exceptional flexibility in an industry now in the flux of rapid development.

Founded in 1923, Consolidated has made a most rapid advance to its present position, unobtrusively becoming the world's largest manufacturer of flying boats as one of its interesting achievements. Because the performances of flying boats are not usually as spectacular as those of smaller planes or land planes of comparable size, this rise to first position has not been noted by the public generally, nor has the company's specialization upon larger craft. Taking as an arbitrary measure of "bigness" the wing span of 100 feet or more, and including the airplane equivalent of spares furnished, Consolidated has constructed more than three times as many such airplanes as all other manufacturers combined. This includes those built during the World War period. Since the company's advent in 1923, Consolidated has built approximately four times as many of such aircraft as all other U. S. manufacturers combined.

As early as 1934, six Consolidated P2Y-1 twin-engined flying boats in the service of the U. S. Navy flew the first successful massed flight from San Francisco to Hawaii, a distance of 2414 miles, non-stop.

Phenomenal success followed the current Model 28's, or U. S. Navy PBY's, the larger twin-engined flying boats. With these planes scarcely off the line the U. S. Navy began a series of "routine" delivery flights non-stop from San Diego to Hawaii, a distance of 2553 miles, with the planes flying in groups of from 12 to 18 at a time. Eighty-eight of these ships to date have made this "routine jump" to Hawaii. Anotner 88 in groups of

from 18 to 18 at a time have been flown non-stop from San Diego to Coco Solo in the Canal Zone, a distance of 3087 miles. Aboard these planes were some 1200 men, members of their regular crews. No untoward incidents were encountered on any of these flights.

Consolidated engineers have followed the highly successful Model 28 design with the Model 29, a huge four-engined craft built for the U. S. Navy and the Model 31, a twin-engined flying boat boasting the first two radial air-cooled engines of 2000 horsepower each ever to be installed in an airplane. Successfully tested, and known to exceed in range, speed and load carrying capacity its forerunners the Model 28's, the Model 31's performance figures are being carefully shielded because of their military potency.

Re-entry of Consolidated into the land plane field is marked by the Model 32 four-engined land bomber known as the U. S. Army's XB-24, with an approximate gross weight of 40,000 pounds. Of this plane the United States Army Air Corps recently stated, "This airplane, from preliminary investigations, gives evidence of living up to the advancements in aerodynamic and performance characteristics predicted. These include a speed of over 300 miles per hour, a range of approximately 3000 miles and a bomb carrying capacity of approximately four tons."

Union, 6/26/4

Consair Faces Record Backlog

$50,000,000 More In Orders Expected

By HOWARD MORIN

Consolidated Aircraft Corp. officials announced yesterday the backlog of the municipal airport plant is expected to reach $120,000,000 by Aug. 1. This is in conformity with the nation's tremendous national defense expansion program.

The current backlog is $70,000,000. Negotiations are under way for $50,000,000 in additional contracts for long-range patrol bombers for the army and navy. Already the largest integrated aircraft plant in America, Consair plans to add more buildings to those nearing completion. Details of the new structures are being worked out.

How events in Europe have affected Consolidated is graphically illustrated by the expansion program of the last 12 months. On July 1, 1939, the total personnel employed was 1129. Yesterday the total reached 6965. Two hundred are being employed each week with a maximum of 10,000 set for Aug. 1,

Consair Faces $120,000,000 Record Backlog

(Continued from Page 1)

the day the new $2,000,000 construction program will be completed.

Last March 6 the backlog of Consolidated was $49,000,000, sufficient to keep the plant operating until late 1941. The total number of men employed was 4300. Working three eight-hour shifts daily the factory will have sufficient contracts to keep it toiling around the clock until 1942 and possibly longer, officials say. Before Hitler began his march through Europe the maximum number employed at Consolidated was 3875.

MORE EXPANSION

The plant occupies 1,910,000 square feet of covered and uncovered manufacturing space. Under option from the harbor department are 954,440 square feet of municipal airport property, part of which is expected to be utilized within the next few months for construction of another assembly building exceeding 300 feet in length.

The magnitude of the expansion program which will be completed within another month is illustrated by the size of some of the buildings. The storage shed is 1000 feet long and covers 30,000 square feet of space.

The final assembly building is 700 feet long and 360 feet wide. Its huge doors each will be 120 feet long, which gives some idea of the tremendous wing spread of the new bombers soon to be added to the nation's sky fleets. The ground floor of this structure covers 259,200 square feet, the first and second mezzanine floors each 7200 square feet and the bonded stockroom 8000 square feet, a total of 281,600.

OTHER BUILDING

The experimental building annex covers 38,000 square feet. Other structures include a final finish building, office building, addition to the paint shop, boiler house and hull and wing department.

Consolidated is said to be the only aircraft plant in the world where construction work can be carried out in areas unprotected by roofing. Thirty percent of the manufacturing operations may be conducted out of doors at least nine months of the year. Provision has been made for this by paving the entire plant yard area, providing suitable outlets for power lines, thus giving exceptional flexibility to the plant in its construction and expansion program.

Since Consolidated moved here from Buffalo, N.Y., it has become the world's largest manufacturer of flying boats. The company, founded in 1923, has built four times as many airboats as all other U.S. manufacturers combined.

BOMBERS FOR ARMY

Re-entry of Consolidated into the land plane field was marked by the construction, testing and acceptance by the army of the four-engied bomber classified as the XB-23, whose gross weight exceeds 20 tons. It has a speed exceeding 300 miles an hour and a flight range of 3500 miles carrying four tons of bombs. The navy's new long-range offshore patrol bombers are just as fast and as heavily armed.

The Consolidated plant, with the completion of the final assembly building, extends for half a mile on Pacific highway. It is heavily guarded and extraordinary precautions are being taken to prevent sabotage and pilferage of plans of not only existing models but larger and more powerful bombers now on the drafting boards.

In a statement to stockholders last month Maj. Reuben H. Fleet, Consolidated president, gave an inkling of the company's Aug. 1 backlog when he said it would exceed $100,000,000 of "outstanding quotations were accepted." The report at the factory is that the negotiations are virtually completed.

---

5 Aircraft Employes Made Special Officers

UNION 6-30 '40

At the request of Clifford E. Peterson, police chief, deputies of Fred Sick, city clerk, have sworn in five aircraft company employes as special police officers who will serve without pay from the city.

They are: William H. Shattuck and George Roth, Consolidated Aircraft Corp., and Al M. Gee, C. F. Bennett and E. E. Schindler, Ryan Aeronautical Co.

Tribune, June 26, '40

New Consair Contracts Pending; $100,000,000 Backlog Anticipated

With a current "firm" backlog of more than $70,000,000 in orders for military planes, Consolidated Aircraft Corp. officials today said that "prospects were bright" that this would be increased to somewhere around $100,000,000 "in the near future."

Negotiations for additional army and navy contracts for long-range patrol bombers are under way at Washington, D. C. Increases in Consair's backlog are contingent upon the outcome of these parleys, company spokesmen said.

These spokesmen explained that the $100,000,000 figure was not to be construed as a ceiling upon possible future orders but that the eventual figure might exceed that amount "substantially."

Consolidated, famous as the manufacturers of the PBY patrol bombers which the navy for several years has used successfully in spectacular transocean mass flights, is known to be developing several new types for the army and navy that are expected to contribute much to the nation's current defense program. A recent development was a four-motored land plane which underwent tests here for the army.

Nearly-completed additions to the huge Consair plant virtually will double its capacity, making it the largest integrated aircraft manufacturing plant in the United States, and further expansion is planned.

Working night and day to rush the government's orders to completion today were 7000 employes and it was expected that 10,000 would be employed at the plant at the peak of production.

'Too Busy To Celebrate'

MAJ. R. H. FLEET

Trib. - 5/29

GROWTH RELATED AS CONSOLIDATED 17 YEARS OLD

"In some respects, I am sorry we are too busy to celebrate."

With these words, Maj. R. H. Fleet, Consolidated Aircraft Corp. president, concluded a memorandum to employes announcing that today marks the 17th anniversary of the huge aircraft firm.

In 1923 Fleet and his oldest associates recalled, the company was located in a small plant in Buffalo, N. Y., and employed 25 workers.

Today, 6014 employes were rushing to fill warplane orders of the United States and foreign governments totaling $70,000,000, the largest backlog in company history, marking it as one of the largest aircraft manufacturing concerns in the nation.

Expansion Under Way

Also under way was a plant expansion program which, when completed, will double the present capacity and cover 1,910,000 square feet of covered and open-air working space, making the plant the largest integrated plane-building factory in the United States, company spokesmen pointed out.

With the federal government embarked on a gigantic defense program and with world history hinging on armament production, Consair authorities predicted that new rush orders for this and other governments will, in the near future, raise the backlog figure to a still more stupendous total.

Since the firm moved to San Diego in October, 1935, it has produced upwards of 200 of the famed Model 28 PBY patrol bomber flying boats for the navy. These are the ships which participated in several spectacular transocean mass flights in recent years.

Guba Consair Product

The Guba, plane of Richard Archbold, American Museum of Natural History explorer, which last year made a record-setting flight around the world, and the plane in which Sir Hubert Wilkins encircled the north pole both were modifications of Model 28.

In addition, Consair has produced several experimental models for commercial and military use, including the newest four-motored 'flying fortress" now in the hands of the United States army. Also flown from the production line were 50 two-seater pursuit planes for the army.

When Consair first was organized, it specialized in production of the famed Fleet trainer, small two-place biplane, in which many of the nation's top-flight pilots learned to fly. Later, while still located at Buffalo, it entered the flying boat field, turning out several types for the navy and the 15 Commodores used in the first United States-Argentina commercial run.

In his memorandum pointing to the growth of the company, Fleet stated:

"Today we are in a factory of our own, tailored to our business and located in the city of our choice."

Consair authorities pointed out that, by coincidence, the number of employes passed the 6000-mark on the company's anniversary today.

THE TRIBUNE-SUN, San Diego, Calif., Tuesday, June 11, 1940

California Aircraft Industry Leads In Drive To Complete U. S. Defenses

With colleges and technical schools turning out more and more skilled men and factory payrolls increasing weekly, California's aircraft industry today was in the vanguard of the drive to carry out President Roosevelt's defense armament program, The International News Service reported from Los Angeles.

Agreeing that the aerial phase of the program is an "all-California job," heads of six of America's leading plane companies located in California, including Consolidated Aircraft Corp., at San Diego, have pledged their resources to doing the job set for the industry by the president's plan for 50,000 planes.

The California aircraft industry now employs more than 33,000 workers, and has an annual payroll, constantly rising, which now stands at more than $50,000,000. For many months, figures show, the aircraft industry has led California employment rolls. So important has this phase become that the state department of employment recently established a central aircraft placement bureau in the Los Angeles area, where most of the factories are located. The bureau draws heavily on skilled workers from all parts of the state.

Capacity Enrollments

California educational institutions are playing an important part in the program of creating wings for defense. With capacity enrollments, the University of California, the California Institute of Technology, the Aerodynamics laboratory, at Stanford, and the vocational departments of several junior colleges are turning out graduates who go to the aircraft plants as engineers and technicians.

The six California companies now principally engaged in rushing military orders are Consolidated Aircraft; Douglas Aircraft, of Santa Monica; Lockheed Aircraft, of Burbank; North American Aviation, of Inglewood; Northrup Aircraft, of Hawthorne, and Vultee Aircraft, of Downey.

Speed Accessory Work

In addition, there are many smaller companies manufacturing vital accessories. By speeding their part of the work, these smaller companies gradually are eliminating one of the "bottlenecks" in the industry.

San Diego aircraft firm officials report the aircraft factories here have taken on employes at the rate of more than 600 a month since Jan. 1, for a total of 3214 to date. The backlog of unfilled orders is reported to be nearly $73,000,000, with consolidated having approximately $70,000,000, Ryan, $1,500,000 and Solar, $1,250,000.

Longer Work Week Approved By President of Consolidated

Trib. 6/11/40

A longer work week for the aviation industry to speed up production is urged by Maj. Reuben H. Fleet, president of the Consolidated Aircraft Corp. here. Fleet, now in the east, spoke last night at the Buffalo Aero club banquet and said the United States could "accelerate" plane deliveries "by increasing the work week to include a full working day on Saturday," The Associated Press reported.

He also said 684 men are working at the Fleet Aircraft Co.'s plant at Fort Erie, Ont., and that he saw there 13 planes ready for delivery to the Royal Canadian air force.

Another speaker, Earl R. Southee, of New York, a flying specialist for the civil aeronautics authority, stressed that the CAA program for training college students "is still a civilian program, although it has military significance." He said its goal is to produce 45,000 pilots by next spring.

Consolidated Aircraft Corp. at present is on the 40-hour work week, with three shifts employed during a 24-hour period. An official of the firm said today this schedule is being maintained "until the government wants to permit a 48-hour work week."

Advertising Budgets for 1940 Aviation

ALICE ROGERS HAGER

A SUBSTANTIAL slice of media revenue is at last coming from aviation. After a spotty history, certain momentous happenings within the past two years have made the industry acutely advertising conscious. These are principally the war, on the one hand, which has put enough money into manufacturers' backlogs to pull them out of red ink, and the creation by Act of Congress in 1938 of the Civil Aeronautics Authority, which has made the transport companies sufficiently secure in their future planning to help them guarantee their commitments; and from a public attention standpoint, has aided in achieving the magnificent safety record of an entire year's flying without a single passenger fatality. It is no secret that these are boom times in the American air industry.

It is significant, to quote but one example, that American Airlines has just announced that its net profit for 1939 was $4.84 a share as against 76¢ in 1938.

It is significant, too, that in 1939, for the first time, the Air Transport Association was able to get its members to decide on a joint advertising program and to appropriate $300,000 for that purpose. The successful "It Pays To Fly" campaign being conducted by Erwin, Wasey & Company is now going on in many leading magazines and newspapers and will undoubtedly be continued for some time to come.

1930s IN REVIEW

Although this is not an historical treatise, it is worth noting that as far back as 1930, John Stewart, now chief of the press section of the Authority, who was then with Erwin, Wasey, tried to inaugurate a similar campaign and found that the industry had to be convinced it must go to the general public, which knew nothing at all about flying rather than to the aviation enthusiasts. As late as 1934, for example, there was not a single big star in Hollywood who was allowed by his or her studio to fly. By the end of 1936, new contracts being written were not only allowing it, but today, nearly the entire film capital commutes by air between the West Coast and the East.

The copy employed by the major airlines is governed by certain unwritten restrictions. These restrictions have been built up from a careful study of the effects caused by certain types of advertising copy on the prospective air traveler, and they act as an involuntary censure with the best results for the industry.

For instance, if a sum of money is placed in a campaign calling attention to last year's safety record or the general safety of airlines, a crash will decrease the psychological advantage gained from the advertising. For this reason, the airlines have majored in campaigns which show the convenience, comfort, and great saving of time accompanying air travel. It is not because they do not have the statistics to prove the safety of air travel, but rather because it is wiser not to dwell on these facts. There are hazards involved in the everyday routine of crossing the street on foot, but attention is not called to the fact because walking is a necessity and an accepted means of modern transportation. The same caution is exercised in the air as on foot.

The airlines, as a rule, do not picture high mountains in their ads because accidents a few years ago were caused by transports crashing into mountain peaks. The airlines could point now to the fact that a device has been perfected—the static suppressor—which eliminates this

---

FRENCH SURRENDER TO SPEED PLANE PRODUCTION FOR U. S.

UNION – 6-18-40

LOS ANGELES, June 17 (A.P.)—Accelerated production of American military aircraft was anticipated today by officials of rapidly-expanding southern California factories as the result of French surrender. Executives of the five largest plane plants would not comment for publication—in line with strict censorship of war activities ordered several months ago—but privately opinion was expressed that army and navy defense speed-up would be felt quickly.

Millions of dollars of unfilled orders are affected by a British announcement that it would take over French purchases in this country. Available data on the status of foreign orders in the plants involved disclosed the following situation:

Douglas Aircraft Co., which has increased its program by adding 1000 employes a week for several months, has unfilled orders exceeding $140,000,000, of which a spokesman said "more than 60 percent is military." The latest French order approximated $20,000,000.

Consolidated Aircraft Corp. is, for the present, following its schedule without change in the production of military planes for the U. S. government, Maj. R. H. Fleet, president, said last night. He said the plant stands ready to go on a six-day production week, but that purchasers have not been willing to pay the required time-and-a-half for overtime.

230 CRAFT DELIVERED

North American Aviation Co. has delivered an order of about $8,000,000 for 230 French military training planes and now is working on similar contract. Four hundred British training ships have been delivered in Canada and 600 more are in production. The two orders total about $24,000,000.

What may happen to a $1,700,000 Lockheed commercial order for 17 Lodestars to three French private airlines, Air France, Air Afrique and Aeromartime, is problematical. Lockheed's Allied military contracts are all for Britain, totaling about $70,000,000.

Northrop Aircraft, Inc., notified that the Norwegian government today deposited $1,500,000 in a New York bank in full payment for 24 patrol bombers ordered before the German invasion, said the Norwegian government has given assurance "it is still in the fight with a determination to win."

PROGRAM EXPANDED

Vultee Aircraft simultaneously announced expansion of its production program to provide two shifts of 58 hours weekly and said 150 to 200 workers would be added weekly to its present payroll of 3000. Vultee's chief contracts are one of $4,000,000 for 300 basic training planes for the U. S. army and another of $9,000,000 for 144 new pursuit ships for Sweden.

In Seattle the Boeing Aircraft Co. announced the situation in France would make no difference in its contracts with the Anglo - French purchasing commission for $25,000,000 worth of two-engined bombers, and that work will continue as planned.

British to Get French Orders

NEW YORK, June 17 (A.P.)—On the "reasonable supposition" that the British will buy all aircraft ordered by France from the United States, it was indicated today that 3280 military planes being turned out by American factories on the French orders will go to the British army.

The "supposition" that the Birtish will take over the French orders eminated from a spokesman for the Anglo-French purchasing board, who said the French had ceased placing new orders in the United States pending "clarification" of the French position.

Figures on the number of planes ordered by France came from other sources, which asserted 1570 American-made fighting planes already had been delievered to France.

A reliable authority said the British already had received "a substantial portion" of 4600 planes they have ordered from the United States in the last 18 months.

The deliveries to France, thus far, were listed as follows: 200 Douglas bombers, 600 Curtiss pursuits, 280 Martin bombers, 40 Vought-Sikorsky bombers, 450 North American Aviation trainers.

French orders which have not been delivered were given as: 120 four-engined Consolidated land bombers, 110 Consolidated patrol-boat bombers, 80 Grumman fighters, 750 Douglas bombers, 600 Martin bombers, 1200 Curtiss pursuits, 400 North American trainers.

Suspect Sabotage At Northrup Plant

Trib. 5/30

HAWTHORNE, Calif., May 30 (I.N.S.)—In what police called possible sabotage directed at the Northrop Aircraft Corp. factory in Hawthorne, main power lines supplying the plant with electricity were cut early today, according to police. Sgt. E. J. Parker telephoned Deputy Sheriff Lew Davies that some one had wielded a hacksaw on a main pole switch.

The company has a new million-dollar factory and is building parts for the Consolidated Aircraft Corp. at San Diego.

No Move to Texas, Says Consolidated

Trib.-6-8-40

Consolidated Aircraft Corp. officials yesterday flatly denied a report from Dallas, Tex., that the Consair plant would be moved to the nation's interior.

The Associated Press stated that the Times - Herald of Dallas said it learned from a reliable source that plans were under way to establish at Dallas a plane-making (Lockheed) plant and for the moving from San Diego to the shores of a lake near Dallas of one of the nation's greatest airplane factories, the Consolidated Corp.

The Times-Herald continued:

"Negotiations have been under way for some time, it was reported, to bring Lockheed here and final negotiations are pending passage of legislation now before congress.

"It was understood that the entire San Diego facilities of the Consolidated company will be moved into the nation's interior to conform with an existing plan to remove such vital defense centers from vulnerable coast lines."

"We request that you deny the rumor about Consolidated's moving," said a Consair spokesman.

Consolidated, now employing more than 5000, moved to San Diego from Buffalo in 1935. It is manufacturing army and navy planes, and is in the process of a huge plant expansion.

AIRCRAFT NEWS

6/6/40

CONSOLIDATED TO HAVE HUGE PLANE FACTORY

Consolidated Aircraft Corporation's present expansion program, now being rushed to completion with full manufacturing facilities estimated as completed by August 1, brings this plant into full alignment with the President's recently announced emergency defense program for building a vastly expanded number of aircraft. When completed, Consolidated Aircraft Corporation will have the largest integrated aircraft plant in America, with 1,910,000 square feet of covered and uncovered manufacturing space and 954,000 square feet of contiguous airport land under option for further expansion if necessary. Ramp, airport and rail sidings are not included in these figures.

Consolidated Aircraft Corporation is unique in its possession of most favorable conditions surrounding its ascendancy as the largest aircraft plant in America.

The greater preponderance of its backlog now noted at over $70,000,000 consists of United States government work, with a smaller proportion of its contracts for foreign deliveries, leaving the company relatively free from any contingencies which might arise over the turn of events abroad.

In undertaking its present plant expansion to enable it to meet this volume of business, a closing agreement was entered into between Consolidated Aircraft Corporation and the United States Treasury Department. This agreement provides that the cost of certain addition excess production facilities, less depreciation, required to meet deliveries may be charged to the cost of performing contracts received by the company, in effect amortizing much of its expansion.

Through the naturally equitable climate of San Diego, site of the huge plant, fully 30 per cent of the manufacturing operations in building airplanes may be conducted out of doors. Provision has been made for this by paving the entire plant yard area and providing suitable outlets for power lines, etc., thus giving exceptional flexibility in an industry now in the flux of rapid development.

Founded in 1923, Consolidated has made a most rapid advance to its present position, unobtrusively becoming the world's largest manufacturer of flying boats as one of its interesting achievements. Because the performances of flying boats are not usually as spectacular as those of smaller planes or land planes of comparable size, this rise to first position has not been noted by the public generally, nor has the company's specialization upon larger craft. Taking as an arbitrary measure of "bigness" the wing span of 100 feet or more, and including the airplane equivalent of spares furnished, Consolidated has constructed more than three times as many such airplanes as all other manufacturers combined. This includes those built during the World War period. Since the company's advent in 1923, Consolidated has built approximately four times as many of such aircraft as all other U. S. manufacturers combined.

As early as 1934, six Consolidated P2Y-1 twin-engined flying boats in the service of the U. S. Navy flew the first successful massed flight from San Francisco to Hawaii, a distance of 2414 miles, non-stop.

Phenomenal success followed the current Model 28's, or U. S. Navy PBY's, the larger twin-engined flying boats. With these planes scarcely off the line the U. S. Navy began a series of "routine" delivery flights non-stop from San Diego to Hawaii, a distance of 2553 miles, with the planes flying in groups of from 12 to 18 at a time. Eighty-eight of these ships to date have made this "routine jump" to Hawaii. Anotner 88 in groups of from 18 to 18 at a time have been flown non-stop from San Diego to Coco Solo in the Canal Zone, a distance of 3087 miles. Aboard these planes were some 1200 men, members of their regular crews. No untoward incidents were encountered on any of these flights.

Consolidated engineers have followed the highly successful Model 28 design with the Model 29, a huge four-engined craft built for the U. S. Navy and the Model 31, a twin-engined flying boat boasting the first two radial air-cooled engines of 2000 horsepower each ever to be installed in an airplane. Successfully tested, and known to exceed in range, speed and load carrying capacity its forerunners the Model 28's, the Model 31's performance figures are being carefully shielded because of their military potency.

Re-entry of Consolidated into the land plane field is marked by the Model 32 four-engined land bomber known as the U. S. Army's XB-24, with an approximate gross weight of 40,000 pounds. Of this plane the United States Army Air Corps recently stated, "This airplane, from preliminary investigations, gives evidence of living up to the advancements in aerodynamic and performance characteristics predicted. These include a speed of over 300 miles per hour, a range of approximately 3000 miles and a bomb carrying capacity of approximately four tons."

Union, 6/26/4

Consair Faces Record Backlog

$50,000,000 More In Orders Expected

By HOWARD MORIN

Consolidated Aircraft Corp. officials announced yesterday the backlog of the municipal airport plant is expected to reach $120,000,000 by Aug. 1. This is in conformity with the nation's tremendous national defense expansion program.

The current backlog is $70,000,000. Negotiations are under way for $50,000,000 in additional contracts for long-range patrol bombers for the army and navy. Already the largest integrated aircraft plant in America, Consair plans to add more buildings to those nearing completion. Details of the new structures are being worked out.

How events in Europe have affected Consolidated is graphically illustrated by the expansion program of the last 12 months. On July 1, 1939, the total personnel employed was 1129. Yesterday the total reached 6965. Two hundred are being employed each week with a maximum of 10,000 set for Aug. 1,

Consair Faces $120,000,000 Record Backlog

(Continued from Page 1)

the day the new $2,000,000 construction program will be completed.

Last March 6 the backlog of Consolidated was $49,000,000, sufficient to keep the plant operating until late 1941. The total number of men employed was 4300. Working three eight-hour shifts daily the factory will have sufficient contracts to keep it toiling around the clock until 1942 and possibly longer, officials say. Before Hitler began his march through Europe the maximum number employed at Consolidated was 3875.

MORE EXPANSION

The plant occupies 1,910,000 square feet of covered and uncovered manufacturing space. Under option from the harbor department are 954,440 square feet of municipal airport property, part of which is expected to be utilized within the next few months for construction of another assembly building exceeding 300 feet in length.

The magnitude of the expansion program which will be completed within another month is illustrated by the size of some of the buildings. The storage shed is 1000 feet long and covers 30,000 square feet of space.

The final assembly building is 700 feet long and 360 feet wide. Its huge doors each will be 120 feet long, which gives some idea of the tremendous wing spread of the new bombers soon to be added to the nation's sky fleets. The ground floor of this structure covers 259,200 square feet, the first and second mezzanine floors each 7200 square feet and the bonded stockroom 8000 square feet, a total of 281,600.

OTHER BUILDING

The experimental building annex covers 38,000 square feet. Other structures include a final finish building, office building, addition to the paint shop, boiler house and hull and wing department.

Consolidated is said to be the only aircraft plant in the world where construction work can be carried out in areas unprotected by roofing. Thirty percent of the manufacturing operations may be conducted out of doors at least nine months of the year. Provision has been made for this by paving the entire plant yard area, providing suitable outlets for power lines, thus giving exceptional flexibility to the plant in its construction and expansion program.

Since Consolidated moved here from Buffalo, N.Y., it has become the world's largest manufacturer of flying boats. The company, founded in 1923, has built four times as many airboats as all other U.S. manufacturers combined.

BOMBERS FOR ARMY

Re-entry of Consolidated into the land plane field was marked by the construction, testing and acceptance by the army of the four-engied bomber classified as the XB-23, whose gross weight exceeds 20 tons. It has a speed exceeding 300 miles an hour and a flight range of 3500 miles carrying four tons of bombs. The navy's new long-range offshore patrol bombers are just as fast and as heavily armed.

The Consolidated plant, with the completion of the final assembly building, extends for half a mile on Pacific highway. It is heavily guarded and extraordinary precautions are being taken to prevent sabotage and pilferage of plans of not only existing models but larger and more powerful bombers now on the drafting boards.

In a statement to stockholders last month Maj. Reuben H. Fleet, Consolidated president, gave an inkling of the company's Aug. 1 backlog when he said it would exceed $100,000,000 of "outstanding quotations were accepted." The report at the factory is that the negotiations are virtually completed.

UNION 6-30 '40

5 Aircraft Employes Made Special Officers

At the request of Clifford E. Peterson, police chief, deputies of Fred Sick, city clerk, have sworn in five aircraft company employes as special police officers who will serve without pay from the city.

They are: William H. Shattuck and George Roth, Consolidated Aircraft Corp., and Al M. Gee, C. F. Bennett and E. E. Schindler, Ryan Aeronautical Co.

Tribune, June 26, '40

New Consair Contracts Pending; $100,000,000 Backlog Anticipated

With a current "firm" backlog of more than $70,000,000 in orders for military planes, Consolidated Aircraft Corp. officials today said that "prospects were bright" that this would be increased to somewhere around $100,000,000 "in the near future."

Negotiations for additional army and navy contracts for long-range patrol bombers are under way at Washington, D. C. Increases in Consair's backlog are contingent upon the outcome of these parleys, company spokesmen said.

These spokesmen explained that the $100,000,000 figure was not to be construed as a ceiling upon possible future orders but that the eventual figure might exceed that amount "substantially."

Consolidated, famous as the manufacturers of the PBY patrol bombers which the navy for several years has used successfully in spectacular transocean mass flights, is known to be developing several new types for the army and navy that are expected to contribute much to the nation's current defense program. A recent development was a four-motored land plane which underwent tests here for the army.

Nearly-completed additions to the huge Consair plant virtually will double its capacity, making it the largest integrated aircraft manufacturing plant in the United States, and further expansion is planned.

Working night and day to rush the government's orders to completion today were 7000 employes and it was expected that 10,000 would be employed at the plant at the peak of production.

'Too Busy To Celebrate'

MAJ. R. H. FLEET

Trib. - 5/29

GROWTH RELATED AS CONSOLIDATED 17 YEARS OLD

"In some respects, I am sorry we are too busy to celebrate."

With these words, Maj. R. H. Fleet, Consolidated Aircraft Corp. president, concluded a memorandum to employes announcing that today marks the 17th anniversary of the huge aircraft firm.

In 1923 Fleet and his oldest associates recalled, the company was located in a small plant in Buffalo, N. Y., and employed 25 workers.

Today, 6014 employes were rushing to fill warplane orders of the United States and foreign governments totaling $70,000,000, the largest backlog in company history, marking it as one of the largest aircraft manufacturing concerns in the nation.

Expansion Under Way

Also under way was a plant expansion program which, when completed, will double the present capacity and cover 1,910,000 square feet of covered and open-air working space, making the plant the largest integrated plane-building factory in the United States, company spokesmen pointed out.

With the federal government embarked on a gigantic defense program and with world history hinging on armament production, Consair authorities predicted that new rush orders for this and other governments will, in the near future, raise the backlog figure to a still more stupendous total.

Since the firm moved to San Diego in October, 1935, it has produced upwards of 200 of the famed Model 28 PBY patrol bomber flying boats for the navy. These are the ships which participated in several spectacular transocean mass flights in recent years.

Guba Consair Product

The Guba, plane of Richard Archbold, American Museum of Natural History explorer, which last year made a record-setting flight around the world, and the plane in which Sir Hubert Wilkins encircled the north pole both were modifications of Model 28.

In addition, Consair has produced several experimental models for commercial and military use, including the newest four-motored 'flying fortress" now in the hands of the United States army. Also flown from the production line were 50 two-seater pursuit planes for the army.

When Consair first was organized, it specialized in production of the famed Fleet trainer, small two-place biplane, in which many of the nation's top-flight pilots learned to fly. Later, while still located at Buffalo, it entered the flying boat field, turning out several types for the navy and the 15 Commodores used in the first United States-Argentina commercial run.

In his memorandum pointing to the growth of the company, Fleet stated:

"Today we are in a factory of our own, tailored to our business and located in the city of our choice."

Consair authorities pointed out that, by coincidence, the number of employes passed the 6000-mark on the company's anniversary today.

THE TRIBUNE-SUN, San Diego, Calif., Tuesday, June 11, 1940

California Aircraft Industry Leads In Drive To Complete U. S. Defenses

With colleges and technical schools turning out more and more skilled men and factory payrolls increasing weekly, California's aircraft industry today was in the vanguard of the drive to carry out President Roosevelt's defense armament program, The International News Service reported from Los Angeles.

Agreeing that the aerial phase of the program is an "all-California job," heads of six of America's leading plane companies located in California, including Consolidated Aircraft Corp., at San Diego, have pledged their resources to doing the job set for the industry by the president's plan for 50,000 planes.

The California aircraft industry now employs more than 33,000 workers, and has an annual payroll, constantly rising, which now stands at more than $50,000,000. For many months, figures show, the aircraft industry has led California employment rolls. So important has this phase become that the state department of employment recently established a central aircraft placement bureau in the Los Angeles area, where most of the factories are located. The bureau draws heavily on skilled workers from all parts of the state.

Capacity Enrollments

California educational institutions are playing an important part in the program of creating wings for defense. With capacity enrollments, the University of California, the California Institute of Technology, the Aerodynamics laboratory, at Stanford, and the vocational departments of several junior colleges are turning out graduates who go to the aircraft plants as engineers and technicians.

The six California companies now principally engaged in rushing military orders are Consolidated Aircraft; Douglas Aircraft, of Santa Monica; Lockheed Aircraft, of Burbank; North American Aviation, of Inglewood; Northrup Aircraft, of Hawthorne, and Vultee Aircraft, of Downey.

Speed Accessory Work

In addition, there are many smaller companies manufacturing vital accessories. By speeding their part of the work, these smaller companies gradually are eliminating one of the "bottlenecks" in the industry.

San Diego aircraft firm officials report the aircraft factories here have taken on employes at the rate of more than 600 a month since Jan. 1, for a total of 3214 to date. The backlog of unfilled orders is reported to be nearly $73,000,000, with consolidated having approximately $70,000,000, Ryan, $1,500,000 and Solar, $1,250,000.

Trib. 6/11/40

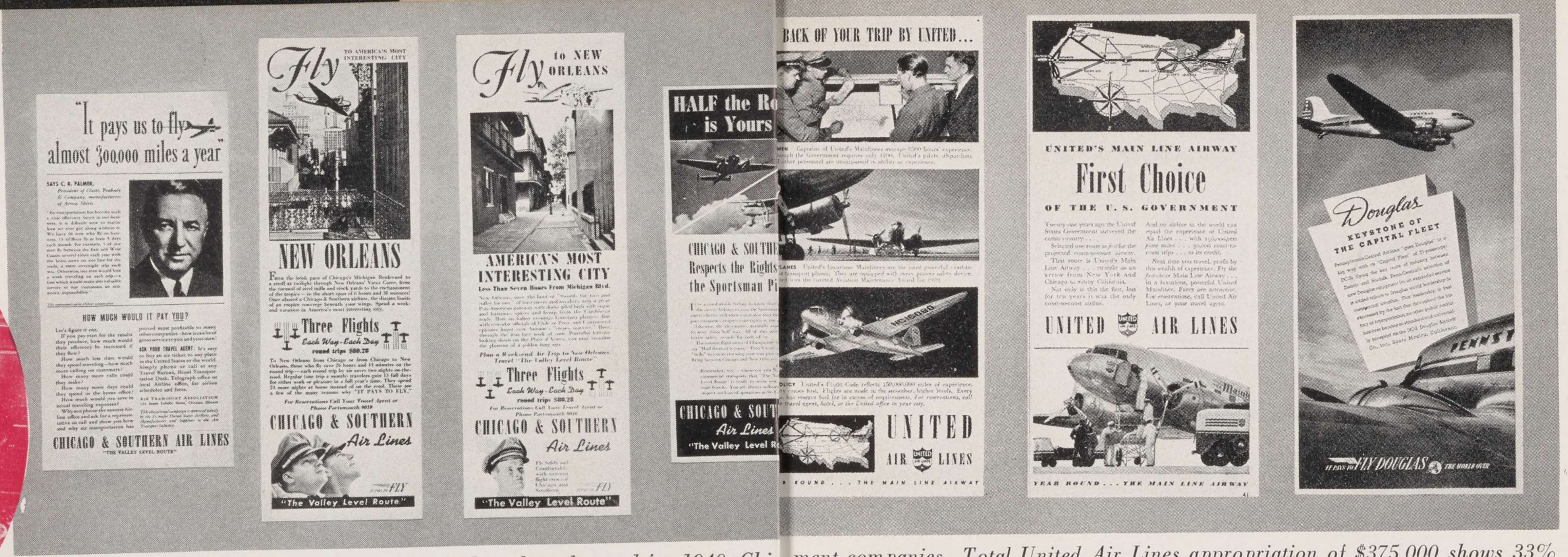
Longer Work Week Approved By President of Consolidated

A longer work week for the aviation industry to speed up production is urged by Maj. Reuben H. Fleet, president of the Consolidated Aircraft Corp. here. Fleet, now in the east, spoke last night at the Buffalo Aero club banquet and said the United States could "accelerate" plane deliveries "by increasing the work week to include a full working day on Saturday," The Associated Press reported.

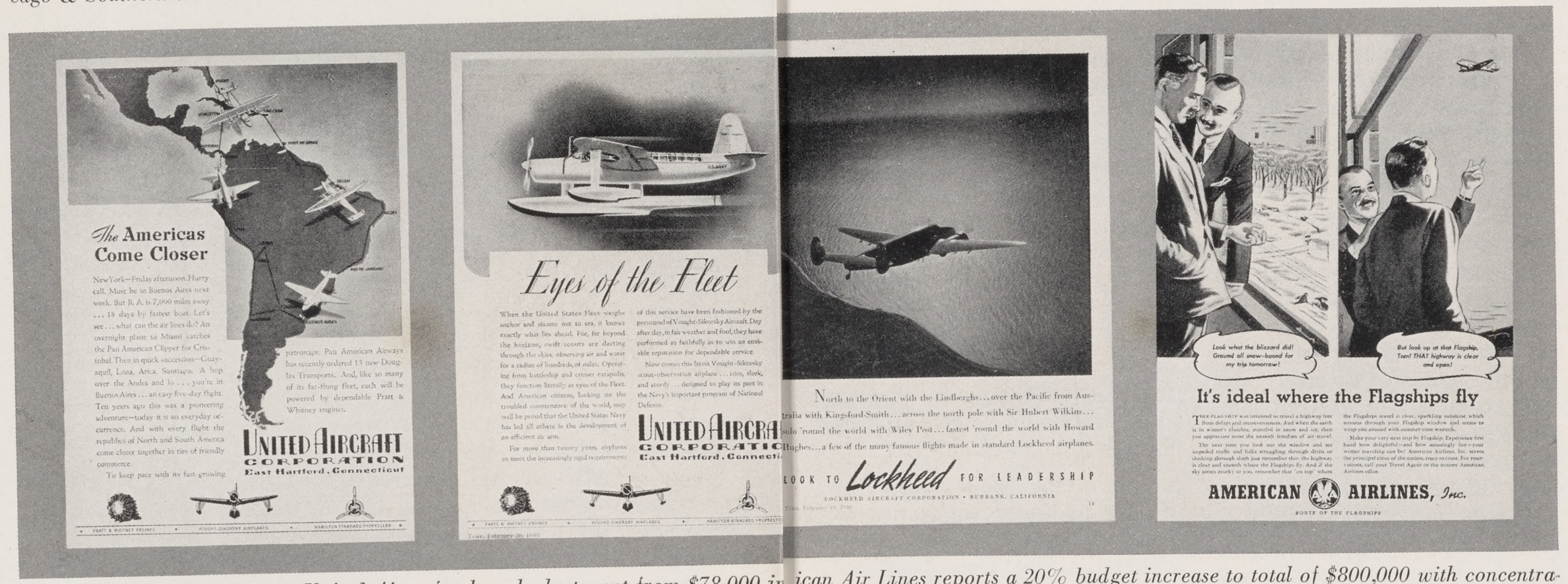
He also said 684 men are working at the Fleet Aircraft Co.'s plant at Fort Erie, Ont., and that he saw there 13 planes ready for delivery to the Royal Canadian air force.

Another speaker, Earl R. Southee, of New York, a flying specialist for the civil aeronautics authority, stressed that the CAA program for training college students "is still a civilian program, although it has military significance." He said its goal is to produce 45,000 pilots by next spring.

Consolidated Aircraft Corp. at present is on the 40-hour work week, with three shifts employed during a 24-hour period. An official of the firm said today this schedule is being maintained "until the government wants to permit a 48-hour work week."


"It pays us to fly almost 300,000 miles a year"
CHICAGO & SOUTHERN AIR LINES
Fly to NEW ORLEANS
NEW ORLEANS
AMERICA'S MOST INTERESTING CITY
Three Flights
CHICAGO & SOUTHERN Air Lines
"The Valley Level Route"
HALF the Ro… is Yours
BACK OF YOUR TRIP BY UNITED…
UNITED'S MAIN LINE AIRWAY
First Choice
OF THE U. S. GOVERNMENT
UNITED AIR LINES
Douglas
KEYSTONE OF THE CAPITAL FLEET
IT PAYS TO FLY DOUGLAS THE WORLD OVER

With traffic and sales increases, aviation budgets have been boosted for 1940. Chicago & Southern stretches a $22,124 six-month budget by tie-ins with oil, equipment companies. Total United Air Lines appropriation of $375,000 shows 33% jump over 1939; it is scheduled for 110 metropolitan newspapers and magazines.


The Americas Come Closer
UNITED AIRCRAFT CORPORATION
East Hartford, Connecticut
Eyes of the Fleet
UNITED AIRCRAFT CORPORATION
East Hartford, Connecticut
LOOK TO Lockheed FOR LEADERSHIP
It's ideal where the Flagships fly
AMERICAN AIRLINES, Inc.

Biggest increase was made by United Aircraft whose budget went from $78,000 in 1939 to $175,000 in 1940. It advertises in national and trade magazines. American Air Lines reports a 20% budget increase to total of $800,000 with concentration in magazines. Douglas, Lockheed, Curtiss-Wright, Martin are unannounced.

hazard, but the mere mention of such a device would only recall unpleasant memories.

To inject power into their campaigns, the airlines are attempting to show that it actually does pay to fly. To carry this idea further they have utilized testimonials of famous people who have flown and are convinced that it does pay to fly, and that it is more comfortable and convenient than other forms of transportation. From surveys it has been discovered that nine out of ten people who fly for the first time continue to use this method of transportation whenever possible. The campaigns of the respective airlines have been aimed at persuading land bound people to travel by air *once*—and let the airplane sell its own safety record and advantages.

This may seem an elementary point, but it is the foundation of any advertising program that is going to be either acceptable or that will achieve sales. The year 1940 is going to see all advertising budgets boosted in keeping with traffic increases. Herewith is a review of latest advertising.

In the international sphere, Pan American Airways, of course, stands as sole representative of the United States, and its 12-year record of expansion into Central and South America, across the Pacific and Atlantic and into Alaska is common knowledge. Its fleet now numbers 135, with several million dollars worth of new and highly improved type of ships now building at the factories. Its program for 1940 is to be conducted in two partially overlapping phases, a system-selling or institutional campaign and a specific traffic promotion or sales campaign. The first institutional advertisements were scheduled to break in the *Saturday Evening Post* of April 10, *Time* of April 11 and *Collier's* of April 12. These are four-color, bleed spreads, each different. They will be followed by a series of single page, four-color ads in the same publications, plus *Newsweek* and *National Geographic*, a total of 20 pages. A simultaneous and coordinated program of 10 single-page, four-color ads will be run by Pan American Grace Airways, the company's South American west coast unit, in *Time*, *Newsweek* and *National Geographic*.

The company's sales campaign will be timed to start approximately six weeks before promised delivery of the new planes when increased service will be available. This will embrace a list of leading class magazines and key newspapers, the space in the former to be chiefly one column black and white, and that in the newspapers to be governed by the size of their markets in relation to Pan American's potential traffic from them. Approximately 60 per cent of the company's budget will go to these outlets, the remainder being divided as shown in table.

Campaign Schedule	*Per Cent*
National advertising campaigns	56%
Trade publications—express service	2%
Trade publications—passenger service	3%
Miscellaneous publication advertising	5%
General travel literature	7%
Tour and special travel literature	4.5%
Semi-permanent window displays	3.5%
Temporary window displays	2%
Plane models, Exposition booths, etc.	1.5%
Agents helps, novelty items, etc.	1%
Special airmail promotion	2%
Participation in passenger and express advertising campaigns of Air Transport Association and other cooperative projects	7%
Miscellaneous	4.5%
	100%

The bulk of the company's space advertising is placed through Batten, Barton, Durstine and Osborn, although other agencies are used for some parts of the program. The bulk of its printed and display material is produced through its own advertising department.

DOMESTIC PICTURE

On the domestic side, the new awareness of the advertising field is exemplified by increased budgets that match last year's traffic increases. United Airlines, oldest of the transcontinentals, whose vice-president, Harold Crary, was one of the moving spirits in putting across the ATA joint program, has announced a 33 per cent increase over last year, to be given to 110 metropolitan newspapers, most of them in on-line cities. The total appropriation is $375,000, with an unannounced portion going to general magazines of national circulation and some experimental ads being run in key publications in special fields. N. W. Ayer handles the account. Special attention is to be paid to vacation business, with the two world's fairs as well as the great recreation areas in between getting heavy emphasis.

Eastern Airlines is planning the use of half and quarter pages in 73 newspapers throughout its system for special announcement of its overnight sleeper plane service between New York and the Mexican border, where it connects with the three-hour Pan American service to Mexico City. Full pages are being taken in Mexico [*Continued on page 92*]

FRENCH SURRENDER TO SPEED PLANE PRODUCTION FOR U. S.

UNION - 6-18-40

LOS ANGELES, June 17 (A.P.)—Accelerated production of American military aircraft was anticipated today by officials of rapidly-expanding southern California factories as the result of French surrender. Executives of the five largest plane plants would not comment for publication—in line with strict censorship of war activities ordered several months ago—but privately opinion was expressed that army and navy defense speed-up would be felt quickly.

Millions of dollars of unfilled orders are affected by a British announcement that it would take over French purchases in this country. Available data on the status of foreign orders in the plants involved disclosed the following situation:

Douglas Aircraft Co., which has increased its program by adding 1000 employes a week for several months, has unfilled orders exceeding $140,000,000, of which a spokesman said "more than 60 percent is military." The latest French order approximated $20,000,000.

Consolidated Aircraft Corp. is, for the present, following its schedule without change in the production of military planes for the U. S. government, Maj. R. H. Fleet, president, said last night. He said the plant stands ready to go on a six-day production week, but that purchasers have not been willing to pay the required time-and-a-half for overtime.

230 CRAFT DELIVERED

North American Aviation Co. has delivered an order of about $8,000,000 for 230 French military training planes and now is working on similar contract. Four hundred British training ships have been delivered in Canada and 600 more are in production. The two orders total about $24,000,000.

What may happen to a $1,700,000 Lockheed commercial order for 17 Lodestars to three French private airlines, Air France, Air Afrique and Aeromartime, is problematical. Lockheed's Allied military contracts are all for Britain, totaling about $70,000,000.

Northrop Aircraft, Inc., notified that the Norwegian government today deposited $1,500,000 in a New York bank in full payment for 24 patrol bombers ordered before the German invasion, said the Norwegian government has given assurance "it is still in the fight with a determination to win."

PROGRAM EXPANDED

Vultee Aircraft simultaneously announced expansion of its production program to provide two shifts of 58 hours weekly and said 150 to 200 workers would be added weekly to its present payroll of 3000. Vultee's chief contracts are one of $4,000,000 for 300 basic training planes for the U. S. army and another of $9,000,000 for 144 new pursuit ships for Sweden.

In Seattle the Boeing Aircraft Co. announced the situation in France would make no difference in its contracts with the Anglo - French purchasing commission for $25,000,000 worth of two-engined bombers, and that work will continue as planned.

British to Get French Orders

NEW YORK, June 17 (A.P.)—On the "reasonable supposition" that the British will buy all aircraft ordered by France from the United States, it was indicated today that 3280 military planes being turned out by American factories on the French orders will go to the British army.

The "supposition" that the Birtish will take over the French orders eminated from a spokesman for the Anglo-French purchasing board, who said the French had ceased placing new orders in the United States pending "clarification" of the French position.

Figures on the number of planes ordered by France came from other sources, which asserted 1570 American-made fighting planes already had been delievered to France.

A reliable authority said the British already had received "a substantial portion" of 4600 planes they have ordered from the United States in the last 18 months.

The deliveries to France, thus far, were listed as follows: 200 Douglas bombers, 600 Curtiss pursuits, 280 Martin bombers, 40 Vought-Sikorsky bombers, 450 North American Aviation trainers.

French orders which have not been delivered were given as: 120 four-engined Consolidated land bombers, 110 Consolidated patrol-boat bombers, 80 Grumman fighters, 750 Douglas bombers, 600 Martin bombers, 1200 Curtiss pursuits, 400 North American trainers.

Trib. 5/30

Suspect Sabotage At Northrup Plant

HAWTHORNE, Calif., May 30 (I.N.S.)—In what police called possible sabotage directed at the Northrop Aircraft Corp. factory in Hawthorne, main power lines supplying the plant with electricity were cut early today, according to police. Sgt. E. J. Parker telephoned Deputy Sheriff Lew Davies that some one had wielded a hacksaw on a main pole switch.

The company has a new million-dollar factory and is building parts for the Consolidated Aircraft Corp. at San Diego.

Trib.-6-8-40

No Move to Texas, Says Consolidated

Consolidated Aircraft Corp. officials yesterday flatly denied a report from Dallas, Tex., that the Consair plant would be moved to the nation's interior.

The Associated Press stated that the Times - Herald of Dallas said it learned from a reliable source that plans were under way to establish at Dallas a plane-making (Lockheed) plant and for the moving from San Diego to the shores of a lake near Dallas of one of the nation's greatest airplane factories, the Consolidated Corp.

The Times-Herald continued:

"Negotiations have been under way for some time, it was reported, to bring Lockheed here and final negotiations are pending passage of legislation now before congress.

"It was understood that the entire San Diego facilities of the Consolidated company will be moved into the nation's interior to conform with an existing plan to remove such vital defense centers from vulnerable coast lines."

"We request that you deny the rumor about Consolidated's moving," said a Consair spokesman.

Consolidated, now employing more than 5000, moved to San Diego from Buffalo in 1935. It is manufacturing army and navy planes, and is in the process of a huge plant expansion.

AIRCRAFT NEWS

6/6/40

CONSOLIDATED TO HAVE HUGE PLANE FACTORY

Consolidated Aircraft Corporation's present expansion program, now being rushed to completion with full manufacturing facilities estimated as completed by August 1, brings this plant into full alignment with the President's recently announced emergency defense program for building a vastly expanded number of aircraft. When completed, Consolidated Aircraft Corporation will have the largest integrated aircraft plant in America, with 1,910,000 square feet of covered and uncovered manufacturing space and 954,000 square feet of contiguous airport land under option for further expansion if necessary. Ramp, airport and rail sidings are not included in these figures.

Consolidated Aircraft Corporation is unique in its possession of most favorable conditions surrounding its ascendancy as the largest aircraft plant in America.

The greater preponderance of its backlog now noted at over $70,000,000 consists of United States government work, with a smaller proportion of its contracts for foreign deliveries, leaving the company relatively free from any contingencies which might arise over the turn of events abroad.

In undertaking its present plant expansion to enable it to meet this volume of business, a closing agreement was entered into between Consolidated Aircraft Corporation and the United States Treasury Department. This agreement provides that the cost of certain addition excess production facilities, less depreciation, required to meet deliveries may be charged to the cost of performing contracts received by the company, in effect amortizing much of its expansion.

Through the naturally equitable climate of San Diego, site of the huge plant, fully 30 per cent of the manufacturing operations in building airplanes may be conducted out of doors. Provision has been made for this by paving the entire plant yard area and providing suitable outlets for power lines, etc., thus giving exceptional flexibility in an industry now in the flux of rapid development.

Founded in 1923, Consolidated has made a most rapid advance to its present position, unobtrusively becoming the world's largest manufacturer of flying boats as one of its interesting achievements. Because the performances of flying boats are not usually as spectacular as those of smaller planes or land planes of comparable size, this rise to first position has not been noted by the public generally, nor has the company's specialization upon larger craft. Taking as an arbitrary measure of "bigness" the wing span of 100 feet or more, and including the airplane equivalent of spares furnished, Consolidated has constructed more than three times as many such airplanes as all other manufacturers combined. This includes those built during the World War period. Since the company's advent in 1923, Consolidated has built approximately four times as many of such aircraft as all other U. S. manufacturers combined.

As early as 1934, six Consolidated P2Y-1 twin-engined flying boats in the service of the U. S. Navy flew the first successful massed flight from San Francisco to Hawaii, a distance of 2414 miles, non-stop.

Phenomenal success followed the current Model 28's, or U. S. Navy PBY's, the larger twin-engined flying boats. With these planes scarcely off the line the U. S. Navy began a series of "routine" delivery flights non-stop from San Diego to Hawaii, a distance of 2553 miles, with the planes flying in groups of from 12 to 18 at a time. Eighty-eight of these ships to date have made this "routine jump" to Hawaii. Anotner 88 in groups of from 18 to 18 at a time have been flown non-stop from San Diego to Coco Solo in the Canal Zone, a distance of 3087 miles. Aboard these planes were some 1200 men, members of their regular crews. No untoward incidents were encountered on any of these flights.

Consolidated engineers have followed the highly successful Model 28 design with the Model 29, a huge four-engined craft built for the U. S. Navy and the Model 31, a twin-engined flying boat boasting the first two radial air-cooled engines of 2000 horsepower each ever to be installed in an airplane. Successfully tested, and known to exceed in range, speed and load carrying capacity its forerunners the Model 28's, the Model 31's performance figures are being carefully shielded because of their military potency.

Re-entry of Consolidated into the land plane field is marked by the Model 32 four-engined land bomber known as the U. S. Army's XB-24, with an approximate gross weight of 40,000 pounds. Of this plane the United States Army Air Corps recently stated, "This airplane, from preliminary investigations, gives evidence of living up to the advancements in aerodynamic and performance characteristics predicted. These include a speed of over 300 miles per hour, a range of approximately 3000 miles and a bomb carrying capacity of approximately four tons."

Tribune, June 26, '40

New Consair Contracts Pending; $100,000,000 Backlog Anticipated

With a current "firm" backlog of more than $70,000,000 in orders for military planes, Consolidated Aircraft Corp. officials today said that "prospects were bright" that this would be increased to somewhere around $100,000,000 "in the near future."

Negotiations for additional army and navy contracts for long-range patrol bombers are under way at Washington, D. C. Increases in Consair's backlog are contingent upon the outcome of these parleys, company spokesmen said.

These spokesmen explained that the $100,000,000 figure was not to be construed as a ceiling upon possible future orders but that the eventual figure might exceed that amount "substantially."

Consolidated, famous as the manufacturers of the PBY patrol bombers which the navy for several years has used successfully in spectacular transocean mass flights, is known to be developing several new types for the army and navy that are expected to contribute much to the nation's current defense program. A recent development was a four-motored land plane which underwent tests here for the army.

Nearly-completed additions to the huge Consair plant virtually will double its capacity, making it the largest integrated aircraft manufacturing plant in the United States, and further expansion is planned.

Working night and day to rush the government's orders to completion today were 7000 employes and it was expected that 10,000 would be employed at the plant at the peak of production.

Union, 6/26/4

Consair Faces Record Backlog

$50,000,000 More In Orders Expected

By HOWARD MORIN

Consolidated Aircraft Corp. officials announced yesterday the backlog of the municipal airport plant is expected to reach $120,000,000 by Aug. 1. This is in conformity with the nation's tremendous national defense expansion program.

The current backlog is $70,000,000. Negotiations are under way for $50,000,000 in additional contracts for long-range patrol bombers for the army and navy. Already the largest integrated aircraft plant in America, Consair plans to add more buildings to those nearing completion. Details of the new structures are being worked out.

How events in Europe have affected Consolidated is graphically illustrated by the expansion program of the last 12 months. On July 1, 1939, the total personnel employed was 1129. Yesterday the total reached 6965. Two hundred are being employed each week with a maximum of 10,000 set for Aug. 1,

Consair Faces $120,000,000 Record Backlog

(Continued from Page 1)

the day the new $2,000,000 construction program will be completed.

Last March 6 the backlog of Consolidated was $49,000,000, sufficient to keep the plant operating until late 1941. The total number of men employed was 4300. Working three eight-hour shifts daily the factory will have sufficient contracts to keep it toiling around the clock until 1942 and possibly longer, officials say. Before Hitler began his march through Europe the maximum number employed at Consolidated was 3875.

MORE EXPANSION

The plant occupies 1,910,000 square feet of covered and uncovered manufacturing space. Under option from the harbor department are 954,440 square feet of municipal airport property, part of which is expected to be utilized within the next few months for construction of another assembly building exceeding 300 feet in length.

The magnitude of the expansion program which will be completed within another month is illustrated by the size of some of the buildings. The storage shed is 1000 feet long and covers 30,000 square feet of space.

The final assembly building is 700 feet long and 360 feet wide. Its huge doors each will be 120 feet long, which gives some idea of the tremendous wing spread of the new bombers soon to be added to the nation's sky fleets. The ground floor of this structure covers 259,200 square feet, the first and second mezzanine floors each 7200 square feet and the bonded stockroom 8000 square feet, a total of 281,600.

OTHER BUILDING

The experimental building annex covers 38,000 square feet. Other structures include a final finish building, office building, addition to the paint shop, boiler house and hull and wing department.

Consolidated is said to be the only aircraft plant in the world where construction work can be carried out in areas unprotected by roofing. Thirty percent of the manufacturing operations may be conducted out of doors at least nine months of the year. Provision has been made for this by paving the entire plant yard area, providing suitable outlets for power lines, thus giving exceptional flexibility to the plant in its construction and expansion program.

Since Consolidated moved here from Buffalo, N.Y., it has become the world's largest manufacturer of flying boats. The company, founded in 1923, has built four times as many airboats as all other U.S. manufacturers combined.

BOMBERS FOR ARMY

Re-entry of Consolidated into the land plane field was marked by the construction, testing and acceptance by the army of the four-engied bomber classified as the XB-23, whose gross weight exceeds 20 tons. It has a speed exceeding 300 miles an hour and a flight range of 3500 miles carrying four tons of bombs. The navy's new long-range offshore patrol bombers are just as fast and as heavily armed.

The Consolidated plant, with the completion of the final assembly building, extends for half a mile on Pacific highway. It is heavily guarded and extraordinary precautions are being taken to prevent sabotage and pilferage of plans of not only existing models but larger and more powerful bombers now on the drafting boards.

In a statement to stockholders last month Maj. Reuben H. Fleet, Consolidated president, gave an inkling of the company's Aug. 1 backlog when he said it would exceed $100,000,000 of "outstanding quotations were accepted." The report at the factory is that the negotiations are virtually completed.

UNION
6-30
'40

5 Aircraft Employes Made Special Officers

At the request of Clifford E. Peterson, police chief, deputies of Fred Sick, city clerk, have sworn in five aircraft company employes as special police officers who will serve without pay from the city.

They are: William H. Shattuck and George Roth, Consolidated Aircraft Corp., and Al M. Gee, C. F. Bennett and E. E. Schindler, Ryan Aeronautical Co.

'Too Busy To Celebrate'

MAJ. R. H. FLEET

Trib. - 5/29

GROWTH RELATED AS CONSOLIDATED 17 YEARS OLD

"In some respects, I am sorry we are too busy to celebrate."

With these words, Maj. R. H. Fleet, Consolidated Aircraft Corp. president, concluded a memorandum to employes announcing that today marks the 17th anniversary of the huge aircraft firm.

In 1923 Fleet and his oldest associates recalled, the company was located in a small plant in Buffalo, N. Y., and employed 25 workers.

Today, 6014 employes were rushing to fill warplane orders of the United States and foreign governments totaling $70,000,000, the largest backlog in company history, marking it as one of the largest aircraft manufacturing concerns in the nation.

Expansion Under Way

Also under way was a plant expansion program which, when completed, will double the present capacity and cover 1,910,000 square feet of covered and open-air working space, making the plant the largest integrated plane-building factory in the United States, company spokesmen pointed out.

With the federal government embarked on a gigantic defense program and with world history hinging on armament production, Consair authorities predicted that new rush orders for this and other governments will, in the near future, raise the backlog figure to a still more stupendous total.

Since the firm moved to San Diego in October, 1935, it has produced upwards of 200 of the famed Model 28 PBY patrol bomber flying boats for the navy. These are the ships which participated in several spectacular transocean mass flights in recent years.

Guba Consair Product

The Guba, plane of Richard Archbold, American Museum of Natural History explorer, which last year made a record-setting flight around the world, and the plane in which Sir Hubert Wilkins encircled the north pole both were modifications of Model 28.

In addition, Consair has produced several experimental models for commercial and military use, including the newest four-motored 'flying fortress" now in the hands of the United States army. Also flown from the production line were 50 two-seater pursuit planes for the army.

When Consair first was organized, it specialized in production of the famed Fleet trainer, small two-place biplane, in which many of the nation's top-flight pilots learned to fly. Later, while still located at Buffalo, it entered the flying boat field, turning out several types for the navy and the 15 Commodores used in the first United States-Argentina commercial run.

In his memorandum pointing to the growth of the company, Fleet stated:

"Today we are in a factory of our own, tailored to our business and located in the city of our choice."

Consair authorities pointed out that, by coincidence, the number of employes passed the 6000-mark on the company's anniversary today.

THE TRIBUNE-SUN, San Diego, Calif., Tuesday, June 11, 1940

California Aircraft Industry Leads In Drive To Complete U. S. Defenses

With colleges and technical schools turning out more and more skilled men and factory payrolls increasing weekly, California's aircraft industry today was in the vanguard of the drive to carry out President Roosevelt's defense armament program, The International News Service reported from Los Angeles.

Agreeing that the aerial phase of the program is an "all-California job," heads of six of America's leading plane companies located in California, including Consolidated Aircraft Corp., at San Diego, have pledged their resources to doing the job set for the industry by the president's plan for 50,000 planes.

The California aircraft industry now employs more than 33,000 workers, and has an annual payroll, constantly rising, which now stands at more than $50,000,000. For many months, figures show, the aircraft industry has led California employment rolls. So important has this phase become that the state department of employment recently established a central aircraft placement bureau in the Los Angeles area, where most of the factories are located. The bureau draws heavily on skilled workers from all parts of the state.

Capacity Enrollments

California educational institutions are playing an important part in the program of creating wings for defense. With capacity enrollments, the University of California, the California Institute of Technology, the Aerodynamics laboratory, at Stanford, and the vocational departments of several junior colleges are turning out graduates who go to the aircraft plants as engineers and technicians.

The six California companies now principally engaged in rushing military orders are Consolidated Aircraft; Douglas Aircraft, of Santa Monica; Lockheed Aircraft, of Burbank; North American Aviation, of Inglewood; Northrup Aircraft, of Hawthorne, and Vultee Aircraft, of Downey.

Speed Accessory Work

In addition, there are many smaller companies manufacturing vital accessories. By speeding their part of the work, these smaller companies gradually are eliminating one of the "bottlenecks" in the industry.

San Diego aircraft firm officials report the aircraft factories here have taken on employes at the rate of more than 600 a month since Jan. 1, for a total of 3214 to date. The backlog of unfilled orders is reported to be nearly $73,000,000, with consolidated having approximately $70,000,000, Ryan, $1,500,000 and Solar, $1,250,000.

Trib.
6/11/40

Longer Work Week Approved By President of Consolidated

A longer work week for the aviation industry to speed up production is urged by Maj. Reuben H. Fleet, president of the Consolidated Aircraft Corp. here. Fleet, now in the east, spoke last night at the Buffalo Aero club banquet and said the United States could "accelerate" plane deliveries "by increasing the work week to include a full working day on Saturday," The Associated Press reported.

He also said 684 men are working at the Fleet Aircraft Co.'s plant at Fort Erie, Ont., and that he saw there 13 planes ready for delivery to the Royal Canadian air force.

Another speaker, Earl R. Southee, of New York, a flying specialist for the civil aeronautics authority, stressed that the CAA program for training college students "is still a civilian program, although it has military significance." He said its goal is to produce 45,000 pilots by next spring.

Consolidated Aircraft Corp. at present is on the 40-hour work week, with three shifts employed during a 24-hour period. An official of the firm said today this schedule is being maintained "until the government wants to permit a 48-hour work week."

Check List for Summer Advertising

GEORGE BIJUR

For best results, you will build your advertising through the next few months on the facts of summertime. Warm weather is only one. Check your plans against these additional 22.

IF you go to the public library and pick up one of last August's issues of America's best known magazine, you'll find scattered through its pages about $80,000 worth of advertising that was doing only $40,000 worth of work. Ads whose effectiveness during these hot months was almost halved, because they were still huddled in winter copy clothes, wrapped in long-underwear layouts, delivering below-zero sales talks when the mercury was bubbling.

Here is a film manufacturer, for example, solemnly telling you—in August—what beautiful *snow* pictures his equipment will enable you to take. A mill trying to sell bed sheets in July, with as sombre and mid-wintery a picture as ever made you want to tuck your head under the pillow. A vacuum cleaner ad shows a thick rug on the floor, and a log crackling in the fireplace. No help here for the housewife who finds that open windows in summer are an invitation to dust, and whose summer rugs and curtains present a new kind of cleaning problem. A radio manufacturer runs five paragraphs of close-set type—but he could run that ad in December without changing a comma! Not a word to touch off the spark of summertime wants and needs, to click with what his customers are doing and thinking at the beachtime season of the year.

So it goes. By turning his back on summer, advertiser after advertiser misses the opportunity to get better reading and more enthusiastic response. The reader of the magazine may have been mopping his brow at every paragraph, but the ad might as well have been written for Eskimos.

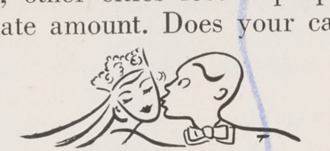
The following "Check List for Summer Advertising" is not complete by any means—but it may help the sales executive to think more concretely in terms of summer, and perhaps to remind him of a few summertime slants that might otherwise be overlooked.

1 . . . While more wedding licenses are issued in June than any other month of the year (14.1 per cent), May, July, August and September are almost as big (together they account for 36.6 per cent of the year's marriages). More furniture sales are made in August than in any other period —45 per cent more than during the average month. Are your summer promotional and advertising plans calculated to reach the hundreds of thousands of honeymooners and new-apartment renters? Many will be building their own homes, all will be starting fresh with everything from kitchen sinks to vacuum cleaners, radios to rugs, toasters to tea tables. Will your summer advertising be as helpful and informative as they want it to be? Will it have a touch of romance?

2 . . . More sales of automobiles, accessories, tires and batteries take place during the "on the road" months of July to September than during any other three-month period. Is your summer advertising full of outdoor zip and go, varied as the road-scene, fast moving and energetic?

3 . . . The three days preceding July 4 and Decoration Day are two of the peak buying periods of the year. Have you arranged for copy and layouts, displays and dealer helps, to get full benefit of holiday news interest?

4 . . . A million people leave New York City every summer week-end; other cities lose a proportionate amount. Does your campaign make the most of the needs and requirements created by America's "week-end habit"?



5 . . . Some 77 per cent of the people who regularly get a vacation take it between July 1 and Labor Day. But long before the actual "two weeks off," these people think, dream, talk vacation. Is something of the promise of vacation put to work for you in your summer advertising?

6 . . . Less money is deposited in savings banks during the summer quarter than any of the other

---

Aviation Advertising Budgets

[*Continued from page 37*]

City and Tampico papers to get return loads of tourists. Federal Advertising is Eastern's agency.

American Airlines reports a 20 per cent increase, or approximately $200,000, with a total of $800,000 to be spent. This will be concentrated in the *Saturday Evening Post, Time, Collier's* and the *New Yorker*, with about 90 per cent of its newspaper copy going to dailies. It will continue publication for its passengers of its "American Way" magazine, which has been much liked. It is also using a large number of small pamphlets for passengers of the type of its "Service Fit for a King," which was cartoon-illustrated. Its magazine ad appeal is to continue with the idea of selling what air transport can do for those using it, rather than that of telling the public of the technique of flying. Ruthrauff and Ryan carries the account.

SMALL COMPANIES ACTIVE

Two of the smaller lines have been advertisingly active. Braniff Airways, operating from Chicago to Brownsville, has played its "Portraits of an Airline" in *Time*, and has made constant use of its new slogan of the "Flying Forties." The company reports such good results from its "Portraits" that it is continuing them through the new year. Such heads as "Trade Wings to Latin America," "Southwest to Fun and Fortune" and "A Fledgling becomes a Fleet" give a rough idea of the appeal. Braniff also makes much of its college girl hostesses. Their newspaper schedule is similar to American's in that consumer benefits are emphasized. Handout material and direct mail matter are largely follow-ups on the *Time* spreads.

Chicago and Southern Airlines, which runs between Chicago and New Orleans, has analyzed its problem of integrating the necessities of a regional company with the national picture and doing it on a limited budget. It has used a spread in *Fortune*. This ad was financed cooperatively with companies selling equipment to the line and brings to the notice of chief executives throughout the country the inauguration of the company's new fleet of Douglas DC3s, in other words, luxury planes. 10,000 four-page reprints of the ad in which the line's history is included, are being mailed to airline agents and travel bureaus.

Tie-ins with advertising in the *Saturday Evening Post, Life, Collier's*, and *Liberty* were made with Sinclair Oil; Douglas Aircraft cooperated with *Time, Newsweek* and *Nation's Business*; and Shell Oil shared online newspaper space expense. In this way, the budget of $22,124 for the first six months of the year is being stretched to get the utmost in results. An additional $10,000 equivalent is made available through permission of the Civil Aeronautic Authority by trade agreements with news space and radio time by exchange of "space available" transportation with approved outlets. Since passengers designated by these outlets are only carried when there are empty seats in the planes, no loss is experienced by the airline in regular traffic sales.

On the side of the manufacturers, two of the larger companies give the statement that most of their appeal is straight to the buyer, rather than to the public. United Aircraft advertises in both national and trade magazines, using Platt and Forbes of East Hartford, Connecticut, as its representative. Its budget jump is one of the most significant of the entire group, from $78,000 in 1939 to $175,000 in 1940. This covers cost of production from layouts up, and includes an institutional campaign that is being continued. The Curtiss-Wright Corporation gives no figures but states that its budget will cover three divisions, engine, military and commercial aircraft, and propellers, with an increase of 25 per cent over 1939. Its agency is Burke, Dowling and Adams of Upper Montclair, New Jersey. It is cooperating very closely with the Air Transport Association in the air travel campaign and is beginning promotion of its new transport, a 36-passenger plane now flight testing in St. Louis.

THREE DIVISIONS

Glenn L. Martin Company in Baltimore, which builds both military and commercial craft, says of its plans: "This company's program is divided into three fields. For the domestic, we emphasize through trade papers the contributions being made by the company to the military air establishment of the United States government. For export, we use trade paper advertising of the types of military aircraft the company is manufacturing and has available for over-seas military service. Finally, for commercial transport, we are using a comprehensive campaign with four-color bleed page advertisements in a long list of leading American weeklies, stressing the peace-time contributions of the company to commercial aviation, and the future plans of the company for further contribution to over-ocean passenger transportation."

From San Diego, the Consolidated Aircraft Corporation reports: "Since our efforts over the past few years have resulted in virtual specialization on military craft for the U. S. government air forces, we have more or less restricted our advertising plan to the area of this country. Our current advertising schedule includes insertions in the national aeronautical magazines, with the single exception of one magazine entering South America."

FRENCH SURRENDER TO SPEED PLANE PRODUCTION FOR U. S.

UNION - 6-18-40

LOS ANGELES, June 17 (A.P.)—Accelerated production of American military aircraft was anticipated today by officials of rapidly-expanding southern California factories as the result of French surrender. Executives of the five largest plane plants would not comment for publication —in line with strict censorship of war activities ordered several months ago—but privately opinion was expressed that army and navy defense speed-up would be felt quickly.

Millions of dollars of unfilled orders are affected by a British announcement that it would take over French purchases in this country. Available data on the status of foreign orders in the plants involved disclosed the following situation:

Douglas Aircraft Co., which has increased its program by adding 1000 employes a week for several months, has unfilled orders exceeding $140,000,000, of which a spokesman said "more than 60 percent is military." The latest French order approximated $20,000,000.

Consolidated Aircraft Corp. is, for the present, following its schedule without change in the production of military planes for the U. S. government, Maj. R. H. Fleet, president, said last night. He said the plant stands ready to go on a six-day production week, but that purchasers have not been willing to pay the required time-and-a-half for overtime.

230 CRAFT DELIVERED

North American Aviation Co. has delivered an order of about $8,000,000 for 230 French military training planes and now is working on similar contract. Four hundred British training ships have been delivered in Canada and 600 more are in production. The two orders total about $24,000,000.

What may happen to a $1,700,000 Lockheed commercial order for 17 Lodestars to three French private airlines, Air France, Air Afrique and Aeromartime, is problematical. Lockheed's Allied military contracts are all for Britain, totaling about $70,000,000.

Northrop Aircraft, Inc., notified that the Norwegian government today deposited $1,500,000 in a New York bank in full payment for 24 patrol bombers ordered before the German invasion, said the Norwegian government has given assurance "it is still in the fight with a determination to win."

PROGRAM EXPANDED

Vultee Aircraft simultaneously announced expansion of its production program to provide two shifts of 58 hours weekly and said 150 to 200 workers would be added weekly to its present payroll of 3000. Vultee's chief contracts are one of $4,000,000 for 300 basic training planes for the U. S. army and another of $9,000,000 for 144 new pursuit ships for Sweden.

In Seattle the Boeing Aircraft Co. announced the situation in France would make no difference in its contracts with the Anglo - French purchasing commission for $25,000,000 worth of two-engined bombers, and that work will continue as planned.

British to Get French Orders

NEW YORK, June 17 (A.P.)—On the "reasonable supposition" that the British will buy all aircraft ordered by France from the United States, it was indicated today that 3280 military planes being turned out by American factories on the French orders will go to the British army.

The "supposition" that the Birtish will take over the French orders eminated from a spokesman for the Anglo-French purchasing board, who said the French had ceased placing new orders in the United States pending "clarification" of the French position.

Figures on the number of planes ordered by France came from other sources, which asserted 1570 American-made fighting planes already had been delievered to France.

A reliable authority said the British already had received "a substantial portion" of 4600 planes they have ordered from the United States in the last 18 months.

The deliveries to France, thus far, were listed as follows: 200 Douglas bombers, 600 Curtiss pursuits, 280 Martin bombers, 40 Vought-Sikorsky bombers, 450 North American Aviation trainers.

French orders which have not been delivered were given as: 120 four-engined Consolidated land bombers, 110 Consolidated patrol-boat bombers, 80 Grumman fighters, 750 Douglas bombers, 600 Martin bombers, 1200 Curtiss pursuits, 400 North American trainers.

No Move to Texas, Says Consolidated

Trib.-6-8-40

Consolidated Aircraft Corp. officials yesterday flatly denied a report from Dallas, Tex., that the Consair plant would be moved to the nation's interior.

The Associated Press stated that the Times - Herald of Dallas said it learned from a reliable source that plans were under way to establish at Dallas a plane-making (Lockheed) plant and for the moving from San Diego to the shores of a lake near Dallas of one of the nation's greatest airplane factories, the Consolidated Corp.

The Times-Herald continued:

"Negotiations have been under way for some time, it was reported, to bring Lockheed here and final negotiations are pending passage of legislation now before congress.

"It was understood that the entire San Diego facilities of the Consolidated company will be moved into the nation's interior to conform with an existing plan to remove such vital defense centers from vulnerable coast lines."

"We request that you deny the rumor about Consolidated's moving," said a Consair spokesman.

Consolidated, now employing more than 5000, moved to San Diego from Buffalo in 1935. It is manufacturing army and navy planes, and is in the process of a huge plant expansion.

Suspect Sabotage At Northrup Plant

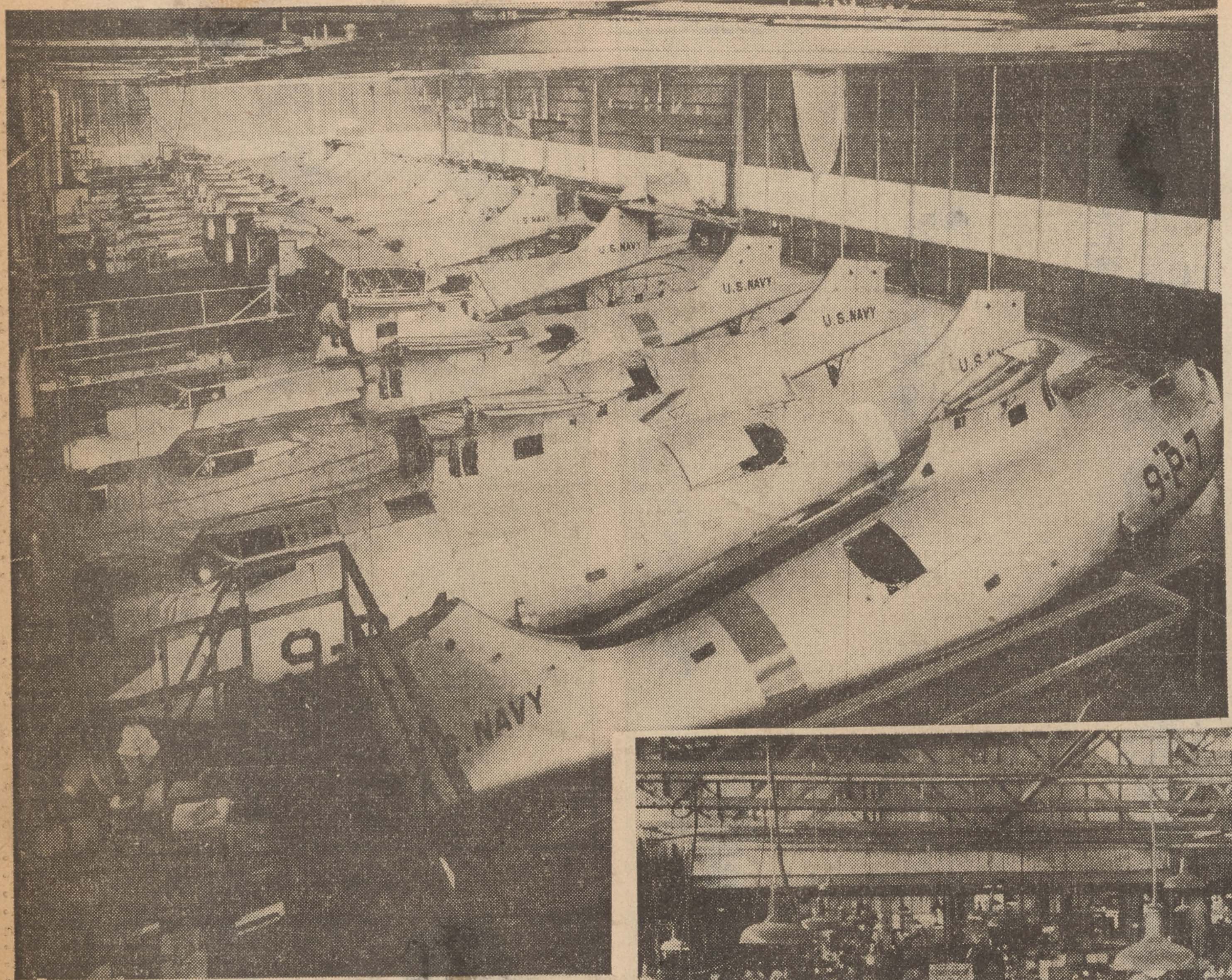
Trib. 5/30

HAWTHORNE, Calif., May 30 (I.N.S.)—In what police called possible sabotage directed at the Northrop Aircraft Corp. factory in Hawthorne, main power lines supplying the plant with electricity were cut early today, according to police. Sgt. E. J. Parker telephoned Deputy Sheriff Lew Davies that some one had wielded a hacksaw on a main pole switch.

The company has a new million-dollar factory and is building parts for the Consolidated Aircraft Corp. at San Diego.

Coast Plants Speed Airplane Production

Union - 6/26/40



With more than 200 of these planes already delivered to the navy, Consolidated Aircraft Corp. is continuing production of its twin-engined Model 28 seaplanes, shown here on the final assembly line.

ENGINES FOR WAR

'Bottleneck' of Aerial Defense Becomes Less Serious as Huge Factories Expand

By DEVON FRANCIS

neighbors in modernizing an army and navy, lacks so many essentials of armament that experts believe she would be hard-pressed to protect her own 1500 miles of coast from foreign assault.

Perhaps, the brightest spot in the defense picture is the long string of great, new commercial airdromes—expected to be ready for service late this summer—stretching north through Rio De Janeiro, Brazil, to link with air fields of the United States.

Developed for use by Pan-American Airline's Buenos Aires to United States service, the fields were built to handle huge four-motor transports. That means they could be used by the heaviest United States bombers as flight bases in any South American emergency.

The new airdromes at Buenos Aires, Rio De Janeiro, Paramarimbo in Netherlands Guiana, Port of Spain on the British island of Trinidad, and San Juan, Puerto Rico, would be convenient stepping stones for the United States bombing planes to danger spots on the eastern coast of South America.

What extent, if any, United States officials have arranged with South American nations for wartime use of the fields has been kept secret.

DEFENSE PLANS SHIELDED

Particularly in the case of Brazil, largest country in South America, and Venezuela, have details of defense plans been shielded behind strict censorship.

Informed sources at Buenos Aires said that so far there had been little or no exchange of defense ideas between the United States and Argentina. Presence of a German military mission at Buenos Aires since 1914 was seen as one barrier for exchange of any such confidential plans.

Both Brazil and Argentina have heavy German and Italian population. One fourth of Argentina's 12,000,000 population is Italian.

Both countries have declared strongly, with the smaller nations of South America, for a common stand to safeguard the western hemisphere.

Argentine spokesmen asked for a stand of non-belligerency instead of mere neutrality, with the comment "we cannot be indifferent" to the events in Europe.

President Getulio Vargas, ruler of Brazil, urged a "common interest of defense" of the Americas.

Especially since the outbreak of war in Europe, South America has speeded its armament.

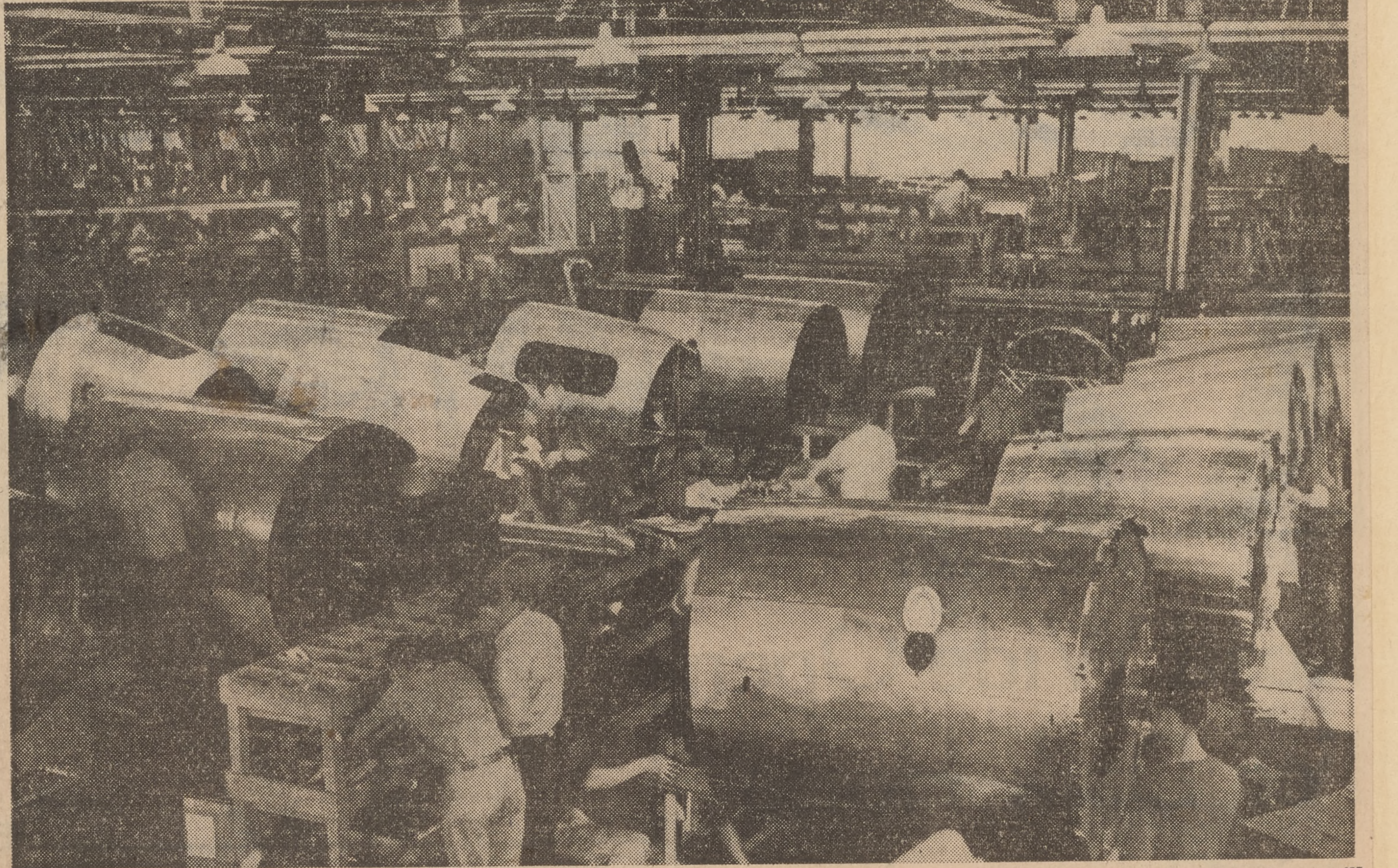
TANKS OBSOLETE

Argentina's well-drilled conscript army has an ample supply of rifles and approximately 1000 pieces of artillery including anti-aircraft, mountain guns and field pieces ranging up to six-inch guns. However, its 40,000 soldiers and 300,000 reservists are without effective motorized equipment. The army's only tanks are 10 old-time, five-ton British tanks hich experts have said are of value only for parades.

The Argentine war ministry is preparing a bill asking 150,000,000 pesos (about $50,000,000) to buy airplanes, more anti-aircraft guns, bombs and other equipment.

Meanwhile, not one peso has been authorized for the purchase of new equipment since 1938.

Workmen are busy in Boeing's Plant No. 1 at Seattle, Wash., turning out miscellaneous plane parts. Employment, already at a record 6700, will be increased when production starts on a new order of planes which probably will go to Britain. (A.P. photo.)



Here are engine mounts being turned out at increased speed in Boeing's Plant No. 1 at Seattle, as part of the U. S. defense program. The newest model of the Boeing bomber for the U. S. army's use will be equipped with four 1100-horsepower motors. (A.P. photo.)

COAST PLANTS READY FOR 1000 PLANES A MONTH

UNION 6-4 40

San Diego and Los Angeles county plane factories could produce 1000 planes a month at present capacity and with expansion might double that output, an unofficial survey indicated yesterday, The Associated Press reported from Los Angeles.

"We are set to go whenever we get the orders," one plane company representative said.

Present production totals 600 planes a month, employing 40,000 workers. The San Diego manufacturers are Consolidated Aircraft Corp. and Ryan Aeronautical Co.

Spokesmen said the southern California companies are ready to increase production and expand whenever needed in connection with President Roosevelt's declaration in favor of war materials aid to the Allies.

Inspector at Consair

Lt. Comdr. Rhea S. Taylor, formerly on duty aboard the aircraft carrier Ranger, has succeeded Comdr. Roland G. Mayer as chief inspector of naval aircraft at Consolidated Aircraft Corp.

Mayer has resigned from the navy to accept the position of production manager and coördinator at Consolidated.

Taylor frequently has been stationed here with aircraft squadrons of the battle and scouting forces.

THE SAN DIEGO UNION: SUNDAY MORNING, MAY 26, 1940

U. S. Faces Production Problems In Expansion of Aircraft Industry

Output to Exceed Capacity of German Factories

By DEVON FRANCIS
Associated Press Aviation Editor

BALTIMORE, May 25—An American aircraft manufacturer, visiting the German air ministry's imposing edifice in Berln last year, asked an official, "what happed to that big, four-engined plane you had in the blueprint stage a few months ago?"

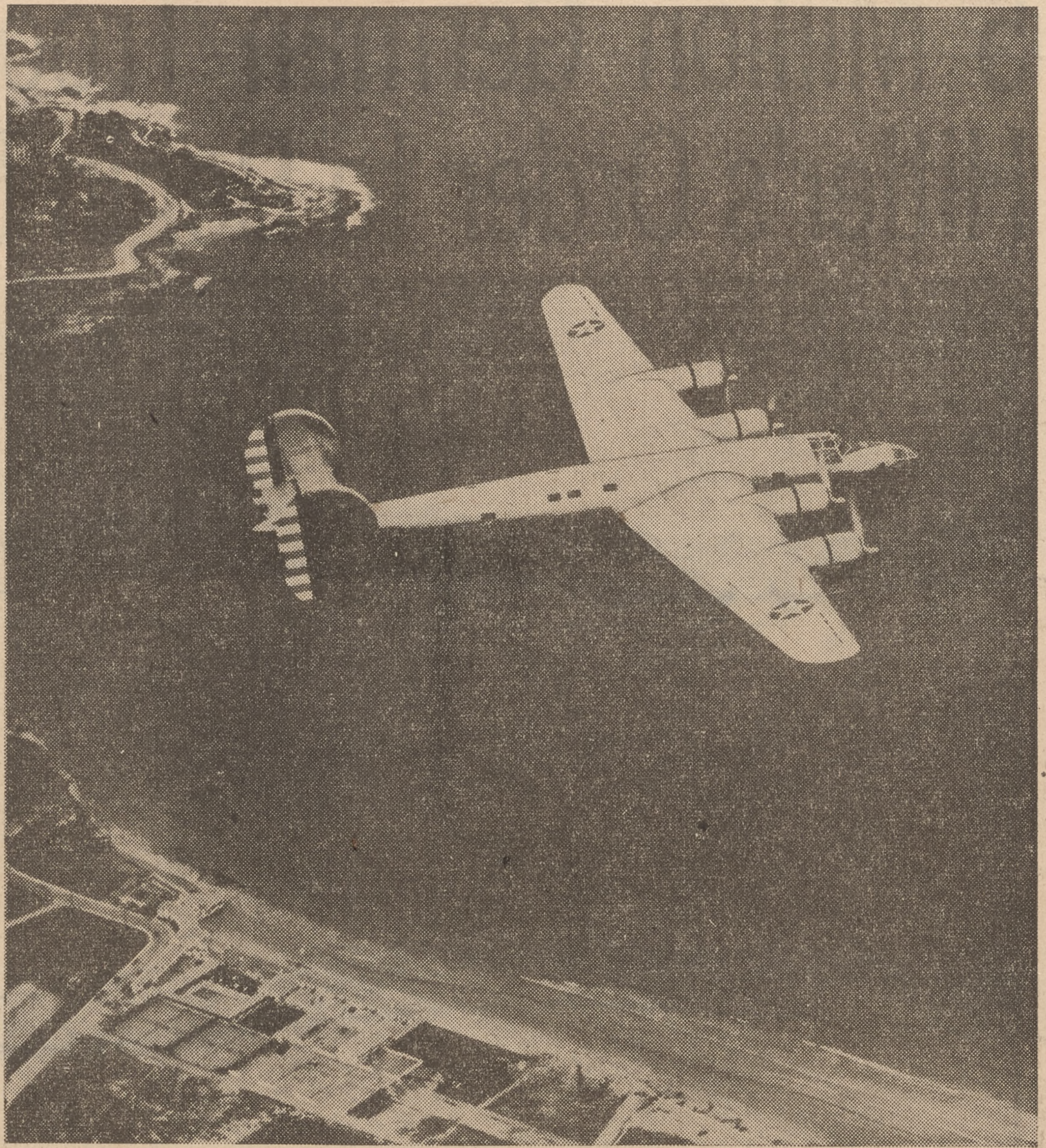
"Oh, that," responded the German. "We built it and discarded it. It wasn't quite what we wanted for production purposes"

In a brief seven months, under totalitarian methods, the Germans had drawn the plans for, built and junked a mammoth war machine. That provides another piece of evidence on the smooth efficiency with which Germany has worked in shaping to the needs of war a highly specialized industry.

SAN DIEGO HOLDS RECORD

The same problems in quick expansion, eingineering and production now face the United States in meeting the demands of the armed services for fresh thousands of warplanes. Turning out 50,000 machines, and boosting American productivity to that figure annually, is a precision job on a mass-production framework.

Up to now the best American plants have done is plan and manufacture a plane in 10 months. That was the time required for a twin-engine flying boat of sensational performance. As a private project of the Consolidated Aircraft Corp., San Diego, it suffered from none of the delays caused by the demands of buyers for changes.



A record for successful plane building was made at the Consolidated plant when this four-motored army bomber took the air less than nine months from the time it was conceived by engineers.

* * *

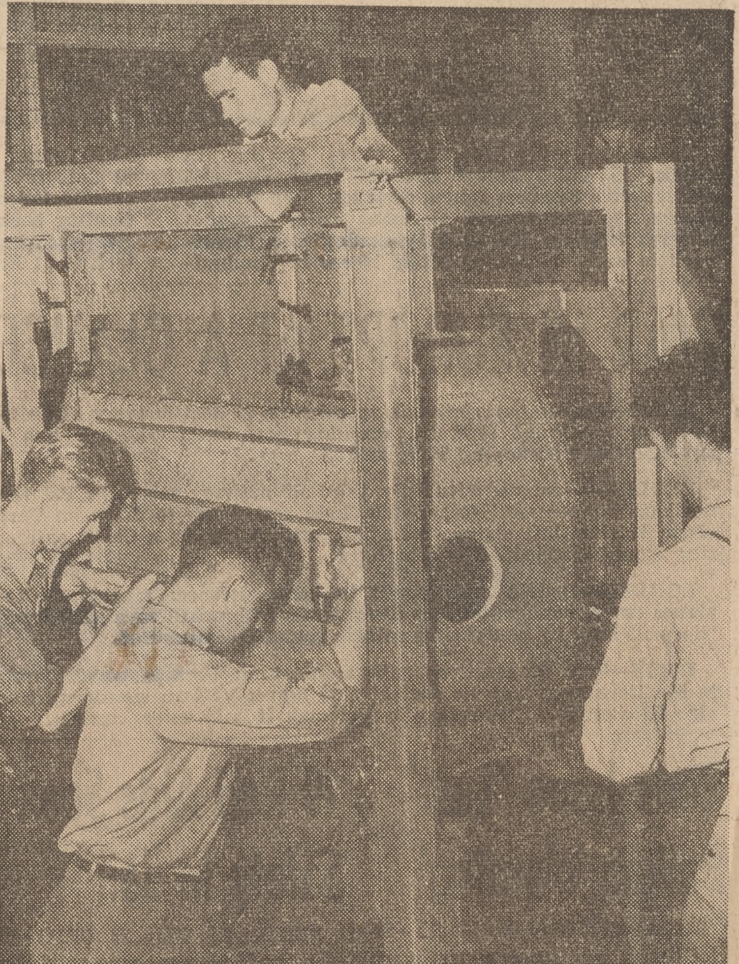
Plane Building Fastest Here

San Diego plane builders are in a position to turn out huge new planes faster than any other plant in the world, despite reports of German superiority along these lines.

This word came from Consolidated Aircraft Corp., world's largest builder of flying boats, but which now has re-entered the landplane field.

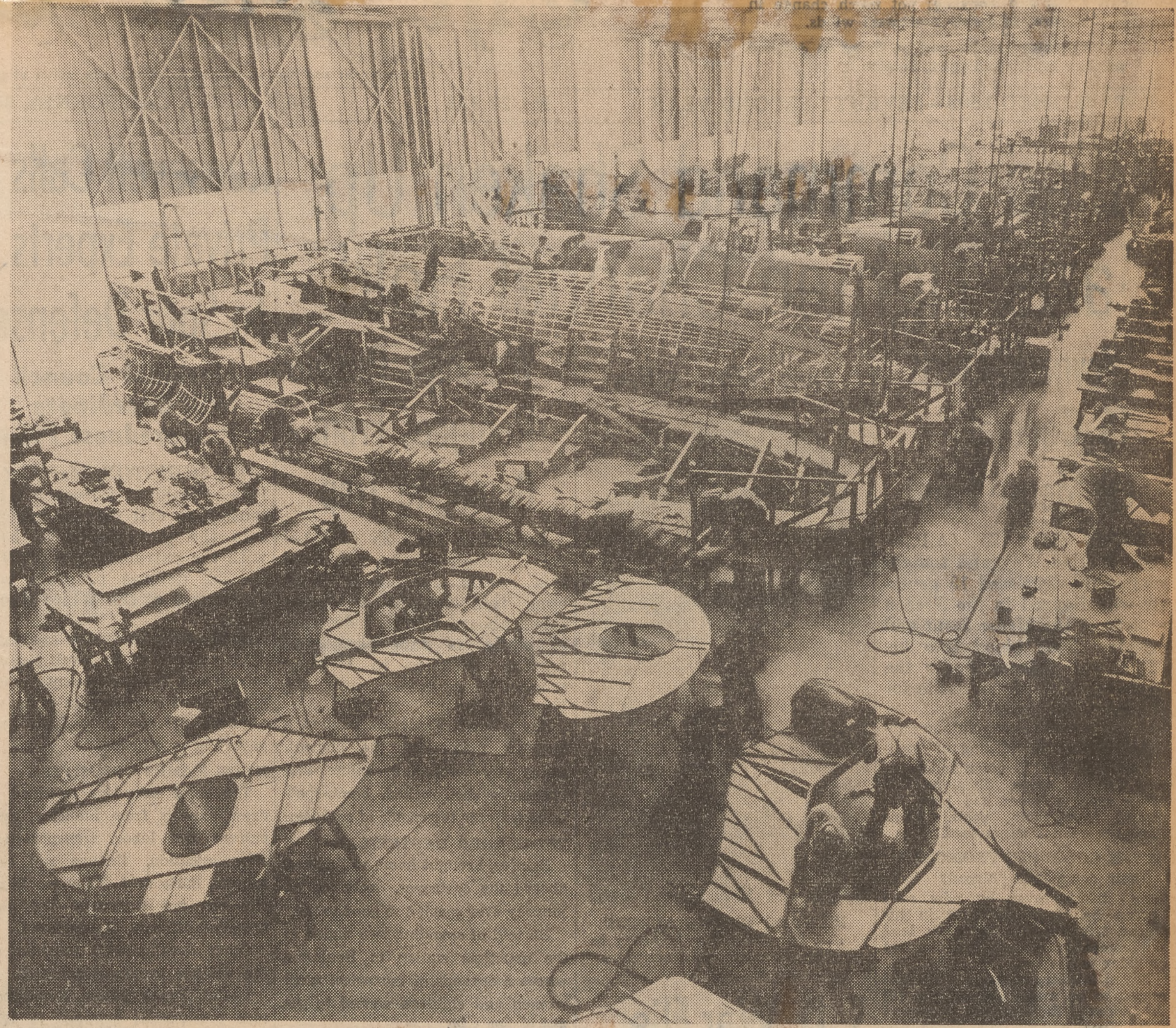
A Consolidated official was told about the German four-motored plane which was designed, built and junked in seven months.

He replied that the great XB-24 —four-motored army bomber—was

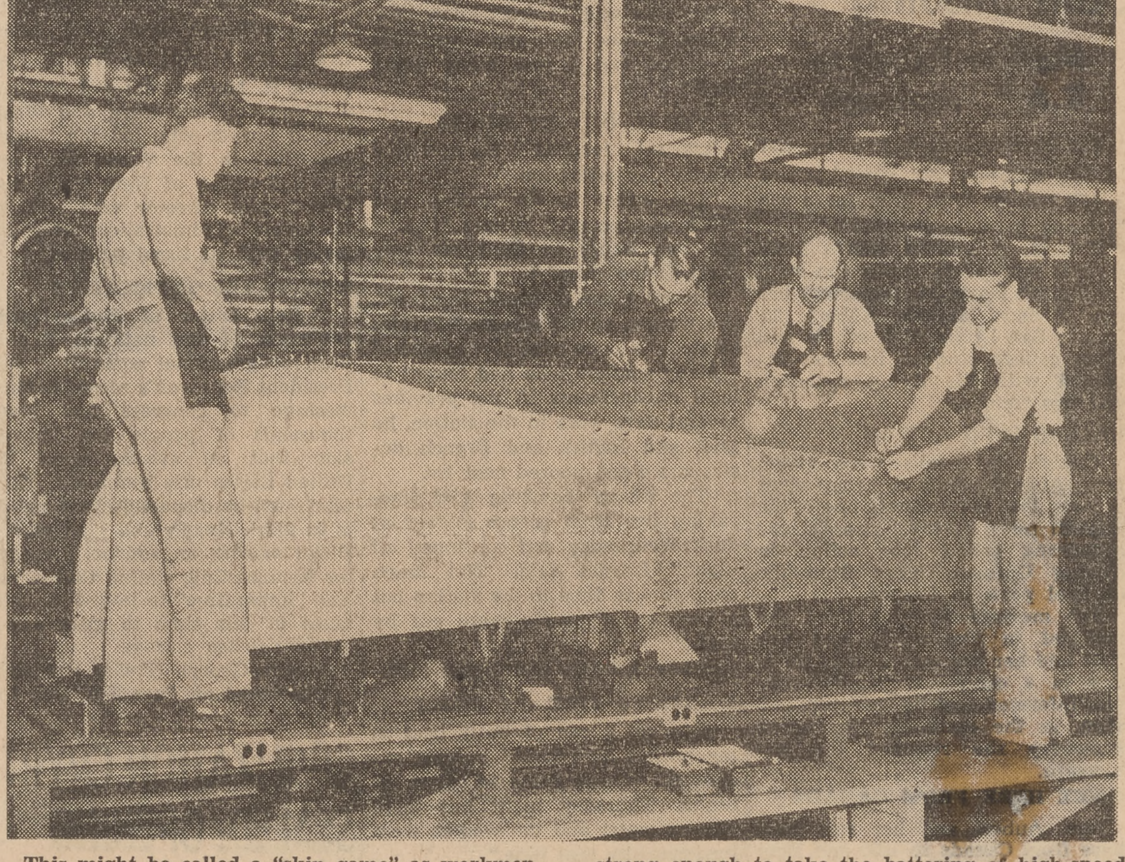


San Diego men rush America's air armament. Here they are working on a tank that forms part of engine nacelle on huge warcraft.

CONSAIR CLAIMS WORLD RECORD FOR SPEED IN WARPLANE CONSTRUCTION



A section of Consolidated's assembly line where the nevy's aerial dreadnaughts are being built. Hulls are seen in various stages of construction. In the foreground bulkheads or formers are being made for another bomber that soon will start down the assembly line.



This might be called a "skin game" as workmen put the metal skin on a wing float that must be strong enough to take the battering of high-speed landings on rough waters of the sea lanes.

New Aircraft Inspector

Capt. S. J. Zeigler, formerly attached to the staff of Vice Adm. Charles A. Blakely, commander battle force aircraft, has reported for duty as inspector general of naval aircraft for the western district with additional duty as naval aircraft inspector at Consolidated Aircraft Corp.

Lt. Comdr. Rhea Taylor, who has been acting navy inspector at Consair, will be assistant to Capt. Ziegler. UNION- 6-15-40

PARIS, May 25 (A.P.) — Police said tonight the Paris mop-up of suspected spies had resulted in arrest of more than 500 persons, including 334 foreigners who were sent to concentration camps.

Sixty thousand were questioned within the last week.

Streets, hotels and cafes were searched.

The detection of spies was complicated by the fact that more than 200,000 Belgian refugees have passed through Paris on their way to shelters.

The papers of refugees were checked to prevent entry of imposters among them.

The newspaper Le Temps advocated farm and factory work for the refugees to replace manpower needed at the front.

Tonight the military commander of Paris announced that all persons, foreign or French whose activity

---

ARANSAS PASS, Tex., May 25 (A.P.)—Through all these years 70-year-old George W. Dahman had his baby teeth.

Then he lost one.

Today, a mature molar, his first, was cut.

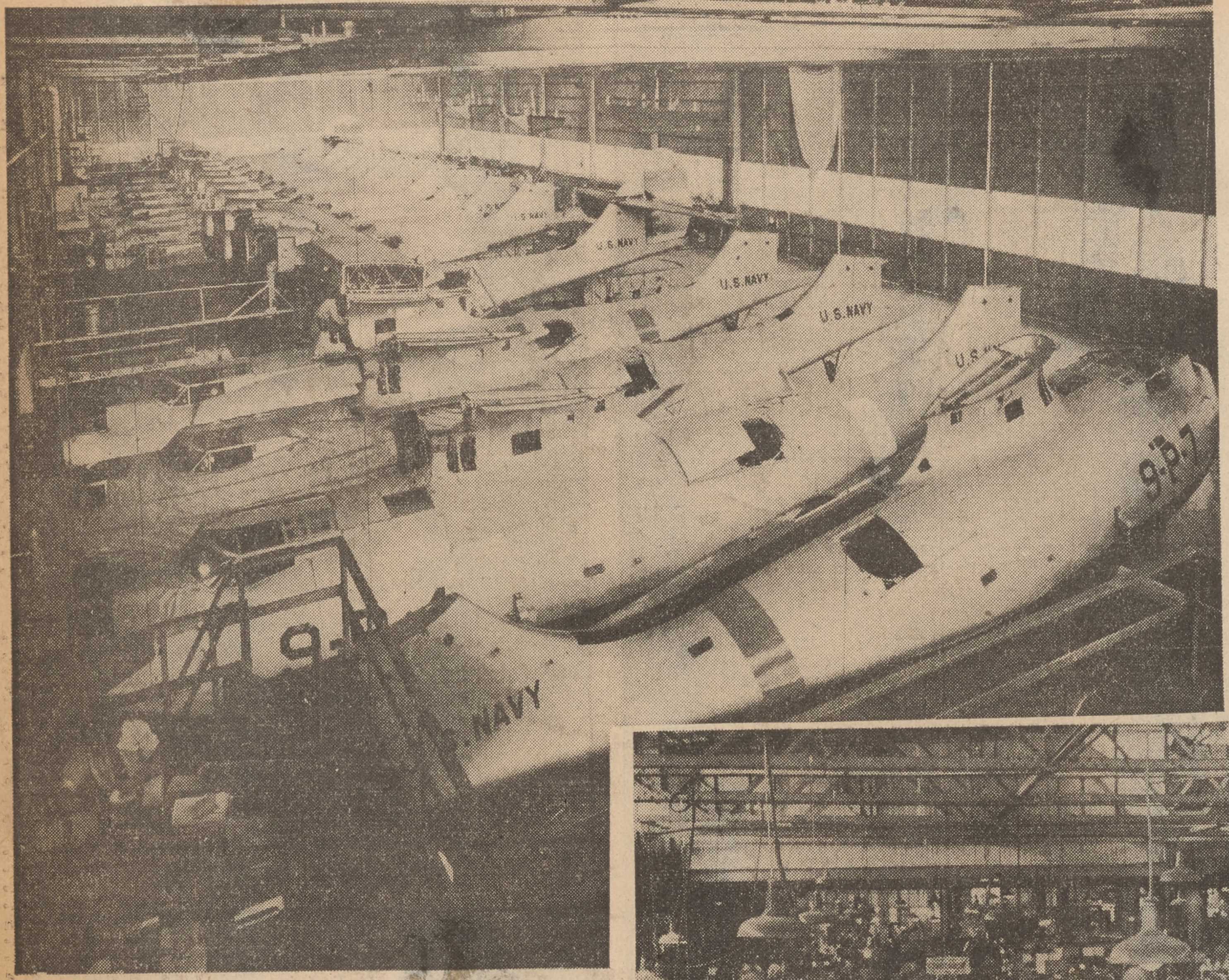
Table of Contents

Today's San Diego Union consists of 86 pages, printed in 9 sections. Department and feature matter will be found as follows:

Sports
Pages 1 2, 3, 4, 5, Section E
Theater News and Programs
Page 5, Section C
Radio Programs
Page 7, Section C.
Eileen Jackson's Tete-a-Tete
Pages 6, 7, Section D
Music and Art Topics
Pages 7, 9, Section C
Vital Statistics
Page 10, Section F
Suburban News
Page 12, Section A
Classified Want Ads
Pages 5, 6, 7, 8, 9, Section F
Financial News and Tables
Page 11, Section F
Romance of Old San Diego
Page 8, Section C
Shipping Information
Page 6, Section E
Editorial Department
Page 8, Section C
Automobile Department
Pages 4, 5, 6, Section B
Building Department
Pages 1, 2, 3, 4, Section F
News and Views of Books
Page 9, Section C
"Of Hearts and Song," serial
Page 3, Section B
Fraternal News
Page 2, Section B
Veterans' News
Page 2, Section B
News of Schools
Page 6, Section C

Coast Plants Speed Airplane Production

Union - 6/26/40



With more than 200 of these planes already delivered to the navy, Consolidated Aircraft Corp. is continuing production of its twin-engined Model 28 seaplanes, shown here on the final assembly line.

* * *

ENGINES FOR WAR

★ ★ ★ ★ ★ ★

'Bottleneck' of Aerial Defense Becomes Less Serious as Huge Factories Expand

By **DEVON FRANCIS**

Associated Press Aviation Editor

SEATTLE, June 22.—American aircraft engine production, called a "possible bottleneck" of our rearmament for air defense only last January, is expanding at a rate which will reach 25,000 units of at least 1000 horsepower each by next March.

Additions have been made to plants, and fabricating tools moved in, at a pace which would have been considered impossible last winter when Secretary Morgenthau of the treasury department remarked on the "possible bottleneck."

One of the major plants will have increased its output by 50 percent in December—or nine times the actual number of shipments off its floor in 1938.

The Wright Aeronautical Corp. at Paterson, N. J., has just dedicated a new unit of its great plant, erected and put to work in 57 days. The addition boosts the heavy engine production in this one factory to 1000 units a month.

"I am sure this is not the last of the expansion," said Guy W. Vaughn, president of the Curtiss-Wright Corp., and of Wright Aeronautical, "according to the latest word from Washington."

MADE UNDER PRESSURE

More than half of the heavy aircraft engines being produced in American factories are going to Europe. Some of them are shipped with warplanes. Others are sold separately to power plants manufactured by Britain. All bear the stamp of semi-mass production, achieved under the pressure of a sudden influx of orders from England and from our own armed services.

By March, 1941, this country will be producing annually 25,000 aircraft engines of at least 1000 horsepower each. In terms of air defense that means power for 12,500 bi-motored bombers, for 6250 of the big, four-motored long range bombers which are being delivered to the Army Air Corps by the Boeing factory here in Seattle, or for 25,000 single-seater fighting planes.

In practice, of course, the engines will be divided among the various types of planes which the army and the navy will specify for buttressing the national defense.

The achievement of the Wright Co., and of the Pratt & Whitney Aircraft division of the United Aircraft Corp., in meeting demands for engines—a high precision product—meant the cooperation of some 350 different companies.

TOOL MAKERS BUSY

Chief among them were the tool and die makers. The precision tool makers worked around the clock to have lathes, polishing equipment and grinding machines ready to move into factory additions when the walls were up and the roofs were on.

Ordinarily, nothing is duller to the layman than factory work, but now, of a sudden, the ingeniously fashioned pieces of metal rolling off the assembly lines of the aircraft engine factories have become of major importance. They constitute integral parts of our air defense establishment.

Planes, engines and men to fly and service them are the ingredients of America's expanded air defense.

If engines were a "possible bottleneck" in our air rearmament, as the treasury secretary said, they probably will continue to be a periodic bottleneck for all time to come. An official of an engine factory told me last week that plane manufacture, due to its relative simplicity, always could be boosted faster than engine production.

Aircraft engines, unlike automobile engines, are made to what shop foremen call "tolerances" of microthousands of an inch. It is possible at the Pratt & Whitney factory, at Hartford, Conn., for instance, to smooth a surface to a perfection of 1/40,000th of an inch.

PRECISION TO BE ASKED

Yet the automobile factories may be called upon to turn out such precision work. A Detroit factory is expected to experiment in the production of a Rolls-Royce 1000 horsepower liquid-cooled engine under license soon.

The Allison Engineering Co., of Indianapolis, a subsidiary of the General Motors Corp., is making an aircraft engine in, as yet, small quantities, to power one of the fastest types of American pursuits and an "interceptor" which is scheduled for shipment to the Allies.

Metalurgy, research in lubricating oils and gasolines, engineering and precision machining are responsible for today's high-power warplane motors. The same engine which a few years ago was producing 550 horsepower is today, with refinements, delivering 1300 horsepower.

While automobile motors weigh between six and seven pounds a horsepower, aircraft motors weigh slightly more than a pound, and an engine still on the government's "secret list" actually will produce a horsepower for every pound.

In use now are aircraft engines of 2200 horsepower, and in prospect in the next couple of years are engines of 3500 horsepower.

Aside from the Allison Co., two plants produce almost all the warplane engines made in the United States—those at Paterson and Hartford. And their crying need always has been men trained to do precision work.

EXPERIENCE VALUABLE

At Hartford the other day an applicant for a job was asked, "What can you do?"

"I polish metal," he responded.

"How long have you worked at it?"

"Three years."

"Sorry," was the rejoinder, "that isn't quite enough experience."

A man in his fifties who said he had been a metal polisher for 35 years, was hired instanter.

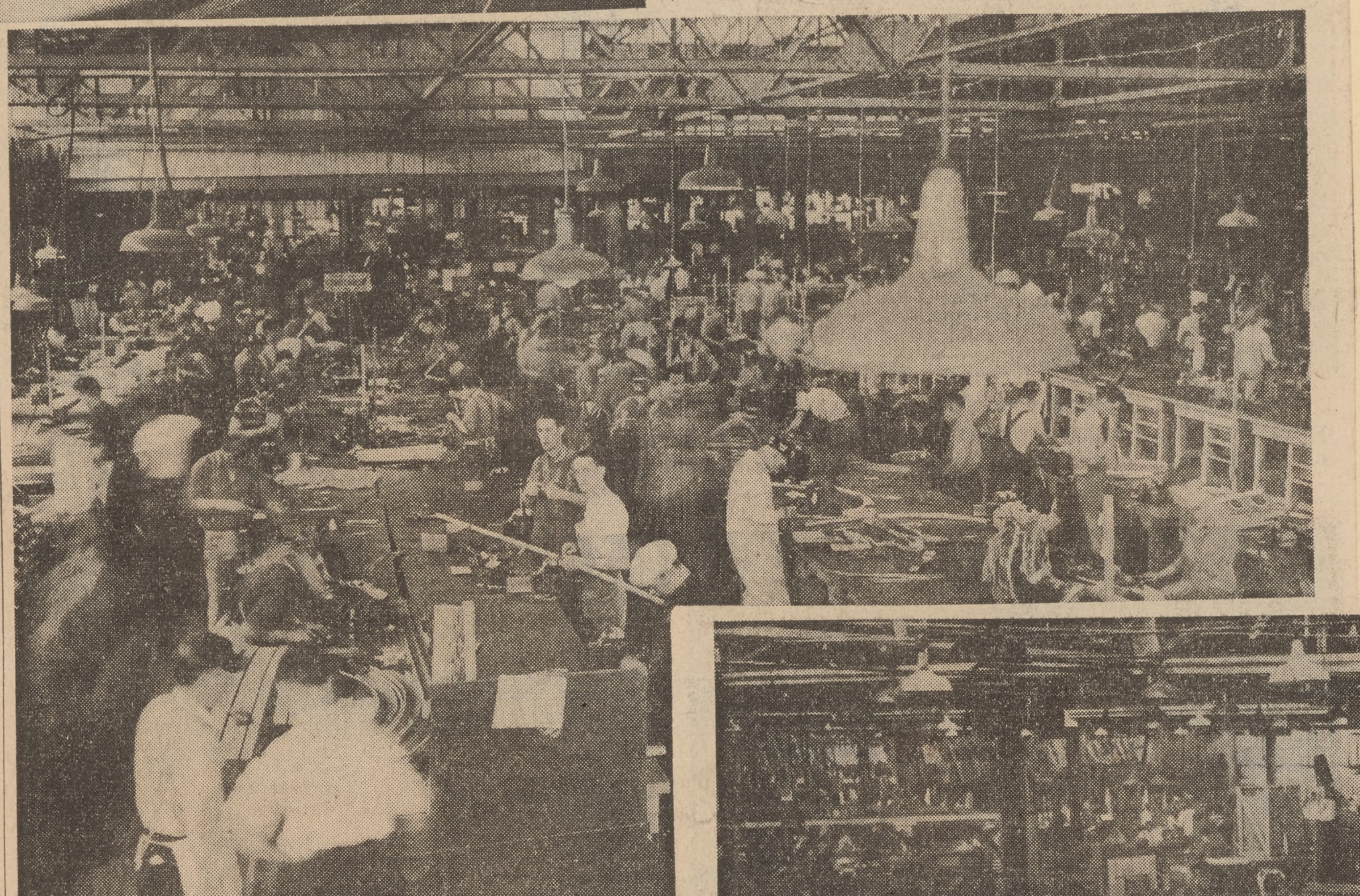
So fine is some of the work that diamond cutting heads are used on precision tools.

Connecting rods must weigh 1-100 of a pound of each other.

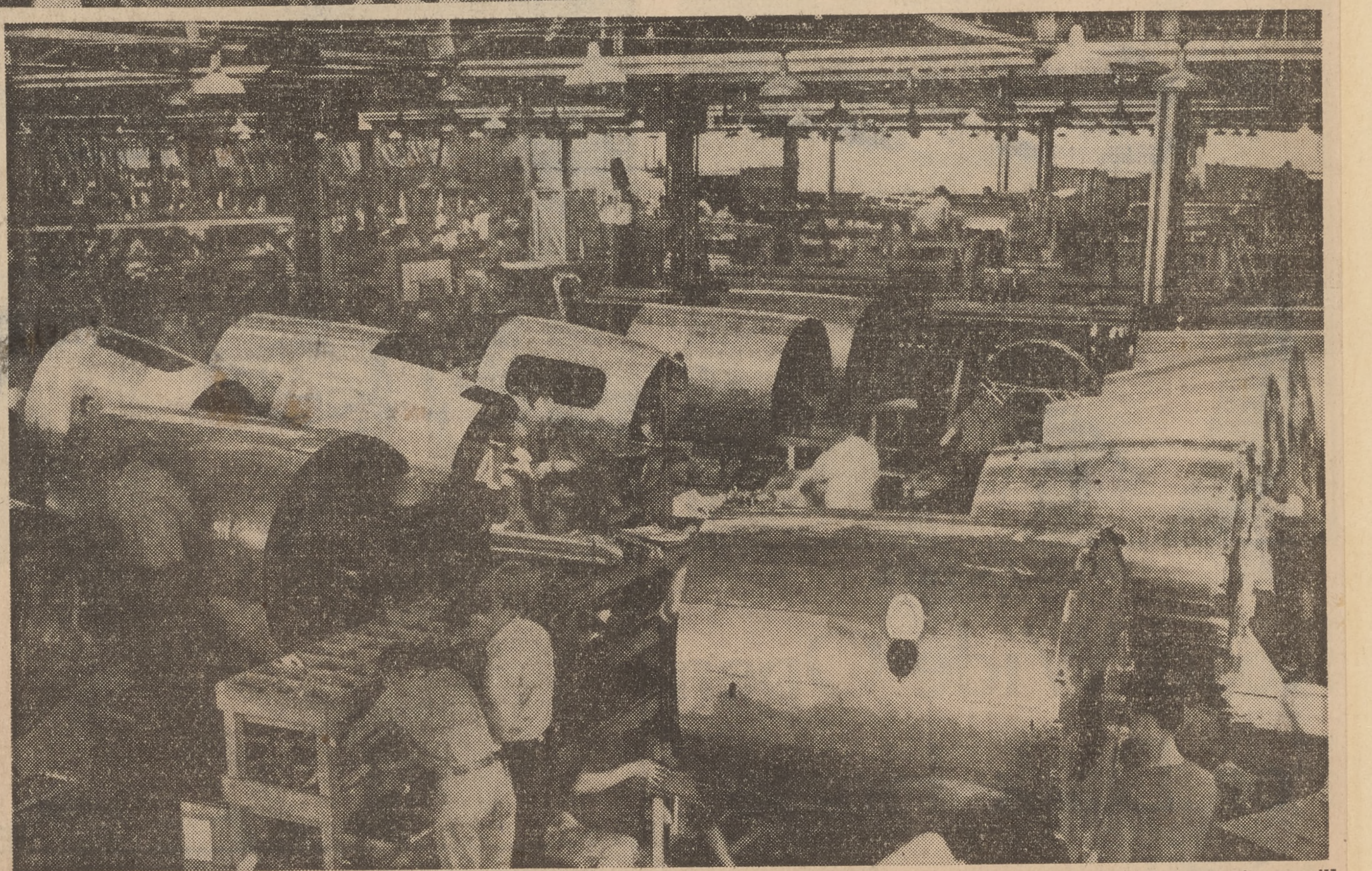
Steel cylinder barrels are put in an ammonia bath for 42 hours to harden them further for the punishing treatment they will receive in warplanes.

While American air transport companies run their engines between 400 and 500 hours—between 72,000 and 90,000 miles—before a major overhaul, on the European front repair work is much more frequent. The French have been reported to be using American engines 200 hours before overhaul.

Overhaul requires spare engines for installation in warplanes doing heavy duty work during an offensive, creating additional demands on the engine factories.



Workmen are busy in Boeing's Plant No. 1 at Seattle, Wash., turning out miscellaneous plane parts. Employment, already at a record 6700, will be increased when production starts on a new order of planes which probably will go to Britain. (A.P. photo.)



Here are engine mounts being turned out at increased speed in Boeing's Plant No. 1 at Seattle, as part of the U. S. defense program.

The newest model of the Boeing bomber for the U. S. army's use will be equipped with four 1100-horsepower motors. (A.P. photo.)

COAST PLANTS READY FOR 1000 PLANES A MONTH

UNION 6-4 40

San Diego and Los Angeles county plane factories could produce 1000 planes a month at present capacity and with expansion might double that output, an unofficial survey indicated yesterday, The Associated Press reported from Los Angeles.

"We are set to go whenever we get the orders," one plane company representative said.

Present production totals 600 planes a month, employing 40,000 workers. The San Diego manufacturers are Consolidated Aircraft Corp. and Ryan Aeronautical Co.

Spokesmen said the southern California companies are ready to increase production and expand whenever needed in connection with President Roosevelt's declaration in favor of war materials aid to the Allies.

Inspector at Consair

Lt. Comdr. Rhea S. Taylor, formerly on duty aboard the aircraft carrier Ranger, has succeeded Comdr. Roland G. Mayer as chief inspector of naval aircraft at Consolidated Aircraft Corp.

Mayer has resigned from the navy to accept the position of production manager and coordinator at Consolidated.

Taylor frequently has been stationed here with aircraft squadrons of the battle and scouting forces.

THE SAN DIEGO UNION: SUNDAY MORNING, MAY 26, 1940

U. S. Faces Production Problems In Expansion of Aircraft Industry

Output to Exceed Capacity of German Factories

By DEVON FRANCIS
Associated Press Aviation Editor

BALTIMORE, May 25—An American aircraft manufacturer, visiting the German air ministry's imposing edifice in Berln last year, asked an official, "what happed to that big, four-engined plane you had in the blueprint stage a few months ago?"

"Oh, that," responded the German. "We built it and discarded it. It wasn't quite what we wanted for production purposes"

In a brief seven months, under totalitarian methods, the Germans had drawn the plans for, built and junked a mammoth war machine. That provides another piece of evidence on the smooth efficiency with which Germany has worked in shaping to the needs of war a highly specialized industry.

SAN DIEGO HOLDS RECORD

The same problems in quick expansion, eingineering and production now face the United States in meeting the demands of the armed services for fresh thousands of warplanes. Turning out 50,000 machines, and boosting American productivity to that figure annually, is a precision job on a mass-production framework.

Up to now the best American plants have done is plan and manufacture a plane in 10 months. That was the time required for a twin-engine flying boat of sensational performance. As a private project of the Consolidated Aircraft Corp., San Diego, it suffered from none of the delays caused by the demands of buyers for changes.

Ordinarily 20 months elapse here between the time a design is drawn and the first plane of a series, or "prototype," rolls out of the factory for flight testing.

As American factories acquire more floor space and install more machinery to which engineers can look for fast fabrication of parts, that time will be reduced. A fast growing industry only now is finding short cuts in turning out its manifold products.

More floor space, more machinery, more engineers and more skilled and semi-skilled plant workmen—these are the elements which will determine the speed with which America can reach for and attain greater productivity for the national defense.

WORKERS BEING TRAINED

Trained workers are not an immediate problem.

The plants themselves have been tutoring men for new jobs as backlogs have shot into the hundreds of millions of dollars Greater producition, moreover, has so altered manufacturing methods that thousands of skilled jobs are now only semi-skilled.

An expansion of training for men doing semi-skilled work probably will become necessary.

Here in Baltimore, on an estuary of Chesapeake bay, one of the "big four" of American aviation's pioneers, Glenn L. Martin, has demonstrated how sharp increases in plane production can be achieved.

In exactly 11 weeks, in 1939, Martin, the builder of flying boats which for years have been flying the Pacific, doubled the size of his factory. During those 11 weeks he began moving in a million dollars worth of new tools and equipment. Production on the new floor space actually was under way before the brick and mortar work was done.

ASSEMBLY 900 FEET LONG

A good many of the 46 plane plants and 13 aircraft engine plants with their 70,000 employes which make up the American aircraft industry have instituted similar training programs. The big engine factories, particularly the Wright Aeronautical Co., at Paterson, N. J., and the Pratt & Whitney division of the United Aircraft Corp., at Hartford, Conn., have had to inaugurate employe training programs of a special nature because engines require especially fine workship

The Douglas Aircraft Co., at Santa Monica, Calif., and the Lockheed Aircraft Co., at Burbank, have training schools which assure them a steady flow of skilled and semi-skilled workmen.

All the manufacturing processes are rigidly scheduled. A stop-watch is held on the flow of materials, the feeding of parts to the sub-assembly, the movement of the production line and final assembly.

From outside the factory are coming instruments, armament, landing gear, engines and propellers. Scores of other industries enter into the construction of the plane.

Assembly lines—one of them is 900 feet long—resemble those in automobile factories. Planes do not move on power-driven conveyors at set speeds, but they do move, growing from minor assemblies into larger ones, into the skeleton center-sections, tails and noses, into metal "skins" and finally to the installation of engines.

Last year the American aircraft industry produced only 5500 planes of all types, including 3000 so-called "light-planes" for the private pilot. Warplanes totaled less than 2000. To achieve a production of 50,000 planes a year, it is estimated that about 300,000 persons must be on the payroll of the aircraft, aircraft engine and such intimately related industries as those producing aluminum sheets, tubing and instruments

That compares with a little less than 600,000 persons employed in making automobiles, trucks and parts and refining and marketing petroleum products.

The aircraft industry's investment of $750,000,000 probably will be doubled.

A record for successful plane building was made at the Consolidated plant when this four-motored army bomber took the air less than nine months from the time it was conceived by engineers.

* * *

Plane Building Fastest Here

San Diego plane builders are in a position to turn out huge new planes faster than any other plant in the world, despite reports of German superiority along these lines.

This word came from Consolidated Aircraft Corp., world's largest builder of flying boats, but which now has re-entered the landplane field.

A Consolidated official was told about the German four-motored plane which was designed, built and junked in seven months.

He replied that the great XB-24—four-motored army bomber—was designed, built and flown in less than nine months after the government awarded the experimental contract.

"And we didn't have to junk it like the Germans did their seven-month plane," he noted.

Before the less-than-nine-months bomber, the fastest time attained by Consolidated in building a new type was the 10 months it took to engineer and complete its sensational two-engined flying boat. But this was not under the speed-up that comes when preparedness for national defense becomes a factor.

Neither was the army bomber exactly a speed-up proposition Because of this, plant officials believe they beat the nine-month time appreciably in getting big, new models ready for the production line.

The big San Diego plant, now virtually being doubled in size to handle a tremendous flow of orders, has had plenty of experience in building big ships and is able to use this knowledge on the job of getting America's air armada ready.

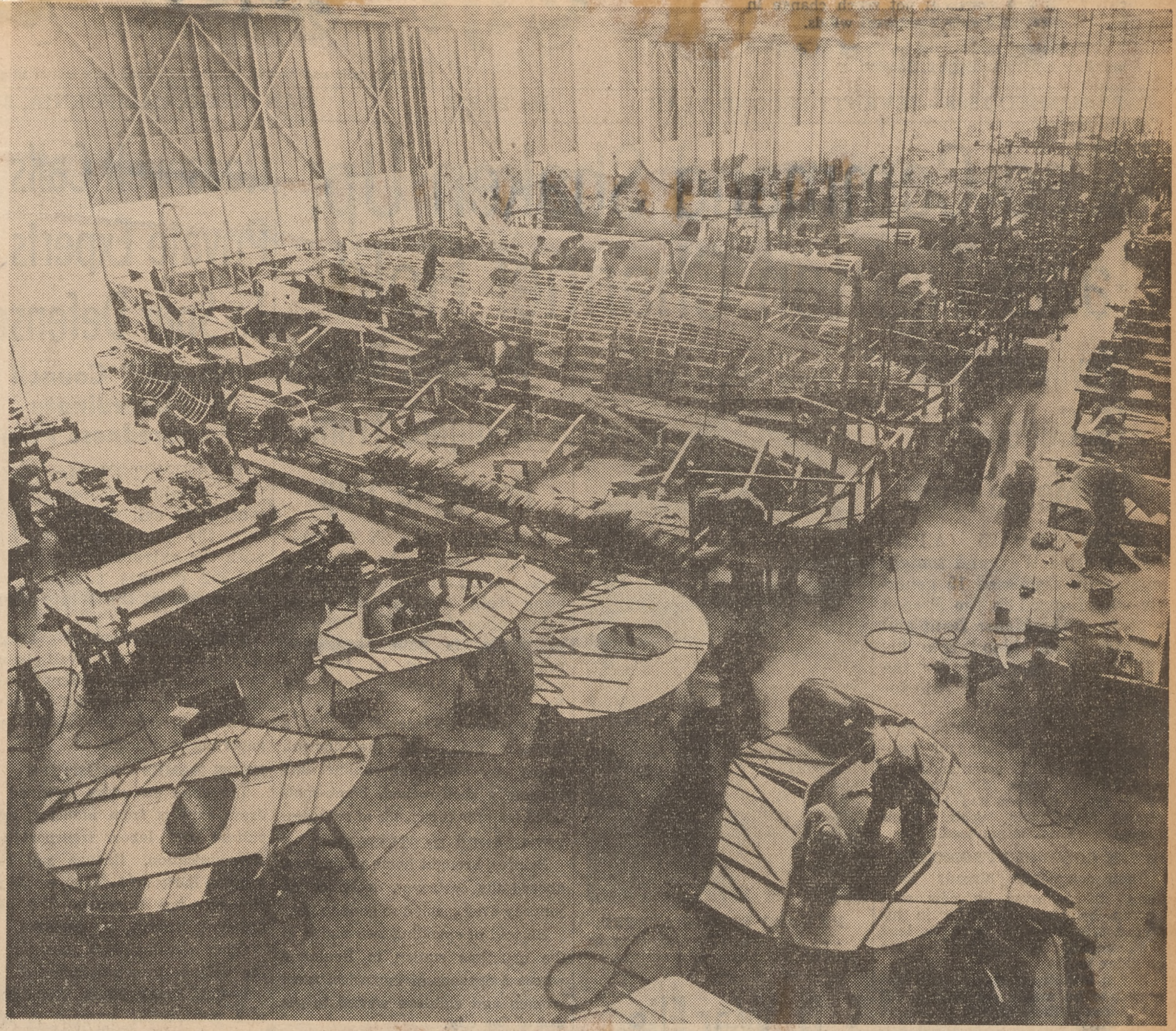
STILL BEING TESTED

The new army bomber, which, according to reports, is the first of a fleet of that type, has been undergoing tests for some time. It was first shown to the public on Army day, April 6. Powered with four 14-cylinder engines rated at 1200 horsepower each, it is said to have a speed in excess of 300 miles an hour, a range of 3000 miles with bomb-carrying capacity of four tons. Its gross weight is around 20 tons, with a wing span of 110 feet and length of 64 feet. The crew will range from to six to nine depending on the mission being flown. It has windows and hatches in the nose, tail, turtledeck, back and bottom.

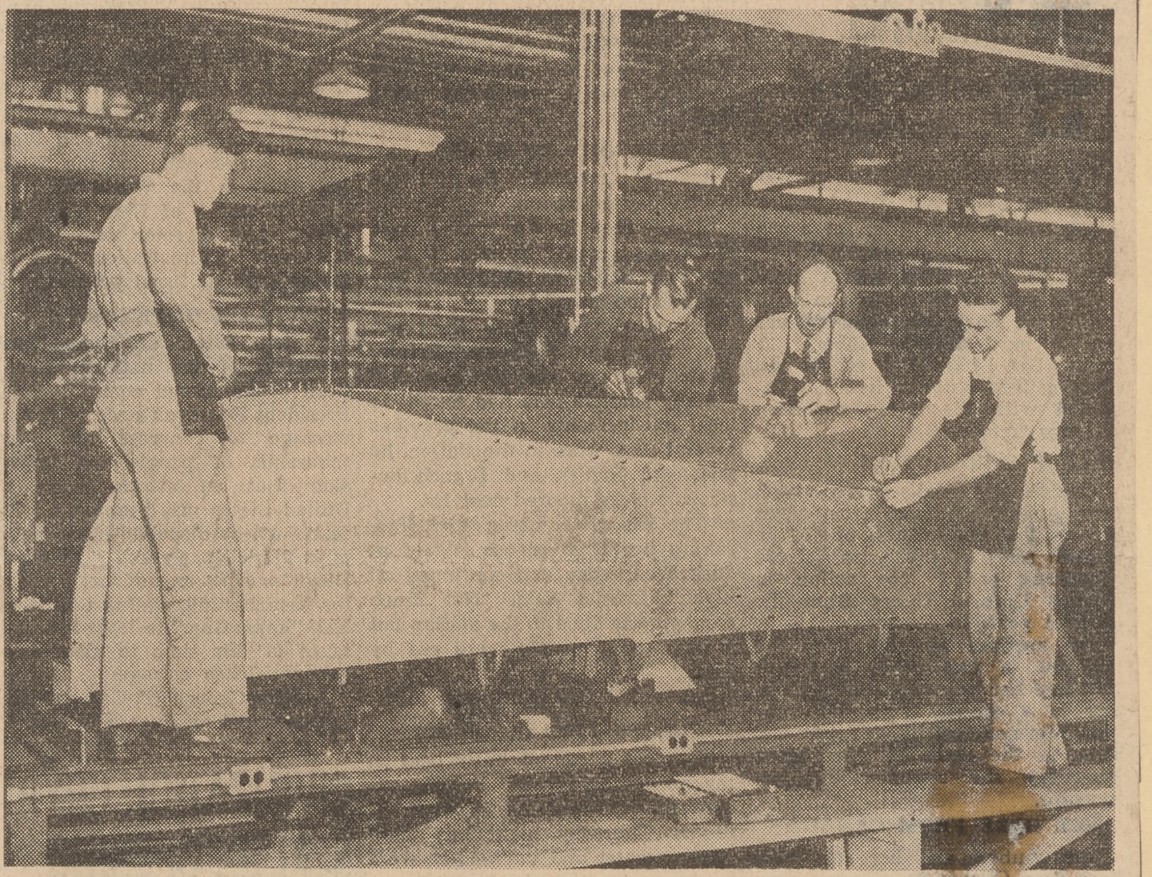
No one says anything about these hatches and windows, but it was said they might be used as ports through which gunners could beat off attacks from all directions.

San Diego men rush America's air armament. Here they are working on a tank that forms part of engine nacelle on huge warcraft.

CONSAIR CLAIMS WORLD RECORD FOR SPEED IN WARPLANE CONSTRUCTION



A section of Consolidated's assembly line where the nevy's aerial dreadnaughts are being built. Hulls are seen in various stages of construction. In the foreground bulkheads or formers are being made for another bomber that soon will start down the assembly line.



This might be called a "skin game" as workmen put the metal skin on a wing float that must be strong enough to take the battering of high-speed landings on rough waters of the sea lanes.

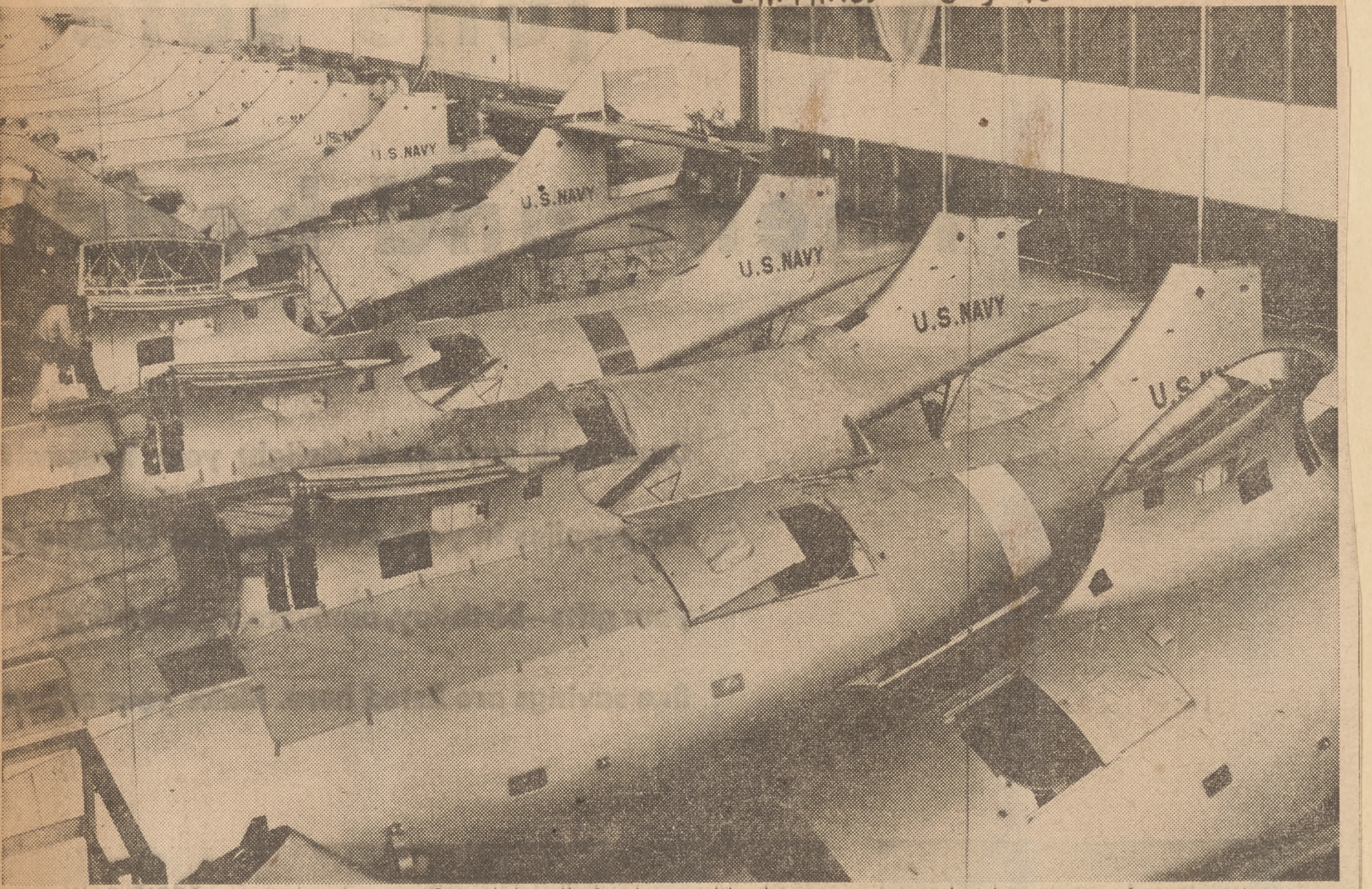
New Aircraft Inspector

Capt. S. J. Zeigler, formerly attached to the staff of Vice Adm. Charles A. Blakely, commander battle force aircraft, has reported for duty as inspector general of naval aircraft for the western district with additional duty as naval aircraft inspector at Consolidated Aircraft Corp.

Lt. Comdr. Rhea Taylor, who has been acting navy inspector at Consair, will be assistant to Capt. Ziegler. UNION- 6-15-40

Huge Aircraft Plant at San Diego Speeds Up Production of Fighting Planes Amid $2,000,000 Expansion Program

L.A. TIMES — 6-3-40



WAR BIRDS—Huge bombers in Consolidated's final assembly shops are pictured in last stages of construction.

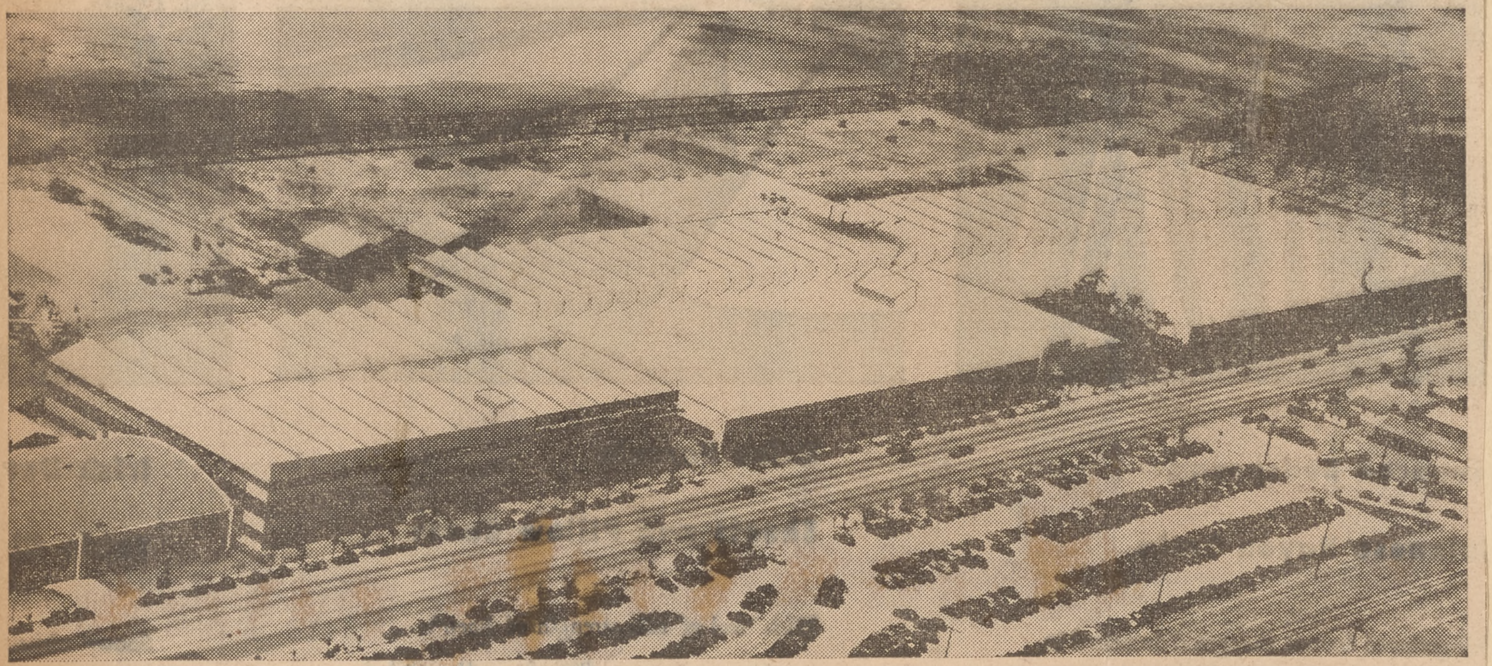
SAN DIEGO, June 2.—Within two months Consolidated Aircraft Corp., San Diego's major industry will boast the largest integrated plane factory in America, company officials disclosed today.

In a single enclosed area by Aug. 1 will be 1,910,000 square feet of airport land under operation for further expansion, Maj. Reuben H. Fleet announced as top speed was ordered in completion of a 90 per cent addition to the plant, at a cost of $2,000,000.

Then the great factory, a key unit in national defense plans, will be able to operate full blast in producing hundreds of Army and Navy bombers—not only for this country but for the Allies. Unfilled orders total $70,000,000 and the concern's vaulting pay roll has just passed the 6000 mark, with the 10,000 figure due to be reached by the end of this year.

Consolidated, established 17 years ago in the East, moved to San Diego from Buffalo, N.Y., in 1935 and since has become the world's largest manufacturer of flying boats.

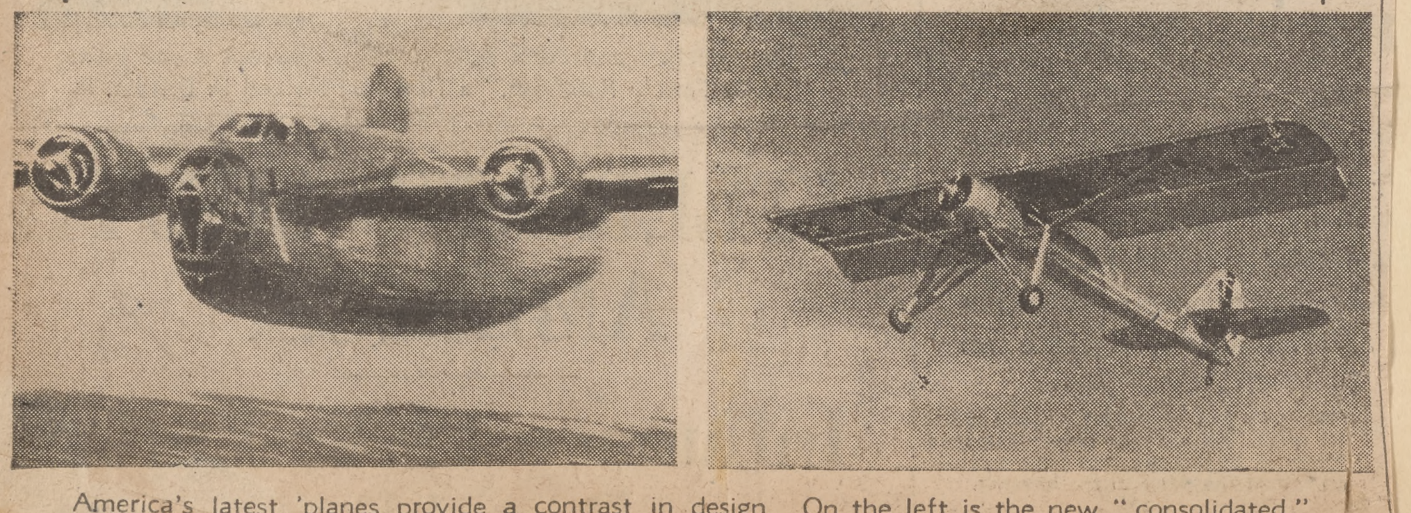
Its latest product, a 20-ton four-engined Army bomber capable of flying more than 300 miles an hour, has a range of 3000 miles and a bomb-carrying capacity of four tons. Approximately 100 of these, known as the "Liberator" type, have been ordered by Allies.



GROWING—Consolidated's improved workshops shown in air photo, with new buildings being added at right.

Glascow Evening Times — 16 March 1940

America's Latest 'Planes



America's latest 'planes provide a contrast in design. On the left is the new "consolidated" bomber, capable of carrying four tons of bombs and of a huge range, and on the right is the "Dragon-Fly" 'plane, which can hang motionless in the air and then dart off at great speed.

Taylor Chosen As Successor Of Mayer

6/11/40 UNION

Comdr. Roland G. Mayer, who officially retires from the navy July 1 to become production manager and coordinator for Consolidated Aircraft Corp., succeeding the late Comdr. Donald M. Carpenter, is being relieved as chief inspector of naval aircraft for San Diego by Lt. Comdr. Rhea S. Taylor, who comes here from duty aboard the airplane carrier Ranger, now in east coast waters, according to report at the Consolidated plant.

Mayer, who joined the navy in 1918, holds licenses as both a pilot of heavier-than-air and lighter-than air craft, with a high record for hours of flight in lighter-than-air craft. He saw duty in the dirigibles Shenandoah, Akron, Macon and Los Angeles, and survived the crash of the Shenandoah.

Taylor was born in Oakland in 1891. He enlisted during the war and attended the ground school aviation course at M.I.T., following this with preliminary flight training at Key West and Miami and advanced training at Pensacola. He received his commission in the naval reserve Oct. 23, 1918, and during the next year instructed in the handling of big airboats.

Taylor saw service with the first shipboard plane operations on battleships before the use of catapults, and had charge of overhaul and reconditioning of planes which were used in taking off from the battleships on a specially-constructed 60-foot runway built atop the battleship turrets.

After serving with the first battleship squadron on the west coast, Taylor from 1922 to 1935 served successively with observation, fighter, patrol boats, cruiser scouting planes and carrier scouting planes at San Diego and Pearl Harbor. Then for three years he was inspector of naval aircraft at Pratt-Whitney and Hamilton Standard Propeller division of United Aircraft at East Hartford, from where he went to duty aboard the Ranger.

Consolidated Air

Romeike & Curtice Ltd.

Telephone
CENTRAL 2781
(2 Lines)

35, Shoe Lane.
LONDON.
E.C.4.

EXTRACT FROM

Aeroplane

Date 5 APR 1940

Consolidated Vice-President

MR. H. E. WEIHMILLER, Vice-President of the Consolidated Aircraft Corporation, has resigned. Before becoming a Vice-President in December, 1937, he was in charge of Consolidated's Washington office.

ROMEIKE & CURTICE LTD.

The Press Clipping Bureau

Consolidated Air

35 Shoe Lane
LONDON, E.C.4

Telephone: Central 2781

EXTRACT FROM

FLIGHT

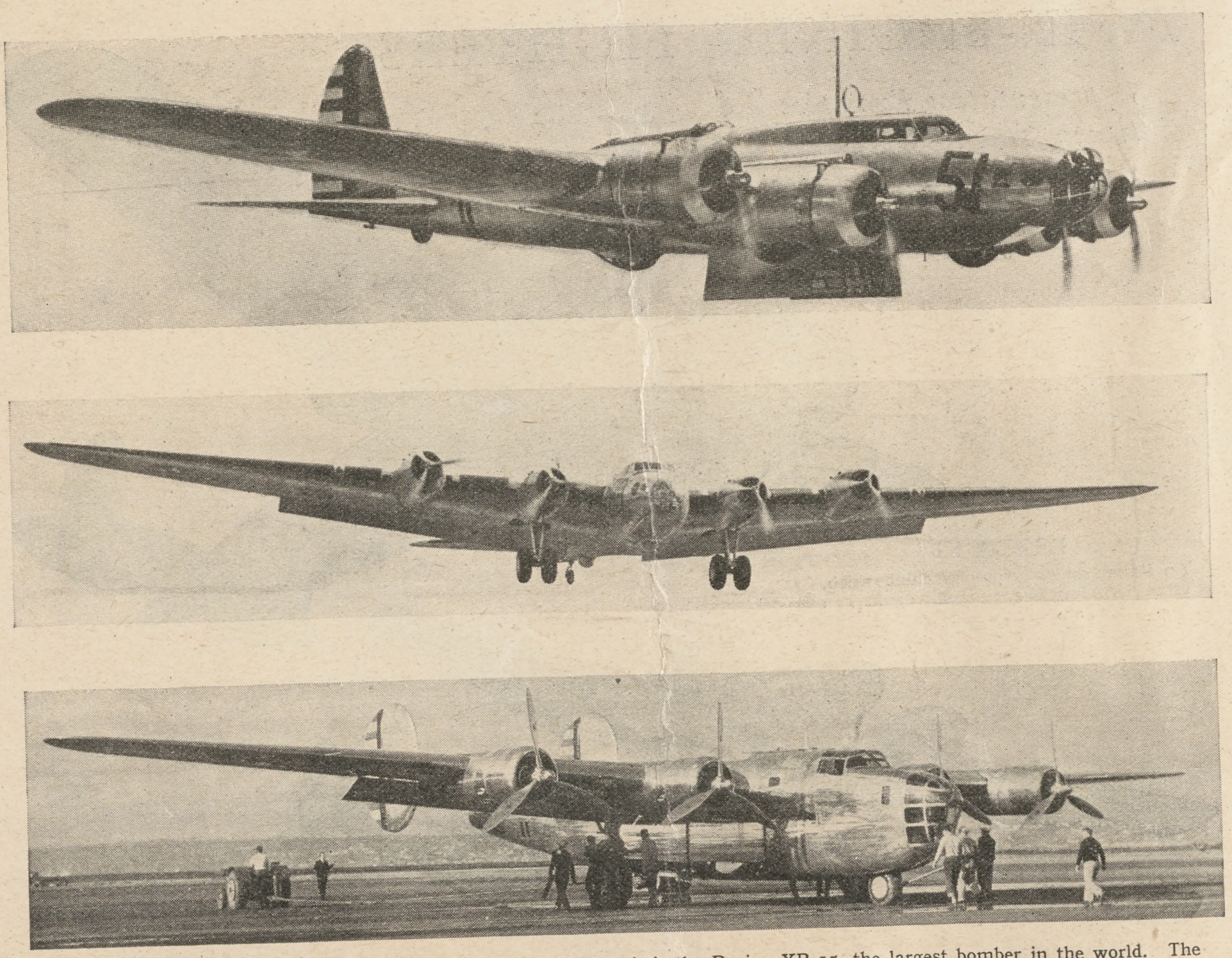
The First Aero Weekly in the World

EVERY THURSDAY 6d.

Flight Publishing Co. Ltd.
Dorset House, Stamford Street, London, S.E.1

DATE 14 MAR 1940

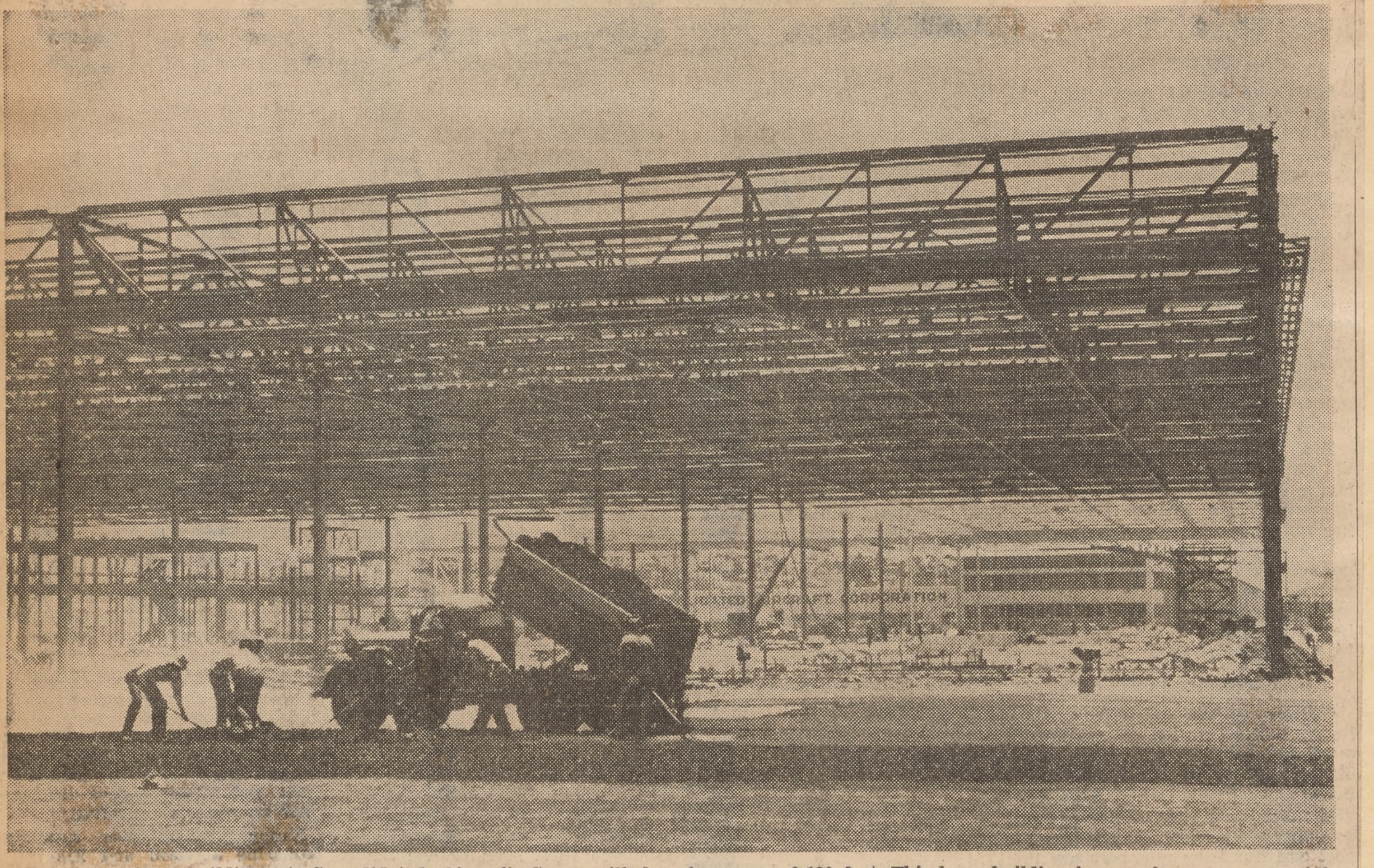
MARCH 14, 1940 FLIGHT 233



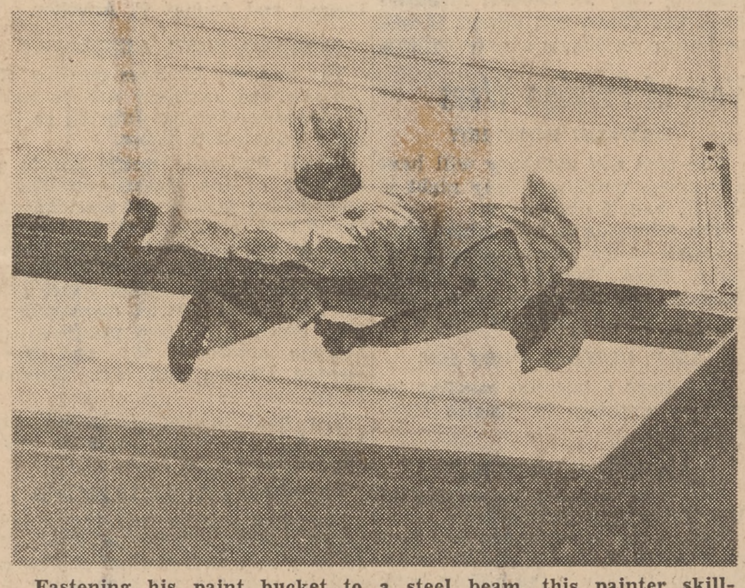
The Boeing B-17 (top) is shown with bomb traps open. Below it is the Boeing XB-15, the largest bomber in the world. The machine with the tricycle undercarriage is the new Consolidated bomber which is claimed to have a wing of exceptional efficiency.

SAN DIEGO, CALIFORNIA, SUNDAY MORNING, JULY 7, 1940

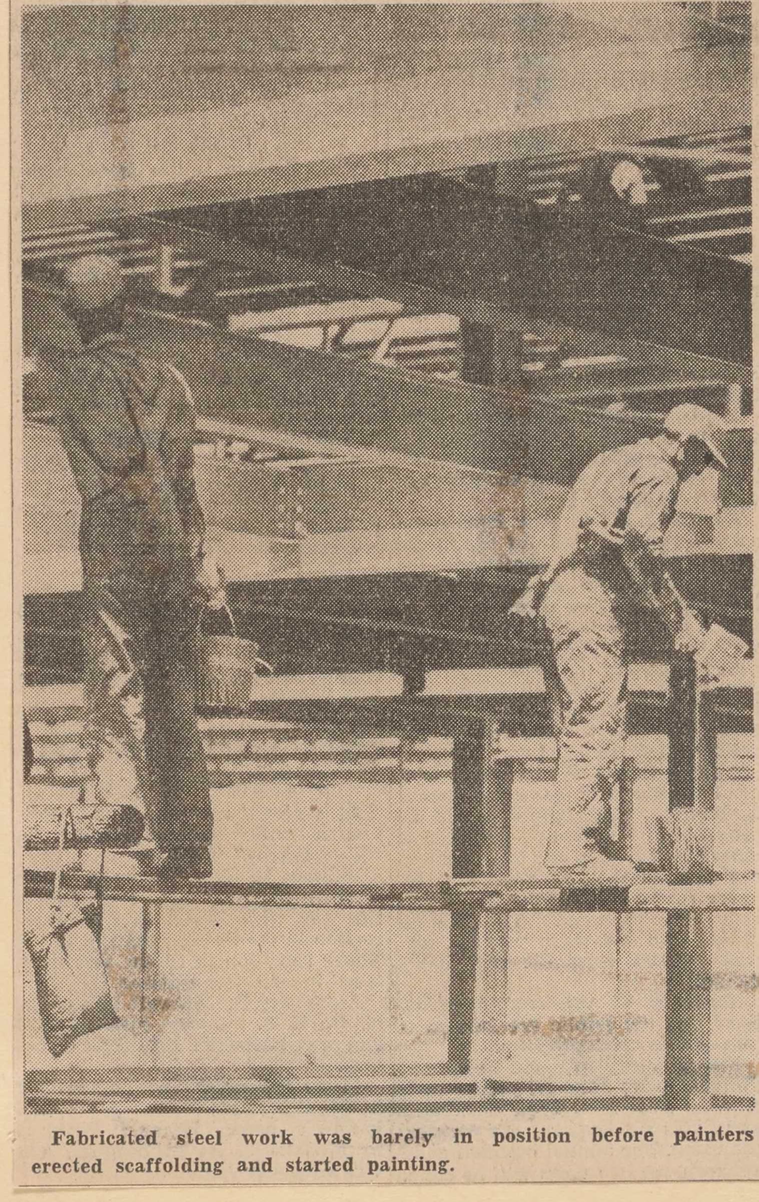
PLANT TO EMPLOY 10,000 WHEN ADDITIONS FINISHED



Final assembly building at Consolidated Aircraft Corp. will be 700 feet long and capable of handling aircraft with a wing spread in excess of 120 feet. This huge building is one of seven now rapidly nearing completion.



Fastening his paint bucket to a steel beam, this painter skillfully balances and plies his brush on the new construction.



Fabricated steel work was barely in position before painters erected scaffolding and started painting.

They still use Dobbin in modern construction work. A horse-drawn scraper is used to clean away the tidelands preliminary to laying of the cement floor on the huge final assembly plant.

* * *

CONSAIR PERSONNEL REACHES ALL-TIME RECORD OF 7560

Consolidated Aircraft Corp. attained an all-time employment high yesterday when the total number of men and women employed was 7560. Donald Frye, personnel director, said employes are being added at the rate of 75 a day.

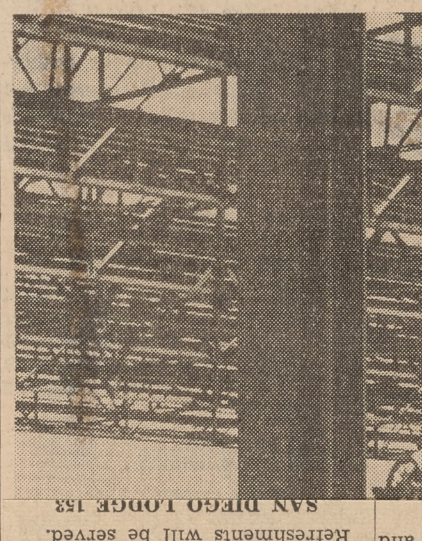
The peak of 10,000 is expected to be attained Aug. 1 when the company's $2,000,000 expansion program of the company's present backlog and number of employes with operations at Buffalo. The total floor space at Buffalo was less than 200,000 square feet, while the plant today occupies 1,910,000 square feet of covered and uncovered manufacturing space with an additional 954,440 square feet of municipal airport property under option.

The backlog including new contracts expected to be received this month will amount to $120,000,000. Heretofore the largest number of employes was 4300.

In the last 17 years Consair planes have been sold to Brazil, Siam, Peru, Argentina, Mexico, Cuba, Canada, Colombia, China, Portugal, Turkey, Rumania, England and France. The bulk of the present contracts are for long-range bombers for the U. S. army and navy and for the British Royal air force.

following officers to assist her: Edith Wilson, R.S.N.G.; Levina Pitts, L.S.N.G.; Gladys Phares, warden; Olive Shorts, conductor; Esther Aust, inside guardian; Walter Kelley, outside guardian; Harriet Young, chaplain; Bernice Schultz, musician. The vice grand appointed as her right and left supporters, Marie Snell and Birdie Romero, respectively.

India Link, junior past noble grand, was presented with her jewel by Florence Cunningham. Bessie



talks, musical numbers and vaudeville acts. Bert McLees will be master of ceremonies; Edward J. Kelley, general chairman, and Tom Sexton, vice chairman. Other committeemen are: Arthur L. Mundo, Gordon Thompson, Laurence Turrentine, Robert B. Burch, W. C. Heller, Harry C. Warner, Sam Claggett, Ernie Dort, Crowell D. Eddy, Roger N. Howe, Seymour Wurfel, Chester Gunn, Thomas Haffey, Howard Jopling, George Heston, Bert Strand, John Grueble and John Greer.

Harmony hall, 840 Fifth ave.

Odd Fellows

CENTENNIAL ENCAMPMENT 58

Wednesday at 8 p.m., Thomas J. Croom, D.D.G.P. will install the following officers at I.O.O.F. hall, 526 Market st.: J. W. Jobes, C. P., W. L. Hales, S. W., T. J. Croom, H. P. Lee Brent, J. W., G. C. Wininger, scribe, H. S. Moore, treasurer.

A delegation from Olive Branch No. 9, Escondido, is expected. Refreshments will be served.

SAN DIEGO LODGE 153

Consolidated Air

ROMEIK

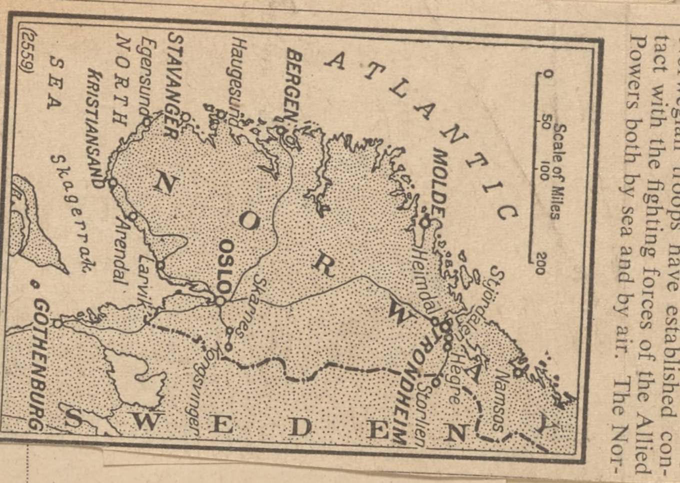
35, S

THE PR

THE

Date..........

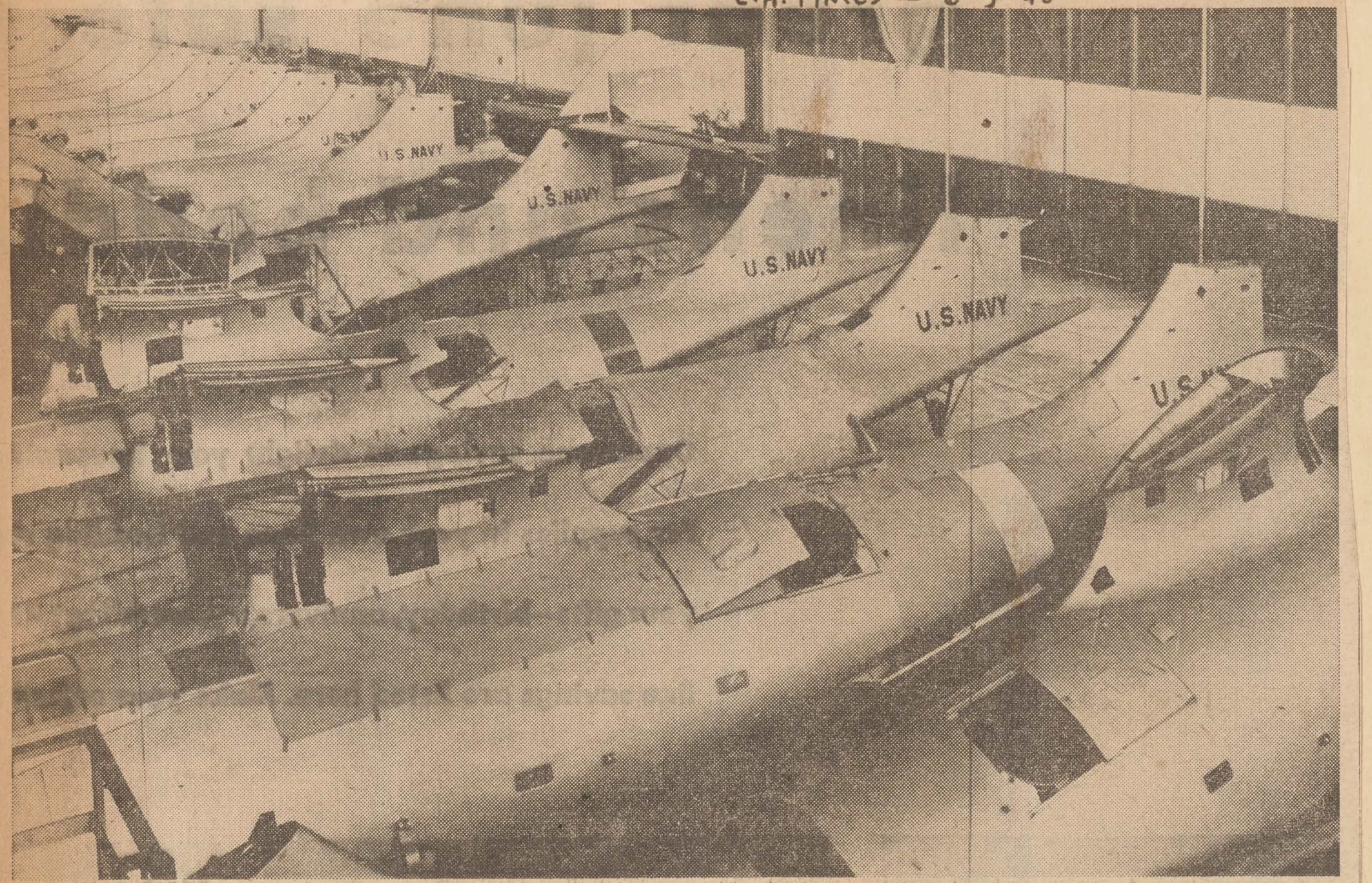
wegian Army Command reports that th first liaison officers have already taken u their places at Norwegian headquarters. German troops are still arriving in th Trondheim sector by air. Fighting in thi area is widely spread, the German Com mander, Colonel Weiss, directing his me north, south, and inland to meet the Allie forces. Namsos, the terminus of the new railway, 100 miles north of Trondheim, i to-day probably the most importan strategical point on the Norwegian wes coast. Empty trains have been waiting a Trondheim station since Sunday for th transport of troops to the north, bu apparently Colonel Weiss has not got th number of men which was promised him.



can be held by the Norwegian troops, and that their situation is gradually improving. Norwegian troops have established contact with the fighting forces of the Allied Powers both by sea and by air. The Nor-

Huge Aircraft Plant at San Diego Speeds Up Production of Fighting Planes Amid $2,000,000 Expansion Program

L.A. TIMES — 6-3-40



WAR BIRDS—Huge bombers in Consolidated's final assembly shops are pictured in last stages of construction.

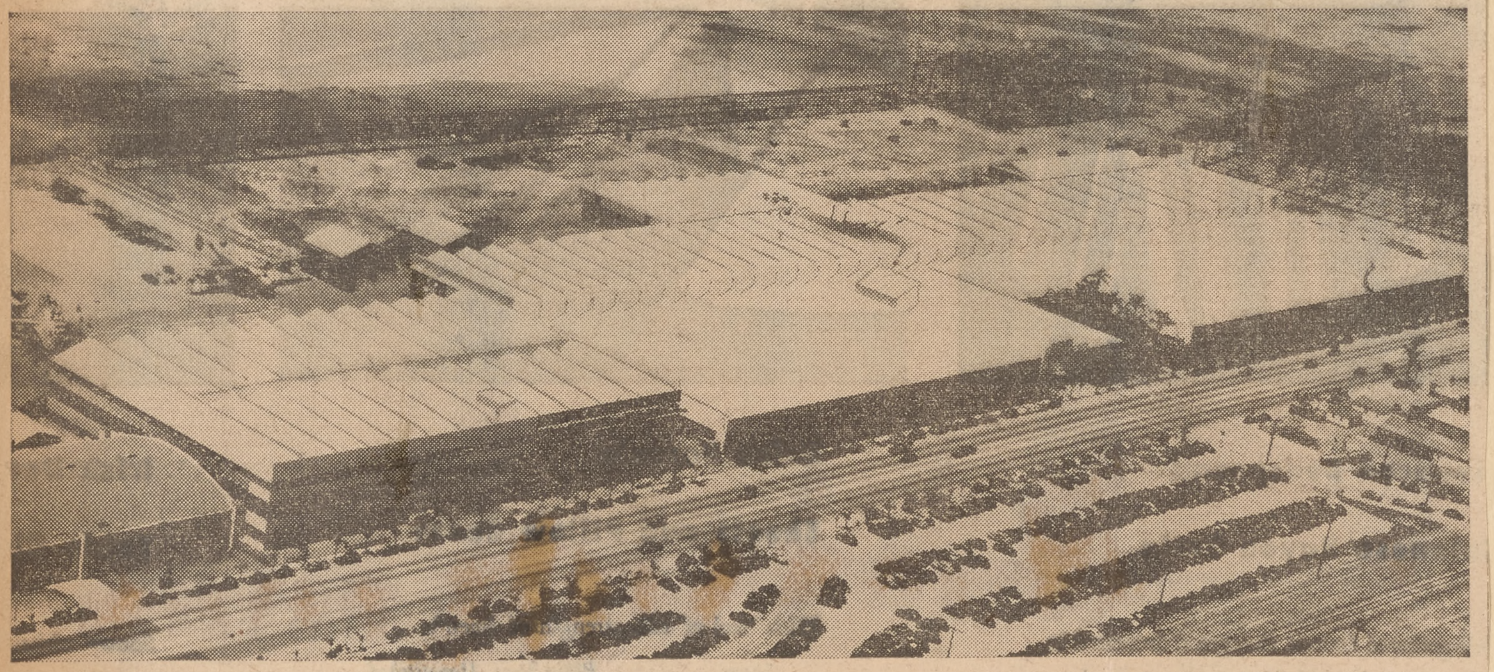
SAN DIEGO, June 2.—Within two months Consolidated Aircraft Corp., San Diego's major industry will boast the largest integrated plane factory in America, company officials disclosed today.

In a single enclosed area by Aug. 1 will be 1,910,000 square feet of airport land under operation for further expansion, Maj. Reuben H. Fleet announced as top speed was ordered in completion of a 90 per cent addition to the plant, at a cost of $2,000,000.

Then the great factory, a key unit in national defense plans, will be able to operate full blast in producing hundreds of Army and Navy bombers—not only for this country but for the Allies. Unfilled orders total $70,000,000 and the concern's vaulting pay roll has just passed the 6000 mark, with the 10,000 figure due to be reached by the end of this year.

Consolidated, established 17 years ago in the East, moved to San Diego from Buffalo, N.Y., in 1935 and since has become the world's largest manufacturer of flying boats.

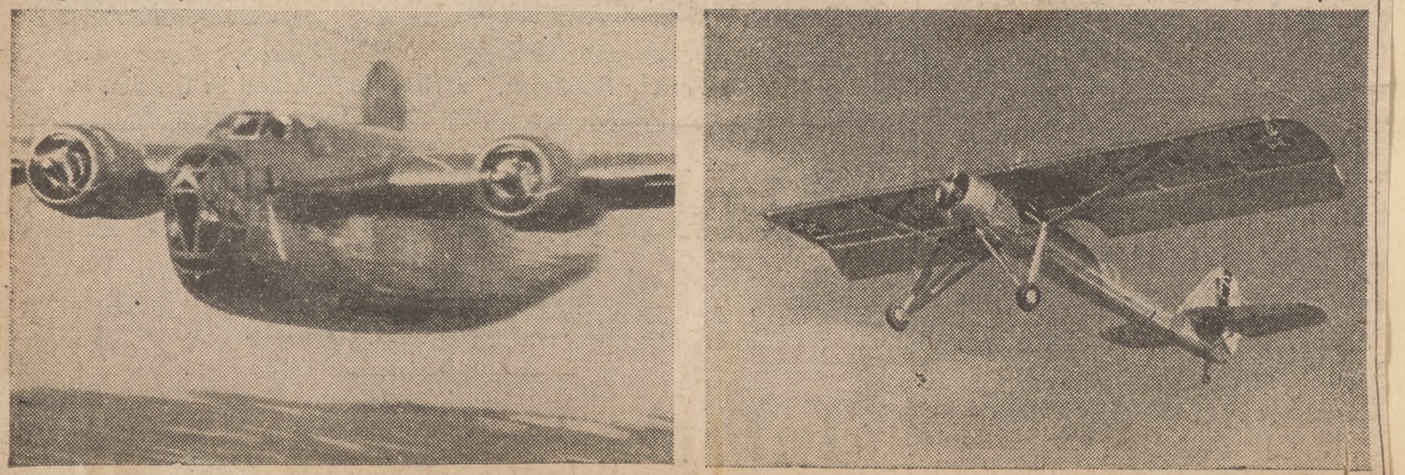
Its latest product, a 20-ton four-engined Army bomber capable of flying more than 300 miles an hour, has a range of 3000 miles and a bomb-carrying capacity of four tons. Approximately 100 of these, known as the "Liberator" type, have been ordered by Allies.



GROWING—Consolidated's improved workshops shown in air photo, with new buildings being added at right.

Glascow Evening Times — 16 March 1940

America's Latest 'Planes



America's latest 'planes provide a contrast in design. On the left is the new "consolidated" bomber, capable of carrying four tons of bombs and of a huge range, and on the right is the "Dragon-Fly" 'plane, which can hang motionless in the air and then dart off at great speed.

Taylor Chosen As Successor Of Mayer

6/11/40 UNION

Comdr. Roland G. Mayer, who officially retires from the navy July 1 to become production manager and coordinator for Consolidated Aircraft Corp., succeeding the late Comdr. Donald M. Carpenter, is being relieved as chief inspector of naval aircraft for San Diego by Lt. Comdr. Rhea S. Taylor, who comes here from duty aboard the airplane carrier Ranger, now in east coast waters, according to report at the Consolidated plant.

Mayer, who joined the navy in 1918, holds licenses as both a pilot of heavier-than-air and lighter-than air craft, with a high record for hours of flight in lighter-than-air craft. He saw duty in the dirigibles Shenandoah, Akron, Macon and Los Angeles, and survived the crash of the Shenandoah.

Taylor was born in Oakland in 1891. He enlisted during the war and attended the ground school aviation course at M.I.T., following this with preliminary flight training at Key West and Miami and advanced training at Pensacola. He received his commission in the naval reserve Oct. 23, 1918, and during the next year instructed in the handling of big airboats.

Taylor saw service with the first shipboard plane operations on battleships before the use of catapults, and had charge of overhaul and reconditioning of planes which were used in taking off from the battleships on a specially-constructed 60-foot runway built atop the battleship turrets.

After serving with the first battleship squadron on the west coast, Taylor from 1922 to 1935 served successively with observation, fighter, patrol boats, cruiser scouting planes and carrier scouting planes at San Diego and Pearl Harbor. Then for three years he was inspector of naval aircraft at Pratt-Whitney and Hamilton Standard Propeller division of United Aircraft at East Hartford, from where he went to duty aboard the Ranger.

Consolidated Air

Romeike & Curtice Ltd

Telephone
CENTRAL 2781
(2 Lines.)

R&C

35. Shoe Lane.
LONDON.
E.C.4.

EXTRACT FROM

Aeroplane

Date 15 APR 1940

Consolidated Vice-President

MR. H. E. WEIHMILLER, Vice-President of the Consolidated Aircraft Corporation, has resigned. Before becoming a Vice-President in December, 1937, he was in charge of Consolidated's Washington office.

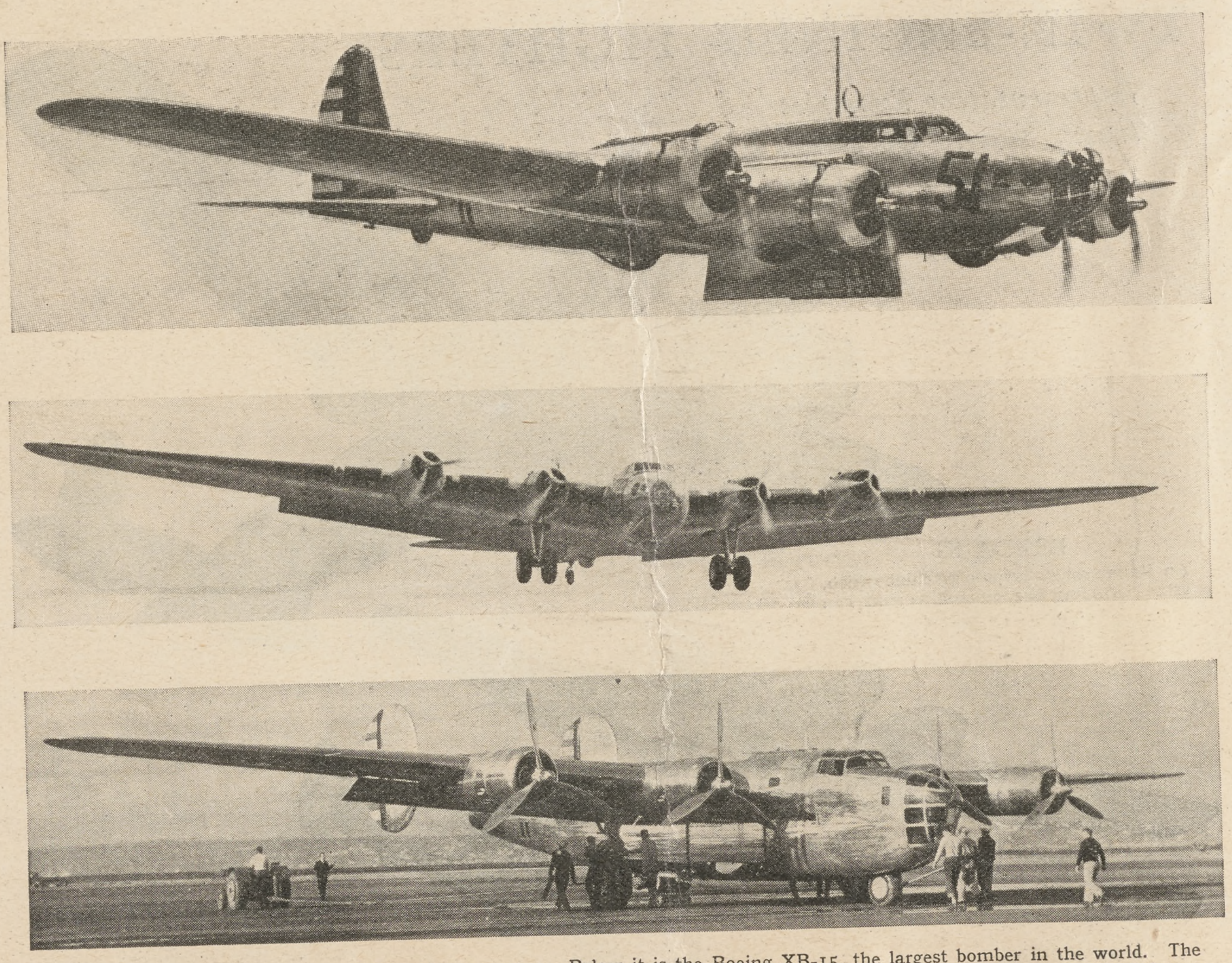
ROMEIKE & CURTICE LTD.
The Press Clipping Bureau
35 Shoe Lane
LONDON, E.C.4
Telephone: Central 2781

Consolidated air

EXTRACT FROM

FLIGHT
The First Aero Weekly in the World
EVERY THURSDAY 6d.
Flight Publishing Co. Ltd.
Dorset House, Stamford Street, London, S.E.1

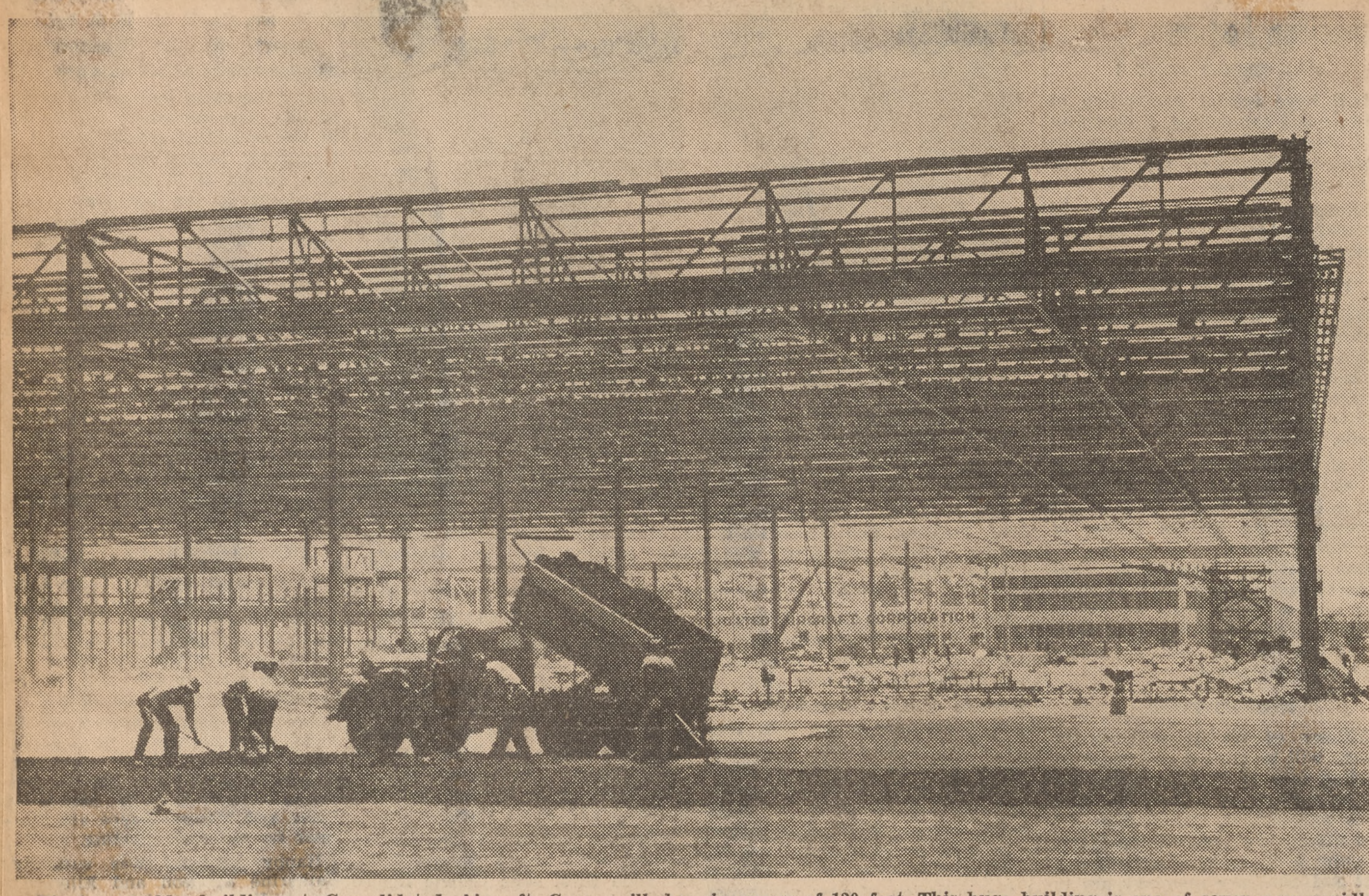
DATE 14 MAR 1940



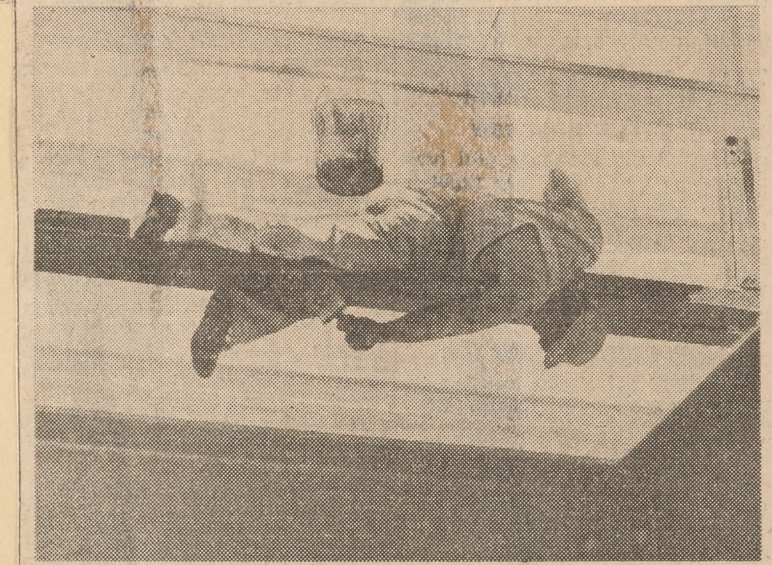
The Boeing B-17 (top) is shown with bomb traps open. Below it is the Boeing XB-15, the largest bomber in the world. The machine with the tricycle undercarriage is the new Consolidated bomber which is claimed to have a wing of exceptional efficiency.

* SAN DIEGO, CALIFORNIA, SUNDAY MORNING, JULY 7, 1940

PLANT TO EMPLOY 10,000 WHEN ADDITIONS FINISHED



Final assembly building at Consolidated Aircraft Corp. will be 700 feet long and capable of handling aircraft with a wing spread in excess of 120 feet. This huge building is one of seven now rapidly nearing completion.



Fastening his paint bucket to a steel beam, this painter skillfully balances and plies his brush on the new construction.

They still use Dobbin in modern construction work. A horse-drawn scraper is used to clean away the tidelands preliminary to laying of the cement floor on the huge final assembly plant.

Fabricated steel work was barely in position before painters erected scaffolding and started painting.

* * *

CONSAIR PERSONNEL REACHES ALL-TIME RECORD OF 7560

Consolidated Aircraft Corp. attained an all-time employment high yesterday when the total number of men and women employed was 7560. Donald Frye, personnel director, said employes are being added at the rate of 75 a day.

The peak of 10,000 is expected to be attained Aug. 1 when the company's $2,000,000 expansion program is completed.

In accordance with the government's plans to accelerate aircraft production, Maj. Reuben H. Fleet, Consair president, has just put into effect a six-day 48-hour weekly schedule in all manufacturing departments. The new schedule will step-up production 20 percent and will increase the payroll by 30 percent due to payment of time and a half over the normal 40-hour week schedule, Fleet said.

New structures which are to be commissioned Aug. 1 include the 700-foot long final assembly building, experimental building annex, final finish building, additions to the paint shop, boiler house and hull and wing department.

Consolidated started operations 17 years ago at East Greenwich, R. I. In 1924 the plant was moved to Buffalo, N. Y., where it remained until 1933 when it came to San Diego.

The tremendous growth of Consair is exemplified by a comparison of the company's present backlog and number of employes with operations at Buffalo. The total floor space at Buffalo was less than 200,000 square feet, while the plant today occupies 1,910,000 square feet of covered and uncovered manufacturing space with an additional 954,440 square feet of municipal airport property under option.

The backlog including new contracts expected to be received this month will amount to $120,000,000. Heretofore the largest number of employes was 4300.

In the last 17 years Consair planes have been sold to Brazil, Siam, Peru, Argentina, Mexico, Cuba, Canada, Colombia, China, Portugal, Turkey, Rumania, England and France. The bulk of the present contracts are for long-range bombers for the U. S. army and navy and for the British Royal air force.

Surveyor carefully gauges position of steel beams before riveters bolt the steel in proper position.

Consolidated Air

ROMEIKE & CURTICE LTD.

35, Shoe Lane, London, E.C.4

THE PRESS CLIPPING BUREAU

EXTRACT FROM

THE TIMES

1785

Date 19 APR 1940

AIRCRAFT BOUGHT FROM U.S.

"HUGE QUANTITIES"

FROM OUR OWN CORRESPONDENT

NEW YORK, April 18

Mr. Arthur B. Purvis, head of the Anglo-French Purchasing Mission, announced in Washington to-day that the Allies have already purchased "huge quantities" of the three latest types of American military aircraft, and that additional contracts would be signed "in the very near future" for others of five types which the United States Government released for sale only last week. He said that the sums involved were "very large indeed."

Contracts were signed in New York yesterday for great numbers—he did not specify how many—of Curtiss fighters and Douglas attack bombers. The latter are reputed here to be the fastest machines of their type in the world. A third contract will be signed immediately for another of the types just released. The five types released last week were the Curtiss P-40, the Douglas attack bomber, the Bell P-39 fighter, the Lockheed twin-engined P 38, and the Lockheed-Hudson twin-engined light bomber.

5,000 IN 18 MONTHS

Mr. Purvis said that besides the Curtiss and Douglas aeroplanes which it had already purchased, his mission had obtained authorization to buy recent models of Glen Martin bombers and Lockheed fighters.

It has been known for some time that the representatives of the Allies have been negotiating for as many as 1,500 Curtiss P-40 and P-40-D fighters, and about 700 Douglas light bombers, and it has been understood that negotiations are well advanced for the purchase of about 1,200 Lockheed interceptors and Lockheed Hudson light bombers, 750 Martin bombers, and several hundred Bell P-39 fighters. Altogether the Allies are expected to contract for about 5,000 aircraft in this country, all of them to be delivered within 18 months.

Mr. Purvis said that the invasion of Norway had not affected the plans of the Purchasing Commission, and that the Allies had expected some kind of active campaign this spring.

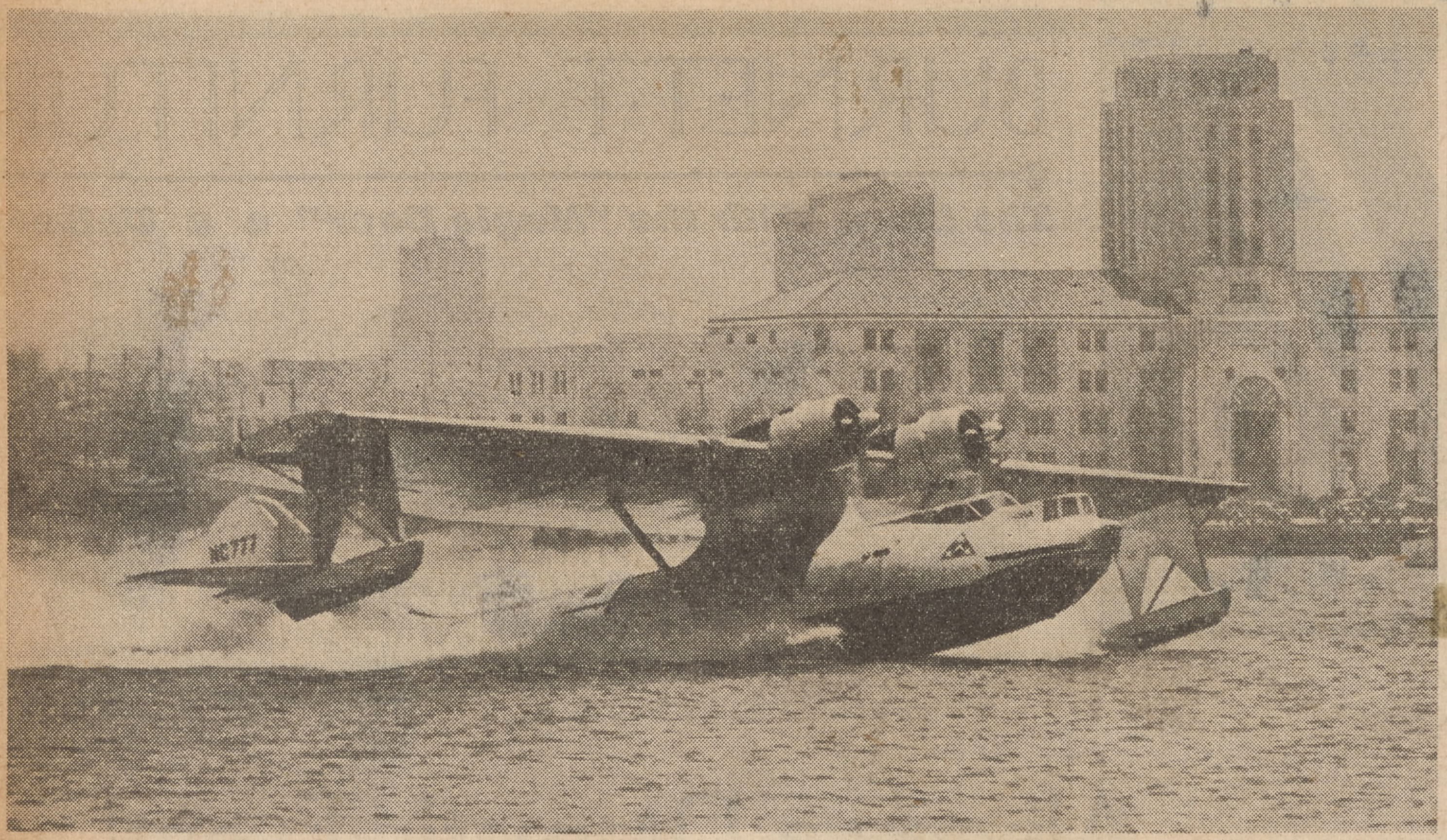
"FLYING FORTRESSES"

It was reported in New York last night that the Allies were negotiating for the purchase of 50 or more four-engined bombers from the Boeing and Consolidated Aircraft Companies. A "flying fortress" of an advanced model has already been released for export, and the Consolidated Company's B-24 has been "released for negotiation"—that is, it will be released for actual sale soon as the company will agree to furnish the U.S. Air Corps with a still later model. Both types have records of extraordinary performances.

A "flying fortress" last year flew non-stop from California to Virginia, 2,317 miles, in 10 hours 45 minutes, and six of them made a mass flight from Miami to Buenos Aires—a distance of 5,260 miles—in less than one and a half days, making only two hops with a stop at Lima. In the Consolidated's patrol bombers Navy airmen have established outstanding records for mass flights. The most notable of these flights were from San Diego to Pearl Harbour in Hawaii (2,553 miles) and from San Diego to Coco Solo in the Canal Zone (3,087 miles).

THE SAN DIEGO UNION: SUNDAY MORNING, JULY 7, 1940

FAMED FLYING BOAT TAKES OFF ON TEST WITH 12 PASSENGERS, CREW OF 5



With spray cascading over wings and fuselage, the world-famed flying boat Guba takes off from San Diego bay abeam the Civic Center on a test flight to Lake Huntington, in the Sierras. Archbold's craft is carrying 12 passengers and a crew of five.

. . . attendant removes chock from Guba's wheels.

Guba Reaches Lake Huntington In 3-Hour Hop

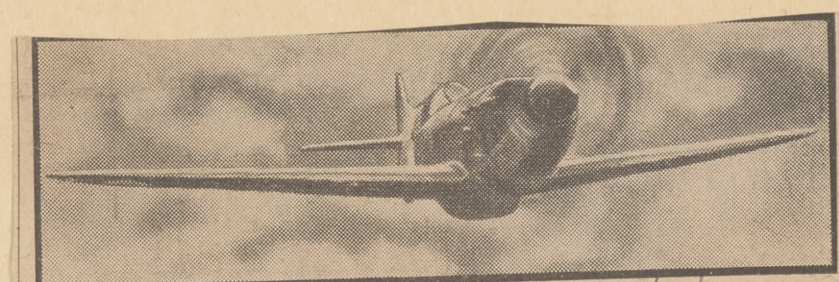
On a test flgiht before leaving here Tuesday for Port Washington, Long Island, Richard H. Archbold's famed San Diego-built flying boat Guba took off from the harbor at 11:26 a.m. yesterday and at 2:30 p.m. landed on Huntington lake in the Sierra Nevada mountains.

The Guba carried 12 passengers and a crew of five. At the controls were Russell Rogers and Douglas Kelley, who will pilot the big plane on its flight across the continent.

Rogers, the United Press reported, had difficulty landing the Guba on the mountain-ringed lake. Owing to the lake's great depth he was unable to use the plane's anchor. The Guba was moored to a small island and the passengers were taken ashore in motorboats. Huntington lake is 50 miles northwest of Fresno.

Barney Boyd, local radio amateur, who has maintained radio communication with the Guba on all its record breaking flights to and from Africa, Netherlands New Guinea and Australia, said he maintained a two-way conversation with Rogers on yesterday's flight. Boyd also will keep in constant contact on the Guba's flight to Port Washington. The Guba is expected to return here tomorrow afternoon.

Archbold, San Diego and New York scientist, is in the east.



London *Daily Express Air Reporter* 4/13/40

THIS single-seater fighter is the Spitfire of the French aircraft industry.

Large numbers of this type have been sent to the Western Front in the past few weeks.

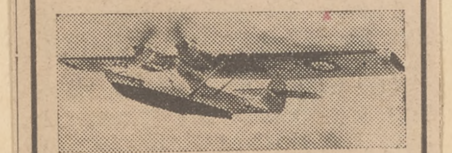
They are faster and probably more heavily armed than any other fighters, American or French, in France's air force.

Their distinctive features appear to be the slim fuselage and small wings.

They are the smallest fighters now on active service in any air force.

Monday's Quiz will tell what can be told about them up to now.

Yesterday's 4,000-mile range American flying - boat was a



CONSOLIDATED PBY

—with two 1,000 horse-power engines. The PBY is all metal, with a top speed of 206 miles an hour.

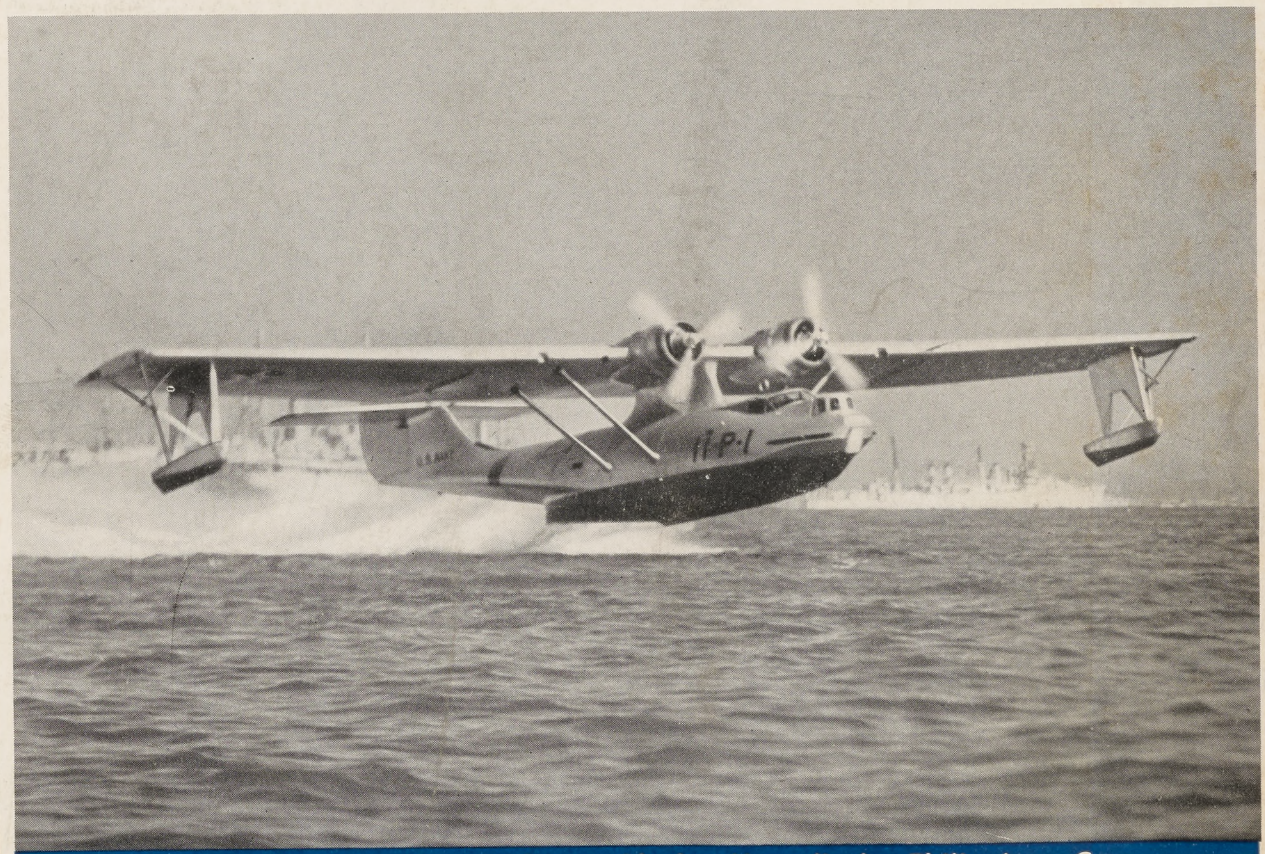
Its armament and war equipment for use with the R.A.F. are secret. But since war began these types of flying boats have operated anywhere between Iceland and the North Atlantic, either on northern blockade reconnaissance or convoy and on submarine patrol.

In the U.S. naval air arm similar types have flown around the world in record-making service formation flights.

WESTERN FLYING

FEB 5

February 1940 **25 Cents**



Famous for their mass flights to Alaska, Hawaii, the Philippines, Coco Solo, and Florida, the Navy's twin-engined Consolidated patrol bombers are now doing yeoman service in patrolling American territorial waters. Tried and true, this type has now won the largest procurement order in naval aviation history. And, like all their predecessors, the new PBY-5's will be powered by dependable Pratt & Whitney Twin Wasp engines.

PRATT & WHITNEY AIRCRAFT
EAST HARTFORD, CONNECTICUT
ONE OF THE THREE DIVISIONS OF UNITED AIRCRAFT CORPORATION

THE TRIBUNE-SUN, San Diego, Calif., Tuesday, June 4, 1940

Consair Plant To Be Largest in U. S. When Completed; Cite 17-Year Record

The following report on the progress being made towards Consolidated Aircraft Corp. becoming the largest aircraft plant in the United States was issued by Consair officals:

Consolidated Aircraft Corp., present expansion program, now being rushed to completion with full manufacturing facilities estimated as completed by Aug. 1 brings this plant into full alignment with the president's recently announced emergency defense program for building a vastly expanded number of aircraft. When completed, Consolidated Aircraft Corp. will have the largest integrated aircraft plant in America, with 1,910,000 square feet of covered and uncovered manufacturing space and 954,440 square feet of contiguous airport land under option for futher expansion if necessary. Ramp, airport and rail sidings are not included in these figures.

U. S. Planes in Backlog

Consolidated Aircraft Corp. is unique in its possession of most favorable conditions surrounding its ascendency as the largest aircraft plant in America.

The greater preponderance of its backlog now noted at over $70,000,000 consists of United States government work, with a small proportion of its contracts for foreign deliveries, leaving the company relatively free from any contingencies which might arise over the turn of events abroad.

In undertaking its present plant expansion to enable it to meet this volume of business, a closing agreement was entered into between Consolidated Aircraft Corp. and the United States treasury department. This agreement provides that the cost of certain addition excess production facilities, less depreciation, required to meet deliveries may be charged to the cost of performing contracts received by the company, in effect amortizing much of its expansion.

Through the naturally equitable climate of San Diego, site of the huge plant, fully 30 percent of the manufacturing operations in building the planes may be conducted out of doors. Provision has been made for this by paving the entire plant yard area and providing suitable outlets for power-lines, etc., thus giving exceptional flexability in an industry now in the flux of rapid development.

Founded in 1923, Consolidated has made a most rapid advance to its present position, unobtrusively becoming the world's largest manufacturer of flying boats as one of its interesting achievements. Because the performances of flying boats are not usually as spectacular as those of smaller planes or land planes of comparable size, this rise to first position has not been noted by the public generally, nor has the company's specialization upon larger craft. Taking as an arbitary measure of "bigness" the wing span of 100 feet or more, and including the airplane equivalent of spares furnished, Consolidated has constructed more than three times as many such planes as all other manufacturers combined. This includes those built in the World war period. Since the company's advent in 1923, Consolidated has built approximately four times as many of such aircraft as all other United States manufacturers combined.

Successful Flights

As early as 1934, six Consolidated P2Y-1 twin engined flying boats in the service of the U. S. navy, flew the first successful massed flight from San Francisco to Hawaii, a distance of 2414 miles, non-stop. Phenomenal success followed the current Model 28's, or United States navy PBY's the larger twin- flying boats. With these planes scarcely off the line the United States navy began a series of 'routine' delivery flights non-stop from San Diego to Hawaii, a distance of 2553 miles, with the planes flying in groups of from 12 to 18 at a time. Eighty-eight of these ships to date have made this "routine jump" to Hawaii. Another 88 in groups of from 12 to 18 at a time, have been flown non-stop from San Diego to Coco Solo in the Canal zone, a distance of 3087 miles. Aboard these planes were some 1200 men, members of their regular crews. No untoward incidents were encountered on any of these flights.

Consolidated engineers have followed the highly successful Model 28 design with the Model 29, a huge four-engined craft built for the United States navy, and the Model 31, a twin-engined flying boat boasting the first two radial aircooled engines of 2,000 horsepower each, ever to be installed in a plane. Successfully tested, and known to exceed in range, speed and load carrying capacity its forerunners the Model 28's, the Model 31's performance figures are being carefully shielded because of their military potency.

Re-entry of Consolidated into the land plane field is marked by the Model 32 four-engined land bomber known as the United States army's XB-24, with an approximate gross weight of 40,000 pounds. Of this plane the United States army air corps recently stated, "This plane, from preliminary investigations, gives evidence of living up to the advancements in aerodynamic and performance characteristics predicted. These include a speed of over 300 miles an hour, a range of approximately 3000 miles and a bomb-carrying capacity of approximately 4 tons."

World's 'Best' Planes U. S. Models In Drive to Goal of 50,000 in Year

Tribune - 6-15-40

(Editor's Note—How do our warplanes compare in types and performance with those of Europe? Here is the answer in a story by the aviation editor of the Special News Service of The Associated Press, who is on a tour of the leading American aviation manufacturing plants.)

By DEVON FRANCIS
Associated Press Aviation Editor

LOS ANGELES, July 15—The United States has some of the world's best warplanes to model on in setting up its factory production facilities for a drive to the goal suggested by President Roosevelt—50,000 machines a year.

Our problem in air rearmament is not so much plane performance is it is large production of both planes and pilots, with the scores of thousands of mechanics to service the planes once they are produced.

We have the necessary planes in types. The idea has been advanced in recent weeks that we have, in fact, too many good types—that we need a simplification of types to assure high factory productivity. A factory can reach its maximum production only if it concentrates on the manufacture of one or two standard models.

Germany introduced a new note into aerial warfare when it sent planes by the hundreds into battle on the assumption that a certain percentage of them was "expendable," like infantrymen. Some of those German planes are not of superlative performance. The German "Stukas," used for dive bombing, for instance, have a top speed of only 220 miles an hour. The famous German single-engine fighter, the Messerschmitt "109," has a level-flight top speed of about 310 miles an hour, considerably short of the performance of two of our fighters, the Curtiss P-40 (top speed 365 miles an hour) and the Bell P-39 (375 miles an hour).

Exceeded in Performance

Two of our newest dive bombers, the Vought-Sikorsky XF4U-1 shipboard fighter and the Curtiss SBC-4, exceed the Stuka in performance, but whereas Germany has Stukas in quantities great enough to throw them into battle in expectation of considerable losses we have only a few score in old and new types.

The Vought-Sikorsky prototype still is being tested for the navy, and the Curtiss type is only getting into production.

Incidentally, the United States navy originated the technique of dive-bombing. Germany adapted the idea to its own use.

In spite of limited research facilities in the United States, American warplanes of "service" caliber frequently have led the rest of the world in performance. Russia excepted, we probably have the world's largest and most efficient long-range, heavy bombing planes, exemplified in the Boeing four-motor and the new Consolidated B-24 four-motor bombing types. The first is made in Seattle, the second in San Diego.

Our Lockheed P-38 bi-motored interceptor, a new type in our army, is designed solely to fight bombing planes. It has a high rate of climb and a high speed of 405 miles an hour.

Our "light bombardment" planes, designed for attacking troops, have a high speed of 395 miles an hour with a bomb load of 2400 pounds. Unlike the Stukas, however, these planes, known as the Curtiss A20's, do not dive on their objectives.

Our medium-weight bombers, such as the Douglases and Martins, are at least the equal of any similar aircraft abroad. The development of bombardment types is part and parcel of a high command's tactical plans.

Two New Types Considered

Our heavy bombardment planes are designed for use against the warships, aircraft carriers and troop transports of any invader.

There is talk now in the American aircraft industry of two new types of aircraft for the Army Air corps—an inexpensive, short-range "baby" fighting plane, made in great quantities for "local" defense, and large numbers of dive bombers for the same tactical use to which Germany is putting its Stukas.

Reduction in cost also is receiving serious study. If one of our four-motored bombers were shot down attacking an enemy fleet, it would mean a loss of $400,000, counting both plane and armament. Each of our pursuits costs from $60,000 to $70,000.

The navy has two general types of planes, each operating intimately with surface units. The navy's shipborne and land-based aircraft are slower than similar air corps planes and enjoy less freedom of action.

Because the navy must make the maximum use of its limited facilities on the aircraft carriers, it often combines several functions in one plane. It has, for instance, both scout-observation planes and scout-bombers. The Curtiss SBC-4 scout and dive bomber has a top speed of about 250 miles an hour. The navy's bi-motor and four-motor heavy flying boats can reach slightly less than 200 miles an hour, but cruise on long flights at no more than three-fourths of that speed.

Consair Leads In Manufacture Of Big Planes

UNION 6-2-40

Consolidated Aicraft Corp.'s present expansion program—now being rushed to completion, with full manufacturing facilities estimated as completed by Aug. 1—brings this plant into full alignment with President Roosevelt's recently announced emergency defense program for building a vast number of aircraft, it was announced yesterday.

When completed, Consolidated Aircraft Corp. will have the largest integrated aircraft plant in America, with 1,910,000 square feet of covered and uncovered manufacturing space and 954,440 square feet of contiguous airport land under option for further expansion. Ramp, airport and rail sidings are not included in these figures.

BACKLOG $70,000,000

Consolidated is unique in its possession of most favorable conditions surrounding its ascendancy as the largest aircraft plant in America, say plant officials.

Its backlog of more than $70,000,000 consists of U. S. government work, with a smaller proportion of its contracts for foreign deliveries. This leaves the company relatively free from any contingencies which might arise over the turn of events abroad, it was stated.

In undertaking its present plant expansion to enable it to meet this volume of business, an agreement was entered into between Consolidated and the U. S. treasury department. This agreement provides that the cost of certain addition excess production facilities, less depreciation, required to meet deliveries may be charged to the cost of performing contracts received by the company, in effect amortizing much of its expansion.

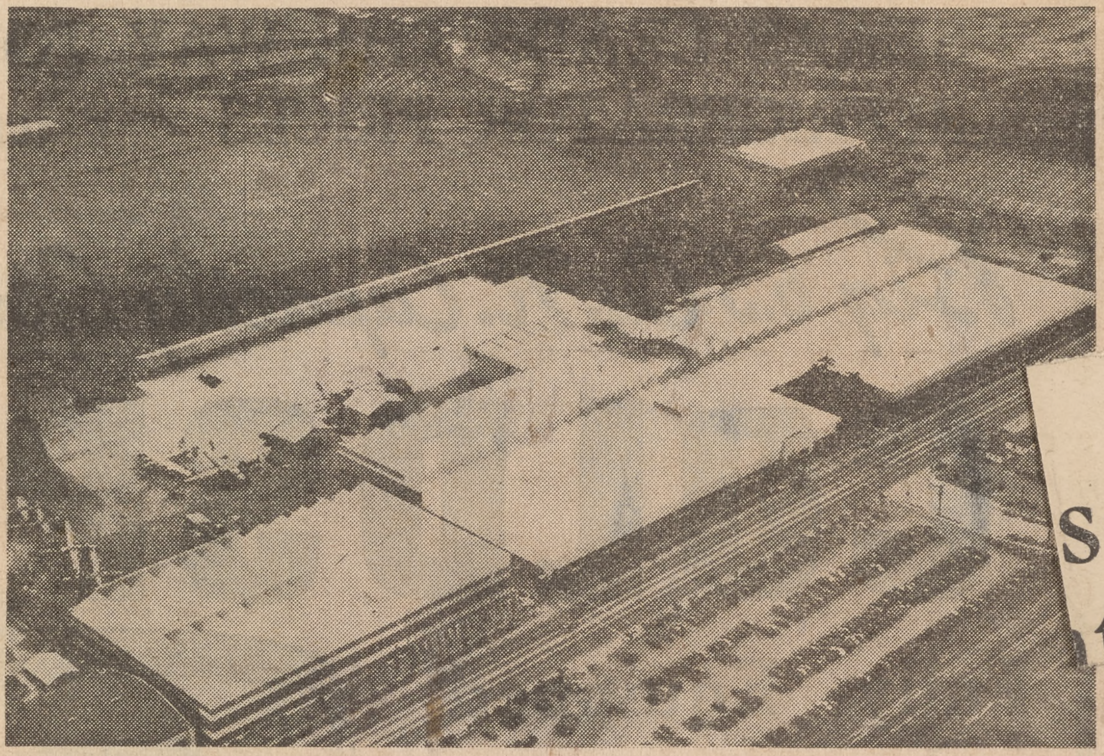
WORK OUTDOORS

Through the equitable climate of San Diego, fully 30 percent of the fanufacturing operations in building the planes may be conducted outdoors. Provision has been made for this by paving the plant yard area and providing suitable outlets for power lines, thus giving exceptional flexability in an industry now in the flux of rapid development.

Founded in 1923, Consolidated has made rapid advance to its present position, unobstrusively becoming the world's largest manufacturer of flying boats as one of its interesting achievements. Because the performances of flying boats are not usually as spectacular as those of smaller planes or land planes of comparable size, this rise to first position has not been noted by the public generally, nor has the company's specialization upon larger craft.

Taking as an arbitrary measure of 'bigness' the wing span of 100 feet or more, and including the plane equivalent of spares provided, Consolidated has constructed more than three times as many such planes as all other manufacturers combined.

FACTORY BUILDINGS LESS THAN FIVE YEARS OLD



All these factory buildings of the present Consolidated Aircraft Corp. plant are less than five years old. The final assembly building at the extreme right is nearing completion. When finished, the plant will be the largest integrated, covered and uncovered aircraft plant in America.

This includes those built in the World war. Since the company's advent in 1923, Consolidated has built nearly four times as many of such aircraft as all other U. S. manufacturers combined.

HOP TO HAWAII IN 1934.

As early as 1934, six Consolidated P2Y-1 twin-engined flying boats in the service of the navy flew the first successful massed flight from San Francisco to Hawaii, a distance of 2414 miles, non-stop.

Phenomenal success followed the current model 28's, or navy PBY's, the largest twin-engine flying boats. With these planes scarcely off the line, the navy began a series of "routine" delivery flights non-stop from San Diego to Hawaii, a distance of 2553 miles, with the planes flying in groups of 12 to 18 at a time.

Eighty-eight of these ships to date have made this "routine jump" to Hawaii. Another 88 in groups of from 12 to 18 at a time, have been flown non-stop from San Diego to Coco Solo in the Canal Zone, a distance of 3087 miles. Aboard these planes were 1200 men, members of their regular crews. No untoward incidents were encountered on any of these flights.

BUILD 4-ENGINED CRAFT

Consolidated engineers have followed the highly successful model 28 design with the model 29, a huge four-engined craft built for the U. S. navy, and the model 31, a twin-engined flying boat boasting the first two radial air cooled engines of 2000 horsepower each, ever to be installed in a plane. Successfully tested, and known to exceed in range, speed and load-carrying capacity its forerunners the model 28's, the model 31's performance figures are being carefully shielded because of their military potency.

Re-entry of Consolidated into the land plane field is marked by the model 32 four-engined land bomber as the army's XB-24 with an approximate gross weight of 40,000 pounds. Of this plane the army air corps recently stated:

"This airplane, from preliminary investigations, gives evidence of living up to the advancements in aerodynamic and performance characteristics predicted. These include a speed of over 300 miles per hour, a range of approximately 3000 miles and a bomb-carrying capacity of four tons.

EVEN

S
W

set Odds in
ternational

ORDERS TO TOTAL £5,000,000

By ROBERT WALLING
Our Air Correspondent

IT is reliably reported in American aviation circles that Britain has followed up the order for £2,000,000 worth of American Brewster single-seater fighters with an order for Douglas naval dive-bombers and about 50 Consolidated flying boats.

This brings the total value of American "active service" aircraft bought for the R.A.F. recently to about £7,000,000. This does not include trainers.

The Douglas dive-bombers—£2,500,000 worth—are DB-19s, the export version of the BT-1 type which is in general use in the U.S.A. Navy.

Two-Seat Monoplanes

They are two-seat monoplanes, powered by a 900-h.p. Pratt and Whitney engine. They have retractable undercarriages and constant-speed airscrews. But they are hardly likely to be faster than our Blackburn Skuas and Rocs which the Royal Navy use in the Fleet Air Arm.

It is not expected that they will be ready for delivery until the early autumn.

The Consolidated flying-boat ordered is the 28-5 type, a high-wing machine of 2000 horse-power which can carry a crew of six for 35 hours, and has a range of 4000 miles.

It is not fast—the cruising speed is 140 m.p.h.—but its range is among the highest in the world of civil or military aviation.

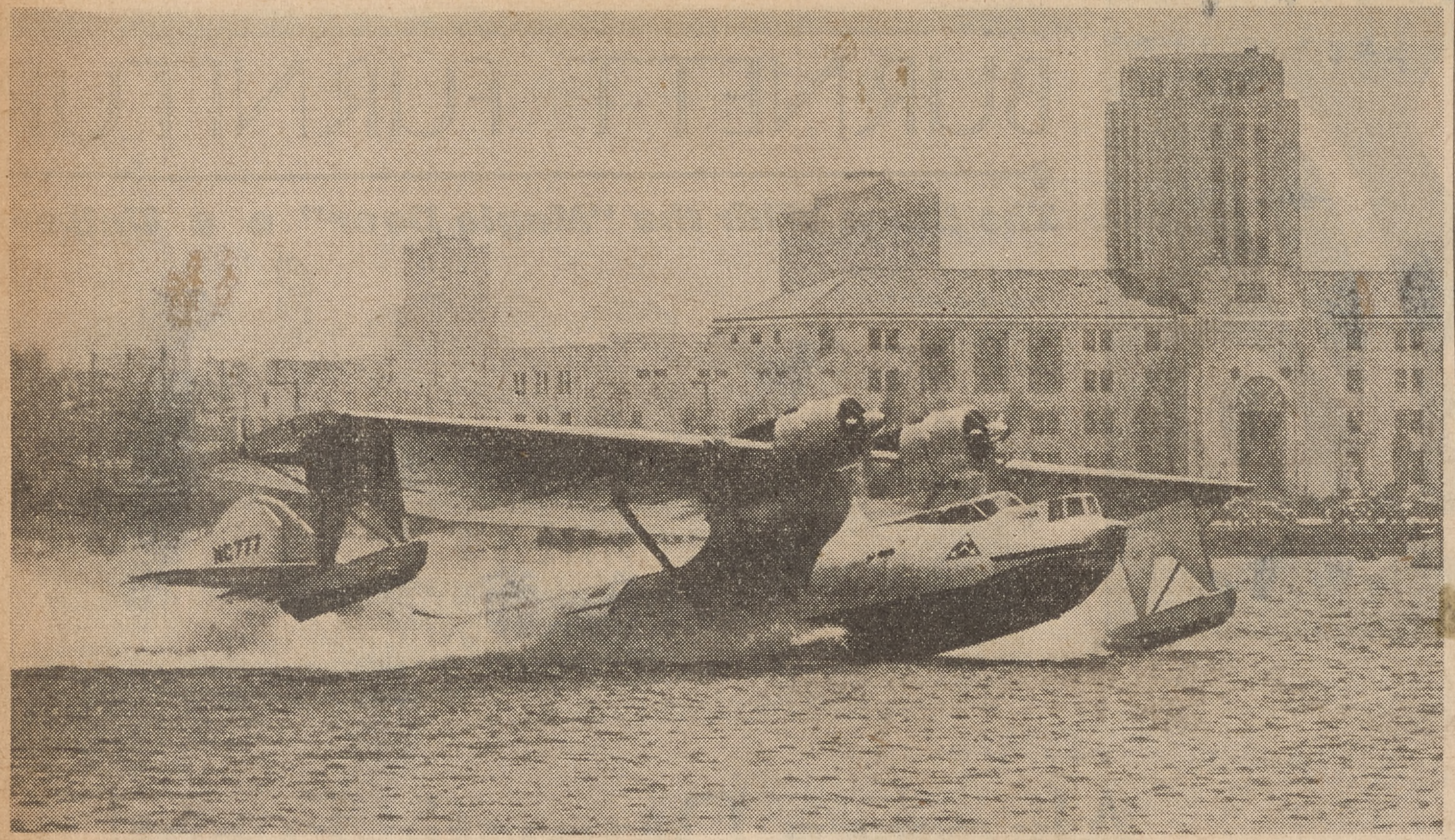
Flew Atlantic

Last summer the Air Ministry bought one of them, and it flew non-stop across the Atlantic from Botwood to Felixstowe—2450 miles—in 15½ hours. This particular flying-boat has already been on long-distance patrol, some of it in Northern waters, during the war.

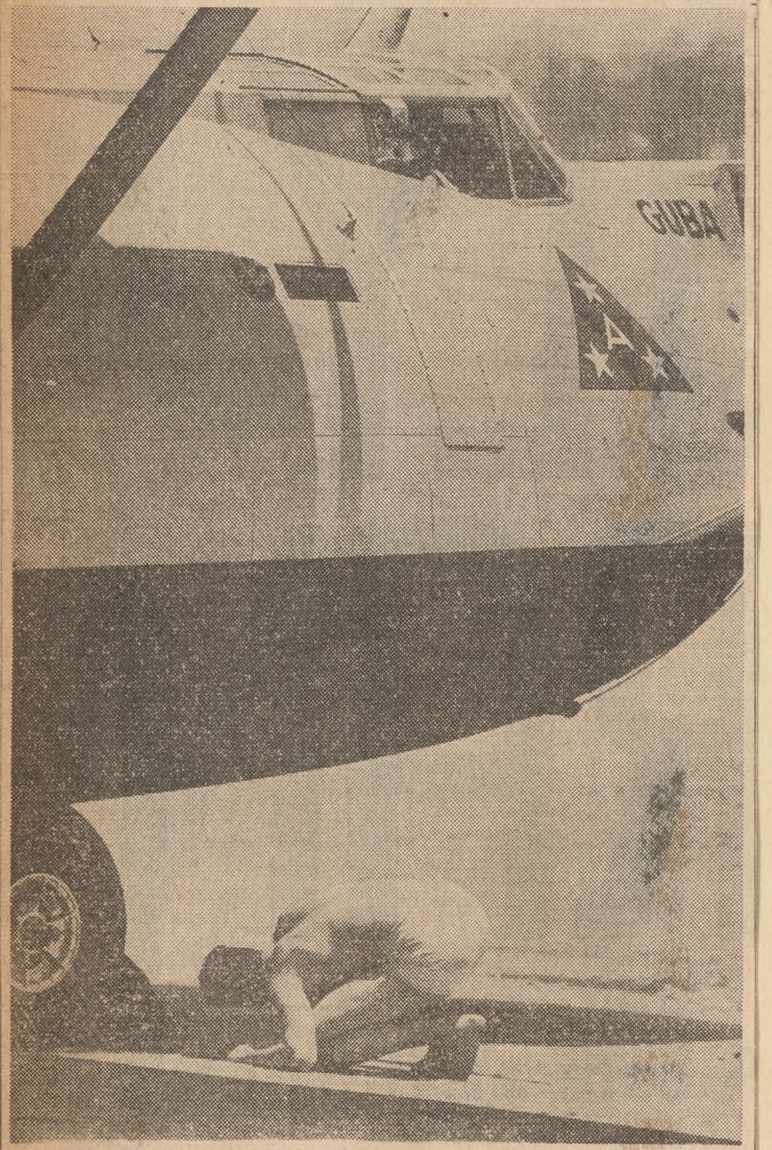
It has retractable wing-tip floats. These go up sideways into the wing-tips when the flying-boat is taking off from the water, thus reducing the drag when in flight.

THE SAN DIEGO UNION: SUNDAY MORNING, JULY 7, 1940

FAMED FLYING BOAT TAKES OFF ON TEST WITH 12 PASSENGERS, CREW OF 5



With spray cascading over wings and fuselage, the world-famed flying boat Guba takes off from San Diego bay abeam the Civic Center on a test flight to Lake Huntington, in the Sierras. Archbold's craft is carrying 12 passengers and a crew of five.



. . . attendant removes chock from Guba's wheels.

Guba Reaches Lake Huntington In 3-Hour Hop

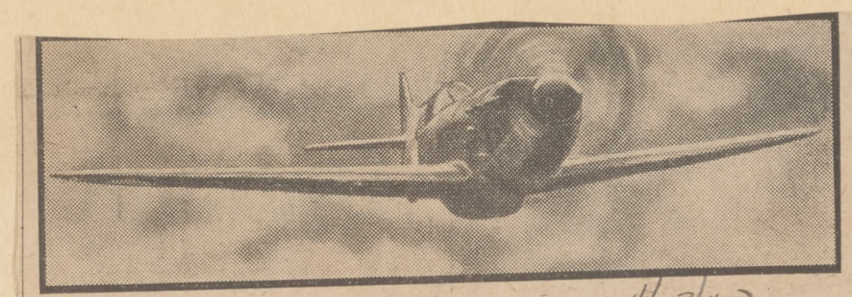
On a test flgiht before leaving here Tuesday for Port Washington, Long Island, Richard H. Archbold's famed San Diego-built flying boat Guba took off from the harbor at 11:26 a.m. yesterday and at 2:30 p.m. landed on Huntington lake in the Sierra Nevada mountains.

The Guba carried 12 passengers and a crew of five. At the controls were Russell Rogers and Douglas Kelley, who will pilot the big plane on its flight across the continent.

Rogers, the United Press reported, had difficulty landing the Guba on the mountain-ringed lake. Owing to the lake's great depth he was unable to use the plane's anchor. The Guba was moored to a small island and the passengers were taken ashore in motorboats. Huntington lake is 50 miles northwest of Fresno.

Barney Boyd, local radio amateur, who has maintained radio communication with the Guba on all its record breaking flights to and from Africa, Netherlands New Guinea and Australia, said he maintained a two-way conversation with Rogers on yesterday's flight. Boyd also will keep in constant contact on the Guba's flight to Port Washington. The Guba is expected to return here tomorrow afternoon.

Archbold, San Diego and New York scientist, is in the east.



London *Daily Express Air Reporter* 4/13/40

THIS single-seater fighter is the Spitfire of the French aircraft industry.

Large numbers of this type have been sent to the Western Front in the past few weeks.

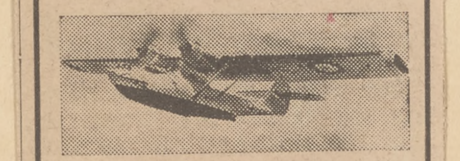
They are faster and probably more heavily armed than any other fighters, American or French, in France's air force.

Their distinctive features appear to be the slim fuselage and small wings.

They are the smallest fighters now on active service in any air force.

Monday's Quiz will tell what can be told about them up to now.

Yesterday's 4,000-mile range American flying - boat was a



CONSOLIDATED PBY

—with two 1,000 horse-power engines. The PBY is all metal, with a top speed of 206 miles an hour.

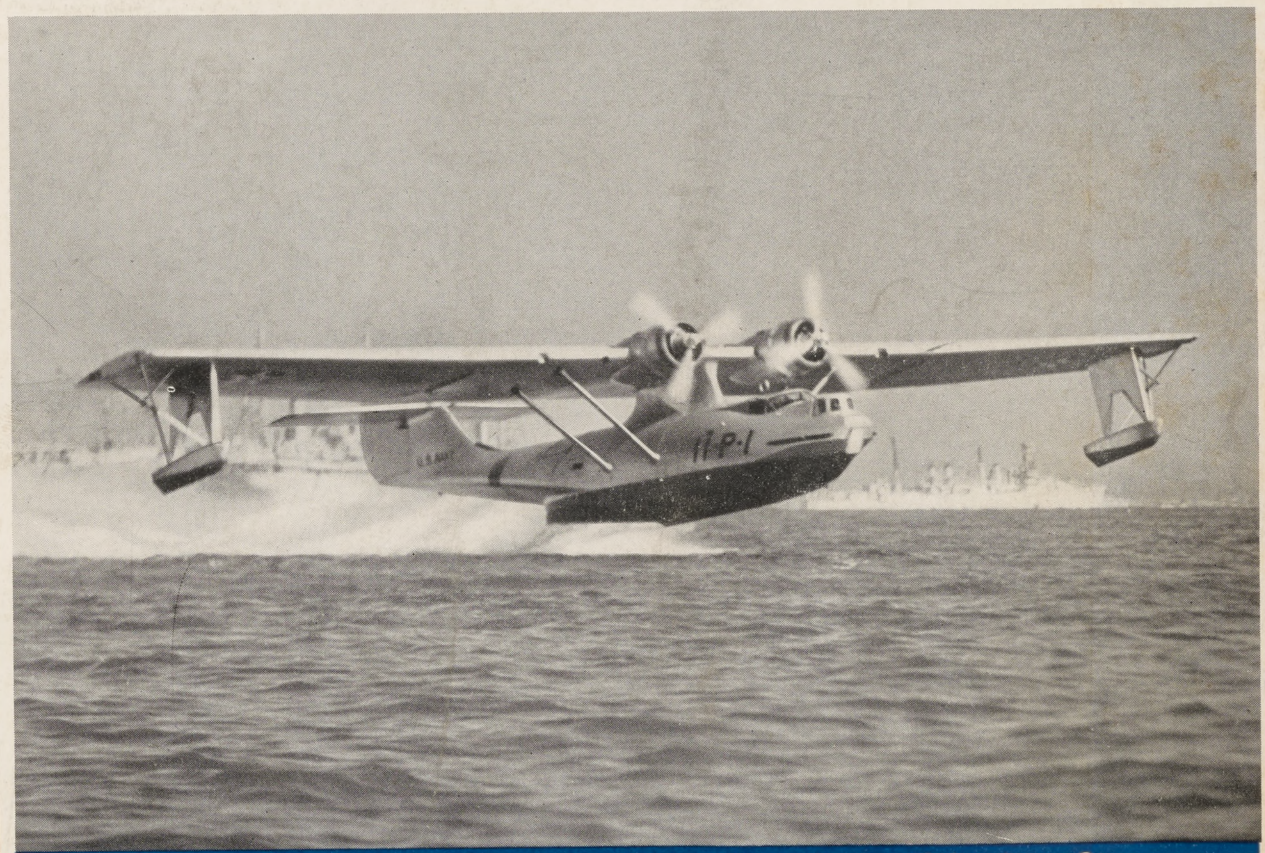
Its armament and war equipment for use with the R.A.F. are secret. But since war began these types of flying boats have operated anywhere between Iceland and the North Atlantic, either on northern blockade reconnaissance or convoy and on submarine patrol.

In the U.S. naval air arm similar types have flown around the world in record-making service formation flights.

WESTERN FLYING

FEB 5

February 1940 **25 Cents**



Famous for their mass flights to Alaska, Hawaii, the Philippines, Coco Solo, and Florida, the Navy's twin-engined Consolidated patrol bombers are now doing yeoman service in patrolling American territorial waters. Tried and true, this type has now won the largest procurement order in naval aviation history. And, like all their predecessors, the new PBY-5's will be powered by dependable Pratt & Whitney Twin Wasp engines.

PRATT & WHITNEY AIRCRAFT
EAST HARTFORD, CONNECTICUT
ONE OF THE THREE DIVISIONS OF UNITED AIRCRAFT CORPORATION

THE TRIBUNE-SUN, San Diego, Calif., Tuesday, June 4, 1940

Consair Plant To Be Largest in U. S. When Completed; Cite 17-Year Record

The following report on the progress being made towards Consolidated Aircraft Corp. becoming the largest aircraft plant in the United States was issued by Consair officals:

Consolidated Aircraft Corp., present expansion program, now being rushed to completion with full manufacturing facilities estimated as completed by Aug. 1 brings this plant into full alignment with the president's recently announced emergency defense program for building a vastly expanded number of aircraft. When completed, Consolidated Aircraft Corp. will have the largest integrated aircraft plant in America, with 1,910,000 square feet of covered and uncovered manufacturing space and 954,440 square feet of contiguous airport land under option for futher expansion if necessary. Ramp, airport and rail sidings are not included in these figures.

U. S. Planes in Backlog

Consolidated Aircraft Corp. is unique in its possession of most favorable conditions surrounding its ascendency as the largest aircraft plant in America.

The greater preponderance of its backlog now noted at over $70,000,000 consists of United States government work, with a small proportion of its contracts for foreign deliveries, leaving the company relatively free from any contingencies which might arise over the turn of events abroad.

In undertaking its present plant expansion to enable it to meet this volume of business, a closing agreement was entered into between Consolidated Aircraft Corp. and the United States treasury department. This agreement provides that the cost of certain addition excess production facilities, less depreciation, required to meet deliveries may be charged to the cost of performing contracts received by the company, in effect amortizing much of its expansion.

Through the naturally equitable climate of San Diego, site of the huge plant, fully 30 percent of the manufacturing operations in building the planes may be conducted out of doors. Provision has been made for this by paving the entire plant yard area and providing suitable outlets for power-lines, etc., thus giving exceptional flexability in an industry now in the flux of rapid development.

Founded in 1923, Consolidated has made a most rapid advance to its present position, unobtrusively becoming the world's largest manufacturer of flying boats as one of its interesting achievements. Because the performances of flying boats are not usually as spectacular as those of smaller planes or land planes of comparable size, this rise to first position has not been noted by the public generally, nor has the company's specialization upon larger craft. Taking as an arbitary measure of "bigness" the wing span of 100 feet or more, and including the airplane equivalent of spares furnished, Consolidated has constructed more than three times as many such planes as all other manufacturers combined. This includes those built in the World war period. Since the company's advent in 1923, Consolidated has built approximately four times as many of such aircraft as all other United States manufacturers combined.

Successful Flights

As early as 1934, six Consolidated P2Y-1 twin engined flying boats in the service of the U. S. navy, flew the first successful massed flight from San Francisco to Hawaii, a distance of 2414 miles, non-stop. Phenomenal success followed the current Model 28's, or United States navy PBY's the larger twin- flying boats. With these planes scarcely off the line the United States navy began a series of 'routine' delivery flights non-stop from San Diego to Hawaii, a distance of 2553 miles, with the planes flying in groups of from 12 to 18 at a time. Eighty-eight of these ships to date have made this "routine jump" to Hawaii. Another 88 in groups of from 12 to 18 at a time, have been flown non-stop from San Diego to Coco Solo in the Canal zone, a distance of 3087 miles. Aboard these planes were some 1200 men, members of their regular crews. No untoward incidents were encountered on any of these flights.

Consolidated engineers have followed the highly successful Model 28 design with the Model 29, a huge four-engined craft built for the United States navy, and the Model 31, a twin-engined flying boat boasting the first two radial aircooled engines of 2,000 horsepower each, ever to be installed in a plane. Successfully tested, and known to exceed in range, speed and load carrying capacity its forerunners the Model 28's, the Model 31's performance figures are being carefully shielded because of their military potency.

Re-entry of Consolidated into the land plane field is marked by the Model 32 four-engined land bomber known as the United States army's XB-24, with an approximate gross weight of 40,000 pounds. Of this plane the United States army air corps recently stated, "This plane, from preliminary investigations, gives evidence of living up to the advancements in aerodynamic and performance characteristics predicted. These include a speed of over 300 miles an hour, a range of approximately 3000 miles and a bomb-carrying capacity of approximately 4 tons."

World's 'Best' Planes U. S. Models In Drive to Goal of 50,000 in Year

Tribune - 6-15-40

(Editor's Note—How do our warplanes compare in types and performance with those of Europe? Here is the answer in a story by the aviation editor of the Special News Service of The Associated Press, who is on a tour of the leading American aviation manufacturing plants.)

By DEVON FRANCIS
Associated Press Aviation Editor

LOS ANGELES, July 15—The United States has some of the world's best warplanes to model on in setting up its factory production facilities for a drive to the goal suggested by President Roosevelt—50,000 machines a year.

Our problem in air rearmament is not so much plane performance is it is large production of both planes and pilots, with the scores of thousands of mechanics to service the planes once they are produced.

We have the necessary planes in types. The idea has been advanced in recent weeks that we have, in fact, too many good types—that we need a simplification of types to assure high factory productivity. A factory can reach its maximum production only if it concentrates on the manufacture of one or two standard models.

Germany introduced a new note into aerial warfare when it sent planes by the hundreds into battle on the assumption that a certain percentage of them was "expendable," like infantrymen. Some of those German planes are not of superlative performance. The German "Stukas," used for dive bombing, for instance, have a top speed of only 220 miles an hour. The famous German single-engine fighter, the Messerschmitt "109," has a level-flight top speed of about 310 miles an hour, considerably short of the performance of two of our fighters, the Curtiss P-40 (top speed 365 miles an hour) and the Bell P-39 (375 miles an hour).

Exceeded in Performance

Two of our newest dive bombers, the Vought-Sikorsky XF4U-1 shipboard fighter and the Curtiss SBC-4, exceed the Stuka in performance, but whereas Germany has Stukas in quantities great enough to throw them into battle in expectation of considerable losses we have only a few score in old and new types.

The Vought-Sikorsky prototype still is being tested for the navy, and the Curtiss type is only getting into production.

Incidentally, the United States navy originated the technique of dive-bombing. Germany adapted the idea to its own use.

In spite of limited research facilities in the United States, American warplanes of "service" caliber frequently have led the rest of the world in performance. Russia excepted, we probably have the world's largest and most efficient long-range, heavy bombing planes, exemplified in the Boeing four-motor and the new Consolidated B-24 four-motor bombing types. The first is made in Seattle, the second in San Diego.

Our Lockheed P-38 bi-motored interceptor, a new type in our army, is designed solely to fight bombing planes. It has a high rate of climb and a high speed of 405 miles an hour.

Our "light bombardment" planes, designed for attacking troops, have a high speed of 395 miles an hour with a bomb load of 2400 pounds. Unlike the Stukas, however, these planes, known as the Curtiss A20's, do not dive on their objectives.

Our medium-weight bombers, such as the Douglases and Martins, are at least the equal of any similar aircraft abroad. The development of bombardment types is part and parcel of a high command's tactical plans.

Two New Types Considered

Our heavy bombardment planes are designed for use against the warships, aircraft carriers and troop transports of any invader.

There is talk now in the American aircraft industry of two new types of aircraft for the Army Air corps—an inexpensive, short-range "baby" fighting plane, made in great quantities for "local" defense, and large numbers of dive bombers for the same tactical use to which Germany is putting its Stukas.

Reduction in cost also is receiving serious study. If one of our four-motored bombers were shot down attacking an enemy fleet, it would mean a loss of $400,000, counting both plane and armament. Each of our pursuits costs from $60,000 to $70,000.

The navy has two general types of planes, each operating intimately with surface units. The navy's shipborne and land-based aircraft are slower than similar air corps planes and enjoy less freedom of action.

Because the navy must make the maximum use of its limited facilities on the aircraft carriers, it often combines several functions in one plane. It has, for instance, both scout-observation planes and scout-bombers. The Curtiss SBC-4 scout and dive bomber has a top speed of about 250 miles an hour. The navy's bi-motor and four-motor heavy flying boats can reach slightly less than 200 miles an hour, but cruise on long flights at no more than three-fourths of that speed.

Consair Leads In Manufacture Of Big Planes

UNION 6-2 40

Consolidated Aicraft Corp.'s present expansion program—now being rushed to completion, with full manufacturing facilities estimated as completed by Aug. 1—brings this plant into full alignment with President Roosevelt's recently announced emergency defense program for building a vast number of aircraft, it was announced yesterday.

When completed, Consolidated Aircraft Corp. will have the largest integrated aircraft plant in America, with 1,910,000 square feet of covered and uncovered manufacturing space and 954,440 square feet of contiguous airport land under option for further expansion. Ramp, airport and rail sidings are not included in these figures.

BACKLOG $70,000,000

Consolidated is unique in its possession of most favorable conditions surrounding its ascendancy as the largest aircraft plant in America, say plant officials.

Its backlog of more than $70,000,000 consists of U. S. government work, with a smaller proportion of its contracts for foreign deliveries. This leaves the company relatively free from any contingencies which might arise over the turn of events abroad, it was stated.

In undertaking its present plant expansion to enable it to meet this volume of business, an agreement was entered into between Consolidated and the U. S. treasury department. This agreement provides that the cost of certain addition excess production facilities, less depreciation, required to meet deliveries may be charged to the cost of performing contracts received by the company, in effect amortizing much of its expansion.

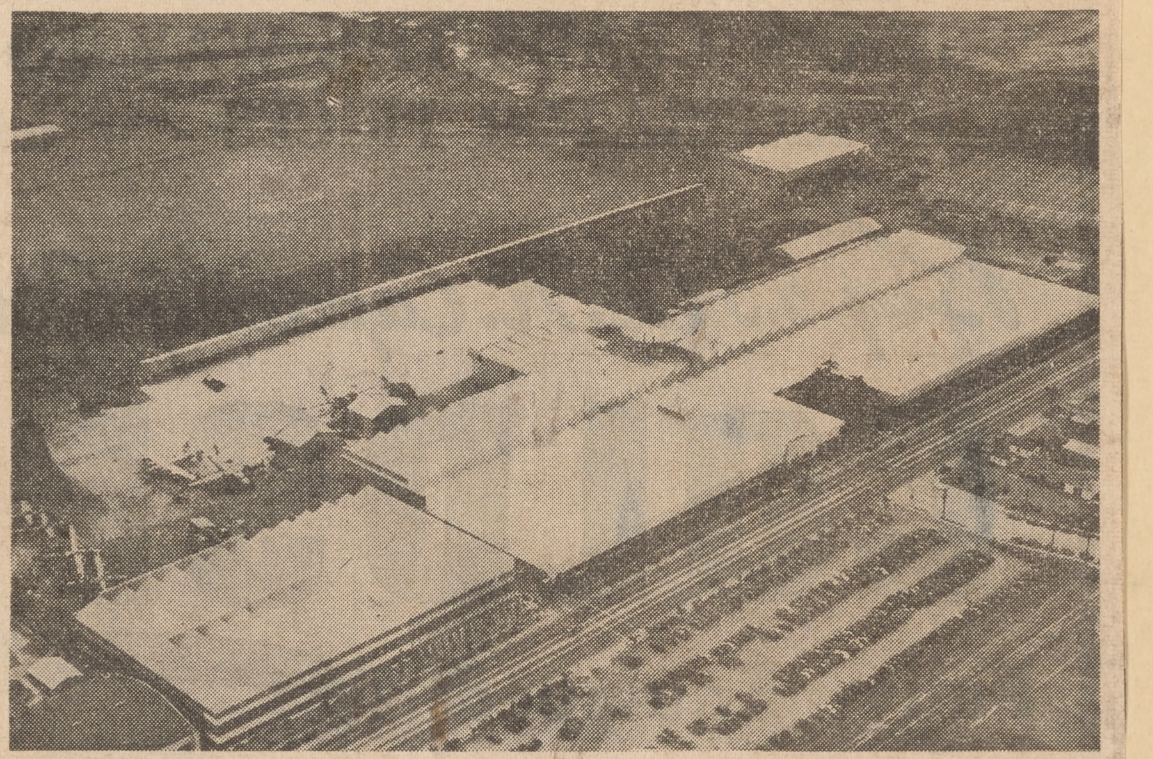
WORK OUTDOORS

Through the equitable climate of San Diego, fully 30 percent of the fanufacturing operations in building the planes may be conducted outdoors. Provision has been made for this by paving the plant yard area and providing suitable outlets for power lines, thus giving exceptional flexability in an industry now in the flux of rapid development.

Founded in 1923, Consolidated has made rapid advance to its present position, unobstrusively becoming the world's largest manufacturer of flying boats as one of its interesting achievements. Because the performances of flying boats are not usually as spectacular as those of smaller planes or land planes of comparable size, this rise to first position has not been noted by the public generally, nor has the company's specialization upon larger craft.

Taking as an arbitrary measure of 'bigness' the wing span of 100 feet or more, and including the plane equivalent of spares provided, Consolidated has constructed more than three times as many such planes as all other manufacturers combined.

FACTORY BUILDINGS LESS THAN FIVE YEARS OLD



All these factory buildings of the present Consolidated Aircraft Corp. plant are less than five years old. The final assembly building at the extreme right is nearing completion. When finished, the plant will be the largest integrated, covered and uncovered aircraft plant in America.

This includes those built in the World war. Since the company's advent in 1923, Consolidated has built nearly four times as many of such aircraft as all other U. S. manufacturers combined.

HOP TO HAWAII IN 1934.

As early as 1934, six Consolidated P2Y-1 twin-engined flying boats in the service of the navy flew the first successful massed flight from San Francisco to Hawaii, a distance of 2414 miles, non-stop.

Phenomenal success followed the current model 28's, or navy PBY's, the largest twin-engine flying boats. With these planes scarcely off the line, the navy began a series of "routine" delivery flights non-stop from San Diego to Hawaii, a distance of 2553 miles, with the planes flying in groups of 12 to 18 at a time.

Eighty-eight of these ships to date have made this "routine jump" to Hawaii. Another 88 in groups of from 12 to 18 at a time, have been flown non-stop from San Diego to Coco Solo in the Canal Zone, a distance of 3087 miles. Aboard these planes were 1200 men, members of their regular crews. No untoward incidents were encountered on any of these flights.

BUILD 4-ENGINED CRAFT

Consolidated engineers have followed the highly successful model 28 design with the model 29, a huge four-engined craft built for the U. S. navy, and the model 31, a twin-engined flying boat boasting the first two radial air cooled engines of 2000 horsepower each, ever to be installed in a plane. Successfully tested, and known to exceed in range, speed and load-carrying capacity its forerunners the model 28's, the model 31's performance figures are being carefully shielded because of their military potency.

Re-entry of Consolidated into the land plane field is marked by the model 32 four-engined land bomber as the army's XB-24 with an approximate gross weight of 40,000 pounds. Of this plane the army air corps rec[illegible]ly stated:

"This airplane, from preliminary investigations, gives evidence of living up to the advancements in aerodynamic and performance characteristics predicted. These include a speed of over 300 miles per hour, a range of approximately 3000 miles and a bomb-carrying capacity of four tons.

London Evening Standard 4/13/40

R.A.F. Buying U.S.A. Dive-bombers

NEW ORDERS TO TOTAL £5,000,000

By ROBERT WALLING
Our Air Correspondent

IT is reliably reported in American aviation circles that Britain has followed up the order for £2,000,000 worth of American Brewster single-seater fighters with an order for Douglas naval dive-bombers and about 50 Consolidated flying boats.

This brings the total value of American "active service" aircraft bought for the R.A.F. recently to about £7,000,000. This does not include trainers.

The Douglas dive-bombers—£2,500,000 worth—are DB-19s, the export version of the BT-1 type which is in general use in the U.S.A. Navy.

Two-Seat Monoplanes

They are two-seat monoplanes, powered by a 900-h.p. Pratt and Whitney engine. They have retractable undercarriages and constant-speed airscrews. But they are hardly likely to be faster than our Blackburn Skuas and Rocs which the Royal Navy use in the Fleet Air Arm.

It is not expected that they will be ready for delivery until the early autumn.

The Consolidated flying-boat ordered is the 28-5 type, a high-wing machine of 2000 horse-power which can carry a crew of six for 35 hours, and has a range of 4000 miles.

It is not fast—the cruising speed is 140 m.p.h.—but its range is among the highest in the world of civil or military aviation.

Flew Atlantic

Last summer the Air Ministry bought one of them, and it flew non-stop across the Atlantic from Botwood to Felixstowe—2450 miles—in 15½ hours. This particular flying-boat has already been on long-distance patrol, some of it in Northern waters, during the war.

It has retractable wing-tip floats. These go up sideways into the wing-tips when the flying-boat is taking off from the water, thus reducing the drag when in flight.

THE VISTA PRESS
THE PROGRESSIVE NEWSPAPER OF NORTHERN SAN DIEGO COUNTY

Subscription:
One Year, $2.00. Six Months $1.00.

VISTA, CALIFORNIA, THURSDAY, JULY 4, 1940

Great Aircraft Plant Employs Thousands

Anticipating a backlog of orders which "probably will exceed $100,000,000" Consolidated Aircraft Corporation is rushing completion on a vast expansion program, Maj. Edgar N. Gott, Consolidated vice president, told more than thirty editors, publicists and advertising men of the county at a meeting of the San Diego chamber of commerce publicity committee in San Diego Friday night.

Maj. Gott's address preceded a visit by the group to the plant where mass production of giant fighting craft was viewed.

Although the meeting theme centered around aircraft expansion in this area and plans for future development, Maj. Gott joined Maj. T. C. Macauley, chamber secretary-manager, in warning that "every possible step should be taken to rid this county of subversive elements seeking to retard national preparedness and to undermine this nation's democracy."

Largest Plant

The tremendous expansion program currently being rushed to completion at Consolidated Aircraft Corporation, which is already by far the largest county manufacturing enterprise, will give San Diego the distinction of having the largest integrated

Aircraft Plant

(Continued from First Page)

the newest and finest plants in all the world.

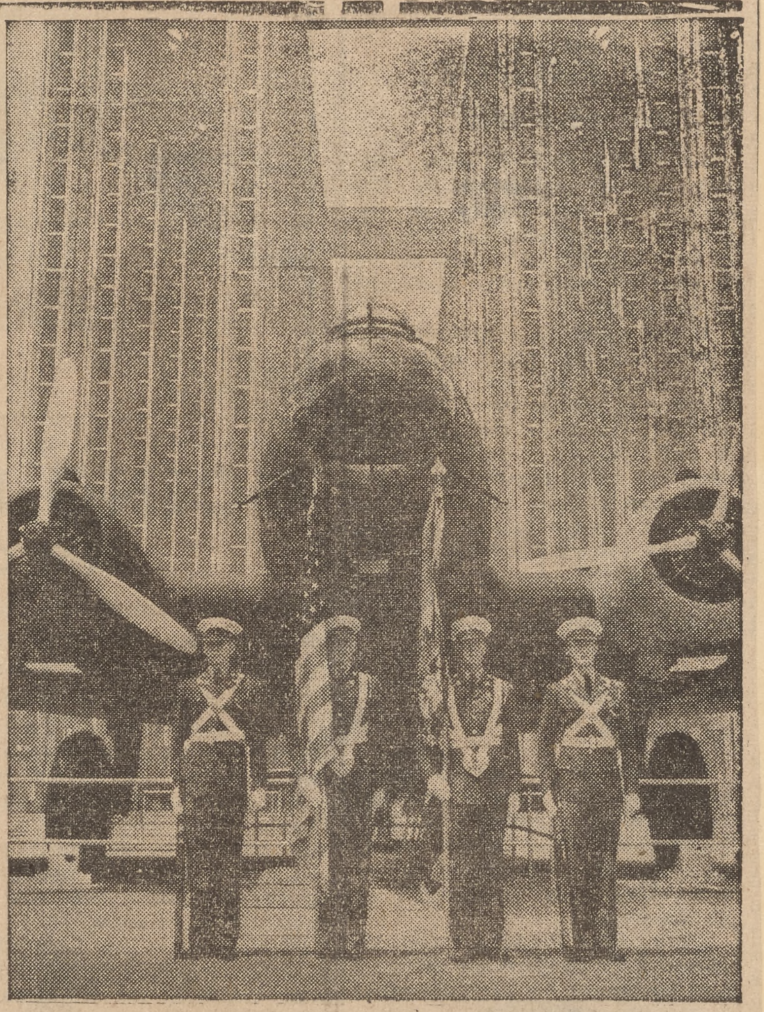
Well Equipped

Rounding out its complement of equipment, some of the finest machine tools available in the market today have, and will be installed as the program progresses. Lathes, automatic screw machines, shapers, millers, die sinkers, planers, punchpresses, hydraulic presses, drop hammers, power shears and brakes and smaller electric and pneumatic tools in almost unlimited number are included. These machines are being operated by men rapidly learning the newest time saving features of this splendid equipment.

At the present moment, approximately 750 of the more than 7,000 skilled aircraftmen are engaged in tool design and production, and the making of patterns which supplement the machine tools with special equipment; providing jigs, patterns and templates, assembly fixtures and the multitude of special tools required to assist the workmen to produce the finest airplanes possible.

Consolidated's present position, and outlook for the future, bids fair to exert a marked influence on the growth of San Diego county. Concluding a statement to the plant personnel on the recent advent of the Consolidated Aircraft Corporation's 17th birthday, President Major Reuben H. Fleet said, "We have a good organization—equal to any in our industry—the best in our history. So in counting our blessings let us consider that we have a factory of our own, tailored for our business, in the city of our choice, with plenty of work on hand and in sight, and no mortgage on our premises or our future. In one sense I regret that we are too busy to celebrate."

Made in San Diego County



Color guard of the 30th Infantry marking time in front of the U. S. Army bomber which stands in the foreground of the Federal Colonnades at the San Francisco Exposition. Many bombers like this are being built at Consolidated Aircraft plant in San Diego.

Trib. - 7-19-40

Vultee Voting on Union; Seek Election at Ryan

Vultee Aircraft's 2400 employes today voted in a national labor relations board election, in the first move in the C.I.O.-United Auto Workers' campaign to obtain collective bargaining rights over approximately 50,000 workers in California plane plants, The Associated Press reported from Downey. A petition for a similar election at the Ryan Aeronautical Co., San Diego, is reported before the board on C.I.O. initiative. The only plant in southern California where the NLRB has desigated a bargaining agent is Consolidated Aircraft, San Diego, where the A.F.L. won an election.

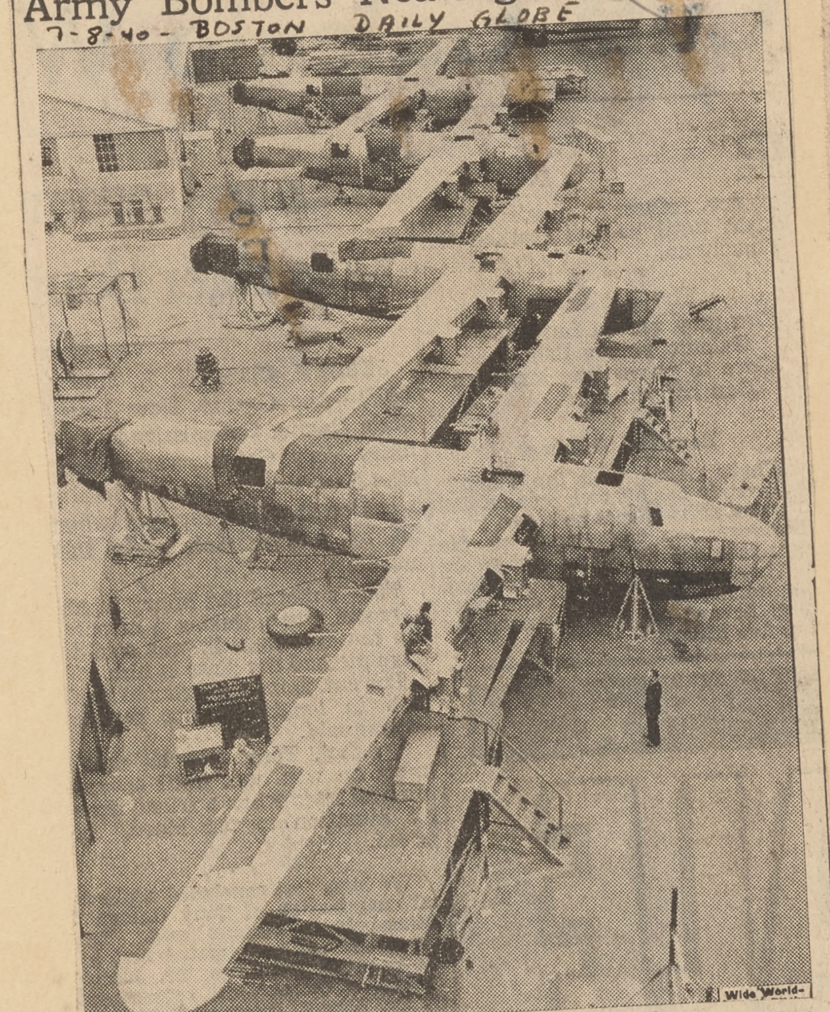
Defer Consair Land O.K. As Water St. Studied

Pending a decision on practicability of making a two-way highway along Water st. from Barnett ave. to Harasthy st., the harbor commission yesterday held in abeyance a request of Consolidated Aircraft Corp. to take over an area 1400 feet by 300 feet west of the existing Consair plant. The firm now has an option for additional land to increase facilities of the plant. Water st. lies west of Pacific highway and is a part of newly reclaimed tidelands. While the city planning commission intends to recommend the street be extended, the commission was advised the marine corps base has plans for erecting buildings and laying railroad tracks in the area through which the street would run. If the street is extended, it would cut into Pacific highway immediately north of Bean st.

Tribune
7-19-40

Army Bombers Nearing Completion

7-8-40 - BOSTON DAILY GLOBE



At San Diego, Calif., rapidly nearing completion, these four-motored Army Air Corps bombers, designated as the XB-24, are pictured on the final assembly line at the Consolidated Aircraft Corporation. Powered with four 1200 h. p. motors, the planes are said to have a large cruising range, to be very fast and carry heavy armament with a crew of nine persons. These planes have been released for export, and it is reported that they will be shipped to Britain. (Photo passed by Army Air Corps censor.)

Union -- May 9, '40

Aviation Training Vital Need, Says Adm. Blakely

Aviation personnel will play as vital a role in national defense as any other phase, Rear Adm. C. A. Blakely, 11th Naval district commandant, told the San Diego Aero club at its dinner meeting last night.

"Whether or not we attain the goal of 50,000 planes," Adm. Blakely said, "if we stimulate sufficient interest in aviation and obtain an adequate force of trained pilots we will have taken a big step forward in the matter of national defense."

He called attention to the known fact that a large ground crew is needed for every craft kept in flying condition, and that in active service three or four pilots are needed for every plane for full fighting efficiency.

RECALLS PREDICTION

The possession and maintenance of a large reserve of competent fliers are of key importance in modern warfare, Adm. Blakely said, and this will be one of the deciding factors in the present European conflict.

The admiral recalled the skepticism with which a forecast of his in 1910 was greeted. He predicted at that time that planes might be used to good advantage in the naval service, and that some day they might even be able to land and take off from ships.

Adm. Blakely not only saw this prophecy come true, but took an active part in shaping its fulfillment. He commanded the aircraft carrier Lexington and later was in command of battle force aircraft, comprising all the carriers and their complements. He took the naval pilot training course at Pensacola, Fla., when he was 50 years old.

In expressing his belief in the need of universal military service, Adm. Blakely said he did not mean by this the shouldering of a rifle by every man but the training of all able-bodied men for one of the many branches and supporting elements of military organization. Aviation would, he said, require a fair share of such trained personnel.

SEEKING NEW SITE

Another speaker was Maj. E. N. Gott, vice president of Consolidated Aircraft Corp., who outlined the development of that plant. He said that in scouting the midwest for a possible site for a sub-assembly plant, in keeping with the government's wish to direct further expansion inland, he told offiicals that the firm "had been spoiled" by the ideal circumstances and cooperative treatment in San Diego.

Gott said a comparatively small part of the present $75,000,000 backlog of orders is for delivery to "the Ally," meaning Britain, the rest being for the United States defense. He expressed the hope that the "one Ally" would be able to accomplish more than the plural combination.

Earl Prudden, club president and vice president of the Ryan School of Aeronautics, introduced the speakers. He mentioned that Fulton Lewis jr., nationally known commentator, had visited San Diego Sunday to inspect the aircraft production facilities here and had devoted his daily radio broadcast to his findings.

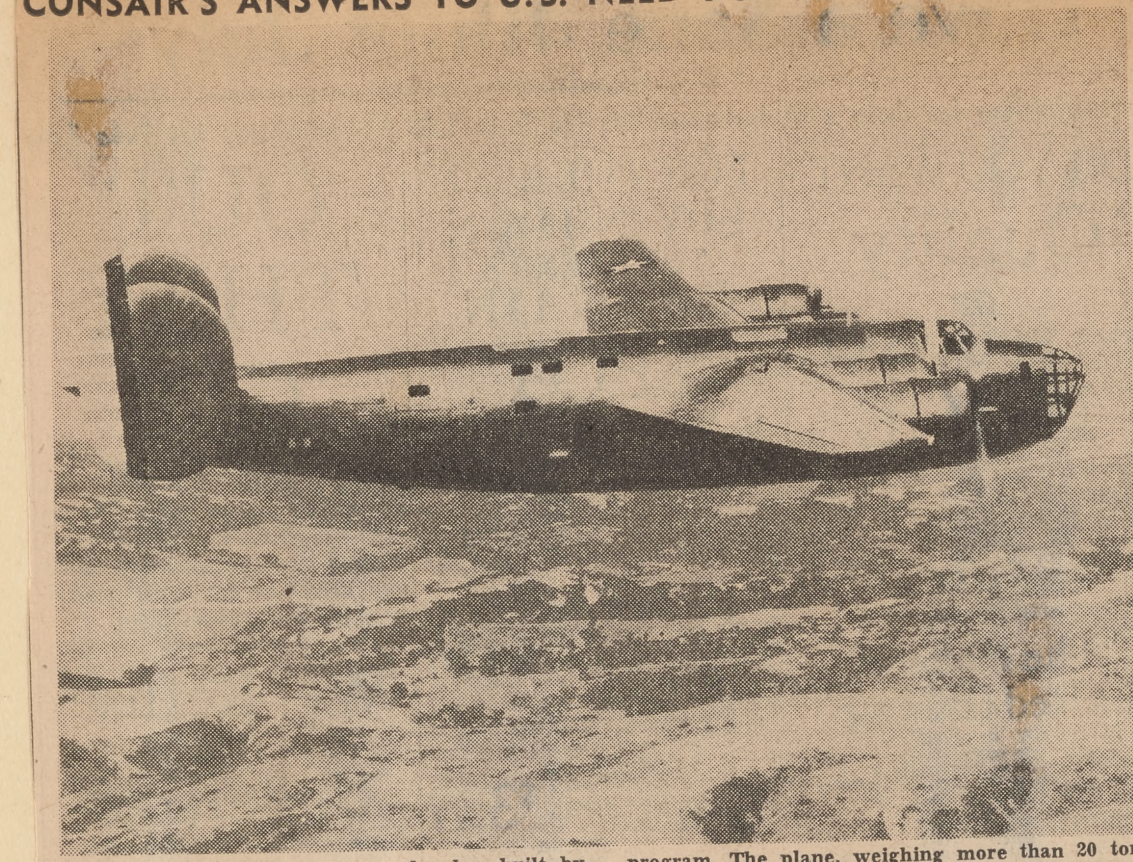
AIR CHIEF ARRIVES

Brig. Gen. Barton K. Yount, assistant chief of the army air corps, had been expected to attend the dinner but did not arrive in time. He came to San Diego to inspect primary training facilities at the Ryan school. In an interview, he said aviation cadets soon will receive their full training in California.

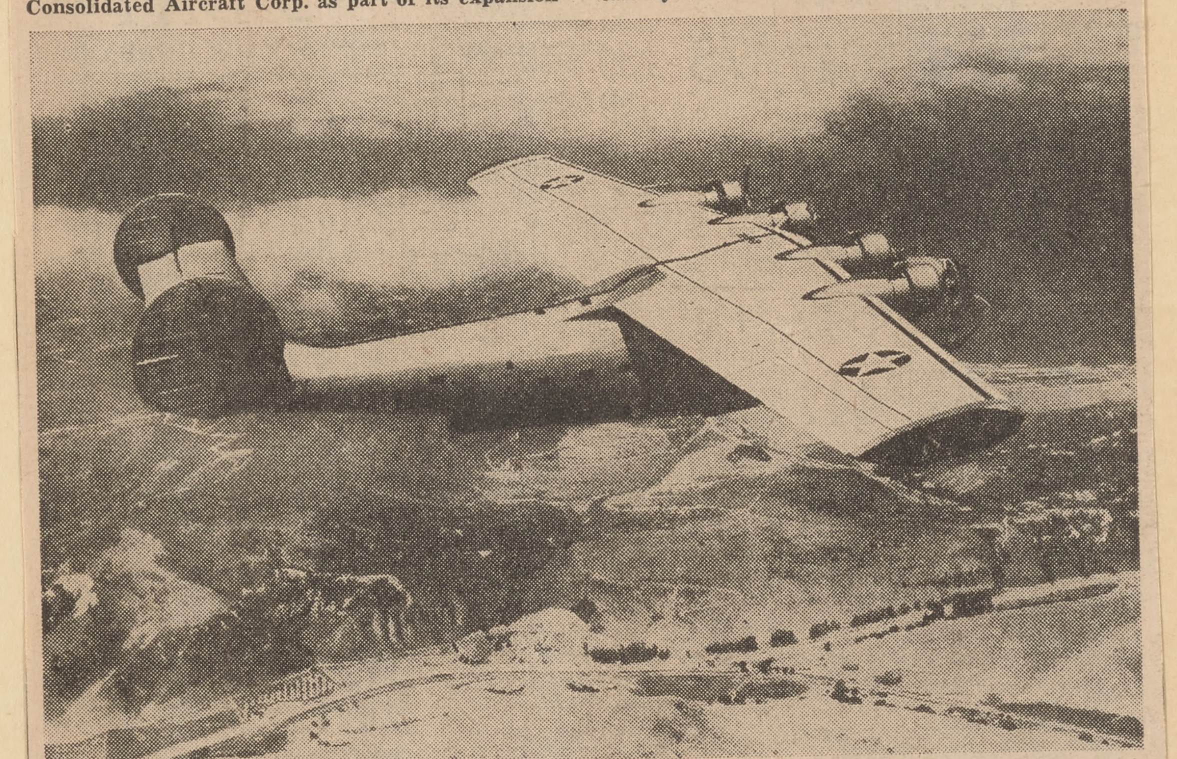
A civilian airport at Stockton, he said, will be converted into an advanced training school similar to that at Randolph field, Tex., and Moffett field, Sunnyvale, will become a tactical school like that at Kelly field, Tex. Heretofore all California student fliers have been sent to Texas for final training.

UNION-6-30-40

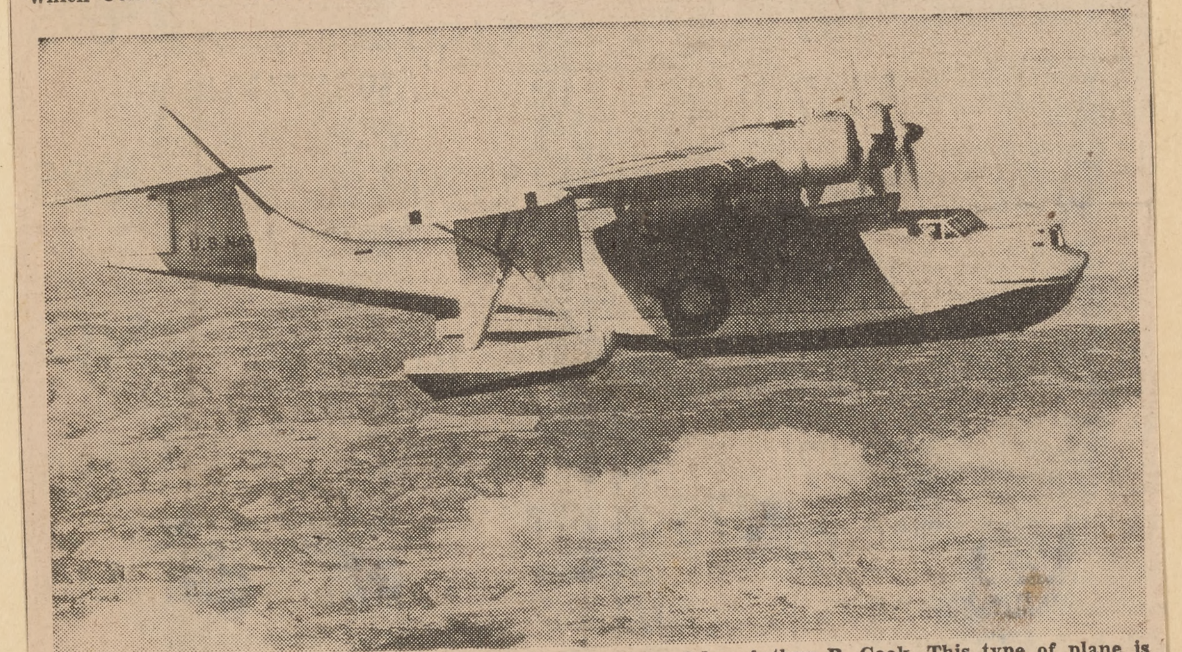
CONSAIR'S ANSWERS TO U.S. NEED FOR GREATER DEFENSE



New type of army long-range bomber built by Consolidated Aircraft Corp. as part of its expansion program. The plane, weighing more than 20 tons, can fly 3000 miles carrying a 4-ton load of bombs.



Four-motored, long-range offshore patrol bomber which Consolidated is building for the navy to replace early PBY twin-motored bombers in use in patrol wings in Hawaii, the Pacific and Atlantic.



The XPBY-5A, world's largest amphibian, built for the navy, which once was the aerial flagship of Rear Adm. Arthur B. Cook. This type of plane is being used to train new navy airboat pilots.

16th June 1940

FRANCE TO HAVE "FLYING FORTS"

120 ORDERED

A contract for 120 flying fortresses, to be built by Consolidated Aircraft, has been signed by French representatives in the United States, it was stated in New York yesterday by the French purchasers.

The French held an option on the contract, which was taken up on Friday. It provides for delivery of the machines in the second and third quarters of 1941.

London Times

National Aeronautics June 1940

Consolidated Aircraft Corp. Photo

San Diego honored Richard Archbold, flying explorer and research associate, the American Museum of Natural History, at a dinner meeting of the Aero Club of San Diego on May 13. An Award Certificate from N A A National Headquarters and a beautiful gold trophy of the Aero Club of San Diego were presented to Mr. Archbold and his crew consisting of Russell Rogers, chief pilot, Gerald Brown and Stephen Barrinka, engineers, Raymond Booth, radioman and the late Captain Lewis Yancey, navigator, for their successful research expedition and flight around the world at its maximum diameter via San Diego, Calif., The Netherlands, Hawaii, Wake Island, New Guinea, Australia, Africa, Virgin Islands, and New York, with return to San Diego, during 1938 and 1939. Other outstanding performances during the expedition included a non-stop flight across the continent of Australia and spanning of the Indian Ocean. Maj. R. H. Fleet, president of the Consolidated Aircraft Corporation, and life member of the N A A, whose firm manufactured the flying boat used by Mr. Archbold during his round-the-world flight made the presentation. Left to Right—Major Fleet, Mr. Archbold, Earl D. Prudden, president of Aero Club of San Diego.

NATIONAL AERONAUTICS
JUNE, 1940

~~Western Flying~~ June 1940

ARCHBOLD, CREW OF 'GUBA' WIN NEW HONORS FROM SAN DIEGANS

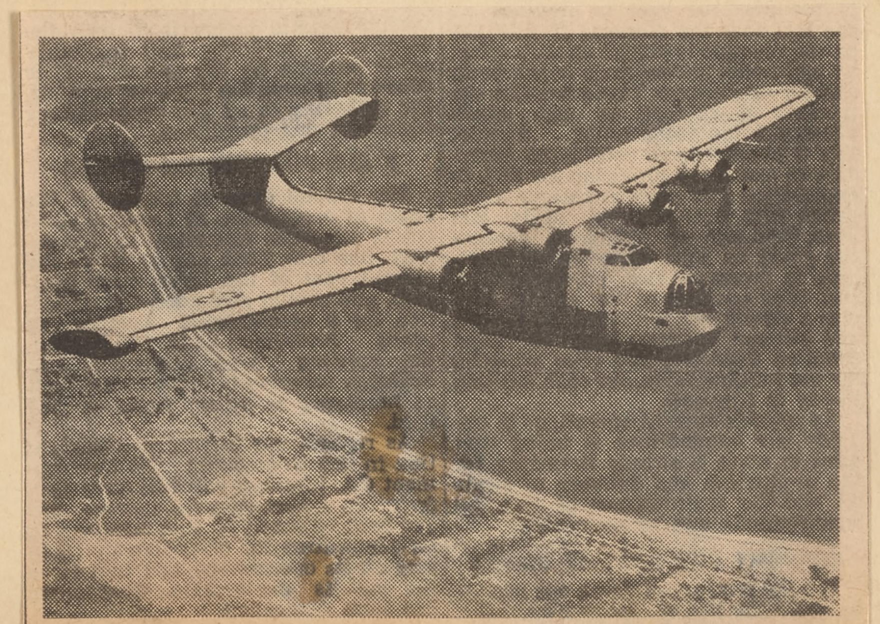
A dinner, honoring Richard Archbold, flying explorer and research associate of the American Museum of Natural History, and his crew of the Guba, was held the evening of May 13 at the Hotel San Diego, San Diego, California, with over 100 persons attending, including members of the San Diego Chapter of the National Aeronautic Association and speakers representing the Army, Navy, Coast Guard, City of San Diego and the Chamber of Commerce.

Major Reuben H. Fleet, life member of the National Aeronautic Association and president of the Consolidated Aircraft Corporation, presented Archbold and his crew with a scroll from the N.A.A., outlining his aerial achievements in the Guba; and Earl D. Prudden, president of the Aero Club of San Diego (N.A.A. Chapter), presented him with a beautiful gold trophy on behalf of that Chapter.

Members of the Guba crew are Russell Rogers, chief pilot; Gerald Brown and Stephen Barrinka, engineers; Raymond Booth, radioman; and the late Captain Lewis Yancy, navigator. Archbold and his crew were the first to circumnavigate the world in a flying boat; the first to circumnavigate the world at its maximum diameter; the first to fly across the Indian ocean; and the first to make a non-stop flight across Australia.

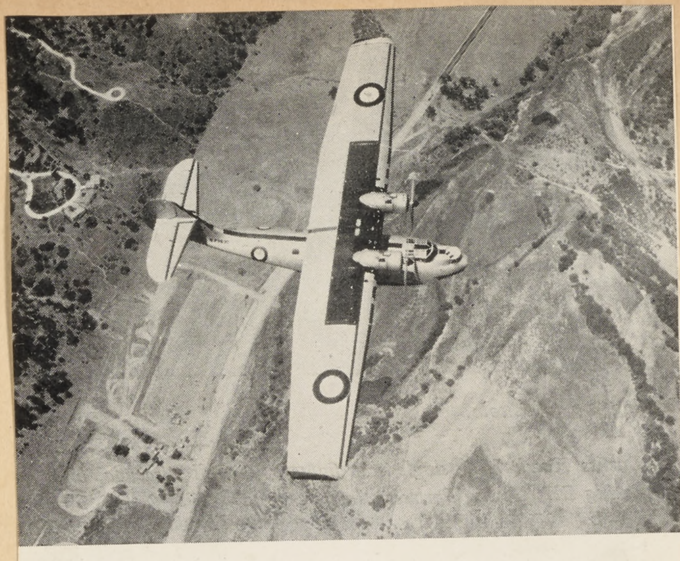
Edgar N. Gott, Consolidated Aircraft's vice-president married Miss Madie Koenig, Los Angeles, Calif. Ceremony held May 2 at home of John H. Jouett, president, Aeronautical Chamber of Commerce, in Washington. Best man was Maj. Gen. H. H. Arnold, Army Air Corps chief.

Aviation - June 1940



One of America's latest flying-boats is this four-engined Consolidated in flight over California. The crew can walk the entire length of the hull without stooping.

London Evening News - June 19 - 1940

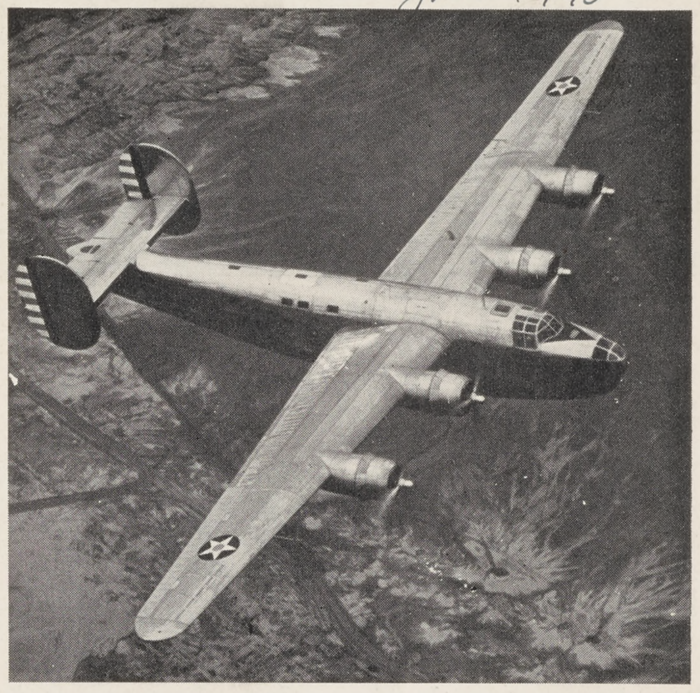


Consolidated, model 28-5, built for British Air Ministry—flown across Atlantic.

COMMERCIAL AVIATION

Western Flying

June 1940



First flight picture of the new Consolidated XB-24 heavy bomber built for the United States Army Air Corps. The ship is still undergoing tests.

American Export Airlines to Begin Transatlantic Air Service

THE CIVIL AERONAUTICS BOARD granted two certificates to American Export Airlines, Inc., on July 15, one for the carrying of mail and express only between New York and Lisbon, Portugal, within 60 days, the other for nonstop passenger, mail and express service to begin next year.

Consolidated Model 28 PBY twin-engined flying boats will be used for the mail-express service, and converted Navy Vought-Sikorsky flying boats will be used next year. A detailed description will appear in our September issue.

U.S. Air Services - Aug '40

THE VISTA PRESS
THE PROGRESSIVE NEWSPAPER OF NORTHERN SAN DIEGO COUNTY
Subscription:
One Year, $2.00. Six Months $1.00.
VISTA, CALIFORNIA, THURSDAY, JULY 4, 1940

Great Aircraft Plant Employs Thousands

Anticipating a backlog of orders which "probably will exceed $100,000,000" Consolidated Aircraft Corporation is rushing completion on a vast expansion program, Maj. Edgar N. Gott, Consolidated vice president, told more than thirty editors, publicists and advertising men of the county at a meeting of the San Diego chamber of commerce publicity committee in San Diego Friday night.

Maj. Gott's address preceded a visit by the group to the plant where mass production of giant fighting craft was viewed.

Although the meeting theme centered around aircraft expansion in this area and plans for future development, Maj. Gott joined Maj. T. C. Macauley, chamber secretary-manager, in warning that "every possible step should be taken to rid this county of subversive elements seeking to retard national preparedness and to undermine this nation's democracy."

Largest Plant

The tremendous expansion program currently being rushed to completion at Consolidated Aircraft Corporation, which is already by far the largest county manufacturing enterprise, will give San Diego the distinction of having the largest integrated covered and uncovered aircraft manufacturing plant in America. Consolidated's manufacturing space, exclusive of field, ramp and railroad sidings, now occupies over 1,910,000 square feet of area or an 87 per cent increase over the previous figure, with an option on adjacent land equal to an added 50 percent of this area, plans are nearly completed for its possible use.

This expansion thus brings the local plant into full step with the President's recently announced national defense program, and helps to place San Diego in the forefront of the drive to produce the stated 50,000 plane output per year.

Already operating with a present backlog in excess of $70,000,000, contracts for additional work are being negotiated which, if accepted, will build this huge backlog for San Diego's concern to well over $100,000,000. Roughly one half of this sum will be expended locally, and this largely through wages to employees, exerting a marked stimulus to local business of a purely beneficial nature, since the plant's operations do not draw upon the community's wealth, other than its climate. A distinct climatic advantage is the fact that approximately 30 per cent of the manufacturing operations can be conducted out of doors, thus paying health dividends to the employees as well as convenience to the company.

Plant Immense

Thoroughly modern in construction and planning, Consolidated's huge plant utilizes all the latest features of aircraft plant design. The plant now extends for a half mile along Pacific Highway, and the new Final Assembly building at the north end of the plant is more than a city block in size with its tremendous roof held high in the air with remarkably few supporting columns. This construction allows exceptional manufacturing freedom within. A three story structure, the size of an average three story office building of the business district, is housed under the roof of this final assembly building, and a dozen more such structures could be placed under its roof without crowding.

Sawtooth roof construction affords north lighting during the daylight hours. Adequate artificial lighting is provided for the night workers. The plant is now operating three shifts. It is not difficult to appraise the fact that the entire plant is streamlined for the most efficient production and the greatest convenience to the workmen in all necessary facilities provided; for all its huge buildings, and most of its equipment, are less than five years old today. This marks it as one of

Aircraft Plant

(Continued from First Page)

the newest and finest plants in all the world.

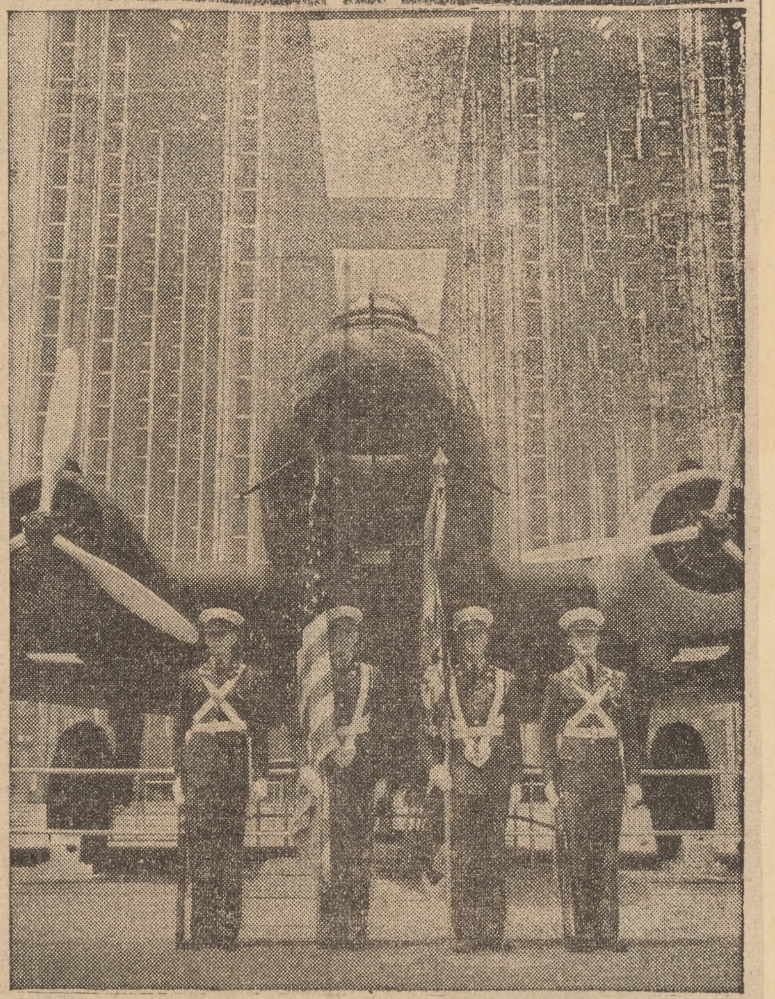
Well Equipped

Rounding out its complement of equipment, some of the finest machine tools available in the market today have, and will be installed as the program progresses. Lathes, automatic screw machines, shapers, millers, die sinkers, planers, punchpresses, hydraulic presses, drop hammers, power shears and brakes and smaller electric and pneumatic tools in almost unlimited number are included. These machines are being operated by men rapidly learning the newest time saving features of this splendid equipment.

At the present moment, approximately 750 of the more than 7,000 skilled aircraftmen are engaged in tool design and production, and the making of patterns which supplement the machine tools with special equipment; providing jigs, patterns and templates, assembly fixtures and the multitude of special tools required to assist the workmen to produce the finest airplanes possible.

Consolidated's present position, and outlook for the future, bids fair to exert a marked influence on the growth of San Diego county. Concluding a statement to the plant personnel on the recent advent of the Consolidated Aircraft Corporation's 17th birthday, President Major Reuben H. Fleet said, "We have a good organization—equal to any in our industry—the best in our history. So in counting our blessings let us consider that we have a factory of our own, tailored for our business, in the city of our choice, with plenty of work on hand and in sight, and no mortgage on our premises or our future. In one sense I regret that we are too busy to celebrate."

Made in San Diego County



Color guard of the 30th Infantry marking time in front of the U. S. Army bomber which stands in the foreground of the Federal Colonnades at the San Francisco Exposition. Many bombers like this are being built at Consolidated Aircraft plant in San Diego.

Trib. - 7-19-40

Vultee Voting on Union; Seek Election at Ryan

Vultee Aircraft's 2400 employes today voted in a national labor relations board election, in the first move in the C.I.O.-United Auto Workers' campaign to obtain collective bargaining rights over approximately 50,000 workers in California plane plants, The Associated Press reported from Downey. A petition for a similar election at the Ryan Aeronautical Co., San Diego, is reported before the board on C.I.O. initiative. The only plant in southern California where the NLRB has desigated a bargaining agent is Consolidated Aircraft, San Diego, where the A.F.L. won an election.

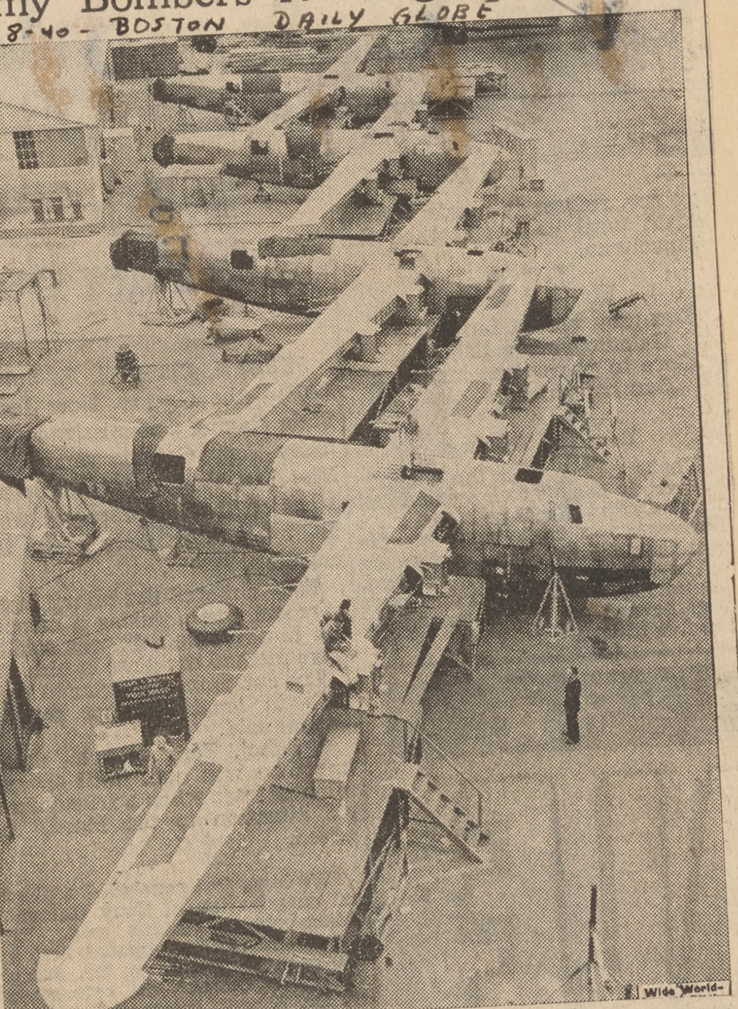
Defer Consair Land O.K. As Water St. Studied

Pending a decision on practicability of making a two-way highway along Water st. from Barnett ave. to Harasthy st., the harbor commission yesterday held in abeyance a request of Consolidated Aircraft Corp. to take over an area 1400 feet by 300 feet west of the existing Consair plant. The firm now has an option for additional land to increase facilities of the plant. Water st. lies west of Pacific highway and is a part of newly reclaimed tidelands. While the city planning commission intends to recommend the street be extended, the commission was advised the marine corps base has plans for erecting buildings and laying railroad tracks in the area through which the street would run. If the street is extended, it would cut into Pacific highway immediately north of Bean st.

Tribune
7-19-40

Army Bombers Nearing Completion

7-8-40 - BOSTON DAILY GLOBE



At San Diego, Calif., rapidly nearing completion, these four-motored Army Air Corps bombers, designated as the XB-24, are pictured on the final assembly line at the Consolidated Aircraft Corporation. Powered with four 1200 h. p. motors, the planes are said to have a large cruising range, to be very fast and carry heavy armament with a crew of nine persons. These planes have been released for export, and it is reported that they will be shipped to Britain. (Photo passed by Army Air Corps censor.)

Union -- May 9, '40

Aviation Training Vital Need, Says Adm. Blakely

Aviation personnel will play as vital a role in national defense as any other phase, Rear Adm. C. A. Blakely, 11th Naval district commandant, told the San Diego Aero club at its dinner meeting last night.

"Whether or not we attain the goal of 50,000 planes," Adm. Blakely said, "if we stimulate sufficient interest in aviation and obtain an adequate force of trained pilots we will have taken a big step forward in the matter of national defense."

He called attention to the known fact that a large ground crew is needed for every craft kept in flying condition, and that in active service three or four pilots are needed for every plane for full fighting efficiency.

RECALLS PREDICTION

The possession and maintenance of a large reserve of competent fliers are of key importance in modern warfare, Adm. Blakely said, and this will be one of the deciding factors in the present European conflict.

The admiral recalled the skepticism with which a forecast of his in 1910 was greeted. He predicted at that time that planes might be used to good advantage in the naval service, and that some day they might even be able to land and take off from ships.

Adm. Blakely not only saw this prophecy come true, but took an active part in shaping its fulfillment. He commanded the aircraft carrier Lexington and later was in command of battle force aircraft, comprising all the carriers and their complements. He took the naval pilot training course at Pensacola, Fla., when he was 50 years old.

In expressing his belief in the need of universal military service, Adm. Blakely said he did not mean by this the shouldering of a rifle by every man but the training of all able-bodied men for one of the many branches and supporting elements of military organization. Aviation would, he said, require a fair share of such trained personnel.

SEEKING NEW SITE

Another speaker was Maj. E. N. Gott, vice president of Consolidated Aircraft Corp., who outlined the development of that plant. He said that in scouting the midwest for a possible site for a sub-assembly plant, in keeping with the government's wish to direct further expansion inland, he told offiicals that the firm "had been spoiled" by the ideal circumstances and cooperative treatment in San Diego.

Gott said a comparatively small part of the present $75,000,000 backlog of orders is for delivery to "the Ally," meaning Britain, the rest being for the United States defense. He expressed the hope that the "one Ally" would be able to accomplish more than the plural combination.

Earl Prudden, club president and vice president of the Ryan School of Aeronautics, introduced the speakers. He mentioned that Fulton Lewis jr., nationally known commentator, had visited San Diego Sunday to inspect the aircraft production facilities here and had devoted his daily radio broadcast to his findings.

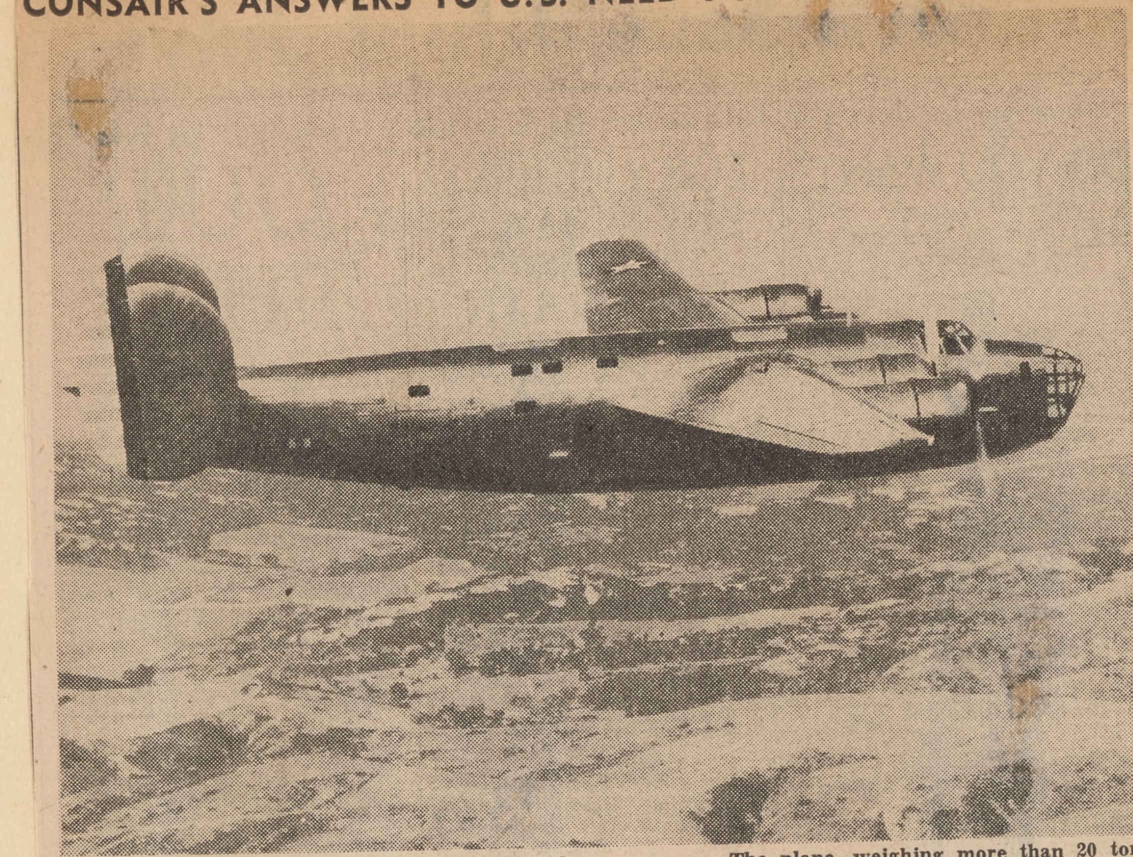
AIR CHIEF ARRIVES

Brig. Gen. Barton K. Yount, assistant chief of the army air corps, had been expected to attend the dinner but did not arrive in time. He came to San Diego to inspect primary training facilities at the Ryan school. In an interview, he said aviation cadets soon will receive their full training in California.

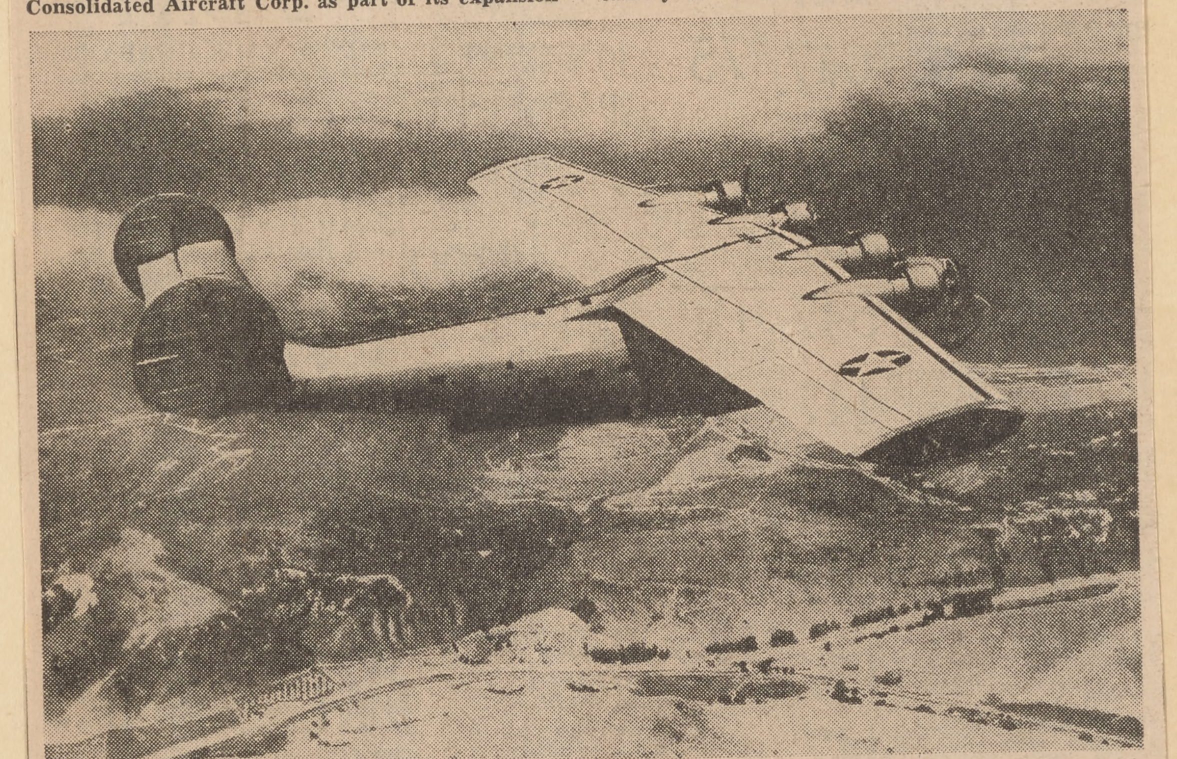
A civilian airport at Stockton, he said, will be converted into an advanced training school similar to that at Randolph field, Tex., and Moffett field, Sunnyvale, will become a tactical school like that at Kelly field, Tex. Heretofore all California student fliers have been sent to Texas for final training.

UNION-6-30-40

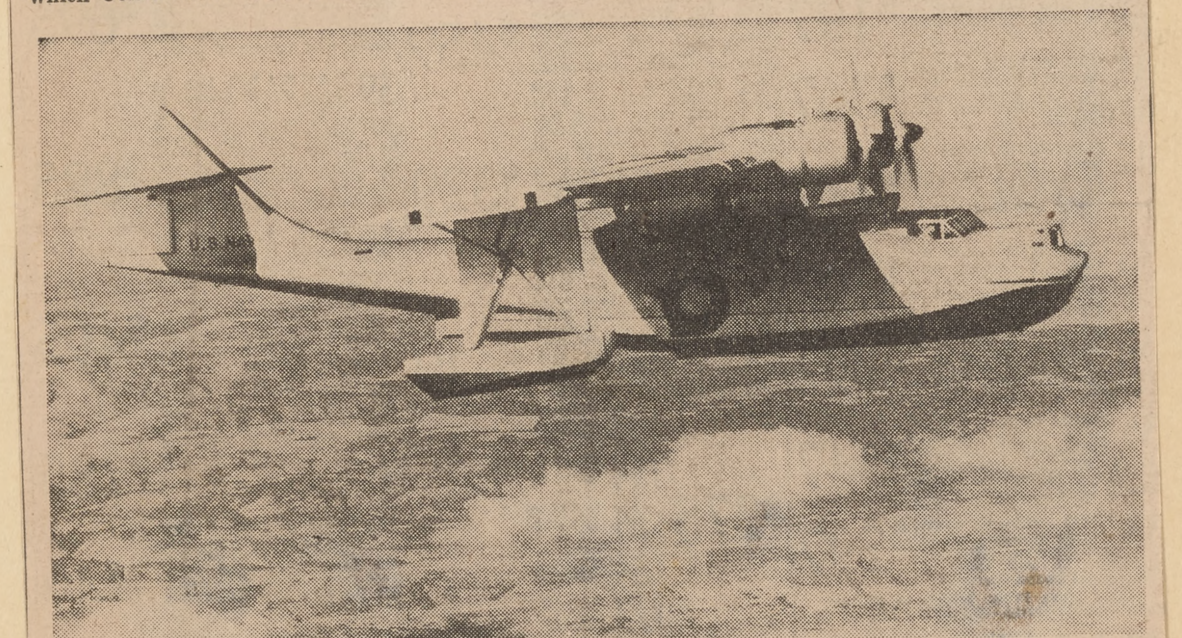
CONSAIR'S ANSWERS TO U.S. NEED FOR GREATER DEFENSE



New type of army long-range bomber built by Consolidated Aircraft Corp. as part of its expansion program. The plane, weighing more than 20 tons, can fly 3000 miles carrying a 4-ton load of bombs.



Four-motored, long-range offshore patrol bomber which Consolidated is building for the navy to replace early PBY twin-motored bombers in use in patrol wings in Hawaii, the Pacific and Atlantic.



The XPBY-5A, world's largest amphibian, built for the navy, which once was the aerial flagship of Rear Adm. Arthur B. Cook. This type of plane is being used to train new navy airboat pilots.

16th June 1940

FRANCE TO HAVE "FLYING FORTS"

120 ORDERED

A contract for 120 flying fortresses, to be built by Consolidated Aircraft, has been signed by French representatives in the United States, it was stated in New York yesterday by the French purchasers.

The French held an option on the contract, which was taken up on Friday. It provides for delivery of the machines in the second and third quarters of 1941.

London Times

National Aeronautics June 1940

Consolidated Aircraft Corp. Photo

San Diego honored Richard Archbold, flying explorer and research associate, the American Museum of Natural History, at a dinner meeting of the Aero Club of San Diego on May 13. An Award Certificate from N A A National Headquarters and a beautiful gold trophy of the Aero Club of San Diego were presented to Mr. Archbold and his crew consisting of Russell Rogers, chief pilot, Gerald Brown and Stephen Barrinka, engineers, Raymond Booth, radioman and the late Captain Lewis Yancey, navigator, for their successful research expedition and flight around the world at its maximum diameter via San Diego, Calif., The Netherlands, Hawaii, Wake Island, New Guinea, Australia, Africa, Virgin Islands, and New York, with return to San Diego, during 1938 and 1939. Other outstanding performances during the expedition included a non-stop flight across the continent of Australia and spanning of the Indian Ocean. Maj. R. H. Fleet, president of the Consolidated Aircraft Corporation, and life member of the N A A, whose firm manufactured the flying boat used by Mr. Archbold during his round-the-world flight made the presentation. Left to Right—Major Fleet, Mr. Archbold, Earl D. Prudden, president of Aero Club of San Diego.

NATIONAL AERONAUTICS
JUNE, 1940

~~Western Flying June 1940~~

ARCHBOLD, CREW OF 'GUBA' WIN NEW HONORS FROM SAN DIEGANS

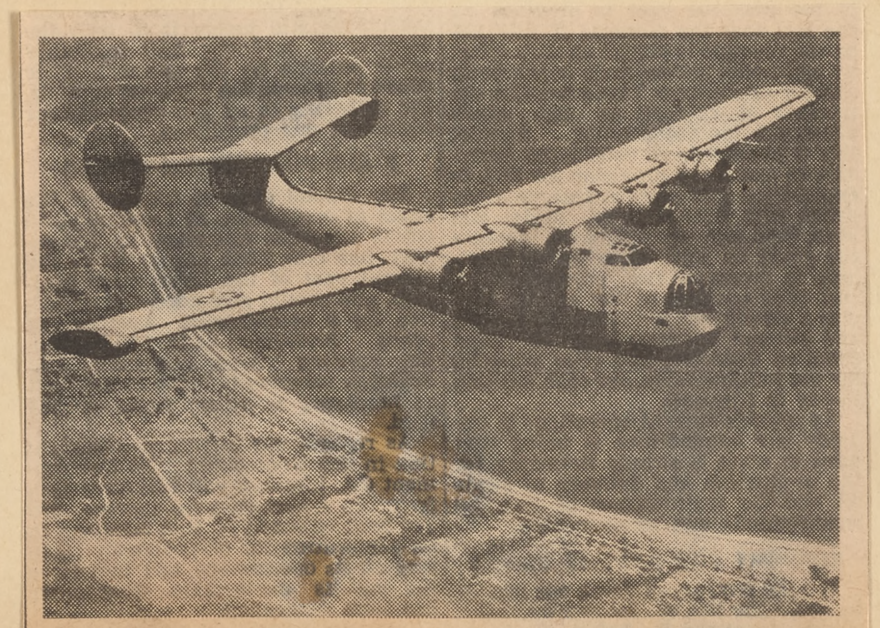
A dinner, honoring Richard Archbold, flying explorer and research associate of the American Museum of Natural History, and his crew of the Guba, was held the evening of May 13 at the Hotel San Diego, San Diego, California, with over 100 persons attending, including members of the San Diego Chapter of the National Aeronautic Association and speakers representing the Army, Navy, Coast Guard, City of San Diego and the Chamber of Commerce.

Major Reuben H. Fleet, life member of the National Aeronautic Association and president of the Consolidated Aircraft Corporation, presented Archbold and his crew with a scroll from the N.A.A., outlining his aerial achievements in the Guba; and Earl D. Prudden, president of the Aero Club of San Diego (N.A.A. Chapter), presented him with a beautiful gold trophy on behalf of that Chapter.

Members of the Guba crew are Russell Rogers, chief pilot; Gerald Brown and Stephen Barrinka, engineers; Raymond Booth, radioman; and the late Captain Lewis Yancy, navigator. Archbold and his crew were the first to circumnavigate the world in a flying boat; the first to circumnavigate the world at its maximum diameter; the first to fly across the Indian ocean; and the first to make a non-stop flight across Australia.

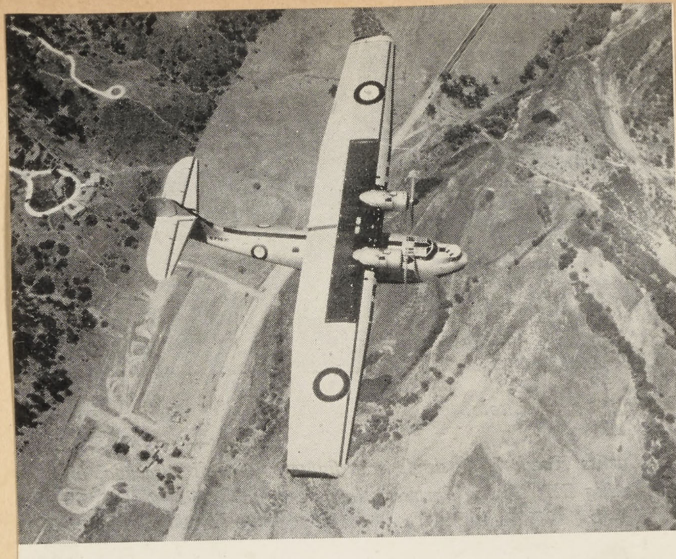
Edgar N. Gott, Consolidated Aircraft's vice-president married Miss Madie Koenig, Los Angeles, Calif. Ceremony held May 2 at home of **John H. Jouett**, president, Aeronautical Chamber of Commerce, in Washington. Best man was **Maj. Gen. H. H. Arnold**, Army Air Corps chief.

Aviation - June 1940



One of America's latest flying-boats is this four-engined Consolidated in flight over California. The crew can walk the entire length of the hull without stooping.

London Evening News - June 19 - 1940



Consolidated, model 28-5, built for British Air Ministry—flown across Atlantic.

COMMERCIAL AVIATION

Western Flying
June 1940

First flight picture of the new Consolidated XB-24 heavy bomber built for the United States Army Air Corps. The ship is still undergoing tests.

American Export Airlines to Begin Transatlantic Air Service

THE CIVIL AERONAUTICS BOARD granted two certificates to American Export Airlines, Inc., on July 15, one for the carrying of mail and express only between New York and Lisbon, Portugal, within 60 days, the other for nonstop passenger, mail and express service to begin next year.

Consolidated Model 28 PBY twin-engined flying boats will be used for the mail-express service, and converted Navy Vought-Sikorsky flying boats will be used next year. A detailed description will appear in our September issue.

U.S. Air Services - Aug '40

L.A. Times

Plane Company Plans Branch

Consolidated Seeking Inland Site but Denies Main Factory to Move

Consolidated Aircraft Corp. is seeking an eastern or middle western site for a branch factory to augment its plant in San Diego. Contrary to reports from the East, it is not considering moving its main plant to Dallas.

These disclosures were made yesterday by a company spokesman who explained that a site for the supplementary plant in the interior would be considered less vulnerable than the coastal factory.

PLANT EXPANSION

Consolidated's San Diego facilities are in the midst of a $2,000,000 expansion program which will increase the floor space 90 per cent by Aug. 1.

Although Maj. Reuben H. Fleet, president, was in Texas last week, presumably examining sites for the branch plant, the company spokesman denied reports that a lakeshore area near Dallas had been chosen.

LOCKHEED DENIAL

Robert E. Gross, president of Lockheed Aircraft Corp. in Burbank, simultaneously denied another report that Lockheed intends to move to Dallas for national defense reasons. "Nothing to it," he said flatly.

Great Britain's Air Vice-Marshal, Henry Meyrick Cave-Browne-Cave, inspected the Lockheed and Consolidated plants yesterday, checking progress on orders totaling $85,000,000.

June 26, 1940

AVIACÃO SUL AMERICANA S.A.

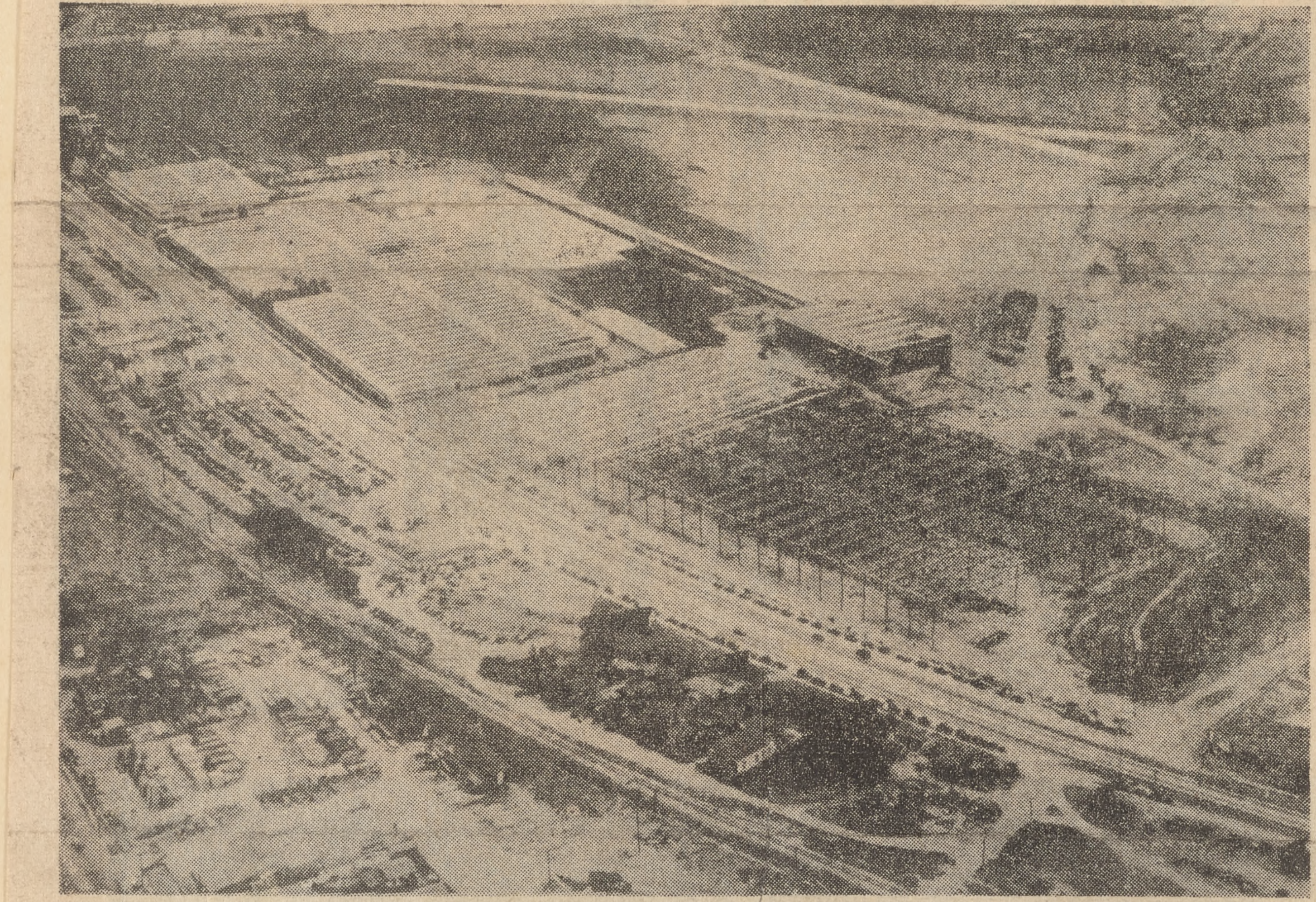
CORREIO DA MANHÃ — Quarta-feira, 26 de Junho de 1940

A AVIAÇÃO

MILITAR, COMMERCIAL E CIVIL

RIO DE JANEIRO

INFORMAÇÕES DO PAIZ E DO ESTRANGEIRO



Uma vista das installações gigantescas e da construcção das salas de montagem da Consolidated Aircraft. Quasi todas as grandes fabricas norte-americanas trabalham nas mesmas proporções para attender ás neccessidades urgentes da aviação militar e naval dos Estados Unidos

O presente programma de expansão da Consolidated Aircraft Corporation, no qual se trabalha com afinco, e que, presume-se, será acabado nos primeiros dias de agosto, está perfeitamente de accordo com o programma do presidente Roosevelt, tendo em vista construir um grande numero de aviões para attender ás necessidades do momento.

Quando a sua fabrica fôr terminada, a Consolidated Aircraft Corporation possuirá a maior fabrica aeronautica da America, com uma área edificada ou não de 1.910.000 pés quadrados, e 954.440 p. q. de aeroporto, com opção para compra em caso de necessidade, em vista de ulterior expansão.

A rampa, o aeroporto, os desvios não estão incluidos nos algarismos citados.

A C. A. C. goza de condições unicas para attender a sua ascensão como maior fabrica aeronautica na America.

A maior parte de suas encommendas, que montam a .... $70.000.000, consiste em obras por conta do governo dos Estados Unidos, com uma proporção menor de contratos para paizes estrangeiros, deixando a Companhia relativamente isenta de quaesquer contingencias que possam advir, conforme o decorrer dos acontecimentos exteriores.

Quando emprehendeu o presente programma de expansão, para poder attender a encommendas do governo, a C. A. C. entrou num estreito entendimento com o Thesouro dos Estados Unidos. O accordo prevê que o custo de certos melhoramentos indispensaveis para attender ás entregas poderiam ra attender ás entregas poderia ser addiccionado ao preço dos afim de amortizar boa parte dos melhoramentos.

No meio do clima naturalmente suave de San Diego, onde está situada esta importante fabrica — trinta por cento no minimo das operações de construcção do material aeronautico podem ser feitos ao ar livre. O necessario foi feito para a pavimentação da totalidade da area da fabrica, tomando providencias para a protecção do material de montagem das cadeias, dando assim uma grande possibilidade de acção á industria agora em pleno desenvolvimento.

Fundada em 1932, a Consolidated Aircraft chegou rapidamente á sua situação actual, tomando posição privilegiada entre os grandes constructores de hydro-aviões, gozando no mundo de uma fama comparavel á de Latecoêre

Tomando como base para os calculos de seus apparelhos uma envergadura de 100 pés no minimo, ella especializou-se em apparelhos de grande porte.

Em 1934, seis Consolidated P2 YI da U. S. Navy realizaram o primeiro vôo de grupo importante entre San Francisco e Hawai, voando uma distancia da 2.414 milhas sem escala.

Um dos maiores successos de engenharia conhecidos até hoje é o Consolidated Model 28 que é ainda — com o Model 31 — maior bimotor da U. S. Navy e que na occasião das entregas dos apparelhos de série as bases as mais distantes realizaram vôos em grupos notaveis como o de 88 M. 28 que voaram em esquadrilhas de 18 ou 20 de San Diego ao Canal de Panamá — ou assim seja uma distancia de cerca de 3.000 milhas, levando uma tripulação total de 1.200 homens. Nenhum incidente digno de nota occorreu durante essas manobras.

Ao Model 28 succederam o Model 29 um gigantesco quadrimotor hydro-avião e o Model 31 — o famoso bimotor de trinta toneladas no qual pela primeira vez foi installado um grupo moto-propulsor duplo de 2.000 c. v. assim como o famoso perfil de asa Lavis que permitte asas enormes — de grande envergadura e pequena largura relativa.

Esse anno emfim, tornando novamente as suas actividades para os apparelhos terrestres, a Consolidated Aircraft construiu o famoso quadrimotor de bombardeio especie de nova Fortaleza Voadora aperfeiçoada adoptado pela U. S. Army sob o indicativo X. B. 24 e que representa um importante progresso aerodynamico sobre os aviões americanos actuaes, tendo um raio de acção de cerca de 4.000 kilometros com carga de quatro toneladas de bombas e uma velocidade de 480 kilometros a hora.

UNION 7/1/40

Guba Will Leave Friday for East

British May Use Craft as Bomber

On a sustained flight to Port Washington, Long Island, with a possibility it later may be purchased by Britain and added to the Royal Air force bombing fleet, Richard Archbold's famed Consolidated-built flying boat Guba is to take off from the harbor Friday afternoon, 2:30.

Crew of the Guba will include Russell Rogers, who has been at the controls in all its record-breaking flights to Africa and Netherlands, New Guinea; Douglas Kelley, veteran local flier, who will act as co-pilot; Stephen Barrinka, flight engineer; H. G. Rann, radio operator and Hector Nicholson, assistant radioman.

NEEDS ONLY RACKS

Rogers said the route will be via Winslow, Ariz.; Kansas City and Pittsburgh. He expects to land at Port Washington early Saturday.

Reports have been current for several weeks that England has been negotiating with Archbold and the

(Continued on Page 2-A, Col. 2)

UNION— 7/1/40

PILOTS OF ARCHBOLD'S FLYING BOAT

RUSSELL ROGERS **DOUGLAS KELLEY**

. . . will pilot the Guba on another epochal flight.

* * *

Guba Will Leave Friday for East

(Continued from Page 1)

American Museum of Natural History for the purchase of the Guba. All that is necessary to convert the craft from a "flying laboratory" into a long-range bomber is to rip out sections of the wings and install bomb racks. This could be accomplished within a few days.

SET MANY RECORDS

The Guba was the first aircraft to fly around the world at its greatest diameter; made the longest overwater nonstop flight, from Dakar, Africa, to St. Thomas, Virgin islands; was the first to fly across the Indian ocean and the first flying boat to cross Africa. It left here in June, 1938, for New Guinea, and the following June sailed from Hollandia, New Guinea, for San Diego via Melbourne, Africa and the Virgin islands.

Rogers said Archbold, a research director of the American Museum of Natural History, has completed a six-month scientific expedition in Arizona and New Mexico. Two collections were obtained, one of a jack rabbit group from Ship Rock, N. M., and a ring tail cat collection from Arizona. Assisting Archbold on the expedition were A. L. Rand, ornithologist; William Richardson, mammalogist, and Prof. L. Brass, Australian botanist.

Archbold's "Guba" Begins Long Flight This Afternoon

July 5 '40
Prog. Journ.

● **Scheduled to** lift from San Diego bay at 2:30 p.m. today, the famed 'round-the-world air boat Guba will begin a non-stop flight to Port Washington, New York.

Reports have been current recently that the huge Consolidated-built craft will be purchased from its millionaire owner, Richard Archbold, by Great Britain for use in the Royal Air Force bombing fleet.

Used by Archbold as a "flying laboratory" on his numerous expeditions to far corners of the world for the American Museum of Natural History, all that would be necessary to convert the ship into a long-range bomber would be to rip out wing sections and install bomb racks. This would be a job of a few days only.

The Guba's crew today will be Russell Rogers, who has been at the controls in all its record-breaking flights to Africa and Netherlands, New Guinea; Douglas Kelley, veteran local flier, who will act as co-pilot; Stephen Barrinka, flight engineer; H. G. Rann, radio operator and Hector Nicholson, assistant radioman.

Rogers said the route will be via Winslow, Ariz.; Kansas City and Pittsburgh. He expects to land at Port Washington early Saturday.

The Guba was the first aircraft to fly around the world at its greatest diameter; made the longest overwater nonstop flight, from Dakar, Africa, to St. Thomas, Virgin islands; was the first to fly across the Indian ocean and the first flying boat to cross Africa. It left here in June, 1938, for New Guinea, and the following June sailed from Hollandia, New Guinea, for San Diego via Melbourne, [illegible] the Virgin islands.

DELAY ARCHBOLD FLIGHT

Postponement of the non-stop flight of Richard Archbold's flying boat Guba to Port Washington, Long Island, until Monday or Tuesday was announced today by Russell Rogers and Douglas Kelly, pilots. The flight originally was scheduled to begin Friday at 2:30 p.m. The postponement was due to Archbold's desire for additional equipment to be delivered by Consolidated Aircraft Corp., builder of the Guba. Trib.- 7-3

Consolidated Now Has Order Backlog Of $120,000,000

● Anticipating a backlog of orders which "probably will exceed $120,000,000" Consolidated Aircraft Corporation is rushing completion on a vast expansion program, Maj. Edgar N. Gott, Consolidated vice president, announced at a recent meeting of the San Diego Chamber of Commerce publicity committee.

Although the meeting theme centered around aircraft expansion in this area and plans for future development, Maj. Gott joined Maj. T. C. Macaulay, Chamber secretary-manager, in warning that "every step should be taken to rid this county of subversive elements seeking to retard national preparedness and to undermine this nation's democracy."

"The expansion program now being rushed to completion at Consolidated will, when completed, give San Diego the distinction of having the largest integrated covered and uncovered aircraft manufacturing plant in America," Maj. Gott declared. "Consolidated's manufacturing space, exclusive of field, ramp and railroad sidings, now occupies more than 1,910,000 square feet of area or a 87 per cent increase over the previous figure. With an option on adjacent land equal to an added 50 per cent of this area, plans nearly are completed for its possible use."

Maj. Gott said that "this expansion brings the local plant into full step with the President's recently announced national defense program and helps to place San Diego in the forefront of the drive to produce the stated 50,000-plane output a year."

In accordance with the gov-

(Continued on Page 3)

SAN DIEGO PROGRESS JOURNAL

Wednesday, July 10, 1940

Consolidated Now Has Order Backlog Of $120,000,000

(Continued from page 1)

ernment's plans to accelerate aircraft production, Consolidated has just put into effect a six-day 48-hour weekly schedule in all manufacturing departments. The new schedule will step-up production 20 percent and will increase the payroll by 30 percent due to payment of time and a half over the normal 40-hour week schedule.

Touching on Consolidated's present volume of business, Maj. Gott stated the plant already is operating "with a backlog in excess of $70,000,000 and contracts for additional work are being negotiated which, if accepted, will build this huge backlog to well over $120,000,000."

"Roughly, one half of this sum will be expended locally, and this largely through wages to employees, exerting a marked stimulus to local business of a purely beneficial nature, since the plant's operations do not draw upon the community's wealth, other than its climate. A distinct climatic advantage is the fact that approximately 30 per cent of the manufacturing operations can be conducted out of doors, thus paying health dividends to the employees as well as convenience to the company," he explained.

Thoroughly modern in construction and planning, Consolidated's huge plant utilizes all the latest features of aircraft plant design.

Rounding out its complement of equipment, some of the finest machine tools available in the market today have, and will be installed as the program progresses. Lathes, automatic screw machines, shapers, millers, die sinkers, planers, punchpresses, hydraulic presses, drop hammers, power shears and brakes and smaller electric and pneumatic tools in almost unlimited number are included. These machines are being operated by men rapidly learning the newest time saving features of this splendid equipment.

At the present moment, approximately 750 of the more than 7,500 skilled aircraftsmen are engaged in tool design and production, and the making of patterns which supplement the machine tools with special equipment; providing jigs, patterns and templates, assembly fixtures and the multitude of special tools required to assist the workmen to produce the finest airplanes possible.

In the past 17 years Consolidated planes have been sold to Brazil, Siam, Peru, Argentina, Mexico, Cuba, Canada, Colombia, China, Portugal, Turkey, Rumania, England and France. The bulk of the present contracts are for long-range bombers for the U. S. Army and navy and for the British Royal air force.

"Consolidated's present position and outlook for the future, bids fair to exert a marked influence on the growth of San Diego county," Maj. Gott concluded.

MAKES LONG HOP

The new navy patrol bomber, the Consolidated XPB2Y-1, recently made a nonstop, roundtrip transcontinental flight. The plane has four engines of 1050 horsepower each.

Tribune - 7-9

UNION

Aircraft Worker Seriously Injured

7/11/40

A Consolidated Aircraft Corp. worker was injured critically last night and his wife was cut and bruised when their car and one driven by Maj. Gen. C. H. Lyman, 64, U.S.M.C. ret., collided on Rosecrans st. between Goldsmith and Freeman sts., police reported.

Police physicians said the victim, Gordon Grant, 22, received a fractured skull and cuts and bruises. Grant and his wife, Elizabeth, 17, who reside at 3878½ Van Dyke ave., were taken to the County hospital.

Richard Alley, crash car officer, said the accident occurred when Grant tried to pass Lyman's vehicle on the right side as Lyman started to turn into his driveway. The impact threw the Grant machine over the curb and into

---

Tribune

Start 48-Hour Week At Consair Plant

7/6-40

Consolidated Aircraft Corp. today began a six-day, 48-hour work week in a move which increases factory production 20 percent and adds 30 percent to the pay of employes, it was reported at the plant. The factory heretofore has been on a five-day, 40-hour week.

Maj. Reuben H. Fleet, president, issued the following statement:

"Subject to satisfactory arrangements with customers and the union representing Consolidated hourly employes, the plant hereafter will work regularly on a six-day, 48-hour weekly schedule and pay time and one-half to all except executive employes after 40 hours work by each employe, or 32 hours in any week cut short by a union-company recognized legal holiday. This action speeds up the national defense program 20 percent and adds 30 percent to the employe pay envelope."

The Merchants' association has been requested to keep stores open one evening a week to facilitate employes shopping.

UNION - 7-9-40

CONSAIR PLANE TO TAKE OFF ON NONSTOP HOP TODAY

On a nonstop flight across the continent to Port Washington, the famed flying boat Guba will take off from the harbor today. Airport attendants are casting adrift the heavy launching hawser for a test.

* * *

Guba Ready To Fly East

With favorable weather conditions prevailing over a large part of the transcontinental route, Richard Archbold's Consolidated-built flying boat Guba is scheduled to take off from the harbor at 2:30 p. m. today on a nonstop flight to Port Washington, Long Island.

The route will take the big plane via Winslow, Ariz., Kansas City, Indianapolis and Pittsburgh. The crew will comprise Russell Rogers and Douglas Kelley, pilots; Stephen Barrinka, flight engigneer; Hector Nicholson, assistant flight engineer and Harold Ramm, radio operator.

The Guba returned here at 10:30 a. m. yesterday following a two-hour flight from Huntington lake, 50 miles from Fresno in the high Sierras. The Guba left San Diego for the lake Saturday on a practice flight.

On the trip across the continent Barney Boyd, local radio amateur, plans to keep in constant radio communication with the Guba until it lands tomorrow morning at Port Washington.

UNION

Consair Plant Plans Complete

7/3/40

Announcement was made yesterday by Maj. Reuben H. Fleet, president, that Consolidated Aircraft Corp. has completed plans for increasing its manufacturing facilities in addition to the $2,000,000 construction program which will be completed Aug. 1. Maj. Fleet said:

"Consolidated Aircraft Corp.'s position relative to President Roosevelt's recently announced national defense program calling for a 50,000-plane output a year is one of timely alignment.

"Our present expansion program by which our factory is being doubled, was under way before the President's announcement. Completed, this expansion will give us 1,910,000 square feet of covered and uncovered manufacturing space making it, I believe, the largest integrated aircraft manufacturing plant in America.

"We have an option on additional adjacent land, equal to 50 percent of this area with plans completed for its possible improvement."

Employment at Consair attained a new all-time high yesterday with a total of 7145 workers. Additional employes are being hired at the rate of 75 daily with the peak of 10,000 set for Aug. 1.

UNION

Archbold Plane Delays Hop to N. Y.

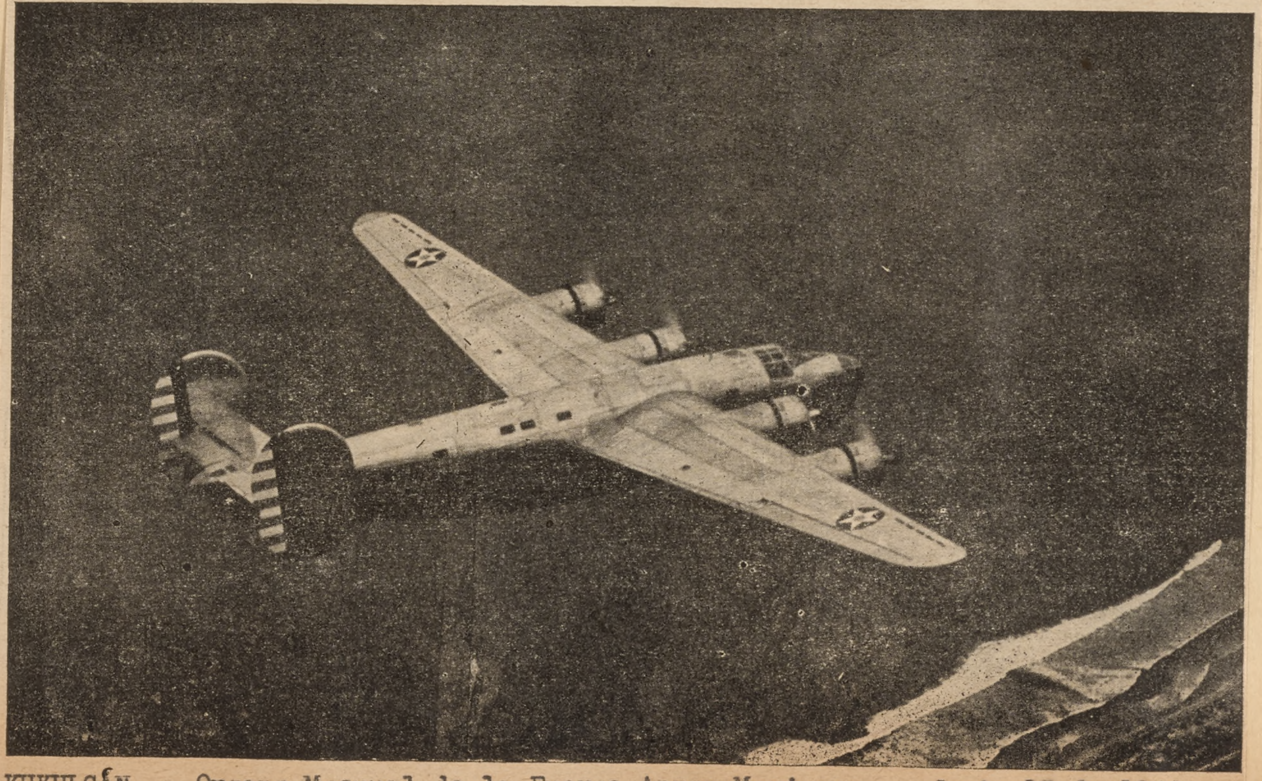
7/3

The non-stop flight from San Diego to Port Washington, Long Island, of Richard Archbold's famed flying boat Guba, scheduled to start Friday, 2:30 p. m., has been postponed until Monday or Tuesday.

The delay was caused by Archbold's desire for additional equipment to be delivered by Consolidated Aircraft Corp., builder of the big airboat.

The Guba will be piloted by Russell Rogers and Douglas Kelley with Stephen Barrinka as flight engineer.

El nuevo bombardero Consolidated metálico, modelo 32, sujeto recientemente a duras pruebas en San Diego, Cal., en una de las pocas fotos que se ha permitido tomarle, haciendo su primer vuelo de prueba. Los cuatro motores son Pratt and Whitney de 14 cilindros, que desarrollan 1,200 c. f. cada uno, equipados con hélices Hamilton Hydromatic de velocidad constante y paso variable, de 12 pies de diámetro. El peso en bruto se calcula en 40,000 libras, su envergadura es de 110 pies y el largo del fuselaje de 64. Los demás datos, sus performances, etc., permanecen en secreto.



KUKULCÁN -- Organo Mesnual de la Fuerza Aerea Mexicana -- Junio 15 de 1940

Trib - 7-9-40

Guba's Hop Delayed On Archbold Orders

Although poised for a 2 p.m. take-off from San Diego for New York, Richard Archbold's flying boat Guba will not make the transcontinental flight today and tonight after all, it developed at noon when Archbold instructed Russell Rogers, pilot, by long-distance phone from New York to delay his departure 24 hours. The reason given by Archbold was that the navy, which is interested in the flight, is planning a reception for Rogers and his flight companions at Floyd Bennett airport.

Weather conditions for a flight across the continent were good today, but Dean Blake, meteorologist, said he would have to study tomorrow morning's weather map before issuing a statement on what weather could be expected tomorrow night. The plane, fueled and stocked with supplies for the flight, is to carry, besides Rogers, Douglas Kelley, copilot; Stephen Barrinka, flight engineer; Harold Ramm, radioman, and Hector Nicholson, radioman.

UNION - 7-9-40

VOCATIONAL SCHOOL TRAINS AIRCRAFT FORCE AT RATE OF 100 SKILLED WORKERS A WEEK

1000 Students Are Attending Summer Classes

With 1000 students enrolled in day and night classes, the San Diego Vocational school's summer session is in full swing to make available to the local aircraft industry 100 trained workers a week.

Short unit courses in the day program have been approved as part of the national defense training program, Walter L. Thatcher, principal, said. Reimbursement for the full amount of instructional cost involved in this phase of the program will be made from state and federal funds.

The weekly enrollment in the school has been stepped up from 80 to 100. Within five or six weeks this will mean a constant supply of 100 workers a week, trained in the various phases of aircraft mechanics.

504 ENROLLED

Thatcher said there are eight classes in aircraft riveting, eight classes in aircraft sheet metal layout, two classes in aircraft welding and one class in machine shop, in the day course, with 504 youths enrolled.

In the last year 900 students have been turned out by the school and obtained immediate employment.

"It is possible for a boy who has started day school work to continue his training by attending our night classes," said Thatcher. "By doing this, he can complete a full course, ordinarily in a year, to attain skilled workman standing. At night school alone this naturally takes somewhat longer, about a year and a half."

In the night sessions there are classes in blueprint reading, aircraft drafting, mettallurgy, plaster pattern making, aircraft sheet metal, aircraft and commercial welding, tool and die design and machine shop. There are 500 enrolled in these classes.

FRED ANDERSON
. . . works on stationary squeezer in aircraft riveting class at Vocational school. This machine is of recent development. San Diego school is the only one on west coast with machine installed.

S. P. EHLERT **DAVID LESTER**
. . . Vocational school instructor guides student in drilling a hole for riveting. Work is done on actual wing section of a bomber from Consolidated Aircraft Corp., where many of the students get jobs.

Consolidated Air

Aeroplane

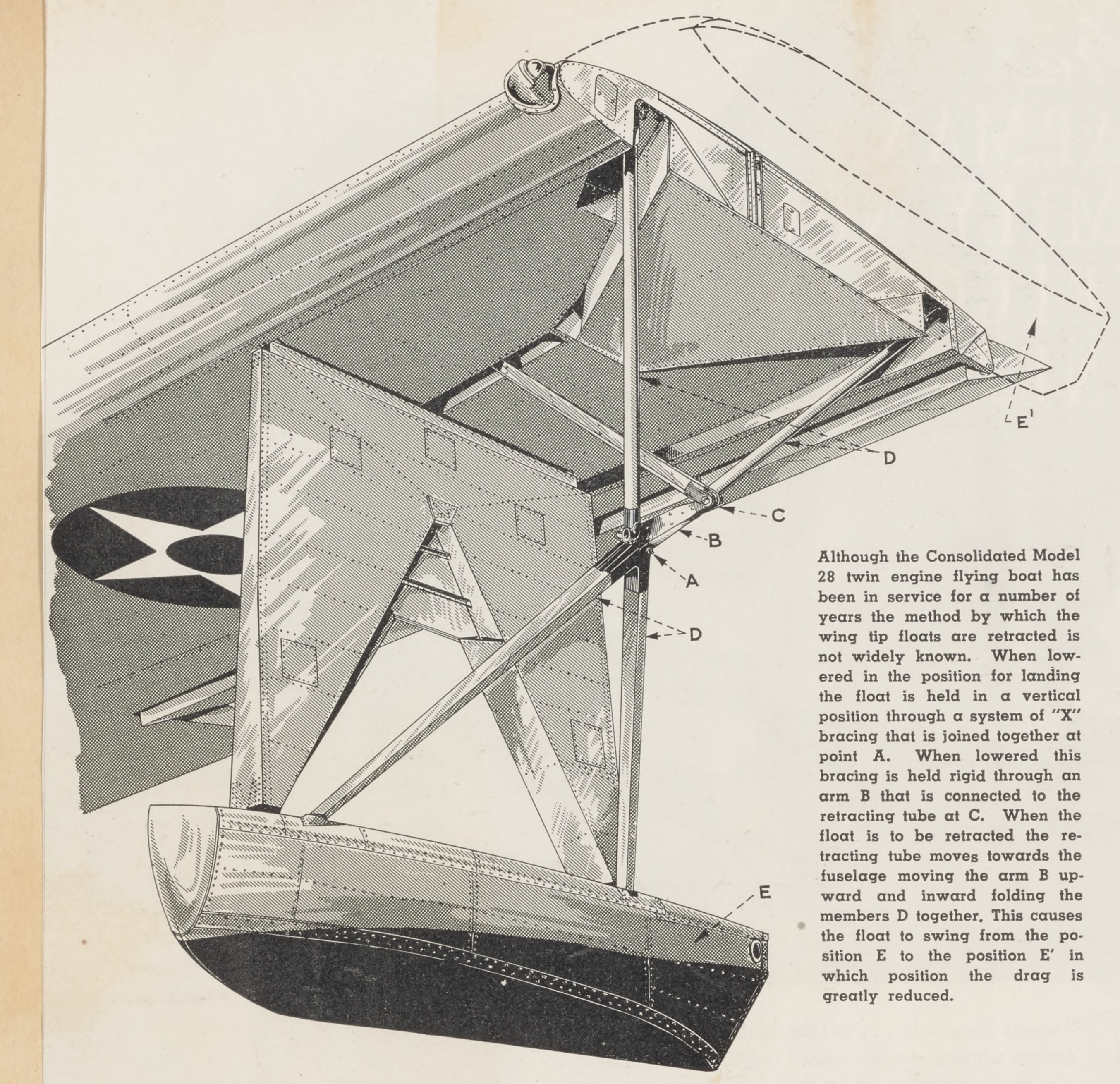
21 JUN 1940

Four-motor Bomber Contract

A CONTRACT for the building of 120 Consolidated Model 32 four-motor bombers for the Armée de l'Air was secured by the Consolidated Aircraft Co. of San Diego, California. Delivery was scheduled to begin in the Summer of 1941.

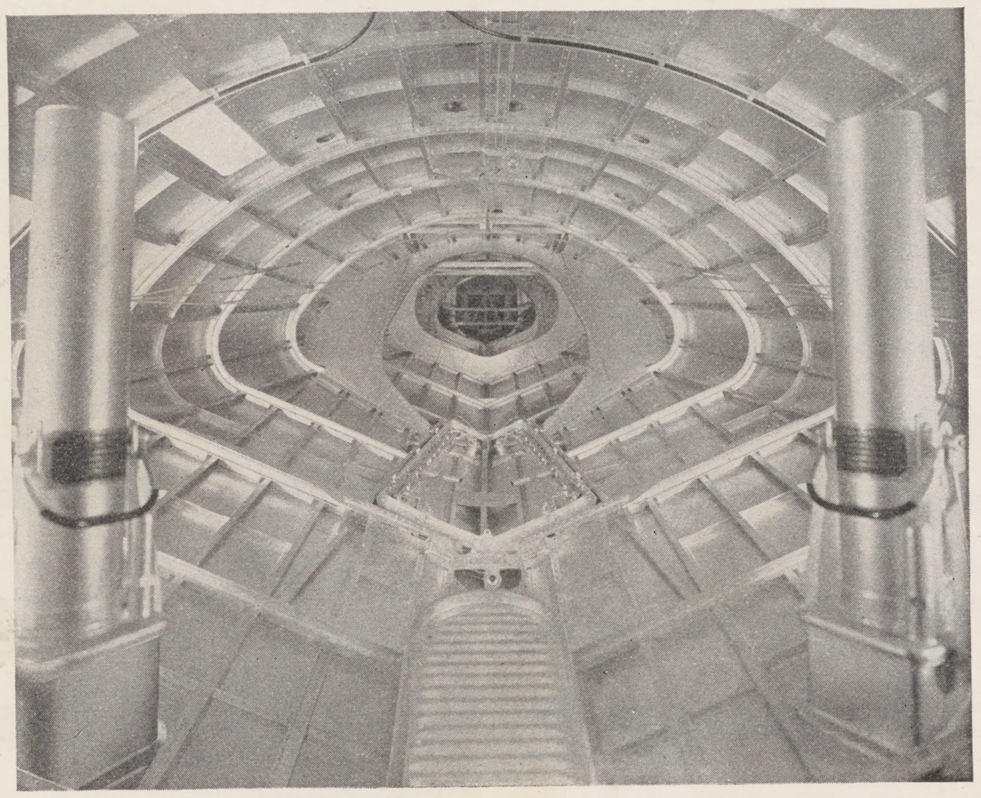
The new four-motor Consolidated bomber is reputed to have a top speed of around 300 m.p.h. and a range of 3,000 miles. The loaded weight is 40,000 lb.

The big type of bomber would not have been our choice. For preference we would not put so many eggs in one basket, but if the big bomber is already in production the order may as well be transferred now to Great Britain. By the middle of next year we should have produced many machines for ourselves and the luxury of some big-scale models may be permissible.



Although the Consolidated Model 28 twin engine flying boat has been in service for a number of years the method by which the wing tip floats are retracted is not widely known. When lowered in the position for landing the float is held in a vertical position through a system of "X" bracing that is joined together at point A. When lowered this bracing is held rigid through an arm B that is connected to the retracting tube at C. When the float is to be retracted the retracting tube moves towards the fuselage moving the arm B upward and inward folding the members D together. This causes the float to swing from the position E to the position E' in which position the drag is greatly reduced.

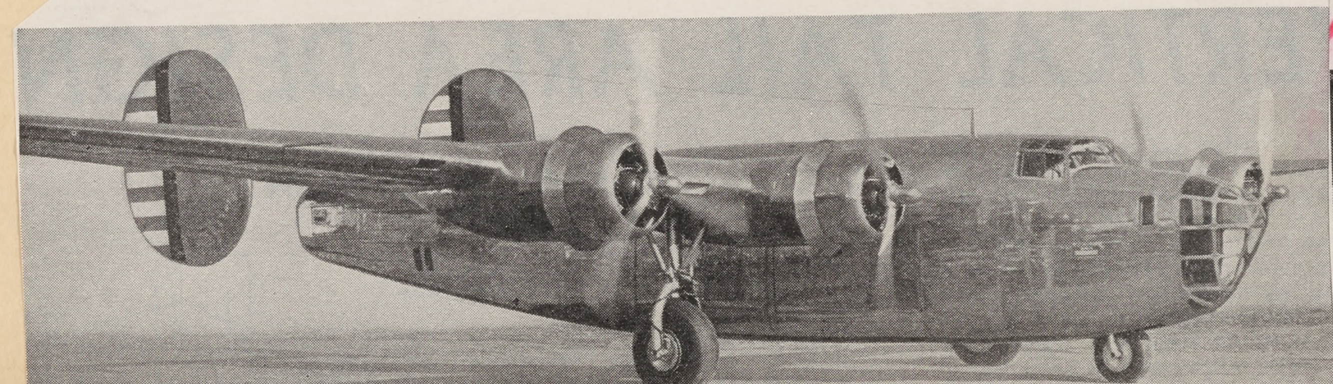
Looking aft inside of the fuselage of the Model 28 shows the Zee stringers running lengthwise and the beltframes running crosswise. The large bulkheads in the rear are the 'banjo' bulkheads which extend on up into the fin structure. The tunnel door or hatch is shown on the keel while the two vertical tubes in the foreground are flare tubes.



Aviation
June 1940

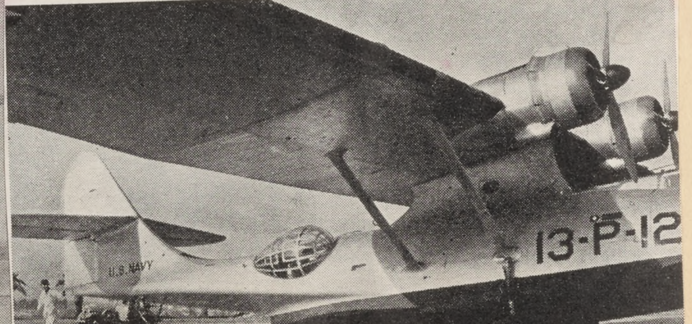
Edgar N. Gott, Consolidated Aircraft's vice-president married Miss Madie Koenig, Los Angeles, Calif. Ceremony held May 2 at home of John H. Jouett, president, Aeronautical Chamber of Commerce, in Washington. Best man was Maj. Gen. H. H. Arnold, Army Air Corps chief.

Popular Aviation March 1940



Above is first exclusive photograph of four-engined Consolidated B-24 bomber for the U. S. Army Air Corps. The wing is the secret new airfoil first installed on the Consolidated Model 31 flying boat.

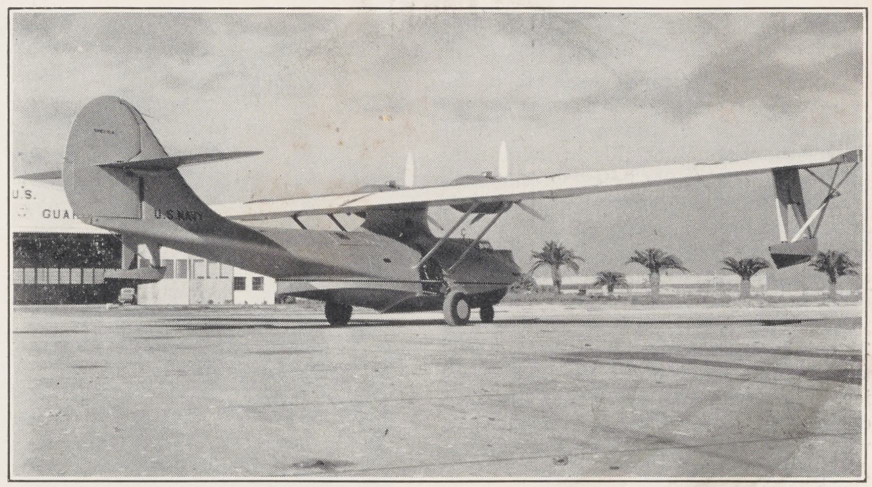
Latest adaptation of the Consolidated PBY has novel machine gun blisters on both sides of hull and a new tail assembly.



The Goodyear News, *April, 1940*

AERONAUTICS

AMPHIBIAN: *Land and Ocean Abilities Extend Ship's Range*



"*. . . opening wider fields of utility . . .*" Official U. S. Navy photo.

Equipped to rise from or alight on either land or water, Consolidated Aircraft Corporation's recent contribution to aeronautical progress, U. S. Navy plane XPBY-5A, is rated largest amphibian plane in the world.

The ship is a twin-engined flying boat to which has been added the amphibian feature, so that it can operate from land or sea, to land or water bases in remote localities, thus opening wider fields of utility.

Landing gear is tricycle type, single wheel forward and two aft, all fully retractable. Side wheel and supporting mechanism, complete with oleo shock struts, retract into wells in the side of the hull. Nose wheel in the bow is completely closed over in the retracted position by automatically operated hatches, so that no resistance to planing is encountered. All three wheels are operated by a central hydraulic power drive.

Flight testing with the gear in all positions and in combination with the retractable wing tip floats failed to disclose any adverse effects. Advantages of the landing gear, aside from greatly extending the scope of utility, are many: for rough water taxiing, the extended gear serves as a sea anchor, greatly assisting in control in open water, and in making an approach for mooring or ramp in an adverse wind. Also, more engine power may be applied for short turns without undue acceleration. Turns on the water are achieved with far less skidding and the danger of scraping the keel on the ramp is eliminated.

There is no need for a beaching crew, because the ship can climb a ramp or beach under its own power, descending in like manner, completely controlled by brakes. Side wheels are above water when the ship rises on the step, in making a take-off, and automatic means have been provided to eject all water in the closed bow-wheel hatch before the plane is in the air, so that flying trim is unaffected.

Contributing to smooth landings of the plane is its Goodyear multiple disc brake equipment.

Air Consolidated Air

Romeike & Curtice Ltd

Telephone
CENTRAL 2781
(2 Lines.)

R&C

35. Shoe Lane,
LONDON.
E.C.4.

EXTRACT FROM
SUNDAY CHRONICLE,
Manchester.

Date 16 JUN 1940

"Flying Fortresses" for the French

A CONTRACT for 120 "flying fortresses," to be built by Consolidated Aircraft, has been signed by French representatives in the United States, it was stated in New York yesterday.

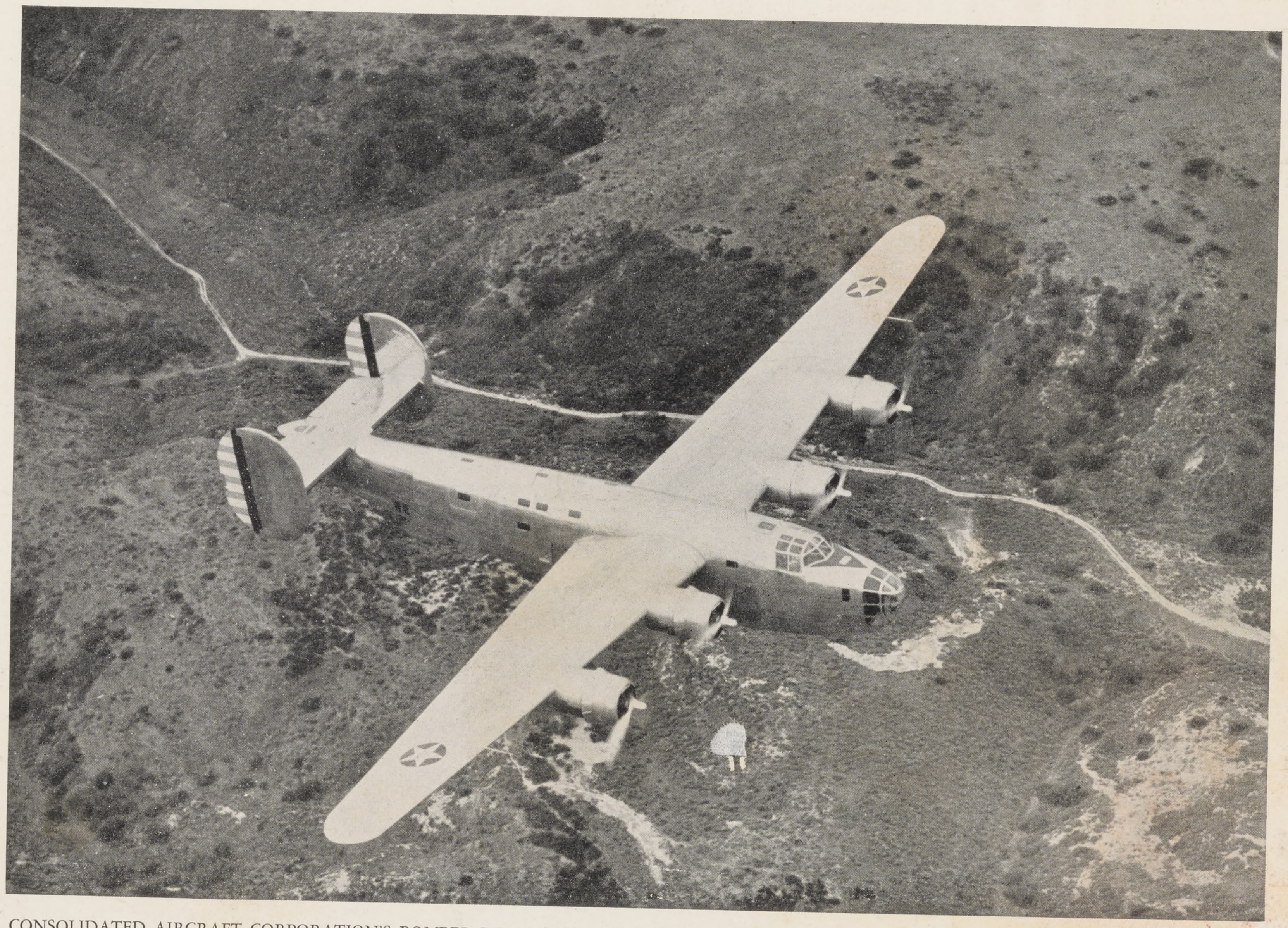
Trib. 7/18/40

$55,136,721 GAIN; CONSAIR BACKLOG NOW $96,870,000

Consolidated Aircraft Corp.'s backlog totals $96,870,000, representing an increase in business at the plant since Jan. 1 of $55,136,721, it was reported today. The figure, as of date June 30, the end of the second quarter of this year, was given in a notice to the stock exchange, it was said at the plant.

On May 13, when announcement was made of an order of approximately $20,000,000 for planes for the French and British governments, the Consolidated backlog rose to $70,000,000. A Consolidated spokesman said today that "no statement can be made" as to the nature of the increase of approximately $26,000,000 since May, and did not indicate whether it was for planes for the American government or foreign orders.

The stock exchange report stated that sales for the first six months this year, representing products delivered and billed, totaled $408,407. The operations during that period, it was reported, consisted primarily in making parts and sub-assemblies for planes which will be delivered commencing next month and continuing through 1941.



CONSOLIDATED AIRCRAFT CORPORATION'S BOMBER IN FLIGHT. THIS FIGHTING AIRCRAFT IS ONE OF A SERIES ON ORDER FOR THE UNITED STATES ARMY AIR CORPS

This Photograph Shows the New Consolidated Model 32, Equipped with Four Pratt & Whitney 14-Cylinder, Twin-row Radial Air-Cooled Engines, Each Rated at 1,200 h-p., Giving the Plane 4,800 Available Horsepower in Flight. Propellers are Hamilton-Standard of the Three-bladed, Hydromatic, Constant-Speed Type. Gross Weight of the Plane is About 40,000 Pounds; Wing Span, 110 Feet; Length of Fuselage, 64 Feet; Overall Height, 19 Feet. Practical Requirements are for Crew of from Six to Nine Persons, Depending Upon the Mission

14 U. S. AIR SERVICES June, 1940

Guba's Non-Stop Flight Delayed Until Today

UNION July 10 - '40

The non-stop flight of Richard Archbold's flying boat Guba from San Diego to Port Washington, Long Island, scheduled to start at 2:30 p. m. yesterday, was postponed until 2 this afternoon on Archbold's request.

Telephoning from New York, Archbold said he desired the postponement because the navy, which is interested in the flight, is planning a reception for the Guba's crew at Floyd Bennett airport after the landing of the big plane at Port Washington.

Dean Blake, meteorologist here, said flight conditions yesterday were ideal but that he will have to consult the weather charts before giving Russell Rogers, the Guba's chief pilot, the go signal. The Guba has been fueled and provisioned for a 17-hour trip across the continent.

Flying with Rogers will be Douglas Kelley, co-pilot; Stephen Barrinka, flight engineer; Harold Ramm, radioman, and Hector Nicholson, assistant flight engineer.

Built by Consolidataed Aircraft Corp. for Archbold and the American Museum of Natural History, the Guba has made several record-breaking flights. It was employed 10 months in a scientific expedition in Netherlands New Guinea, later flew to Australia, thence across the Indian ocean to Africa and back to San Diego via the Virgin islands and New York.

Edgar N. Gott Marries

Edgar N. Gott, vice president, Consolidated Aircraft Corporation, San Diego, Calif., was married on May 2nd to Miss Madie Koenig, who was born in Omaha, Nebr. The ceremony took place at noon at the home of Colonel and Mrs. John H. Jouett, in Washington, D. C. About 30 persons attended, including Maj. Gen. H. H. Arnold, Chief of the Air Corps, who acted as best man.

⁂

UNION - 7/19

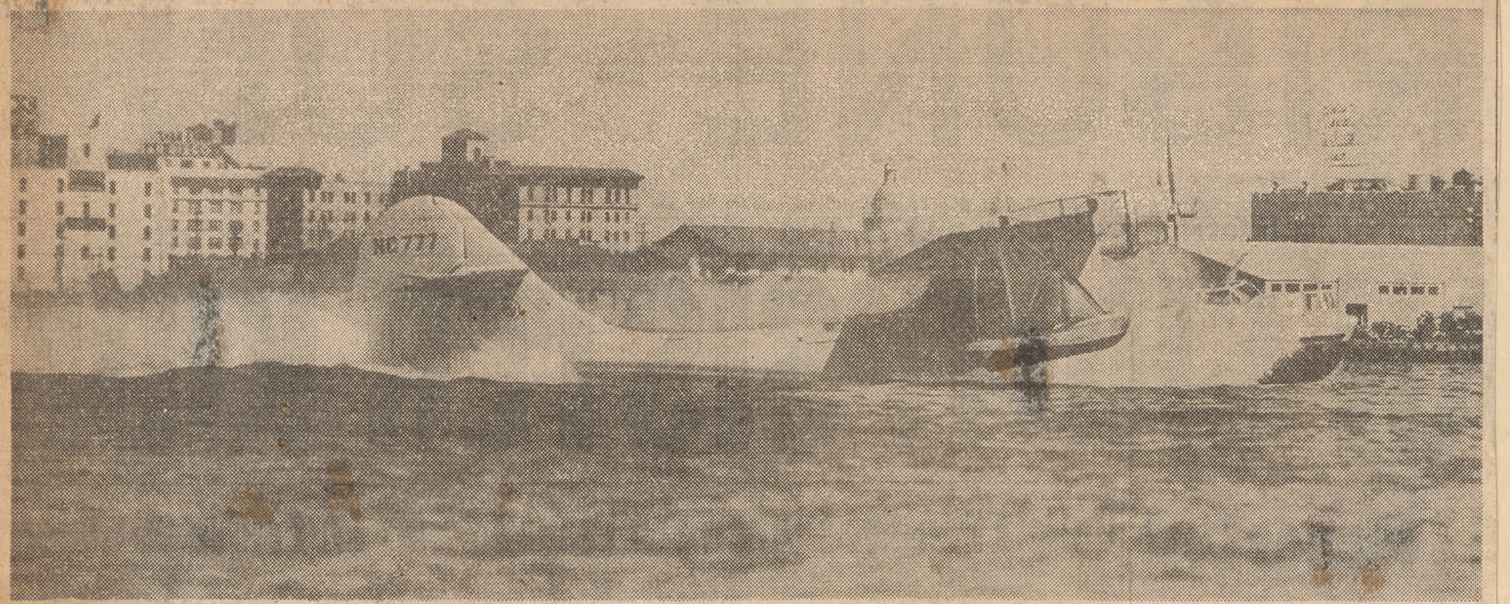
Consair Backlog Nears $100,000,000 Mark

Backlog of the Consolidated Aircraft Corp. totals $96,870,000 it was announced yesterday. This represents an increase since Jan. 1 of $55,136,721.

According to Maj. Reuben Fleet, president, additional contracts are expected to bring the backlog in excess of $100,000,000 within a few weeks.

THE TRIBUNE-SUN, San Diego, Calif., Thursday, July 11, 1940

Guba Spans Continent Nonstop in Less Than Sixteen Hours



The Guba, shown above, is taking off from San Diego bay yesterday afternoon, New York-bound.

FLIGHT IS CITED AS DEMONSTRATING SHIP'S MOBILITY

Completing a non-stop flight from San Diego in just under 16 hours, Richard Archbold's Consolidated-built flying boat Guba landed on Jamaica bay, New York, at 5:45 a.m., Pacific time, today. The plane left San Diego at 1:55 p.m. yesterday.

Navy officers were on hand at Floyd Bennett field to welcome Russell Rogers, chief pilot, and his flight companions, the International News Service reported. Archbold, who used the plane two years ago in scientific exploration in New Guinea, later flying on around the world by way of the Indian ocean, Africa and the Atlantic, was described as "enthusiastic about the plane's performance on its non-stop transcontinental flight."

Carries Mayor's Greetings

The Guba carried 1200 gallons of gasoline and greetings from Mayor P. J. Benbough were sent with Rogers to Mayor LaGuardia of New York. The flight route was via Winslow, Ariz., Kansas City and Pittsburgh.

Barney Boyd, local radio amateur, received a short-wave report at 11:40 p.m. yesterday that the plane had just passed Kansas City, flying at 8500 feet. The Guba is similar to the navy's PBY patrol bombers, but carries no armament.

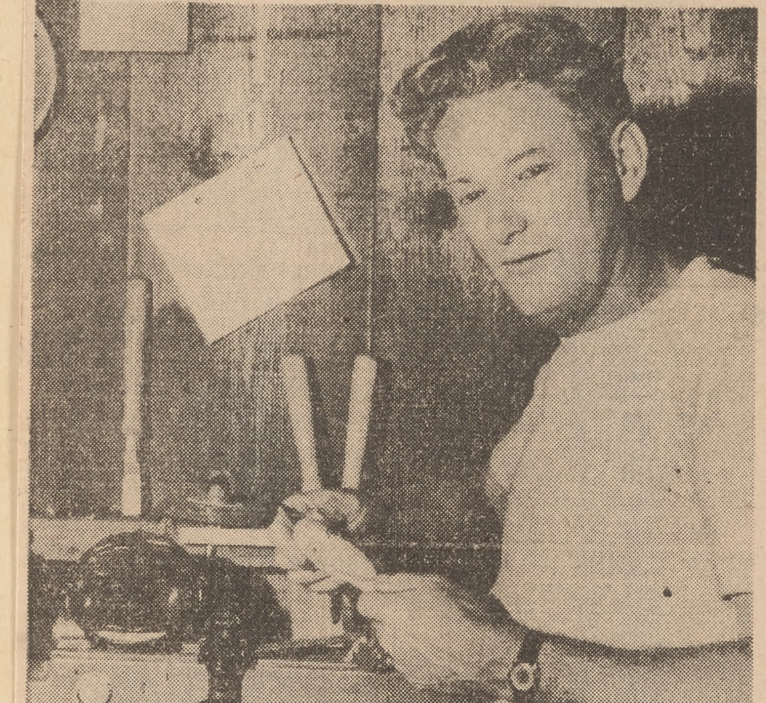
Lt. Comdr. Donald F. Smith, head of the Floyd Bennett naval reserve base, said the flight was a "remarkable demonstration of the mobility and striking power of such ships," The United Press reported.

Rogers said the flight was uneventful. Archbold, who ordered the plane flown east, plans to store the Guba at Port Washington, Long Island. With Rogers were Douglas Kelley, co-pilot; Stephen Barrinka, flight engineer; Hector Nicholson, assistant engineer, and Harold Ramm, radioman.

WEDNESDAY MORNING, JULY 17, 1940 PAGE NINE—B

UNION

STARTED HOBBY ON BACK PORCH



LEWIS S. JONES

. . . whittled out a career for himself, with fun as a starter.

* * *

OCEAN BEACH MAN CARVES HIS WAY TO AIRCRAFT JOB

Starting as a back-porch whittler, Lewis S. Jones, Ocean Beach, once developed the hobby into a regular business, his products ranging from a scarf pin to a statute of a liver-lipped Ubangi maiden. He is still whittling, after a fashion, in the form department of the Consolidated Aircraft Corp. plant here.

Jones held classes at a hobby school and had more orders from department stores than he could fill once he got started in the business. This was not until after the proprietress of a gift shop next to the electric appliance company where Jones was a salesman saw a steer's head scarf pin he had carved for a colleague.

Jones now whittles on a much larger scale, helping to make the wood and metal forms around which the final metal parts of the big flying boats are built. He doubts that he will ever leave aircraft work to return to full-time wood carving.

Aircraft News - 7-11-40

Consolidated Now On 48-Hour Week

SAN DIEGO—Workers at Consolidated Aircraft Corp. Monday began a six-day, 48-hour week in a move which is expected to increase plant production 20 per cent and add 30 per cent to the pay of employees, factory officials reported.

The factory has been on a five-day, 40-hour week in the past.

UNION 7/11/40

Guba Leaves On Nonstop Flight to N. Y.

BULLETIN

"Just passed Kansas City at 11:40 p.m. (PST); flying at altitude of 8500 feet. Have covered 1330 miles; have 1110 miles to go; everything OK," was the message received from the Guba by Barney Boyd, following the flight by short-wave radio.

Loaded with 1200 gallons of gasoline, Richard H. Archbold's flying boat Guba took off from the harbor at 1:55 p.m. yesterday on a nonstop flight to Floyd Bennett field, New York.

Russell Rogers, chief pilot, said he expects to complete the 2440-mile flight in time to land at New York about 10:30 this morning.

AT 10,000 FEET

The flight route was via Winslow, Ariz., Kansas City, Indianapolis and Pittsburgh. Russell said he planned to fly at an altitude of 10,000 feet except when crossing over the Rocky mountains when the Guba will skim along the air lanes at 15,000 feet.

The plane carried greetings from Mayor P. J. Benbough to Mayor LaGuardia of New York.

Following a navy reception at the Floyd Bennett airport, the Guba is to be flown to Port Washington Long Island, where it will be stored pending a decision as to its future use by Archbold and the American Museum of Natural History, of which Archbold is an associate director.

AROUND WORLD

Since its construction by Consolidated the Guba has flown around the world and bears the distinction of being the first airboat to fly across the Indian ocean. Archbold used the craft for 10 months in a scientific expedition in Netherlands New Guinea, later flying it to Australia, Africa and the Virgin Islands.

In addition to Rogers the Guba's crew on the transcontinentau hop were Douglas Kelley, co-pilot; Stephen Barrinka, flight engineer; Hector Nicholson, assistant engineer, and Harold Ramm, radioman.

Scottish Daily Mail 6/15/40

FOR SALE: 1 FLYING-BOAT

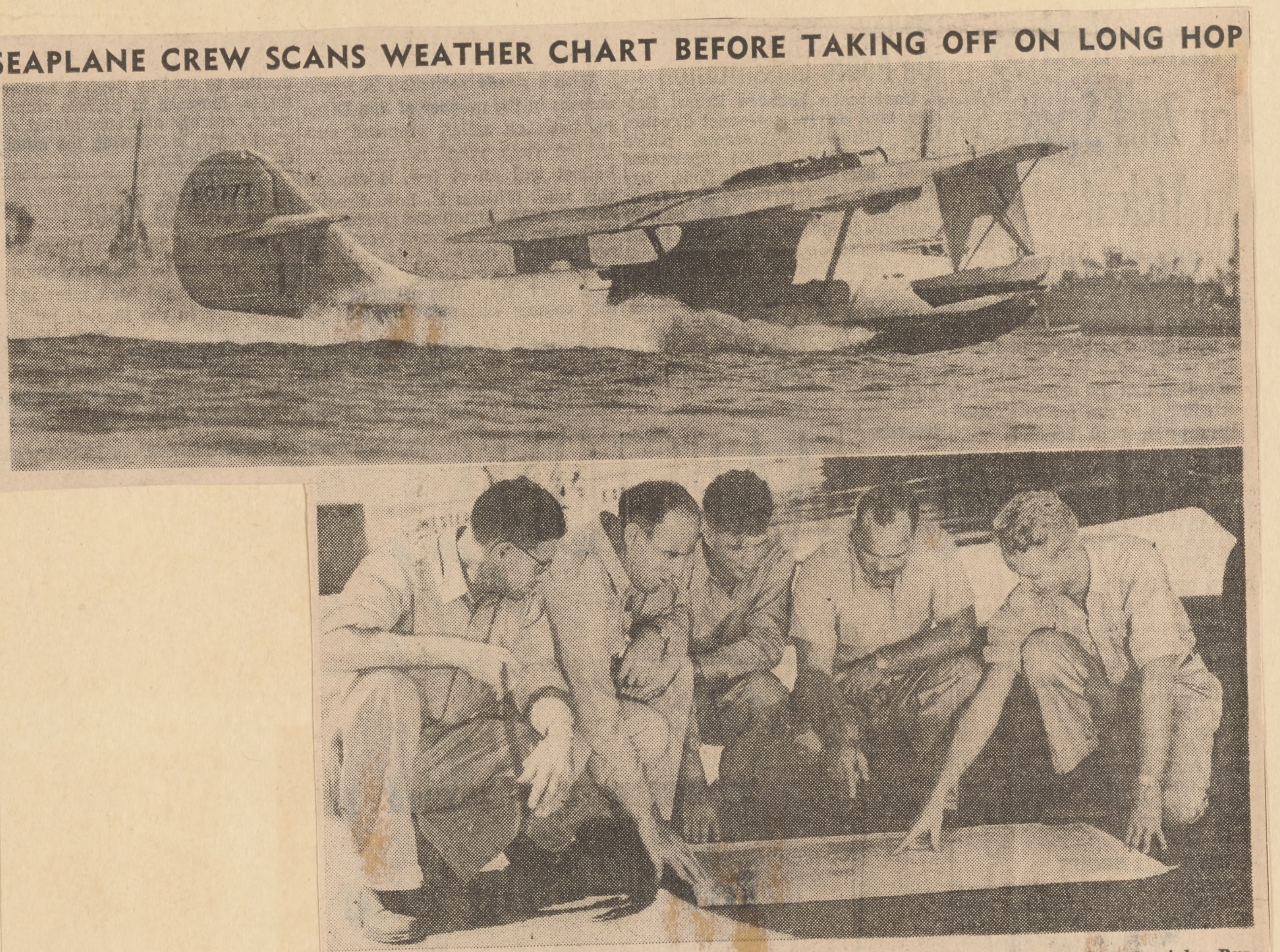
ANYONE wanting a private flying-boat?

A famous American craft —the Consolidated P.B. Y.2 "Guba"—which was making headlines a year ago with a series of remarkable flights across British territories overseas, is advertised for sale as a bargain in a leading American aviation magazine.

It has a reputed range of 4,000 miles, a speed of nearly 200 miles an hour, a host of gadgets including automatic pilot homing devices, direction finders—and two spare engines.

"Guba" made the first coast-to-coast crossing of the Indian Ocean from India to British East Africa. It has also crossed the Atlantic and Pacific Oceans and the continents of Australia and Africa.

SEAPLANE CREW SCANS WEATHER CHART BEFORE TAKING OFF ON LONG HOP



The crew of the seaplane Guba scanned the weather chart before taking off yesterday on a nonstop flight to New York. Left to right: Hector Nicholson, Douglas Kelley, Stephen Barrinka, Russell Rogers and Harold Ramm. The Guba, carrying 1200 gallons of gasoline, will fly at 10,000 feet.

Aircraft Contract Gives Hint of First Move to Inland Areas

Consolidated at San Diego May Reach Agreement for Placing Orders With New Factory at Dallas

LA Times 7/5/40.

SAN DIEGO, July 4.—First indication that any West Coast airplane plant has instigated steps to transfer even a portion of its operations inland appeared today in a confirmed report that Consolidated Aircraft Corp. may subcontract business to the Hall-Aluminum Aircraft Corp. in the latter's forthcoming new factory near Dallas.

RUMORS DENIED

Although denying rumors that the San Diego concern itself plans to establish a branch in Texas, David G. Fleet, assistant to Maj. Reuben Fleet, president, said:

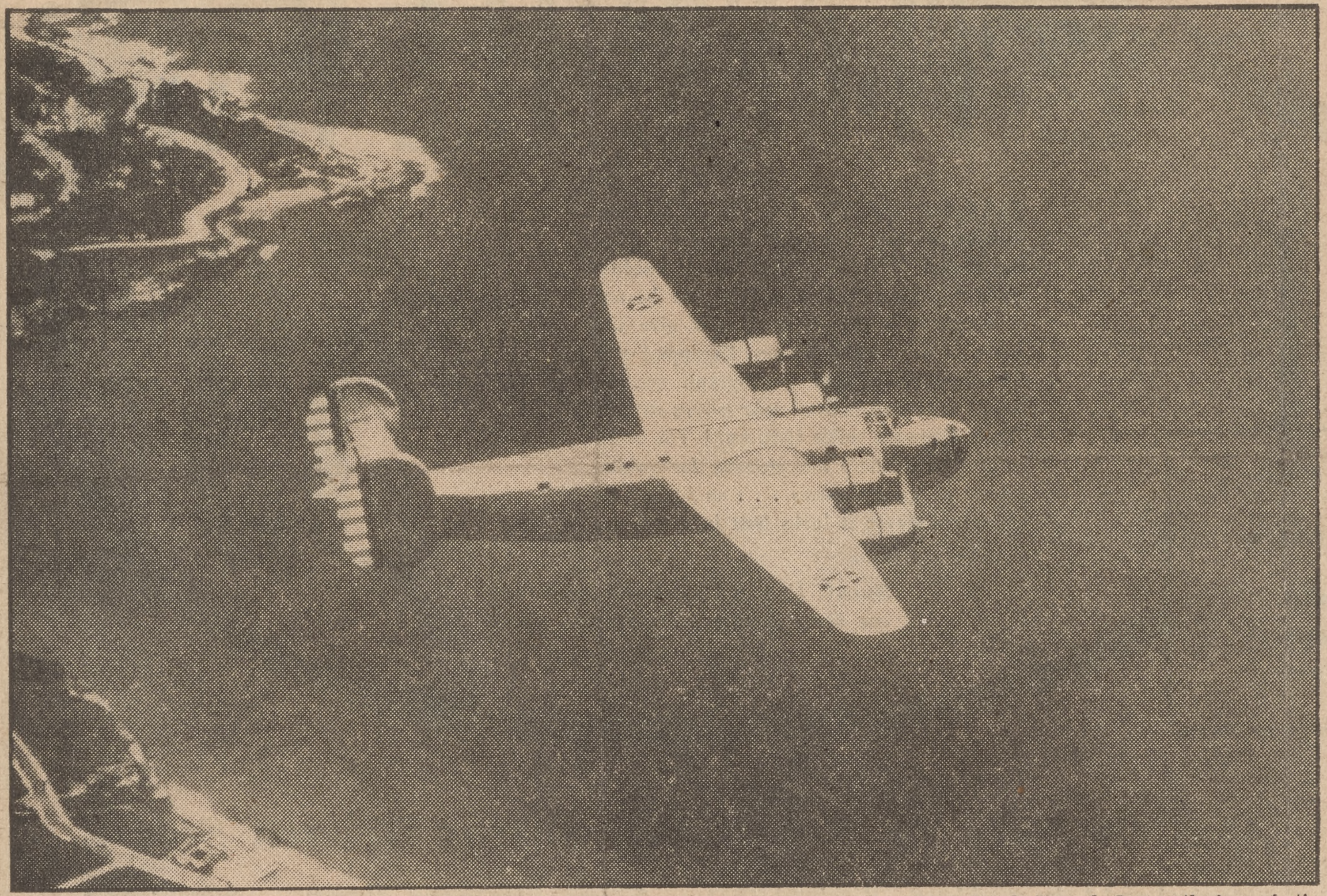
"Last month my father went east with Archibald Hall, president of the Hall company. En route, they stopped at Dallas to inspect a possible site for the Hall plant, since the latter's lease at Bristol, Pa., has expired. The Hall company is interested in establishing a new plant in the near future."

EXPERIENCE CITED

Fleet said the Hall concern, which is partially owned by the Aluminum Co. of America, builds Coast Guard seaplanes. Because of its experience, he indicated, it undoubtedly would receive consideration in placement of large Consolidated parts contracts—for tail structures and other fittings.

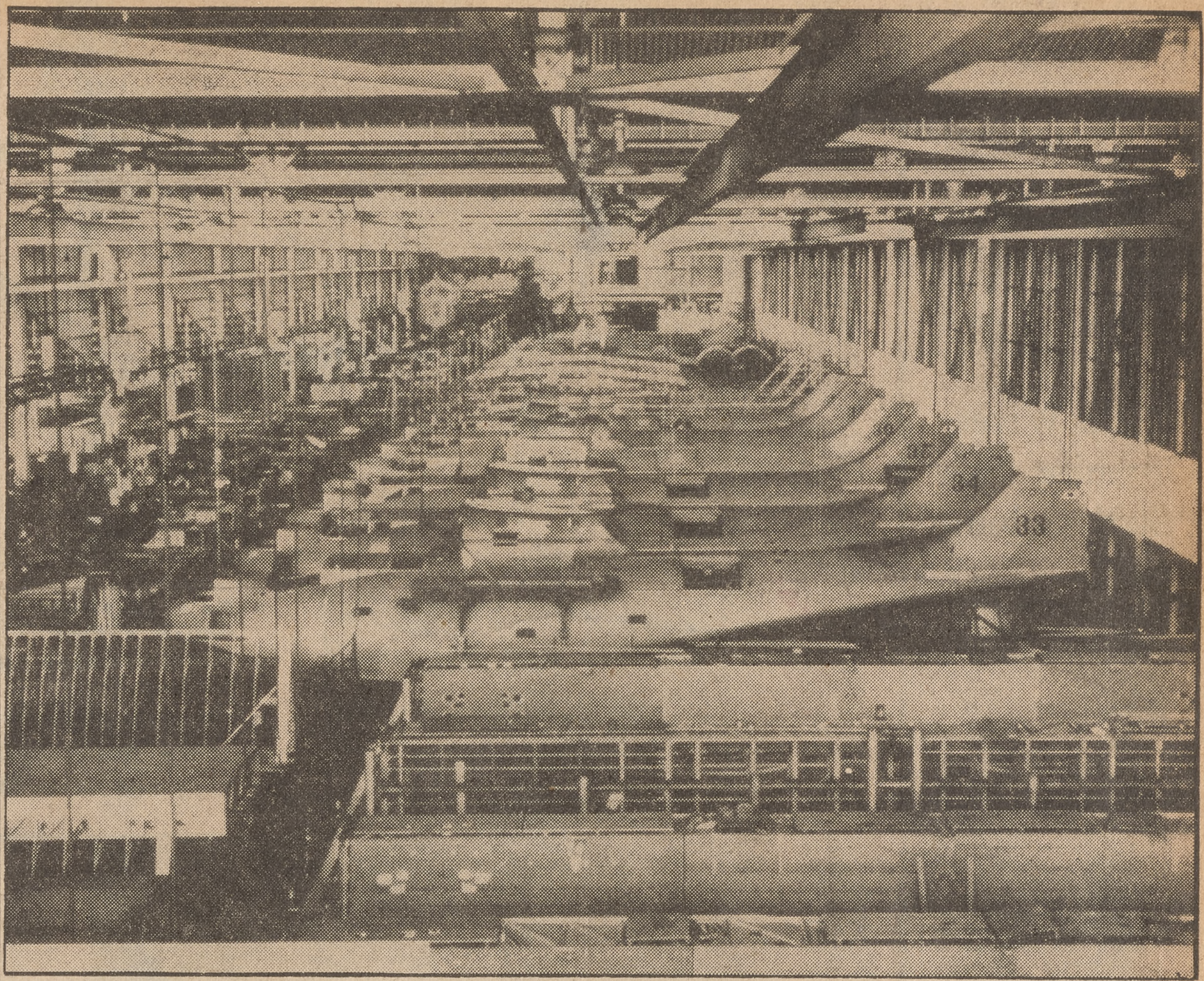
No plans have been made, Fleet added, for erection of a Consolidated branch factory inland, particularly since his company will complete a $2,000,000 expansion program next month, which will make it the largest integrated aircraft plant in America with almost 2,000,000 square feet of floor space.

UNCLE SAM'S NEW LONG-RANGE BOMBER



NEAR SAN DIEGO One of the United States Army Air Corps' new four-engined bombers was photographed recently in majestic flight over the Pacific Ocean. The giant craft, built by the Consolidated Aircraft Corporation, is known as the XB-24. She has a speed of more than 300 miles an hour, a range of approximately 3,000 miles and a bomb-carrying capacity of approximately four tons. Long-range flying is a primary consideration in building for Western Hemisphere defense.—Wirephoto.

SEA BIRDS FOR THE UNITED STATES NAVY



IN SAN DIEGO Flying boats constitute an important arm of aerial warfare, and American manufacturers are not neglecting this branch of aviation. Shown here is a long row of twin-engined flying boats in the hull-assembly line of the Consolidated Aircraft Corporation plant. Wing sections appear in the foreground. The Navy has in service more than 200 planes similar to these. Many flying boats are required as the Navy's Pacific defense area stretches from the Panama Canal to Hawaii to Alaska.—Wirephoto.

Sunday - June 2nd
Times - Seattle.

7/6/40

So your Seattle does
mention Consolidated
once in a while! —

7/12/40

UNION 7/11/40

44 FIRMS ASSURE EMPLOYES AGAINST LOSS BY TRAINING

Forty-four San Diego business and industrial firms, representing thousands of employes, yesterday had pledged security to employes who engage in military training.

Signed assurances that jobs of men who enroll for military activity will not be jeopardized and that they will suffer no financial loss during training period are in the hands of Ewart Goodwin, special national guard civilian committee chairman.

Purpose of the campaign to enroll employers under the pledge, according to Goodwin, is to remove possibility of insecurity for the employes. Closing paragraph of the statement follows:

"It is our intention that these employes shall be spared the worry of insecurity in their jobs while they are training for a national emergency and while they are in the service of their country to protect the interests of the people of the United States."

The first firms signing the pledge include Alexander's, Aztec Brewing Co., Bank of America, Benson Lumber Co., Coca Cola Bottling Co., Consolidated Aircraft Corp., Consolidated Gas & Electric Co., Dixie Lumber Co., El Cortez Pontiac, First National Trust & Savings bank, Foster & Kleiser Co., Franklin Insurance Service Corp., Frost Hardwood Lumber Co., Gazosa Beverage Co., Glasson Mill & Lumber Co., Percy H. Goodwin Co., Mark Hanna Chrysler, Industries Supply Co., Kelley Linen Supply Co.

Don Lee Inc., Lion Clothing Co., Maryland Hotel, Robert D. Maxwell Co., Perry Metcalfe garage, Motor Hardware & Equipment Co., Old Mission Packing Corp., Owl Drug Co., Qualitee Dairy, R & R Market, Rinehart's Cleaners and Dyers, San Diego chamber of commerce, San Diego city council, San Diego county board of supervisors, San Diego Trust & Savings bank.

Security Trust & Savings bank, Snowflake Baking Co., Sullivan Hardwood Lumber Co., U. S. National bank, Union Title Insurance & Trust Co., Union-Tribune Publishing Co., Walker's Department store, Western Lumber Co., Western Transfer & Storage Co., Andy Woods.

Progress Journal
7/5/40

Increase Facilities At Consolidated Aircraft Corp.

● **Completion of plans** for increasing manufacturing facilities of Consolidated Aircraft Corp. has been announced by Maj. Reuben H. Fleet, president.

These increased facilities are in addition to the $2,000,000 construction program which will be completed Aug. 1, it was pointed out.

In the meantime, employment this week at Consolidated reached a high peak with more than 7000 workers busy. Additional employees are being hired at the rate of 75 daily. A total of 10,000 persons are scheduled to be working Aug. 1.

"Consolidated Aircraft Corp.'s position relative to President Roosevelt's recently announced national defense program calling for a 50,000-plane output a year is one of timely alignment," said Maj. Fleet.

"Our present expansion program by which our factory is being doubled, was under way before the President's announcement. Completed, this expansion will give us 1,910,000 square feet of covered and uncovered manufacturing space making it, I believe, the largest integrated aircraft manufacturing plant in America.

"We have an option on additional adjacent land, equal to 50 percent of this area with plans completed for its possible improvement," he concluded.

UNION - 7/16/40

Welders Hint Consair Strike

Possibility of a strike at Consolidated Aircraft Corp. here was reflected yesterday in the statement of James Goss, business agent of the United Aircraft Welders of America at Los Angeles, that the membership would be asked to strike unless the national labor relations board calls a bargaining election soon at Consolidated and at Lockheed and Vega aircraft plants at Los Angeles.

Goss said the labor board had refused to certify the welders' union as a bargaining agency because the American Federation of Labor machinists' union already had an agreement with the firms, The Associated Press reported.

The board has recognized that the welders union held a majority at the Ryan Aircraft Co., San Diego, and Douglas, North American and Vultee plants in Los Angeles, Goss said. A strike call would affect all seven factories, he added. The welders' union is affiliated with neither the A.F.L. nor the Congress of Industrial Organizations.

A Consolidated spokesman said the firm knew nothing of the matter and suggested it was a question between the labor board and the welder's group.

Aircraft News 7/11/40

SWEDLOW AERO ISSUE ON MART

Public offering is being made today of 64,500 shares of 20-cent par value capital stock of Swedlow Teroplastics Corp. by a syndicate headed by Lester & Co. and including Cavanaugh, Morgan & Co.; Banks, Huntley & Co.; Page, Hubbard & Asche, and O'Melveny-Wagenseller & Durst. Offering price is $1.25 a share. Proceeds from the sale of this issue are to be ued for the purchase of additional machinery and equipment, for the increase of working capital and for other corporate purposes.

Officers and directors of the new company are as follows: Dave Swedlow, president and director; Lawrence Green, secretary, treasurer and director; Hall L. Hibbard, vice-president, director, and chief engineer of Lockheed Aircraft Corp.; Wolfgang Klemprer, engineer of Douglas Aircraft Co., Inc., director; Richard W. Millar, president of Vultee Aircraft, Inc., director, John K. Northrop, president of Northrop Aircraft, Inc., director; Charles H. Van Dusen, vice-president and works manager of Consolidated Aircraft Corp., director.

The company is engaged in the manufacture and sale of various articles fabricated from acrylic (methyl methacrylate) resins, which are plastics use, among other purposes, as a substitute for glass. The company fabricates and molds these plastics by a heating process into various forms and shapes for use in many industries, including the aviation industry.

Journal-American 7/11/40

Navy Type Seaplane Spans U. S. Non-Stop

The non-stop transcontinental flight of a huge flying boat, duplicate of the Navy's big PBY bombers, was completed at Floyd Bennett Field today in 15 hours, 49 minutes, opening official Navy eyes to the possibilities of transporting seaplanes over long routes in safety.

Navy officials were on hand as the plane, the Guba, owned by Richard Archbold, explorer, settled on Jamaica Bay at 9:45 a. m., after taking off from San Diego yesterday at 5:56 p. m., New York time.

Archbold, who used the ship in a round-the-world flight in 1938 in association with the American Museum of Natural History, was enthusiastic about the plane's performance on the non-stop journey across the nation.

Lieut. Comdr. Donald F. Smith, commanding the Naval Reserve base at Floyd Bennett, termed the flight "a remarkable demonstration of the mobility and potential striking power of the Navy's long range type bombers."

"It is proof that in an emergency large fleets of Navy bombers could be flown overnight from one coast to the other," he said.

Achbold, explaining that a third of its original gasoline supply of 1,700 gallons still remained in the tanks, added:

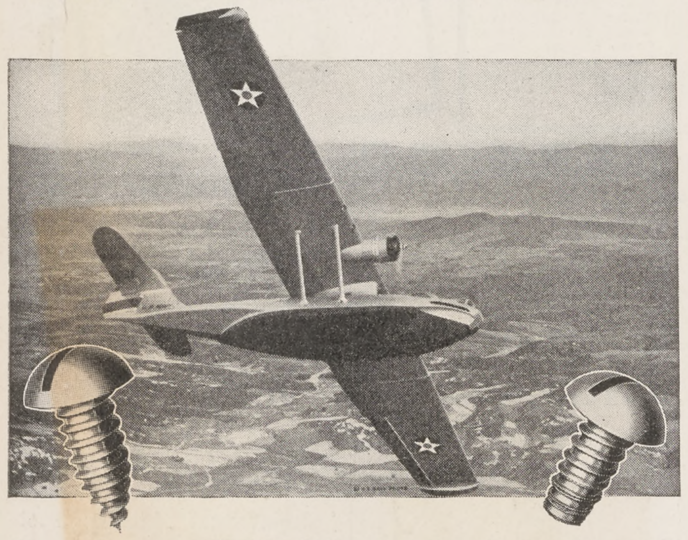
"We could have circled the field here and gone right on down to Florida without stopping."

A crew of five accompanied Archbold on the overnight hop from ocean to ocean.

JULY-1st- AUTOMOTIVE
1940 INDUSTRIES

SECURE FASTENINGS ASSURE SAFE FLIGHT

. . . NO "DOUBTFUL" SCREWS HERE!



For clamp-tight bonds, CONSOLIDATED AIRCRAFT calls on Parker-Kalon Self-tapping Screws

THE PRODUCT you make may not be airplanes, but the same moral holds true . . . don't take chances on "doubtful" screws! You know the kind—screws that are hard to start, that break, strip, or cannot draw up tight. In your work, where much depends on *secure* fastenings, you simply cannot afford to use such screws.

You don't have these worries when Parker-Kalon Self-tapping Screws go on the job. For the quality of each Parker-Kalon Screw is uniformly high . . . a quality maintained by Parker-Kalon's $250,000 Laboratory and backed by over 25 years' experience in screw manufacture. This is your guarantee that every Parker-Kalon Screw will work right every time. Parker-Kalon Corporation, 190-200 Varick Street, New York, N.Y.

Quality-Controlled

TYPES, SIZES, HEAD-STYLES FOR EVERY ASSEMBLY OF METAL OR PLASTICS

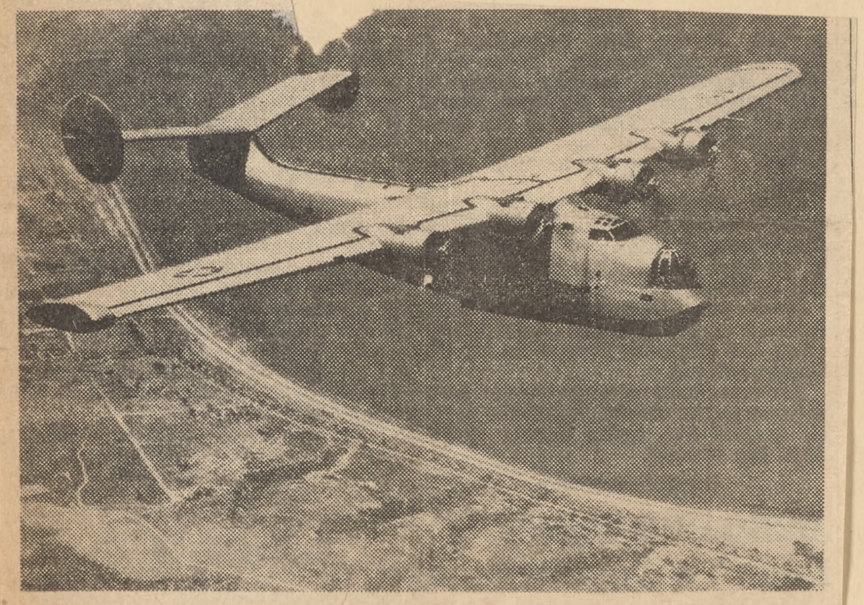
HEX-HEAD

TYPE Z

SOLD ONLY THROUGH RECOGNIZED DISTRIBUTORS

PARKER-KALON
HARDENED
Self-tapping Screws

Ludlow Advertiser Series 6/19/40



One of America's latest flying-boats is this four-engined Consolidated in flight over California. The crew can walk the entire length of the hull without stooping.

Adam's Avenue Examiner 7/11/40

Airplane Growth Zooms Skyward

Consolidated Air Craft Expansion Vividly Explained

EDITOR'S NOTE—This exclusive story, released for publication in the EXAMINER, gives readers a most comprehensive picture of the rapid expansion of this city's largest payroll, now concentrated in a defense preparation program second to none in the nation! More than 7,000 men are now employed at Consolidated.

The tremendous expansion program currently being rushed to completion at Consolidated Aircraft Corporation, which is already by far the largest local manufacturing enterprise, **will give San Diego the distinction of having the largest integrated covered and uncovered aircraft manufacturing plant in America.** Consolidated's manufacturing space, exclusive of field, ramp and railroad sidings, now occupies over 1,910,000 square feet of area or an 87 per cent increase over the previous figure, with an option on adjacent land equal to an added 50 percent of this area; plans are nearly completed for its possible use.

This expansion thus brings the local plant into full step with the President's recently announced national defense program, and helps to place San Diego in the forefront of the drive to produce the stated 50,000 plane output per year.

Already operating with a present backlog in excess of $70,000,000, contracts for additional work are being negotiated which, if accepted, will build this huge backlog for San Diego's concern to well over $100,000,000. **Roughly one half of this sum will be expended locally, and this largely through wages to employees, exerting a marked stimulus to local business of a purely beneficial nature, since the plant's operations do not draw upon the community's wealth, other than its climate.** A distinct climatic advantage is the fact that approximately 30 per cent of the manufacturing operations can be conducted out of doors, thus paying health dividends to the employees as well as convenience to the company.

LATEST EQUIPMENT

Thoroughly modern in construction and planning, Consolidated's huge plant utilizes all the latest features of aircraft plant design. The plant now extends for a half mile along Pacific Highway, and the new Final Assembly building at the north end of the plant is more than a city block in size with its tremendous roof held high in the air with remarkably few supporting columns. This construction allows exceptional manufacturing freedom within. A three story structure, the size of an average three story office building of the business district, is housed under the roof of this final assembly building, and a dozen more such structures could be placed under its roof without crowding.

Sawtooth roof construction affords north lighting during the daylight hours. Adequate artificial lighting is provided for the night workers. The plant is now operating three shifts. It is not difficult to appraise the fact that the entire plant is streamlined for the most efficient production and the greatest convenience to the workmen in all necessary facilities provided; for all its huge buildings, and **most of its equipment, are less than five years old today. This marks it as one of the newest and finest plants in all the world.**

Rounding out its complement of equipment, some of the finest machine tools available in the market today have, and will be installed as the program progresses. Lathes, automatic screw machines, shapers, millers, die sinkers, planers, punch-presses, hydraulic presses, drop hammers, power shears and brakes and smaller electric and pneumatic tools in almost unlimited number are included. These machines are being operated by men rapidly learning the newest time saving features of this splendid equipment.

At the present moment, **approximately 750 of the more than 7,000 skilled aircraftsmen are engaged in tool design and production,** and the making of patterns which supplement the machine tools with special equipment; providing jigs, patterns and templates, assembly fixtures and the multitude of special tools required to assist the workmen to produce the finest airplanes possible.

Consolidated's present position, and outlook for the future, bids fair to exert a marked influence on the growth of San Diego. Concluding a statement to the plant personnel on the recent advent of the Consolidated Aircraft Corporation's 17th birthday, President Major Reuben H. Fleet said, "We have a good organization—equal to any in our industry—the best in our history. So in counting our blessings let us consider that we have a factory of our own, tailored for our business, in the city of our choice, with plenty of work on hand and in sight, and no mortgage on our premises or our future. In one sense I regret that we are too busy to celebrate."

UNION-7-23

Ryan Aero Gets $800,000 Order

'Foreign Power' Buys Trainers

Closing of an $800,000 contract by Ryan Aeronautical Co. for production of military training planes for a "foreign power" was announced yesterday by T. Claude Ryan, president.

One of the largest individual contracts awarded to the firm, the order calls for manufacture and delivery of Ryan STM-2 military trainers, similar to those recently delivered to the U.S. army air corps. The country which ordered the trainers was not revealed, nor was the number of craft involved. The deal, however, was approved by the state department.

The contract covers land-plane trainers and a number of the same model equipped with twin floats as seaplane trainers. This is the first time the Ryan trainer has been offered as a seaplane. Production is under way, Ryan said, and the entire order is scheduled for delivery in the next few months.

Meanwhile, Consolidated Aircraft Corp. announced a backlog of orders totaling $96,870,000, an increase of $55,136,721 since Jan. 1. Additional orders are expected within a few weeks to bring the backlo to more than $100,000,000, accordi to Maj. Reuben Fleet, president.

Tottenham Weekly Herald Series 6/14/40

KLY HERALD. Friday, June 14th, 1940.

OUR FLYING BOYS

A BLENHEIM'S LAST FIGHT

Limping home with one engine out of action and part of its tail shot away, while six Me.109 fighters attacked from behind, a British Blenheim fighter landed on a mudbank. Its crew were posted as "missing"; they are now safe.

They had been on a "strafing" expedition with others of their squadron to Rotterdam. They attacked enemy aircraft on Rotterdam aerodrome, blazed away at hangars, and then found six Me.109's on their tail as they came out of the dive.

The Blenheim's port engine, which had been smoking from an early shot, was destroyed by a shell from an enemy aircraft's cannon. Apart from the six enemy machines in pursuit, there were at least fifty German aircraft in the air at the time.

Things looked black for the Blenheim's crew with only the starboard engine working. As they turned for home, they swung from side to side and their speed fell to 130 m.p.h., making them virtually a "sitting bird" for the Messerschmitts.

"But, fortunately for us," said the Blenheim's air-gunner, "their shooting was bad. Only an occasional burst of machine-gun bullets entered the cockpit, though one of the shells fired at us broke up our tail and another took ten inches or so off the blade of the airscrew."

"If it hadn't been for the excellent guidance of the gunner," said the pilot, "we would not have escaped. He gave a first-rate running commentary over the radio telephone on the movements of the enemy, which helped me to adopt successful evasive tactics."

After nearly ten minutes, with the Blenheim's speed failing, the enemy decided to leave the British aircraft to the mercy of one Messerschmitt. Five flew off and the sixth came in to give the *coup de grace*. But the enemy pilot took things a little too easily. He attacked from close range and at last the British rear gun spoke (it had jammed earlier in the fight).

"I must have got him," said the air-gunner. "Instead of sweeping past he suddenly slowed down and gradually fell away towards the ground. I think I must have hit the pilot with my last few rounds."

The British crew were left alone for the next five or six minutes, hedge-hopping as they went on slowly, on one engine. Finally, the pilot decided his remaining engine was running so badly that it would be unsafe to go further. He landed on a mudbank, coming down on the mud about 50 yards from the shore of an estuary.

When they finally reached home, with the help of a British destroyer, the pilot and air-gunner found that they had been posted as "missing" and that telegrams had been sent to their families.

Reassuring telegrams, however, quickly followed.

* * *

TRUTH ABOUT THE TROOP-CARRIERS

Answering a question in the House of Commons recently Captain Balfour, Parliamentary Under-Secretary of State for Air, said that the German aircraft engaged on troop-carrying operations are generally of the unarmed transport class.

A member had asked for information about the nature and calibre of the armament, other than small arms, carried by German troop-carriers and similar aircraft which have been employed in the operations on the continent.

Replying, Captain Balfour said that in addition to the usual small arms, the troops carried are known to have been equipped with heavy machine-guns of 13 and 20 millimetres calibre; with 5 centimetre and 8.1 centimetre mortars; with 7.5 centimetre infantry guns and possibly 10.5 centimetre light howitzers.

The most widely used German troop-carrier is the 3-engined Junkers 52, which is capable of carrying about fourteen troops, has a maximum speed of 190 m.p.h. and a range of 1,000 miles. The more modern Ju.90 carries nearly three times as many troops and has a top speed of 225 m.p.h.

LOCKHEED HUDSON STILL MAKING GOOD

Among the first American-built aircraft to go into action with the Allied Air Forces is a military version of a famous U.S.A. civil air-liner, the Lockheed 14. In its specially equipped form as a fast reconnaissance aircraft it is known as the "Hudson."

It was the first aircraft to cross the Atlantic on the deck of a modern liner. Several hundreds of the type were ordered before the war, and a considerable number are now in service with the R.A.F.

It is an all-metal mid-wing monoplane with two Wright Cyclone radial motors giving a total power output of about 2,000 h.p. The fuselage is the cabin type with accommodation for a crew of four, and there is a gun turret aft in addition to forward firing armament. In its commercial form, with less powerful engines, it had a speed of about 260 m.p.h.

Though fast and manœuvreable the Hudson is primarily a scouting rather than fighting machine. Nevertheless, in the hands of R.A.F. pilots of the Coastal Command the Hudson has earned a great fighting reputation in a number of actions.

Many of these fights have about them more than a touch of audacity. In the first months of the war a single Hudson took on two big German Dornier flying-boats, holding them in close battle until two other British aircraft came up and helped to defeat the Germans. Another engagement over Bergen fjord ended with a Dornier being shot down; and in a fight between a Hudson and a Dornier over the North Sea the Hudson settled its adversary in 35 seconds. It was also a Hudson aircraft of Coastal Command which first spotted the ill-famed Altmark off the coast of Norway.

A recent exploit of the Hudsons was an attack by three of them last week on a formation of forty enemy planes, including protective fighters, which were attempting to bomb a British troopship. Three Ju.87 dive bombers were destroyed, two more driven down and the formation broken up, whilst the Hudsons were untouched.

The tale of successes of this trans-Atlantic aircraft, under all sorts of conditions of weather and war, is a good augury for the performance of the newer and more powerful American types now coming into service with the Allies.

* * *

AIR FORCE NEWS IN BRIEF

The number of awards for outstanding bravery, skill and daring made to officers, N.C.O.'s and men of the Air Force since the beginning of the war affords ample evidence of the devotion of all ranks alike. Up to the end of May 10 D.S.O.'s, one bar to a D.S.O., 139 Distinguished Flying Crosses and three bars to the D.F.C. had been awarded to officers. During the same period 41 Distinguished Flying Medals and two bars to the D.F.M. were awarded to Sergeants and Flight Sergeants and 46 Distinguished Flying Medals to Corporals and others below that rank.

* * *

TAILPIECE

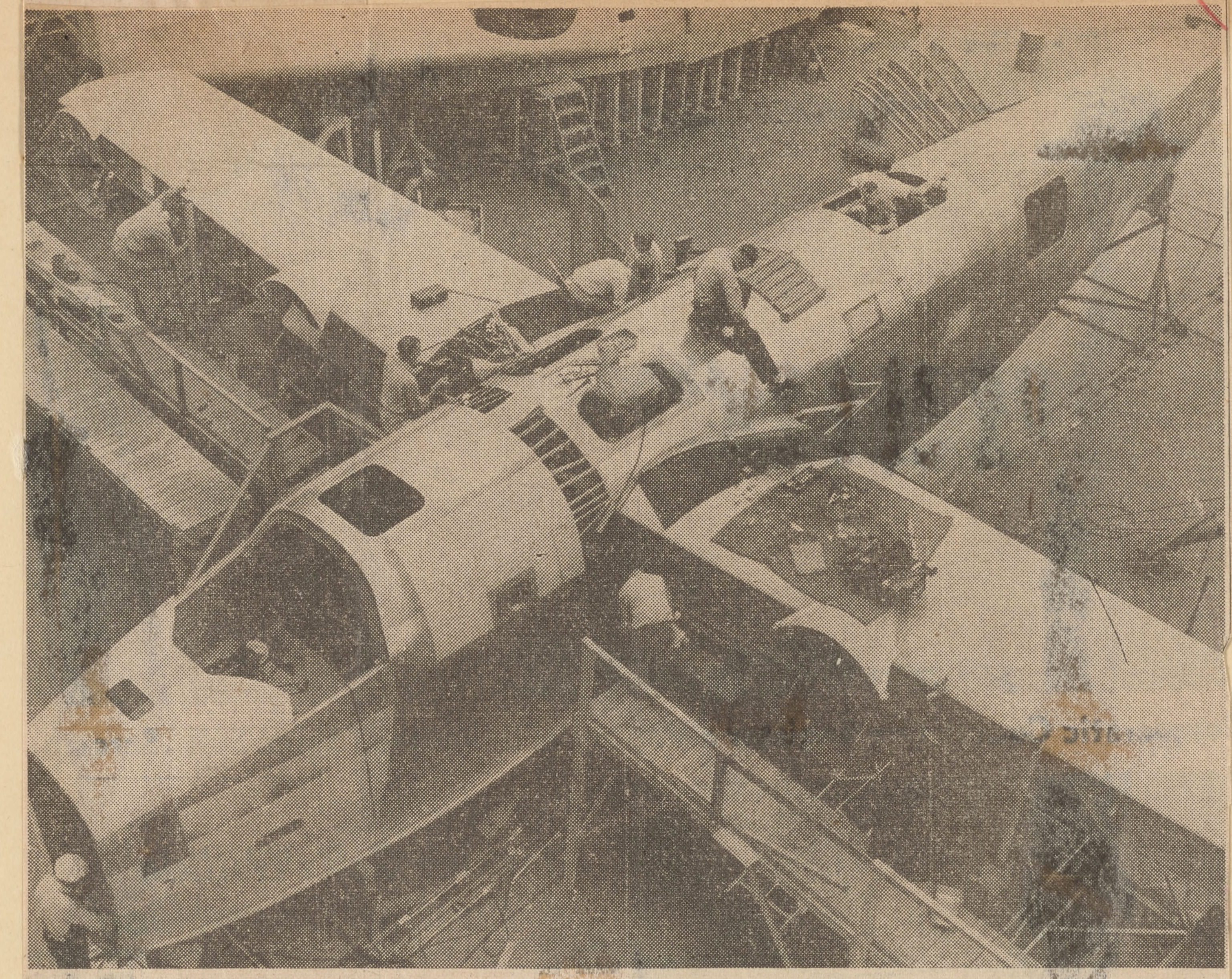
A famous American flying-boat—the Consolidated P.B.Y.2 "Guba"—which was making headlines a year ago with a series of remarkable flights across British territories overseas, is in the news again. It is advertised for sale as a bargain in "Aviation's Market-place" in a leading American aviation magazine.

This seems to be a chance for anyone wanting their own private flying-boat, with a reputed range of 4,000 miles, a speed of nearly two hundred miles an hour, a host of gadgets including automatic pilot homing devices, direction finders—and two spare engines!

"Guba" made the first coast-to-coast crossing of the Indian Ocean from India to British East Africa. Its round trip included also crossings of the Atlantic and Pacific Oceans, and the continents of Australia and Africa.

Following flights of famous British aircraft, such as the world record flight of Vickers "Wellesleys" from Egypt to Australia, and of the Short "Empire" flying boats on the Empire Air Mail services, "Guba's" flight demonstrated some of the possibilities of the modern long-range aircraft in linking up the distant parts of the British Commonwealth.

SAN FRANCISCO, CALIF.,
CHRONICLE—293.
JULY 17, 1940



Army Bomber Nears Completion

Workmen finishing construction of an army XB-24 bomber on the final outdoor assembly line at Consolidated Aircraft Corp. in San Diego. The plane marks the re-entry into the land plane field by the Consolidated Company, which is now the largest manufacturer of flying boats in the world. Several of these huge bombers are now on the final assembly line. They are powered with four engines rated at 1200 H. P. each. Wide World Photo.

Wings of the Navy

Long-Range Patrol 'Air Battleships' in Commission

By **HAROLD KEEN**

Released by
North American Newspaper Alliance, Inc.

SAN DIEGO, July 15—The U. S. navy's scouting eyes have acquired "binoculars" that will project the fleet's vision to the most distant theaters of possible sea combat.

This is the isgnificant fact behind the commissioning this month of a new aviation unit, Patrol Squadron 13, at the naval air station here.

It is the first to contain the navy's most recently developed long-range heavy bombing seaplanes, four-motored (1050 h. p. each), 25-ton giants capable of a speed in excess of 200 miles an hour and a nonstop range of 5000 miles.

Their range, with a great load of bombs or aerial torpedoes, will give the fleet a reconaissance scope of 2500 miles from any shore base or refueling vessels at sea, and a terrific striking power to harass or even cripple an approaching hostile force.

The new bombers, built at Consolidated Aircraft Corporation, San Diego, will enable a complete blanketing of such gateways to vital American positions as the Caribbean, the Pacific approaches to Hawaii, Alaska and the Aleutian islands, and the zones in the Far East surrounding the U. S. naval base at Cavite, Philippine islands.

They will extend the present area of scouting operations 1000 round-trip miles beyond that made possible by the navy's present armada of 250 twin-engined PBY-type patrol bombers, based at Pearl harbor, Hawaii; Sitka, Alaska; Cavite, P. I.; Seattle, San Diego, Norfolk and Coco Solo, Canal zone.

The prototype of these veritable battleships of the air, secretly engineered and built over a period of more than three years, was perhaps the most expensive seaplane ever constructed in the United States. Its cost was $1,000,000, with the navy contributing $400,000. This first of the series of recently completed 4-motored bombers startled the world of military aviation October 28, 1938, when it was flown nonstop, while still in an experimental stage, across the continent from San Diego to Anacostia, D. C.—over stretches of land where a forced landing for a seaplane would have been disastrous—in 13 hours, 55 minutes.

Because of its great speed and passeng!er carrying capacity, it has unequaled value as an overwater—or even overland—transport to effect rapid troop transfers. On long, overnight flights the plane can carry 30 passengers and, six crew members, while on shorter jaunts there would be space enough for 50.

Patrol squadron 13 will bear the distinction of containing the most heavily armed aircraft in the navy service, the exact caliber of their guns being a military secret.

---

air Consolidated Air

Romeike & Curtice Ltd
Telephone CENTRAL 2781 (2 Lines.)
R&C
35. Shoe Lane. LONDON. E.C.4.

EXTRACT FROM

HUDDERSFIELD DAILY EXAMINER,
Ramsden Street, Huddersfield.

Date 14 JUN 1940

In The News Again

A FAMOUS American flying-boat—the Consolidated P.B.Y. 2 "Guba"—which was making headlines a year ago with a series of remarkable flights across British territories overseas, is in the news again. It is advertised for sale as a bargain in "Aviation's Market-place" in a leading American aviation magazine. This seems to be a chance for anyone wanting their own private flying-boat, with a reputed range of 4,000 miles, a speed of nearly two hundred miles an hour, a host of gadgets including automatic pilot homing devices, direction finders—and two spare engines! "Guba" made the first coast-to-coast crossing of the Indian Ocean from India to British East Africa. Its round trip included also crossings of the Atlantic and Pacific oceans, and the continents of Australia and Africa. Following flights of famous British aircraft—such as the world record flight of Vickers "Wellesleys" from Egypt to Australia, and of the Short "Empire" flying-boats on the Empire Air Mail services—"Guba's" flight demonstrated some of the possibilities of modern long-range aircraft in linking up the distant parts of the British Commonwealth.

Air
Consolidated Air

Romeike & Curtice Ltd
Telephone CENTRAL 2781 (2 Lines.)
R&C
35. Shoe Lane. LONDON. E.C.4.

EXTRACT FROM

SCOTTISH DAILY EXPRESS
196, Albion Street, Glasgow

Date 29 JUN 1940

BRITAIN'S U.S. PLANE BILL—£250,000,000

THE New York Times yesterday printed the following article:—

For the first time since France and Britain placed orders for American airplanes, a detailed and fairly complete picture of the number of types of airplanes purchased can now be made public.

Until now the purchases have been expressed in dollar values, leaving the number of units to guesswork.

By assuming the French contracts, Britain now holds contracts for 9512 American airplanes, estimated at a cost of more than £250,000,000. Nearly half that number have been delivered—that is, turned over to Allied agents here. How many have been shipped to Europe cannot be definitely learned, but the latest estimate is about 3,000.

British orders in the 10 months of the war were made up as follows:—Douglas bombers, 360; North American trainers, 1165; Lockheed bombers, 1550; Bell Aircobras, 240; Brewster fighters, 150; Consolidated flying-boats, 40.

The arrival in New York this week of Harold F. James of the British Ministry of Aircraft Production is interpreted as meaning that the British plan to place further orders.

Consolidated Air

Romeike & Curtice Ltd
Telephone CENTRAL 2781 (2 Lines.)
R&C
35. Shoe Lane. LONDON. E.C.4.

EXTRACT FROM

Daily Mail

Date 29 JUN 1940

2

9,50LANES FF U.S.

3,000 in England

From DON Mail Correspondent

NEW YORK, Friday.

BRITAIN contracts for 9,512 American warevealed to-day. Nearly half of them ered, and 3,000 machines are already in

Included 4,934 'planes ordered by France. Theer after the surrender of the Bordeaux Government.

Among the machines delivered and on order are North American trainers, Curtiss pursuit 'planes, Douglas, Martin and Lockheed bombers, Grumman fighters, and Consolidated flying-boats.

Meanwhile, the negotiations, between the Packard Motor Company and Government officials, concerning the construction of Rolls-Royce aviation engines for Britain, continue to be stimulated by the statement issued last night by Mr. Henry Morgenthau, Secretary of the Treasury.

Mr. Morgenthau said that Britain will share in any Rolls-Royce engines produced in America, not only as a matter of fairness, but because of President Roosevelt's policy of giving full aid to the Allies

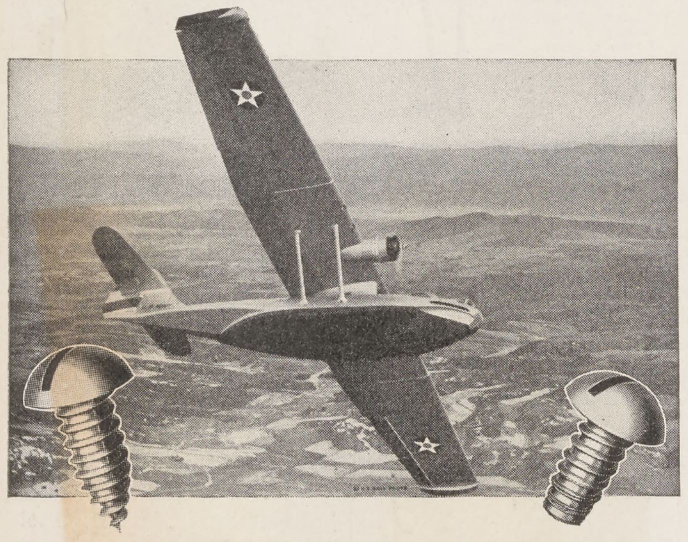
As Mr. Morrison, Britain's Minister of Supply, revealed in the House of Commons yesterday, every leading aircraft firm in the United States is working on 'planes for the Allies.

In addition, America is also producing great quantities of machine tools.

JULY-1ST- AUTOMOTIVE
1940 INDUSTRIES

SECURE FASTENINGS ASSURE SAFE FLIGHT

... NO "DOUBTFUL" SCREWS HERE!



For clamp-tight bonds, CONSOLIDATED AIRCRAFT calls on Parker-Kalon Self-tapping Screws

THE PRODUCT you make may not be airplanes, but the same moral holds true ... don't take chances on "doubtful" screws! You know the kind—screws that are hard to start, that break, strip, or cannot draw up tight. In your work, where much depends on *secure* fastenings, you simply cannot afford to use such screws.

You don't have these worries when Parker-Kalon Self-tapping Screws go on the job. For the quality of each Parker-Kalon Screw is uniformly high ... a quality maintained by Parker-Kalon's $250,000 Laboratory and backed by over 25 years' experience in screw manufacture. This is your guarantee that every Parker-Kalon Screw will work right every time. Parker-Kalon Corporation, 190-200 Varick Street, New York, N.Y.

Quality-Controlled

TYPES, SIZES, HEAD-STYLES FOR EVERY ASSEMBLY OF METAL OR PLASTICS

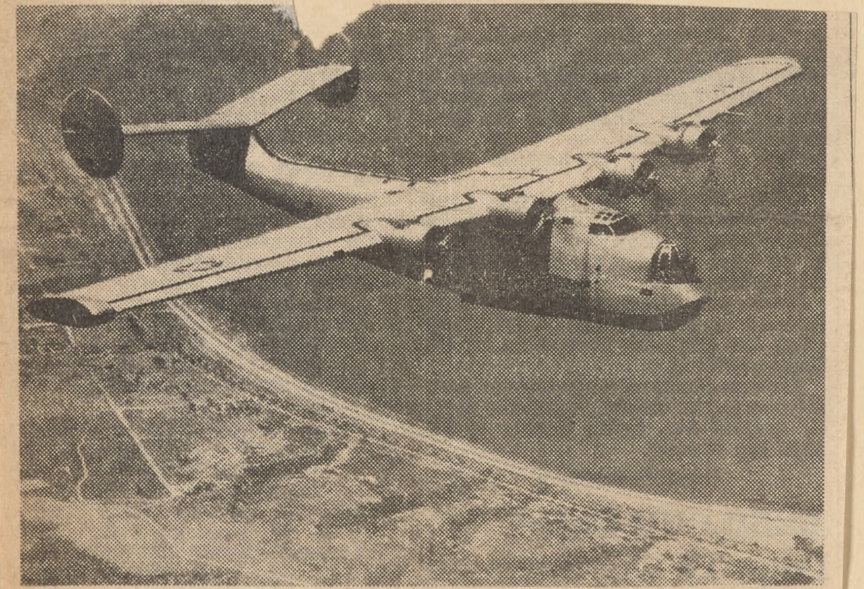
HEX-HEAD

TYPE Z

SOLD ONLY THROUGH RECOGNIZED DISTRIBUTORS

PARKER-KALON
HARDENED
Self-tapping Screws

Ludlow Advertiser Series 6/19/40



One of America's latest flying-boats is this four-engined Consolidated in flight over California. The crew can walk the entire length of the hull without stooping.

Adam's Avenue Examiner 7/11/40

Airplane Growth Zooms Skyward

Consolidated Air Craft Expansion Vividly Explained

EDITOR'S NOTE—This exclusive story, released for publication in the EXAMINER, gives readers a most comprehensive picture of the rapid expansion of this city's largest payroll, now concentrated in a defense preparation program second to none in the nation! More than 7,000 men are now employed at Consolidated.

The tremendous expansion program currently being rushed to completion at Consolidated Aircraft Corporation, which is already by far the largest local manufacturing enterprise, **will give San Diego the distinction of having the largest integrated covered and uncovered aircraft manufacturing plant in America.** Consolidated's manufacturing space, exclusive of field, ramp and railroad sidings, now occupies over 1,910,000 square feet of area or an 87 per cent increase over the previous figure, with an option on adjacent land equal to an added 50 percent of this area; plans are nearly completed for its possible use.

This expansion thus brings the local plant into full step with the President's recently announced national defense program, and helps to place San Diego in the forefront of the drive to produce the stated 50,000 plane output per year.

Already operating with a present backlog in excess of $70,000,000, contracts for additional work are being negotiated which, if accepted, will build this huge backlog for San Diego's concern to well over $100,000,000. **Roughly one half of this sum will be expended locally, and this largely through wages to employees, exerting a marked stimulus to local business of a purely beneficial nature, since the plant's operations do not draw upon the community's wealth, other than its climate.** A distinct climatic advantage is the fact that approximately 30 per cent of the manufacturing operations can be conducted out of doors, thus paying health dividends to the employees as well as convenience to the company.

LATEST EQUIPMENT

Thoroughly modern in construction and planning, Consolidated's huge plant utilizes all the latest features of aircraft plant design. The plant now extends for a half mile along Pacific Highway, and the new Final Assembly building at the north end of the plant is more than a city block in size with its tremendous roof held high in the air with remarkably few supporting columns. This construction allows exceptional manufacturing freedom within. A three story structure, the size of an average three story office building of the business district, is housed under the roof of this final assembly building, and a dozen more such structures could be placed under its roof without crowding.

Sawtooth roof construction affords north lighting during the daylight hours. Adequate artificial lighting is provided for the night workers. The plant is now operating three shifts. It is not difficult to appraise the fact that the entire plant is streamlined for the most efficient production and the greatest convenience to the workmen in all necessary facilities provided; for all its huge buildings, and **most of its equipment, are less than five years old today. This marks it as one of the newest and finest plants in all the world.**

Rounding out its complement of equipment, some of the finest machine tools available in the market today have, and will be installed as the program progresses. Lathes, automatic screw machines, shapers, millers, die sinkers, planers, punch-presses, hydraulic presses, drop hammers, power shears and brakes and smaller electric and pneumatic tools in almost unlimited number are included. These machines are being operated by men rapidly learning the newest time saving features of this splendid equipment.

At the present moment, **approximately 750 of the more than 7,000 skilled aircraftsmen are engaged in tool design and production,** and the making of patterns which supplement the machine tools with special equipment; providing jigs, patterns and templates, assembly fixtures and the multitude of special tools required to assist the workmen to produce the finest airplanes possible.

Consolidated's present position, and outlook for the future, bids fair to exert a marked influence on the growth of San Diego. Concluding a statement to the plant personnel on the recent advent of the Consolidated Aircraft Corporation's 17th birthday, President Major Reuben H. Fleet said, "We have a good organization—equal to any in our industry—the best in our history. So in counting our blessings let us consider that we have a factory of our own, tailored for our business, in the city of our choice, with plenty of work on hand and in sight, and no mortgage on our premises or our future. In one sense I regret that we are too busy to celebrate."

UNION-7-23

Ryan Aero Gets $800,000 Order

'Foreign Power' Buys Trainers

Closing of an $800,000 contract by Ryan Aeronautical Co. for production of military training planes for a "foreign power" was announced yesterday by T. Claude Ryan, president.

One of the largest individual contracts awarded to the firm, the order calls for manufacture and delivery of Ryan STM-2 military trainers, similar to those recently delivered to the U.S. army air corps. The country which ordered the trainers was not revealed, nor was the number of craft involved. The deal, however, was approved by the state department.

The contract covers land-plane trainers and a number of the same model equipped with twin floats as seaplane trainers. This is the first time the Ryan trainer has been offered as a seaplane. Production is under way, Ryan said, and the entire order is scheduled for delivery in the next few months.

Meanwhile, Consolidated Aircraft Corp. announced a backlog of orders totaling $96,870,000, an increase of $55,136,721 since Jan. 1. Additional orders are expected within a few weeks to bring the backlo to more than $100,000,000, accordin to Maj. Reuben Fleet, president.

Tottenham Weekly Herald Series 6/14/40

KLY HERALD. Friday, June 14th, 1940.

OUR FLYING BOYS

A BLENHEIM'S LAST FIGHT

Limping home with one engine out of action and part of its tail shot away, while six Me.109 fighters attacked from behind, a British Blenheim fighter landed on a mudbank. Its crew were posted as "missing"; they are now safe.

They had been on a "strafing" expedition with others of their squadron to Rotterdam. They attacked enemy aircraft on Rotterdam aerodrome, blazed away at hangars, and then found six Me.109's on their tail as they came out of the dive.

The Blenheim's port engine, which had been smoking from an early shot, was destroyed by a shell from an enemy aircraft's cannon. Apart from the six enemy machines in pursuit, there were at least fifty German aircraft in the air at the time.

Things looked black for the Blenheim's crew with only the starboard engine working. As they turned for home, they swung from side to side and their speed fell to 130 m.p.h., making them virtually a "sitting bird" for the Messerschmitts.

"But, fortunately for us," said the Blenheim's air-gunner, "their shooting was bad. Only an occasional burst of machine-gun bullets entered the cockpit, though one of the shells fired at us broke up our tail and another took ten inches or so off the blade of the airscrew."

"If it hadn't been for the excellent guidance of the gunner," said the pilot, "we would not have escaped. He gave a first-rate running commentary over the radio telephone on the movements of the enemy, which helped me to adopt successful evasive tactics."

After nearly ten minutes, with the Blenheim's speed failing, the enemy decided to leave the British aircraft to the mercy of one Messerschmitt. Five flew off and the sixth came in to give the *coup de grace*. But the enemy pilot took things a little too easily. He attacked from close range and at last the British rear gun spoke (it had jammed earlier in the fight).

"I must have got him," said the air-gunner. "Instead of sweeping past he suddenly slowed down and gradually fell away towards the ground. I think I must have hit the pilot with my last few rounds."

The British crew were left alone for the next five or six minutes, hedge-hopping as they went on slowly, on one engine. Finally, the pilot decided his remaining engine was running so badly that it would be unsafe to go further. He landed on a mudbank, coming down on the mud about 50 yards from the shore of an estuary.

When they finally reached home, with the help of a British destroyer, the pilot and air-gunner found that they had been posted as "missing" and that telegrams had been sent to their families.

Reassuring telegrams, however, quickly followed.

* * *

TRUTH ABOUT THE TROOP-CARRIERS

Answering a question in the House of Commons recently Captain Balfour, Parliamentary Under-Secretary of State for Air, said that the German aircraft engaged on troop-carrying operations are generally of the unarmed transport class.

A member had asked for information about the nature and calibre of the armament, other than small arms, carried by German troop-carriers and similar aircraft which have been employed in the operations on the continent.

Replying, Captain Balfour said that in addition to the usual small arms, the troops carried are known to have been equipped with heavy machine-guns of 13 and 20 millimetres calibre; with 5 centimetre and 8.1 centimetre mortars; with 7.5 centimetre infantry guns and possibly 10.5 centimetre light howitzers.

The most widely used German troop-carrier is the 3-engined Junkers 52, which is capable of carrying about fourteen troops, has a maximum speed of 190 m.p.h. and a range of 1,000 miles. The more modern Ju.90 carries nearly three times as many troops and has a top speed of 225 m.p.h.

LOCKHEED HUDSON STILL MAKING GOOD

Among the first American-built aircraft to go into action with the Allied Air Forces is a military version of a famous U.S.A. civil air-liner, the Lockheed 14. In its specially equipped form as a fast reconnaissance aircraft it is known as the "Hudson."

It was the first aircraft to cross the Atlantic on the deck of a modern liner. Several hundreds of the type were ordered before the war, and a considerable number are now in service with the R.A.F.

It is an all-metal mid-wing monoplane with two Wright Cyclone radial motors giving a total power output of about 2,000 h.p. The fuselage is the cabin type with accommodation for a crew of four, and there is a gun turret aft in addition to forward firing armament. In its commercial form, with less powerful engines, it had a speed of about 260 m.p.h.

Though fast and manœuvreable the Hudson is primarily a scouting rather than fighting machine. Nevertheless, in the hands of R.A.F. pilots of the Coastal Command the Hudson has earned a great fighting reputation in a number of actions.

Many of these fights have about them more than a touch of audacity. In the first months of the war a single Hudson took on two big German Dornier flying-boats, holding them in close battle until two other British aircraft came up and helped to defeat the Germans. Another engagement over Bergen fjord ended with a Dornier being shot down; and in a fight between a Hudson and a Dornier over the North Sea the Hudson settled its adversary in 35 seconds. It was also a Hudson aircraft of Coastal Command which first spotted the ill-famed Altmark off the coast of Norway.

A recent exploit of the Hudsons was an attack by three of them last week on a formation of forty enemy planes, including protective fighters, which were attempting to bomb a British troopship. Three Ju.87 dive bombers were destroyed, two more driven down and the formation broken up, whilst the Hudsons were untouched.

The tale of successes of this trans-Atlantic aircraft, under all sorts of conditions of weather and war, is a good augury for the performance of the newer and more powerful American types now coming into service with the Allies.

* * *

AIR FORCE NEWS IN BRIEF

The number of awards for outstanding bravery, skill and daring made to officers, N.C.O.'s and men of the Air Force since the beginning of the war affords ample evidence of the devotion of all ranks alike. Up to the end of May 10 D.S.O.'s, one bar to a D.S.O., 139 Distinguished Flying Crosses and three bars to the D.F.C. had been awarded to officers. During the same period 41 Distinguished Flying Medals and two bars to the D.F.M. were awarded to Sergeants and Flight Sergeants and 46 Distinguished Flying Medals to Corporals and others below that rank.

* * *

TAILPIECE

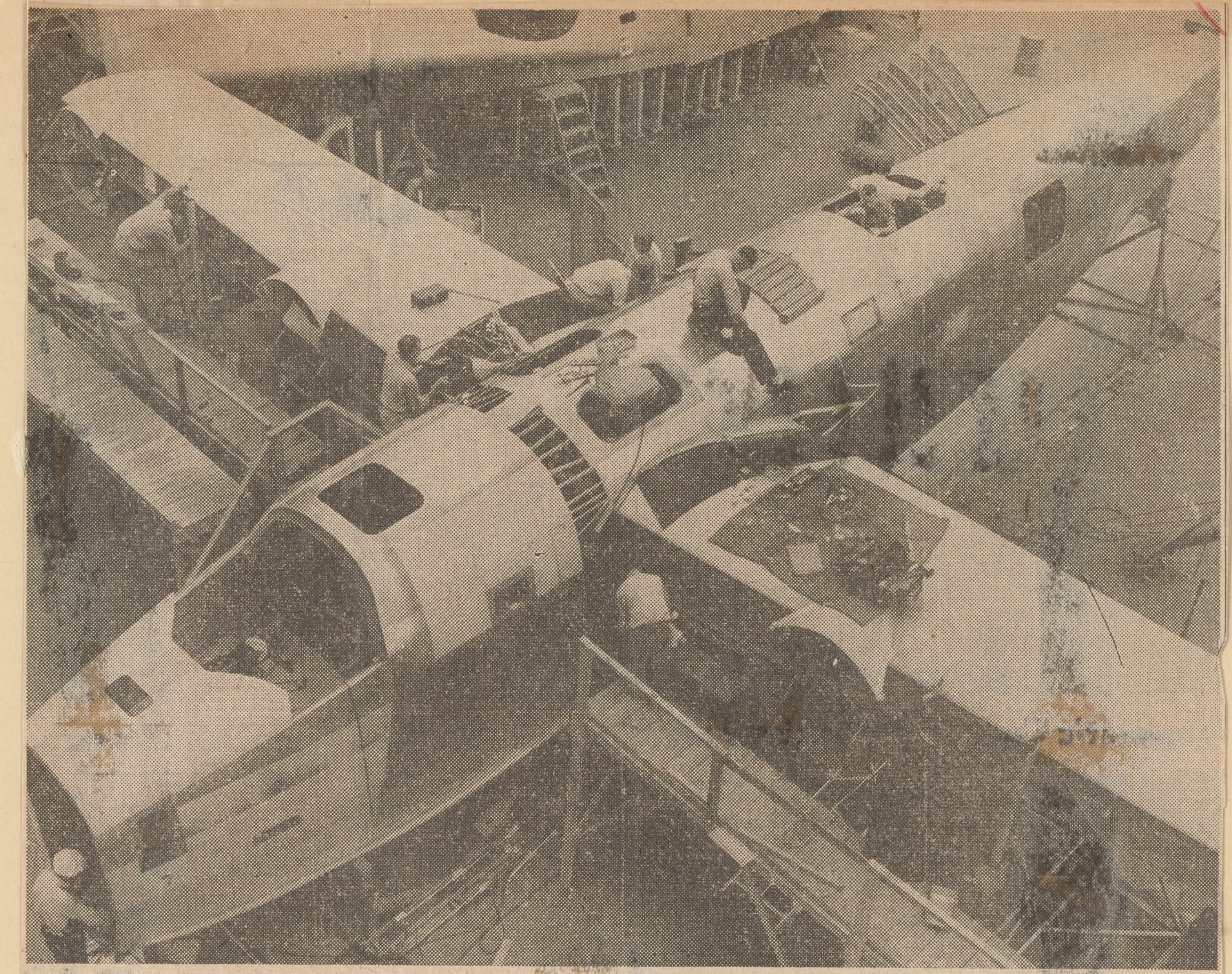
A famous American flying-boat—the Consolidated P.B.Y.2 "Guba"—which was making headlines a year ago with a series of remarkable flights across British territories overseas, is in the news again. It is advertised for sale as a bargain in "Aviation's Market-place" in a leading American aviation magazine.

This seems to be a chance for anyone wanting their own private flying-boat, with a reputed range of 4,000 miles, a speed of nearly two hundred miles an hour, a host of gadgets including automatic pilot homing devices, direction finders—and two spare engines!

"Guba" made the first coast-to-coast crossing of the Indian Ocean from India to British East Africa. Its round trip included also crossings of the Atlantic and Pacific Oceans, and the continents of Australia and Africa.

Following flights of famous British aircraft, such as the world record flight of Vickers "Wellesleys" from Egypt to Australia, and of the Short "Empire" flying boats on the Empire Air Mail services, "Guba's" flight demonstrated some of the possibilities of the modern long-range aircraft in linking up the distant parts of the British Commonwealth.

SAN FRANCISCO, CALIF.,
CHRONICLE—293.
JULY 17, 1940



Army Bomber Nears Completion

Workmen finishing construction of an army XB-24 bomber on the final outdoor assembly line at Consolidated Aircraft Corp. in San Diego. The plane marks the re-entry into the land plane field by the Consolidated Company, which is now the largest manufacturer of flying boats in the world. Several of these huge bombers are now on the final assembly line. They are powered with four engines rated at 1200 H. P. each. Wide World Photo.

Wings of the Navy

Long-Range Patrol 'Air Battleships' in Commission

By HAROLD KEEN

Released by
North American Newspaper Alliance, Inc.

SAN DIEGO, July 15—The U. S. navy's scouting eyes have acquired "binoculars" that will project the fleet's vision to the most distant theaters of possible sea combat.

This is the isgnificant fact behind the commissioning this month of a new aviation unit, Patrol Squadron 13, at the naval air station here.

It is the first to contain the navy's most recently developed long-range heavy bombing seaplanes, four-motored (1050 h. p. each), 25-ton giants capable of a speed in excess of 200 miles an hour and a nonstop range of 5000 miles.

Their range, with a great load of bombs or aerial torpedoes, will give the fleet a reconaissance scope of 2500 miles from any shore base or refueling vessels at sea, and a terrific striking power to harass or even cripple an approaching hostile force.

The new bombers, built at Consolidated Aircraft Corporation, San Diego, will enable a complete blanketing of such gateways to vital American positions as the Caribbean, the Pacific approaches to Hawaii, Alaska and the Aleutian islands, and the zones in the Far East surrounding the U. S. naval base at Cavite, Philippine islands.

They will extend the present area of scouting operations 1000 round-trip miles beyond that made possible by the navy's present armada of 250 twin-engined PBY-type patrol bombers, based at Pearl harbor, Hawaii; Sitka, Alaska; Cavite, P. I.; Seattle, San Diego, Norfolk and Coco Solo, Canal zone.

The prototype of these veritable battleships of the air, secretly engineered and built over a period of more than three years, was perhaps the most expensive seaplane ever constructed in the United States. Its cost was $1,000,000, with the navy contributing $400,000. This first of the series of recently completed 4-motored bombers startled the world of military aviation October 28, 1938, when it was flown nonstop, while still in an experimental stage, across the continent from San Diego to Anacostia, D. C.—over stretches of land where a forced landing for a seaplane would have been disastrous—in 13 hours, 55 minutes.

Because of its great speed and passenger carrying capacity, it has unequaled value as an overwater—or even overland—transport to effect rapid troop transfers. On long, overnight flights the plane can carry 30 passengers and six crew members, while on shorter jaunts there would be space enough for 50.

Patrol squadron 13 will bear the distinction of containing the most heavily armed aircraft in the navy service, the exact caliber of their guns being a military secret.

---

air Consolidated
Air

Romeike & Curtice Ltd
Telephone CENTRAL 2781 (2 Lines.)
R&C
35. Shoe Lane. LONDON. E.C.4.

EXTRACT FROM

HUDDERSFIELD DAILY EXAMINER,
Ramsden Street, Huddersfield.

Date 14 JUN 1940

In The News Again

A FAMOUS American flying-boat—the Consolidated P.B.Y. 2 "Guba"—which was making headlines a year ago with a series of remarkable flights across British territories overseas, is in the news again. It is advertised for sale as a bargain in "Aviation's Market-place" in a leading American aviation magazine. This seems to be a chance for anyone wanting their own private flying-boat, with a reputed range of 4,000 miles, a speed of nearly two hundred miles an hour, a host of gadgets including automatic pilot homing devices, direction finders—and two spare engines! "Guba" made the first coast-to-coast crossing of the Indian Ocean from India to British East Africa. Its round trip included also crossings of the Atlantic and Pacific oceans, and the continents of Australia and Africa. Following flights of famous British aircraft—such as the world record flight of Vickers "Wellesleys" from Egypt to Australia, and of the Short "Empire" flying-boats on the Empire Air Mail services—"Guba's" flight demonstrated some of the possibilities of modern long-range aircraft in linking up the distant parts of the British Commonwealth.

Consolidated Air

Romeike & Curtice Ltd
Telephone CENTRAL 2781 (2 Lines.)
R&C
35. Shoe Lane. LONDON. E.C.4.

EXTRACT FROM

Daily Mail

Date 29 JUN 1940

2

9,500 'PLANES FROM U.S.

3,000 Now in England

From DON IDDON, Daily Mail Correspondent

NEW YORK, Friday.

BRITAIN now has given contracts for 9,512 American warplanes, it was revealed to-day. Nearly half of them have been delivered, and 3,000 machines are already in England.

Included in the total are 4,934 'planes ordered by France. They were taken over after the surrender of the Bordeaux Government.

Among the machines delivered and on order are North American trainers, Curtiss pursuit 'planes, Douglas, Martin and Lockheed bombers, Grumman fighters, and Consolidated flying-boats.

Meanwhile, the negotiations, between the Packard Motor Company and Government officials, concerning the construction of Rolls-Royce aviation engines for Britain, continue to be stimulated by the statement issued last night by Mr. Henry Morgenthau, Secretary of the Treasury.

Mr. Morgenthau said that Britain will share in any Rolls-Royce engines produced in America, not only as a matter of fairness, but because of President Roosevelt's policy of giving full aid to the Allies

As Mr. Morrison, Britain's Minister of Supply, revealed in the House of Commons yesterday, every leading aircraft firm in the United States is working on 'planes for the Allies.

In addition, America is also producing great quantities of machine tools.

Air
Consolidated Air

Romeike & Curtice Ltd
Telephone CENTRAL 2781 (2 Lines.)
R&C
35. Shoe Lane. LONDON. E.C.4.

EXTRACT FROM

SCOTTISH DAILY EXPRESS
196, Albion Street, Glasgow

Date 29 JUN 1940

BRITAIN'S U.S. PLANE BILL—£250,000,000

THE New York Times yesterday printed the following article:—
For the first time since France and Britain placed orders for American airplanes, a detailed and fairly complete picture of the number of types of airplanes purchased can now be made public.

Until now the purchases have been expressed in dollar values, leaving the number of units to guesswork.

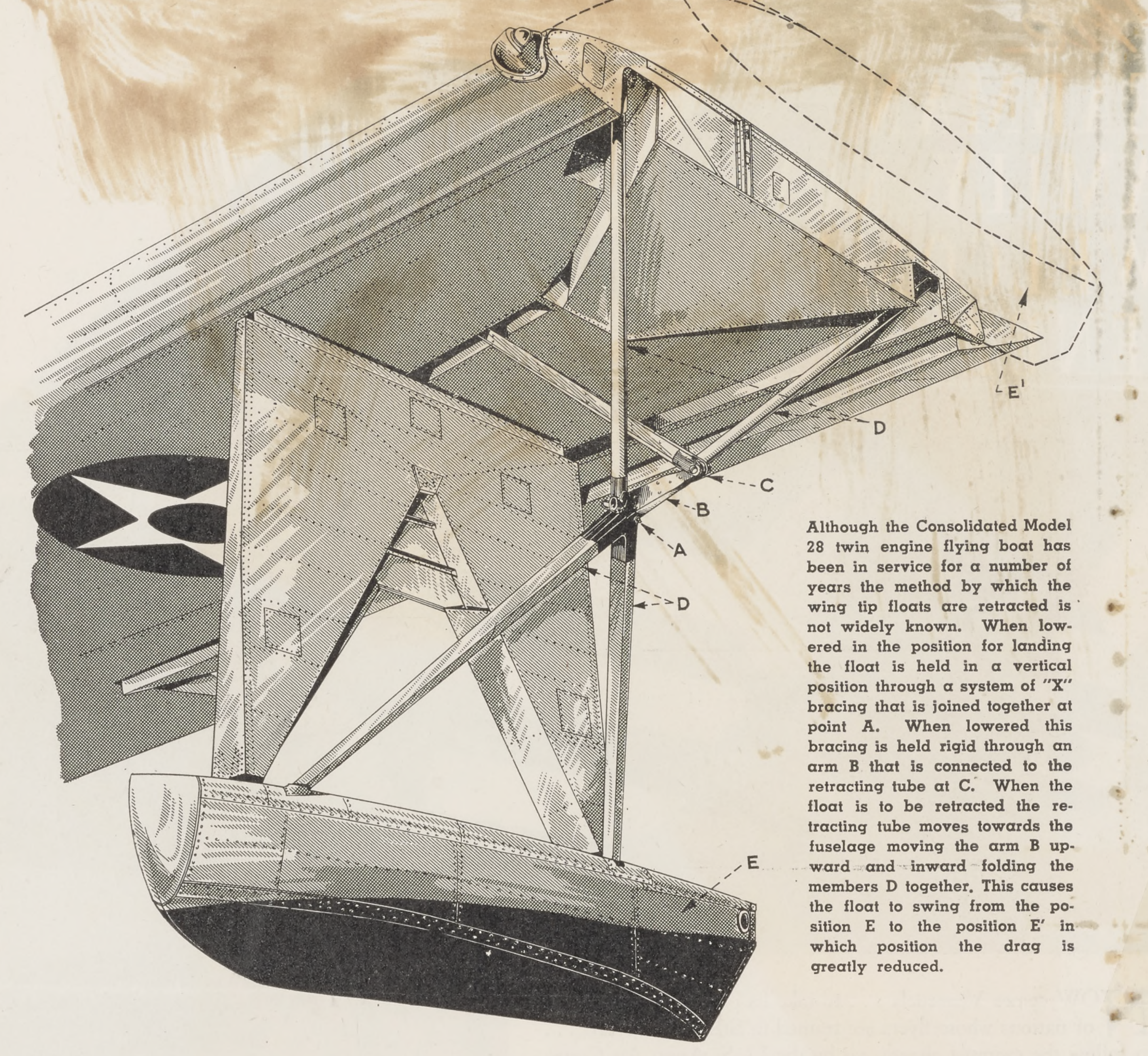
By assuming the French contracts, Britain now holds contracts for 9512 American airplanes, estimated at a cost of more than £250,000,000. Nearly half that number have been delivered—that is, turned over to Allied agents here. How many have been shipped to Europe cannot be definitely learned, but the latest estimate is about 3,000.

British orders in the 10 months of the war were made up as follows:—Douglas bombers, 360; North American trainers, 1165; Lockheed bombers, 1550; Bell Aircobras, 240; Brewster fighters, 150; Consolidated flying-boats, 40.

The arrival in New York this week of Harold F. James of the British Ministry of Aircraft Production is interpreted as meaning that the British plan to place further orders.

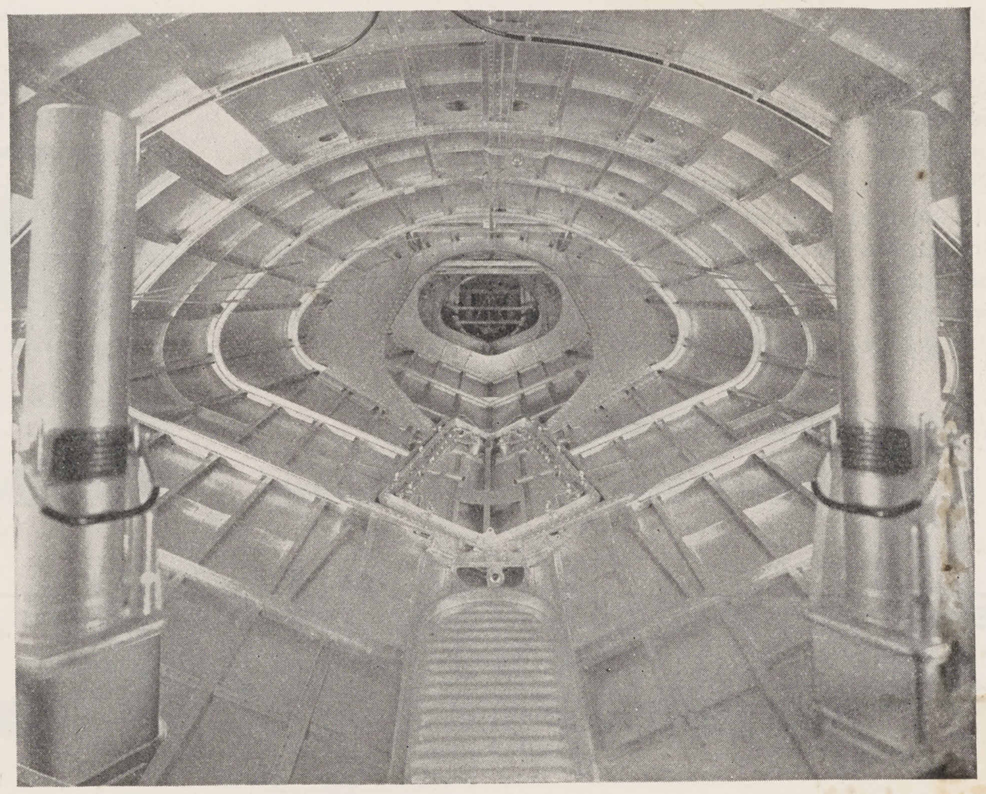
AVIATION - June 1940

Charles F. McReynolds
9121 Dalton Ave., L.A.



Although the Consolidated Model 28 twin engine flying boat has been in service for a number of years the method by which the wing tip floats are retracted is not widely known. When lowered in the position for landing the float is held in a vertical position through a system of "X" bracing that is joined together at point A. When lowered this bracing is held rigid through an arm B that is connected to the retracting tube at C. When the float is to be retracted the retracting tube moves towards the fuselage moving the arm B upward and inward folding the members D together. This causes the float to swing from the position E to the position E' in which position the drag is greatly reduced.

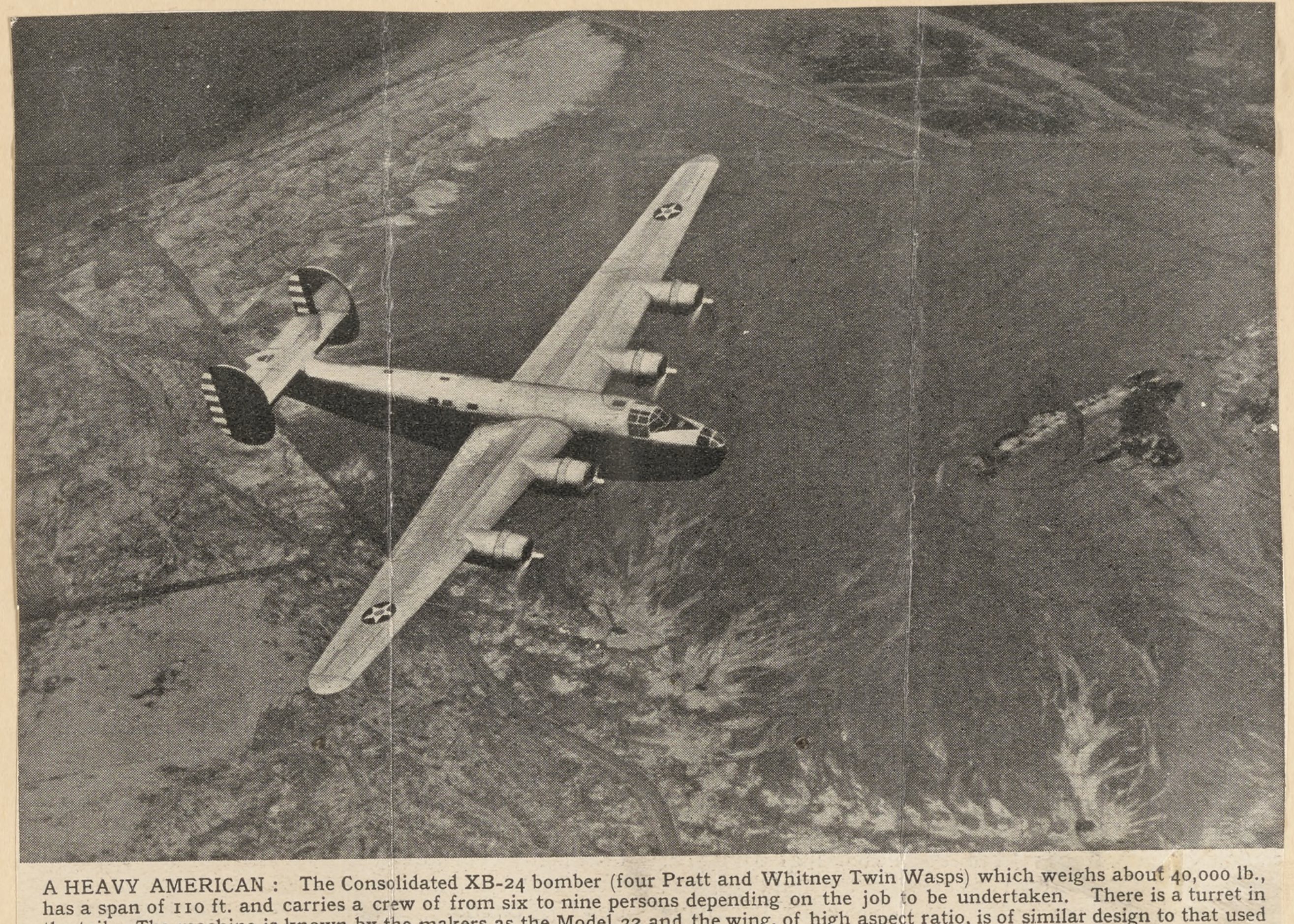
Looking aft inside of the fuselage of the Model 28 shows the Zee stringers running lengthwise and the beltframes running crosswise. The large bulkheads in the rear are the 'banjo' bulkheads which extend on up into the fin structure. The tunnel door or hatch is shown on the keel while the two vertical tubes in the foreground are flare tubes.



				20 transports
Stearman Aircraft Div.	primary trainer	PT-13B	75	
Stearman Aircraft Div.	primary trainer	PT-17	225	
Fairchild Aircraft Div.	primary trainer	PT-19A	200	
Ryan Aeronautical Co.	primary trainer	PT-20A	100	
				600 primary trainers
Vultee Aircraft Inc.	basic trainer	BT-13A	500	
				500 basic trainers
North American Aviation	advanced trainer	AT-6A	637	
Beech Aircraft Corp.	advanced trainer	AT-7A	150	
Beech Aircraft Corp.	advanced trainer	AT-7	67	
Cessna Aircraft Co.	advanced trainer	AT-8	33	
				887 advanced trainers
Stinson Aircraft Div.	observation	105	6	
				6 observation
Platt-LePage Aircraft Corp.	autogiro	XR-1	1	
				1 autogiro
			Total...	2,777

(Editor's note: The following contracts were announced as let or cleared recently: Consolidated, $14,861,342; Boeing, $70,449,955; Lockheed, $30,278,787; Beech, $3,410,746 and $4,847,217; North American, $11,335,631; Cessna, $900,378; Ryan, $2,074,234; Platt-LePage, $203,375; Vultee, 7,488,782; Stearman, 2,041,947.)

Flight — 7/28/40



A HEAVY AMERICAN : The Consolidated XB-24 bomber (four Pratt and Whitney Twin Wasps) which weighs about 40,000 lb., has a span of 110 ft. and carries a crew of from six to nine persons depending on the job to be undertaken. There is a turret in the tail. The machine is known by the makers as the Model 32 and the wing, of high aspect ratio, is of similar design to that used on the Model 31 flying boat.

THE AIR SERVICES

Consolidated Bomber Tested at San Diego

Now undergoing tests at San Diego, the new Consolidated Model 32 four-engined land bomber marks Consolidated's re-entry into the land plane manufacturing field.

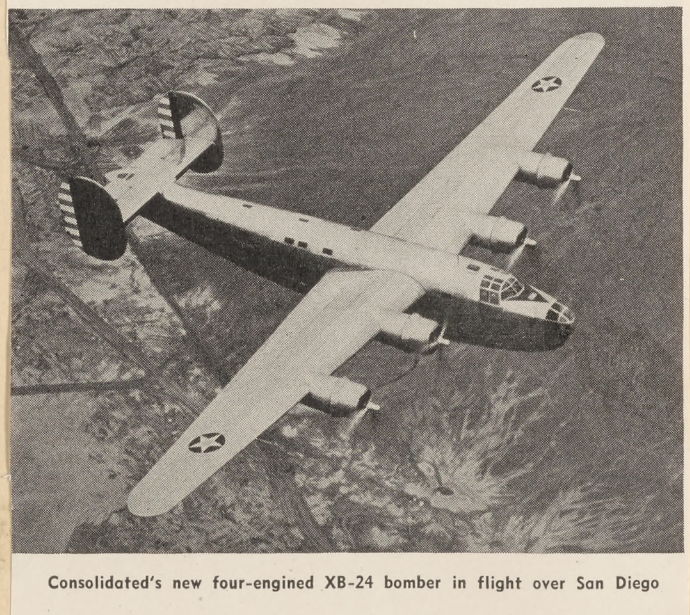
The Model 32 is a full cantilever, all-metal plane, powered with four Pratt & Whitney 14 cylinder twin row radial air-cooled engines rated at 1200 hp each. The propellers are Hamilton Standards of the 3-bladed Hydromatic constant speed type, 12 ft. in diameter. Fowler flaps extend inboard of the ailerons in the wing, with the engine nacelles mounted flush with the upper surface of the center section.

Approximate gross weight of the airplane is 40,000 lbs.; wing span, 110 ft.; length 64 ft.; and overall height, 19 ft. Tactical requirements are for a crew of from 6 to 9, depending upon the mission to be performed.

Control surfaces are fabric covered and fully counterweighted. A full cantilever horizontal stabilizer has twin fins and rudders mounted at the tips. The all-metal stressed skin fuselage is equipped with hatches and windows in the nose, tail, turtledeck, back and bottom. The landing gear is of the tricycle type with a single retractable wheel forward. Main landing wheels retract into the wing wells.

While performance figures are not available, an official release indicates a speed of more than 300 mph, a range of approximately 3000 miles, and a bomb carrying capacity of approximately 4 tons.

(Continued on page 110)



Consolidated's new four-engined XB-24 bomber in flight over San Diego

AERO DIGEST

JUNE '40

and other methods, and as such are used for lateral forming members throughout the flying boat hull, in engine nacelles, and at other points.

Although the draw bench at Consolidated is of standard type, the technique of using it, and the special roller-type dies used for forming the various sections required, have been developed within the department to fit the particular requirements of aircraft manufacture. Single lengths in excess of 50 ft. can be handled on the main draw bench, which is powered by a 50-hp. electric motor, and which handles material up to 0.128 in. thick in present production. In fact, not all of the work of this department is devoted to light alloy structural parts for aircraft; many special parts for tools, jigs and machine guards are drawn or rolled out of various materials including steel up to 1½x3-in. pieces rolled edgewise.

Raw material to be formed is first sheared to required widths from material of the proper alloy, sheet thickness and length. These strips come to the draw bench in rolls and may go through the large draw bench, or be processed on one of several rolling machines, depending on the size and type of shape to be formed. The sections rolled vary widely from simple right-angle bends to multiple curves including "hat" sections with short return bends at the edges to secure maximum structural rigidity. Such a section complicates the rolling process, and requires careful design of the rollers, and demands care in production. The completed sections must conform to strict dimensional requirements. Bend radii must be maintained accurately, and the finished part must not show appreciable loss in section thickness.

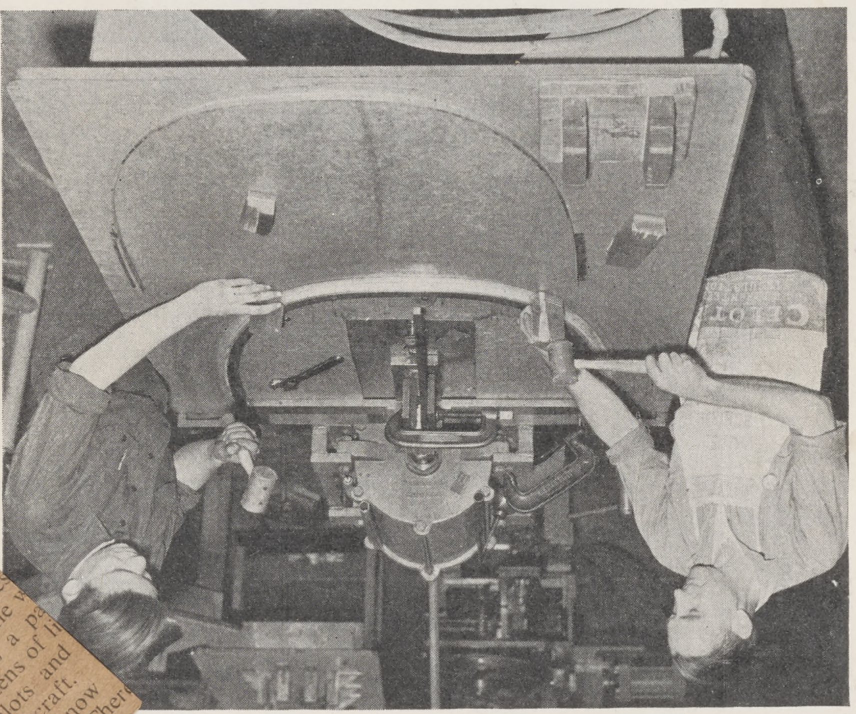
Rolls Carefully Designed

All forming dies are of the roll type, as is required to assure maintenance of the protective layer of pure aluminum on the strip stock. Each roller is carefully designed to impart a new shape to the ribbon of met until it passes through the last se rollers in finished form. Once to shape the sections are r heat-treatment, straightening, pulling, and checking for correct hardness by means of a conventional Rockwell hardness tester.

Forming the sections, as well as heat-treating, results in some distortion of the members from true straightness. Therefore, it is necessary to pass them through a straightening operation. This also serves to work-harden the material to its maximum strength. After heat-treatment, each section to be straightened is placed on a special pneumatic draw-bench machine and pull to just beyond its elastic limit, simneously straightening the section 1 work-hardening the material. Ev section is automatically stamped al its entire length for identificationrposes. This simplifies storing ancnal assembly. After straighteninghe sections are cut into desired lens and formed where such formins necessary to mak part.

Forming light sons is done b and thine. Much ork done on the de-

ha to be shape a ing, or stre ends of the pa forming bar is against the part, proper shape. Operat the material by hamme rawhide hammers. Many forming require a certain am hand hammering with a rawhide mer to bring the part to the require shape, but the basic work throughout is done by machine.



This machine stretches a nearly formed angle or other section around a form of the exact final shape. While it is being stretched, a few blows around the edge of the section sets it so that when the stretching force is relieved the work retains the desired shape

Many Miscellaneous Parts

Total monthly production of the draw-bench department runs to many thousands of feet cf aluminum alloy material. However,this does not adequately express the mportance of the department since mch of its work is devoted to the formig of miscellaneous parts that are idely used for tooling and jigging urposes. Also, much of the work ofhe department is devoted to formin these sections after they are rollecor drawn to shape. Other functior such as rolling engine mount tubeto shape, are also performed in th department. And out of these drabenches and rolling machines comthe various parts, straight or forme that are so widely usesd as ribs, fraework, and stiffening members undehe skin of the giant birds which patı America's sea lanes.

Consolidated Air Trans

ROMEIKE & CURTICE LTD.

35, Shoe Lane, London, E.C.4

THE PRESS CLIPPING BUREAU

Trade Supp

EXTRACT FROM

THE TIMES

1785

DEC 1940

BRITISH AIRCRAFT INDUSTRY

AMERICA'S NEW FACTORIES

Trade + Engineering 12/1940

GREAT EXTENSIONS PLANNED

From Our Aeronautical Correspondent

With a veil of secrecy drawn discreetly over the activities of most of the Air Forces of Europe and with the United States pressing ahead to put her air " house " in order, most of the interesting news of aeronautical developments these days comes from the other side of the Atlantic.

The U.S. War Department has completed the entire ordering of the programme for 18,641 army aircraft, so that the army now has on hand, or on order, all the aeroplanes to achieve its goal of 25,000 aircraft by 1942. The navy's goal is 10,000 aeroplanes by the same date.

The Aeronautical Chamber of the United States was reported recently to be contemplating an outlay of a further $100,000,000 (£25,000,000) on aircraft factory construction, $52,000,000 (£13,000,000) having been already spent for this purpose during the first year of war in Europe. If this is done it will add considerably to the production of 1.500 aeroplanes a month which, it is predicted, will be reached next March. There are a number of estimates of the present rate of production, the most frequently stated being 900 or 1,000 a month.

An important obstacle to further expansion of aircraft production was removed when the United States Excess Profits Bill had a provision inserted which will allow industry to liquidate the cost of new defence plant on more liberal terms than previously. Much of the delay in the aircraft programme had been attributed to opposition within the Administration to this provision.

Ford Enterprise

This concession was followed by announcements from several concerns to the effect that their plant was being extended. The Great Britain 20 four-engined Boeing bombers of the "Flying Fortress" type which have already been completed.

The machines of the Consolidated Aircraft Company are reported to be very similar to the "Flying Fortresses," both types being capable of a range of 3,000 miles. The first deliveries of these machines were made to the British last month. The United States Army will accept a delay of approximately three months in its own deliveries of this same type, which is known as the B-24.

General George C. Marshall, Army Chief of Staff, said that in consideration of this priority the British Government had released to the United States sufficient engines to equip 41 Boeing Flying Fortresses, which the United States Army had already accepted without their engines or would have received without engines before January 1. Referring to the Boeing Company's B-17 type of four-engined bomber, General Marshall said that the United States was then negotiating with the British authorities the basis for releasing to them 20 fully equipped aeroplanes except as to the Norden bombsight. The Sperry bombsight, he said, had been released to Great Britain.

Another company making extensions is the United Aircraft Company, which has spent about $16,000,000 on expansion during the past 13 months and has already increased the number of employees on its payroll from 5,000 to 15,000. It is now believed to be preparing to spend $15,000,000 on new facilities for building dive-bombers, airscrews, and engines.

Yet another company which is making bombers, the Glenn L. Martin Company, of Baltimore, is increasing its floor space to 3,000,000 sq. ft. and spending $1,000,000 on machinery and equipment, apart from building construction costs.

An increase from 1,350 men at present employed, to 8,000 or 10,000 is allowed for in the plans prepared by the Curtiss-Wright Company to build an $8,000,000 plant at St. Louis. The new factory will have a floor space of 1,000,000 sq. ft. and will manufacture

---

owered motor-tugs, ferries, and self-propelled redgers, with machinery in some cases up to ,000 b.h.p., are equipped with Diesel-engine enerators supplying current to electric-ropelling motors. In almost all instances eneral Motors Corporation are responsible or the equipment, having developed a type of nstallation which is unusual in several espects. The complete generating unit is lentical with the set which is standardized or the large number of passenger locomotives uilt by the same concern and comprises a 50 b.h.p. two-stroke poppet-valve V-type 2-cylinder engine driving a 600kw. direct-urrent generator at 750 r.p.m. In some essels two or even three units are installed, nd modifications can be provided by adopting an eight or 16-cylinder design. The motor riving the propeller shaft runs at 750 r.p.m. nd is geared down to give a propeller speed f 200 to 250 r.p.m.

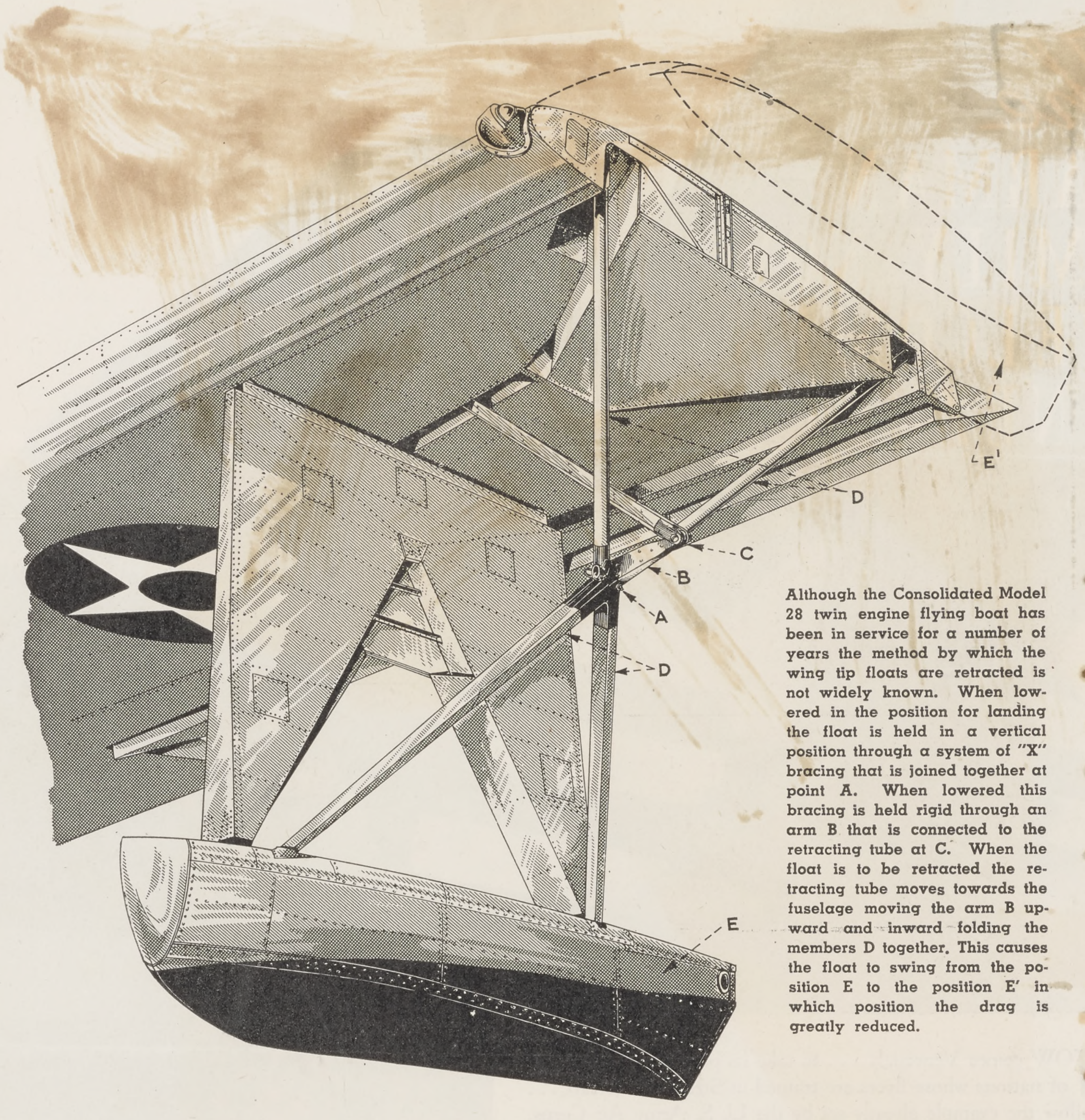
Recently three 13½-knot passenger ferries or service at New York were built with nachinery of this class, but perhaps the most otable examples are three 3,500 b.h.p. tugs or the U.S. Navy, also recently completed. Most of the big tugs now on order in America vill have a similar propulsive system, which s claimed to give a relatively light and flexible nstallation, the cost of which is rather lower han that of a plant with direct drive. This an be possible only on account of the large utput due to the adoption of a standard unit apable of being used for both locomotives nd ships.

poppet valves, hydraulically operated on the Meier Mattern system, was produced by the Werkspoor Company and fitted in the steamer Batavier III, with very satisfactory results.

Particulars have just been published of another design of two-stage compound engine, developed by the Stork Company at Hengelo, just before the occupation of Holland, which produces an exceptional degree of economy. The engine has one high-pressure cylinder of 550mm. diameter and two low-pressure cylinders of 900mm. diameter, with a common stroke of 800mm., developing 1,500 i.h.p. at about 125 r.p.m. The high-pressure cylinder is fitted with a piston valve having chrome-hardened surfaces on the working parts, and it has been shown that the wear of the liners is greatly minimized when using superheated steam, with a great improvement in steam tightness. Admission to the low-pressure cylinders is controlled by an improved form of balanced slide valve, which incorporates a relief in the valve cage to give communication between the cylinder space and steam receiver if any excessive rise in compression pressure occurs. Hackworth valve gear is fitted to provide an engine of very small dimensions. The low-pressure cylinder exhausts on the uniflow principle, and the trial results showed a fuel consumption of about 1lb. of coal per h.p. hour, an improvement of 15 to 20 per cent. on the standard triple-expansion engine working with similar steam conditions of about 200lb. steam pressure and 600deg. F. temperature.

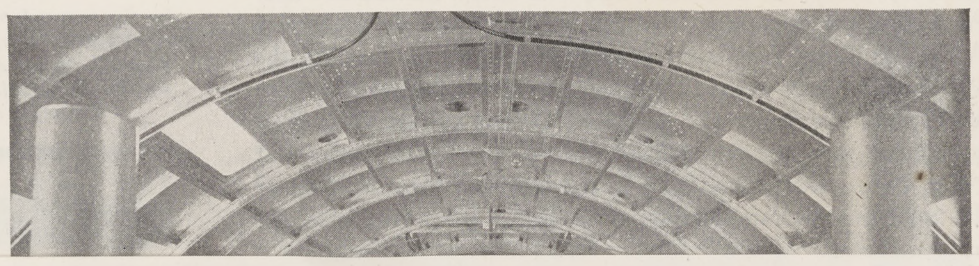
AVIATION - June 1940

Charles F. McReynolds
9121 Dalton Ave., L.A.



Although the Consolidated Model 28 twin engine flying boat has been in service for a number of years the method by which the wing tip floats are retracted is not widely known. When lowered in the position for landing the float is held in a vertical position through a system of "X" bracing that is joined together at point A. When lowered this bracing is held rigid through an arm B that is connected to the retracting tube at C. When the float is to be retracted the retracting tube moves towards the fuselage moving the arm B upward and inward folding the members D together. This causes the float to swing from the position E to the position E' in which position the drag is greatly reduced.

Looking aft inside of the fuselage of the Model 28 shows the Zee stringers running lengthwise and the beltframes running crosswise. The large bulkheads in the rear are the 'banjo' bulkheads which extend on up into the fin structure. The tunnel door or hatch is shown on the keel while the two vertical tubes



OEING AIRCRAFT
COMPANY
SEATTLE, WASHINGTON

BOEING

STEARMAN
AIRCRAFT DIVISION
WICHITA, KANSAS

American Aviation 9/15/40

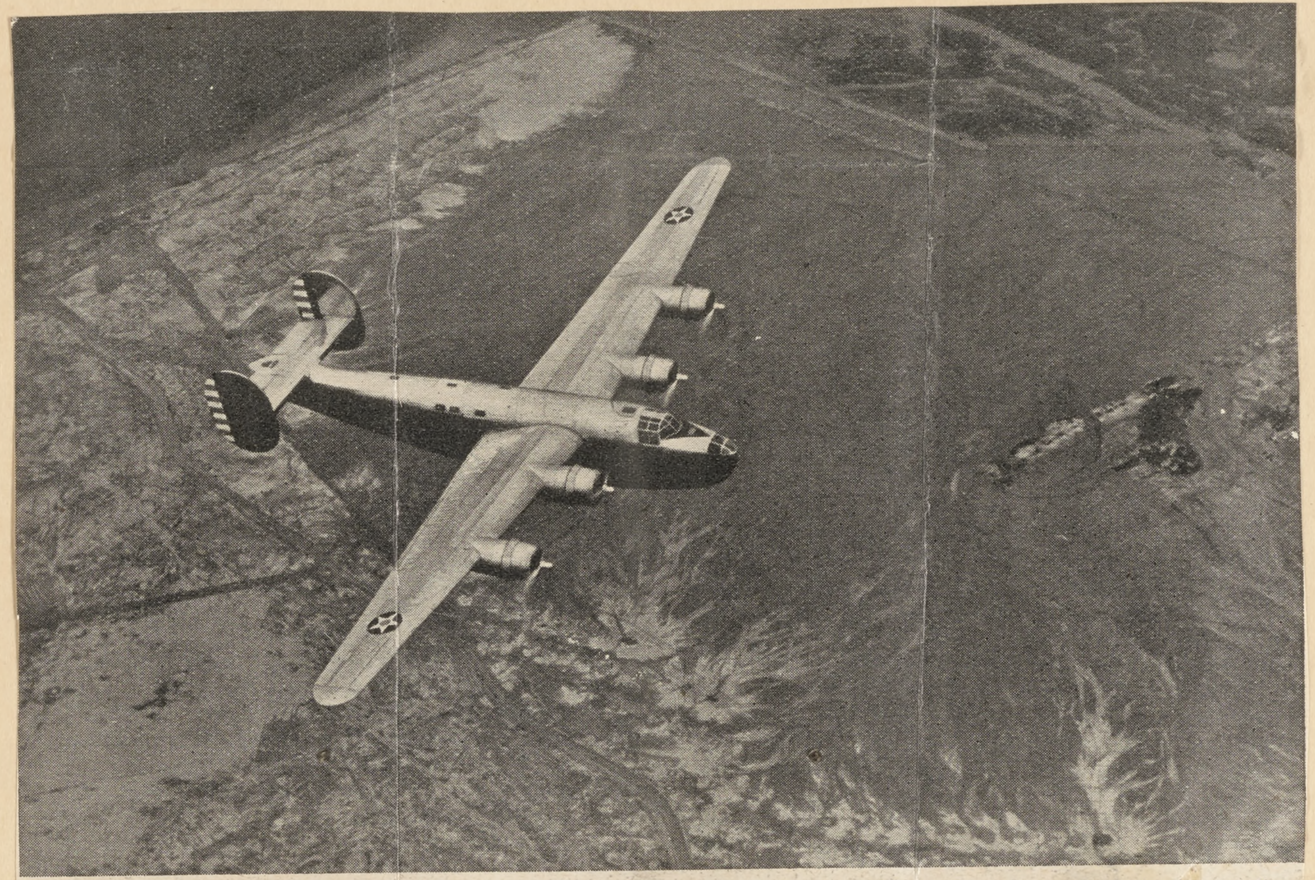
Status of War Dept. Aircraft Orders

Data as to the number and types of military aircraft for which contracts were entered into after June 1, 1940, by the War Dept. became known on Sept. 5. The data follow:

Manufacturer	Type and Army Model Number		Quantity	
Consolidated Aircraft Corp.	4-engine heavy bomber	B-24D	56	
Boeing Aircraft Co.	4-engine heavy bomber	B-17E	277	
Douglas Aircraft Co.	light attack bomber	A-20A	20	
				353 bombers
Lockheed Aircraft Corp.	2-engine pursuit	P-38E	410	
				410 pursuits
Beech Aircraft Corp.	2-engine transport	C-45A	20	
				20 transports
Stearman Aircraft Div.	primary trainer	PT-13B	75	
Stearman Aircraft Div.	primary trainer	PT-17	225	
Fairchild Aircraft Div.	primary trainer	PT-19A	200	
Ryan Aeronautical Co.	primary trainer	PT-20A	100	
				600 primary trainers
Vultee Aircraft Inc.	basic trainer	BT-13A	500	
				500 basic trainers
North American Aviation	advanced trainer	AT-6A	637	
Beech Aircraft Corp.	advanced trainer	AT-7A	150	
Beech Aircraft Corp.	advanced trainer	AT-7	67	
Cessna Aircraft Co.	advanced trainer	AT-8	33	
				887 advanced trainers
Stinson Aircraft Div.	observation	105	6	
				6 observation
Platt-LePage Aircraft Corp.	autogiro	XR-1	1	
				1 autogiro
			Total...	2,777

(Editor's note: The following contracts were announced as let or cleared recently: Consolidated, $14,861,342; Boeing, $70,449,955; Lockheed, $30,278,787; Beech, $3,410,746 and $4,847,217; North American, $11,335,631; Cessna, $900,378; Ryan, $2,074,234; Platt-LePage, $203,375; Vultee, 7,488,782; Stearman, 2,041,947.)

Flight — 7/28/40



A HEAVY AMERICAN: The Consolidated XB-24 bomber (four Pratt and Whitney Twin Wasps) which weighs about 40,000 lb., has a span of 110 ft. and carries a crew of from six to nine persons depending on the job to be undertaken. There is a turret in the tail. The machine is known by the makers as the Model 32 and the wing, of high aspect ratio, is of similar design to that used on the Model 31 flying boat.

THE AIR SERVICES

Consolidated Bomber Tested at San Diego

Now undergoing tests at San Diego, the new Consolidated Model 32 four-engined land bomber marks Consolidated's re-entry into the land plane manufacturing field.

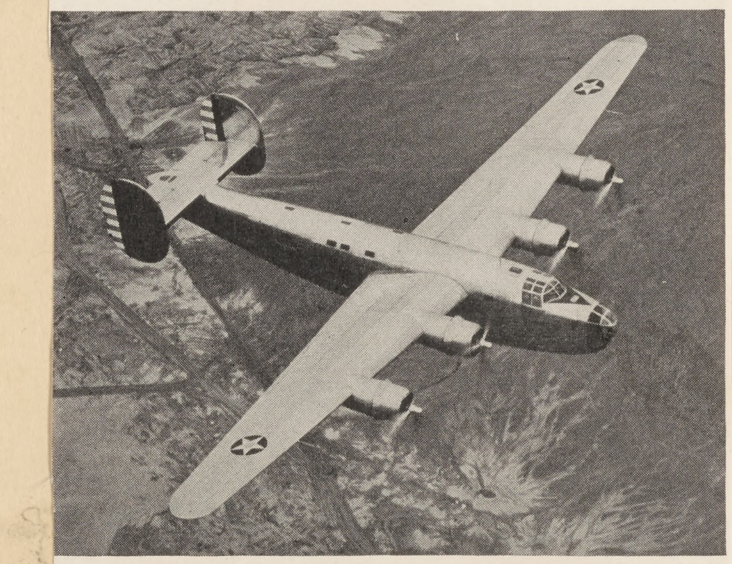
The Model 32 is a full cantilever, all-metal plane, powered with four Pratt & Whitney 14 cylinder twin row radial air-cooled engines rated at 1200 hp each. The propellers are Hamilton Standards of the 3-bladed Hydromatic constant speed type, 12 ft. in diameter. Fowler flaps extend inboard of the ailerons in the wing, with the engine nacelles mounted flush with the upper surface of the center section.

Approximate gross weight of the airplane is 40,000 lbs.; wing span, 110 ft.; length 64 ft.; and overall height, 19 ft. Tactical requirements are for a crew of from 6 to 9, depending upon the mission to be performed.

Control surfaces are fabric covered and fully counterweighted. A full cantilever horizontal stabilizer has twin fins and rudders mounted at the tips. The all-metal stressed skin fuselage is equipped with hatches and windows in the nose, tail, turtledeck, back and bottom. The landing gear is of the tricycle type with a single retractable wheel forward. Main landing wheels retract into the wing wells.

While performance figures are not available, an official release indicates a speed of more than 300 mph, a range of approximately 3000 miles, and a bomb carrying capacity of approximately 4 tons.

(Continued on page 110)

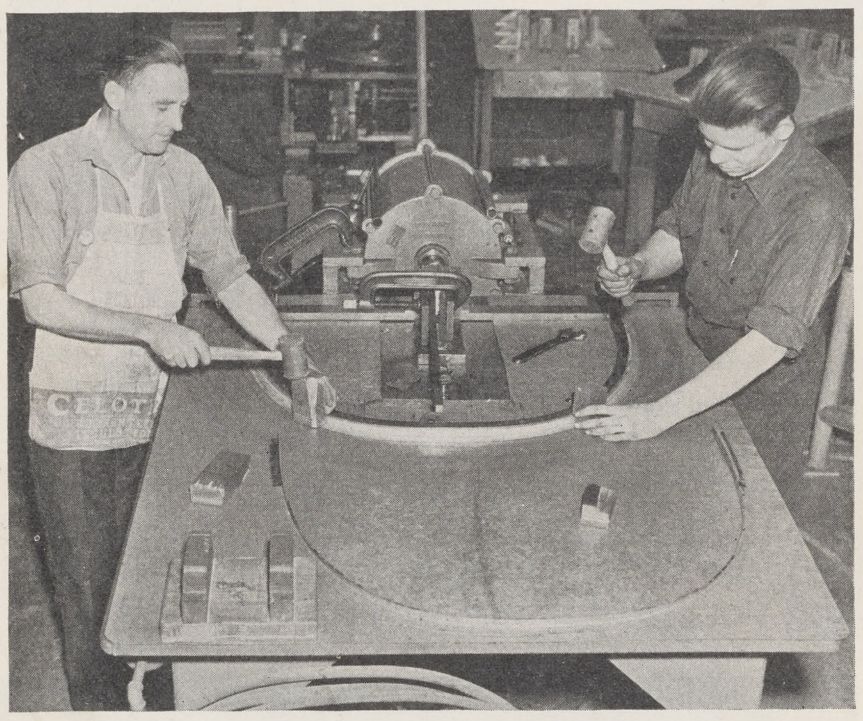


Consolidated's new four-engined XB-24 bomber in flight over San Diego

JUNE '40

and other methods, and as such are used for lateral forming members throughout the flying boat hull, in engine nacelles, and at other points.

Although the draw bench at Consolidated is of standard type, the technique of using it, and the special roller-type dies used for forming the various sections required, have been developed within the department to fit the particular requirements of aircraft manufacture. Single lengths in excess of 50 ft. can be handled on the main draw bench, which is powered by a 50-hp. electric motor, and which handles material up to 0.128 in. thick in present production. In fact, not all of the work of this department is devoted to light alloy structural parts for aircraft; many special parts for tools, jigs and machine guards are drawn or rolled out of various materials including steel up to $1\frac{1}{2}$x3-in. pieces rolled edgewise.



This machine stretches a nearly formed angle or other section around a form of the exact final shape. While it is being stretched, a few blows around the edge of the section sets it so that when the stretching force is relieved the work retains the desired shape

Raw material to be formed is first sheared to required widths from material of the proper alloy, sheet thickness and length. These strips come to the draw bench in rolls and may go through the large draw bench, or be processed on one of several rolling machines, depending on the size and type of shape to be formed. The sections rolled vary widely from simple right-angle bends to multiple curves including "hat" sections with short return bends at the edges to secure maximum structural rigidity. Such a section complicates the rolling process, and requires careful design of the rollers, and demands care in production. The completed sections must conform to strict dimensional requirements. Bend radii must be maintained accurately, and the finished part must not show appreciable loss in section thickness.

Rolls Carefully Designed

All forming dies are of the roll type, as is required to assure maintenance of the protective layer of pure aluminum on the strip stock. Each roller is carefully designed to impart a new shape to the ribbon of metal until it passes through the last set of rollers in finished form. Once drawn to shape the sections are ready for heat-treatment, straightening, pulling, and checking for correct hardness by means of a conventional Rockwell hardness tester.

Forming the sections, as well as heat-treating, results in some distortion of the members from true straightness. Therefore, it is necessary to pass them through a straightening operation. This also serves to work-harden the material to its maximum strength. After heat-treatment, each section to be straightened is placed on a special pneumatic draw-bench machine and pul to just beyond its elastic limit, simneously straightening the section work-hardening the material. Ev section is automatically stamped al its entire length for identificationrposes. This simplifies storing ancnal assembly. After straighteninghe sections are cut into desired lehs and formed where such formins necessary to make the part.

Forming of these light sons is done both by hand and chine. Much of the forming work done on special rolling machines, we the perfection of the finished p depends largely on the skill and istry of the individual operator. s a guide he uses a special masteorm jig, which employs adjustableorm blocks and may be set for any cred form.

The operator checks his ork against this master pattern and lls the part in his machine until ias received the proper round, ovor other form.

Wide use is also made of a pn-matic forming table using stand forming bars usually of semi-circu, half-oval or similar shapes. The pi to be formed is rolled to approxim shape and is then placed on the for ing, or stretching table, and the op ends of the part are clamped fast. Ti forming bar is pneumatically forc against the part, stretching it t proper shape. Operators usually "set the material by hammering it witl rawhide hammers. Many types o forming require a certain amount o hand hammering with a rawhide hammer to bring the part to the required shape, but the basic work throughout is done by machine.

Many Miscellaneous Parts

Total monthly production of the draw-bench department runs to many thousands of feet cf aluminum alloy material. However,this does not adequately express the mportance of the department since mch of its work is devoted to the formig of miscellaneous parts that are idely used for tooling and jigging urposes. Also, much of the work ofhe department is devoted to formin these sections after they are rollecor drawn to shape. Other functior such as rolling engine mount tubeto shape, are also performed in th department. And out of these drawbenches and rolling machines comthe various parts, straight or forme that are so widely usesd as ribs, fraework, and stiffening members undehe skin of the giant birds which patr America's sea lanes.

Consolidated Air Iras

ROMEIKE & CURTICE LTD.
35, Shoe Lane, London, E.C.4

THE PRESS CLIPPING BUREAU

Trade Supp

EXTRACT FROM
THE TIMES
1785

DEC 1940

BRITISH AIRCRAFT INDUSTRY

AMERICA'S NEW FACTORIES

Trade + Engineering 12/1940

GREAT EXTENSIONS PLANNED

From Our Aeronautical Correspondent

With a veil of secrecy drawn discreetly over the activities of most of the Air Forces of Europe and with the United States pressing ahead to put her air " house " in order, most of the interesting news of aeronautical developments these days comes from the other side of the Atlantic.

The U.S. War Department has completed the entire ordering of the programme for 18,641 army aircraft, so that the army now has on hand, or on order, all the aeroplanes to achieve its goal of 25,000 aircraft by 1942. The navy's goal is 10,000 aeroplanes by the same date.

The Aeronautical Chamber of the United States was reported recently to be contemplating an outlay of a further $100,000,000 (£25,000,000) on aircraft factory construction, $52,000,000 (£13,000,000) having been already spent for this purpose during the first year of war in Europe. If this is done it will add considerably to the production of 1.500 aeroplanes a month which, it is predicted, will be reached next March. There are a number of estimates of the present rate of production, the most frequently stated being 900 or 1,000 a month.

An important obstacle to further expansion of aircraft production was removed when the United States Excess Profits Bill had a provision inserted which will allow industry to liquidate the cost of new defence plant on more liberal terms than previously. Much of the delay in the aircraft programme had been attributed to opposition within the Administration to this provision.

Ford Enterprise

This concession was followed by announcements from several concerns to the effect that their plant was being extended. The Ford Motor Company is reported to have begun preliminary engineering work for the construction of an $11,000,000 aircraft engine factory. A statement to this effect was made by Mr. Edsel Ford, president of the company, in Detroit after an order for 4,000 engines had been received from the U.S. Government. Mr. Ford added that construction contracts would be awarded soon and the factory would be completed within four months after the ground had been broken. The first engine was expected to be turned out between two and four months later. About 10,000 people will be employed in this latest Ford enterprise. Construction of the works will cost $4,000,000 and tools and equipment $7,000,000. The factory will make engines to the value of $69,000,000 for the United States War Department. This factory will be the second large works to be built in Detroit for defence work. The Chrysler Corporation has already broken ground for the construction of a $20,000,000 tank factory which has a Government order for tanks to the value of $33,000,000.

The engines to be built at the new Ford works are the Pratt and Whitney Double Wasp type, a radial air-cooled engine of 18 cylinders in two banks, capable of developing nearly 3,000 h.p. Only a few of these engines are in service at the moment. Mr. Ford also intends to produce an aeroplane of his own design. He has not yet disclosed what type of aircraft it will be, though it was reported recently that it will be similar to the Lockheed P.38 fighter, which is said to be the world's fastest fighter aircraft. The new Ford aeroplane will have a 24-cylinder V-type engine, modelled on the 24-cylinder Hispano-Suiza. Officials of the Ford Company have not revealed in what market they intend to sell the aircraft, but one of them said that the engine would serve for both civil and military use. A cannon, firing a 2lb. shell, can be fitted with the engine. Presumably it would nestle into the " V " of the cylinders and fire through the propeller.

Other Extensions

Mr. Donald Douglas, president of the Douglas Aircraft Company, stated that the United States Government's £35,000,000 contract for warplanes given to his firm would necessitate extensive factory extension. He added that the aeroplanes to be built would be similar in design to the fighters being delivered to Britain, although vastly superior in speed, range and striking ability.

The Boeing Aircraft Corporation, builders of the four-motor " Flying Fortress " bomber, is stated to be spending $7,000,000 to $8,000,000 in Seattle and about $3,000,000 in Wichita, Kansas, where training aircraft are being manufactured.

It was announced recently that the United States Army High Command has given Great Britain priority on the delivery of 26 four-engined bombers at present at the factory of the Consolidated Aircraft Company at San Diego, California. It is understood that they will be delivered on or before March 1. The High Command simultaneously announced that negotiations are under way for giving Great Britain 20 four-engined Boeing bombers of the " Flying Fortress " type which have already been completed.

The machines of the Consolidated Aircraft Company are reported to be very similar to the " Flying Fortresses," both types being capable of a range of 3,000 miles. The first deliveries of these machines were made to the British last month. The United States Army will accept a delay of approximately three months in its own deliveries of this same type, which is known as the B-24.

General George C. Marshall, Army Chief of Staff, said that in consideration of this priority the British Government had released to the United States sufficient engines to equip 41 Boeing Flying Fortresses, which the United States Army had already accepted without their engines or would have received without engines before January 1. Referring to the Boeing Company's B-17 type of four-engined bomber, General Marshall said that the United States was then negotiating with the British authorities the basis for releasing to them 20 fully equipped aeroplanes except as to the Norden bombsight. The Sperry bombsight, he said, had been released to Great Britain.

Another company making extensions is the United Aircraft Company, which has spent about $16,000,000 on expansion during the past 13 months and has already increased the number of employees on its payroll from 5,000 to 15,000. It is now believed to be preparing to spend $15,000,000 on new facilities for building dive-bombers, airscrews, and engines.

Yet another company which is making bombers, the Glenn L. Martin Company, of Baltimore, is increasing its floor space to 3,000,000 sq. ft. and spending $1,000,000 on machinery and equipment, apart from building construction costs.

An increase from 1,350 men at present employed, to 8,000 or 10,000 is allowed for in the plans prepared by the Curtiss-Wright Company to build an $8,000,000 plant at St. Louis. The new factory will have a floor space of 1,000,000 sq. ft. and will manufacture radial engines, airscrews, and fighter aircraft. North American Aviation, Inc., is to spend $10,500,000 on training aircraft alone.

New Inventions

There are also reports from the United States of a number of new inventions. Major W. Goddard, U.S. Army Research chief, said recently, after he had seen tests at Rochester, N.Y., that new photographic inventions will enable aerial observers to see enemy movements at night almost as well as by day. Pictures taken from a height of a mile showed clear detail, thanks to a new light " bomb " which lit up the sky " just like the setting sun." Tests were made with a camera having photo-electric cells to operate the shutter when illumination reached the peak, while the film wound automatically after each exposure. He added that the new equipment enabled observers to take pictures, develop them in mid-air, and transmit them by radio to bomber and artillery commands.

Rapid progress is reported from the United States with experiments in the art of making warplanes extremely difficult to detect from the ground, from fighters above them, and even when caught in the searchlights at night. One set of experiments is being conducted by the U.S. Army Air Corps at Wright Field, Dayton, Ohio. The best results are said to have been obtained from a mottled combination of dull greens and browns on the aeroplane's upper surfaces, to confuse fighters above them. On the lower surfaces a solid application of lampblack has been found to make machines much less visible in searchlights. A four-motor Boeing bomber, its under side thickly blacked, was reported recently to have flown unseen through the beams of 800,000,000 candle-power searchlights. New United States fighters are being camouflaged in various ways to match the terrain over which they are to be tested. Some are treated with flat colours, heightened with brilliant red and yellow stripes, while other compounds are dull grey and bright aluminium, the first for use on grey, misty days, and the second for bright, sunny weather.

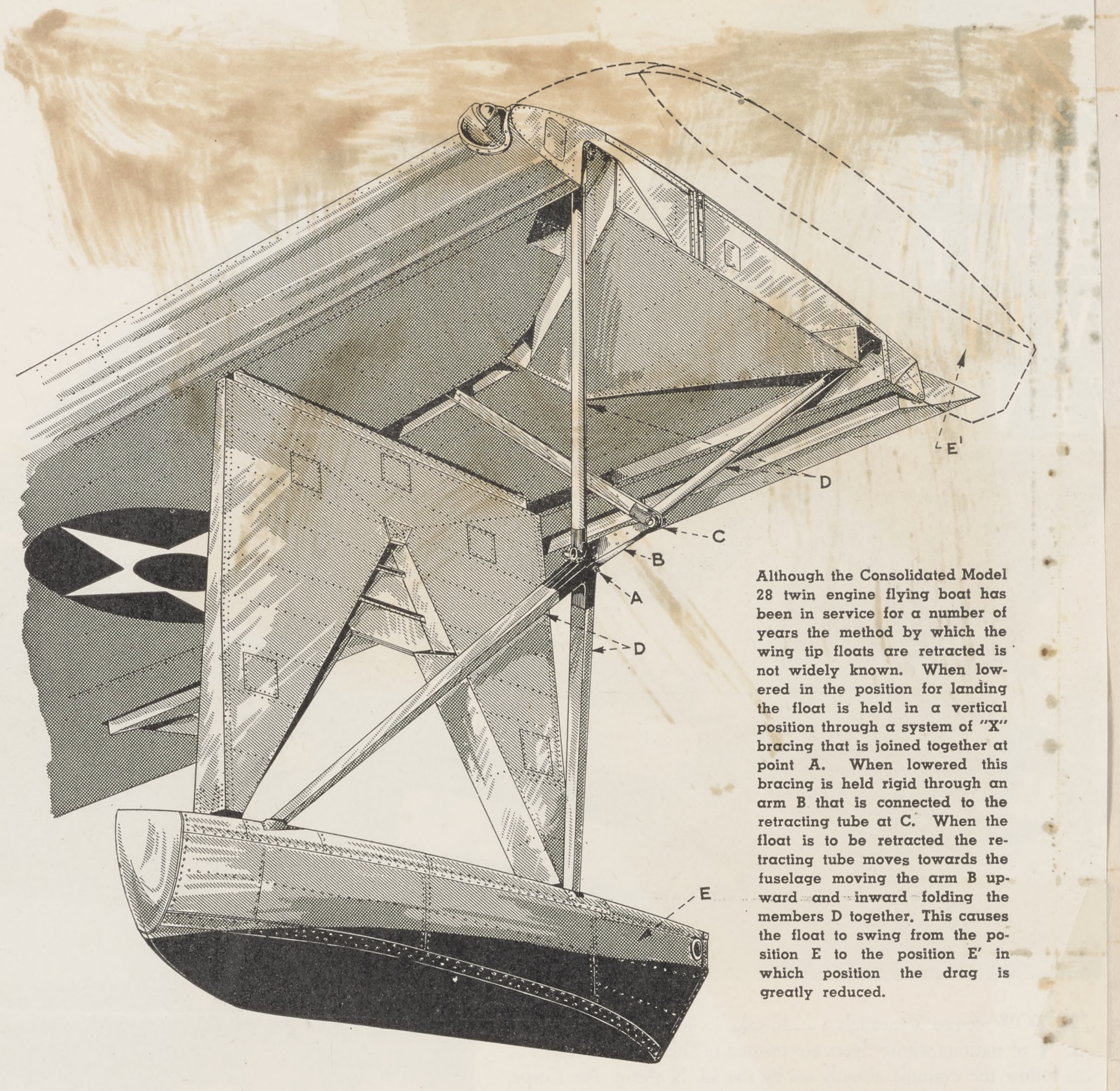
Plans for a flying " bumblebee " aeroplane, a tiny robot of a new type, for defence against bombers, were announced last month by Mr. Edward Chandler, the American marine engineer. The " bumblebee " would steer itself automatically by the sound of the attacking bomber and would then " buzz along " with it, dropping sound-directed bombs on its victim. It sounds fantastic—but one never knows in these days. According to Mr. Chandler, the small aircraft would be launched from a bombing defence station when the course of attacking bombers had been charted with fair accuracy and while they were still some miles away.

The most powerful aero-engine in the world developing 2,200 h.p.,is claimed to be in process of manufacture at the newly expanded factory of the Wright Aeronautical Corporation at Paterson, New Jersey. The engine was inspected by Mr. William Knudsen, member of the National Defence Commission. It is said that it is more powerful than any other engine of its type to the extent of 400 h.p.,and that four

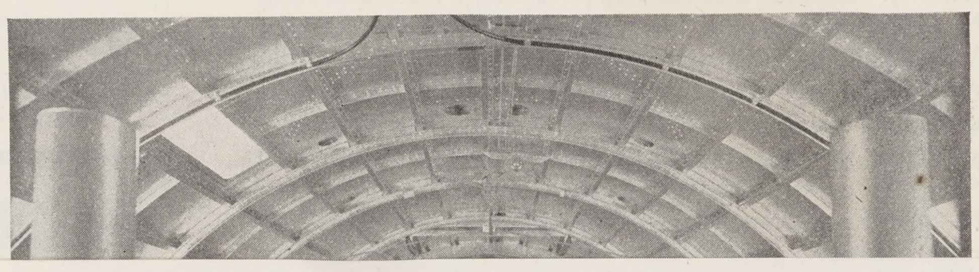
(over)

AVIATION - June 1940

Charles F. McReynolds
9121 Dalton Ave., L.A.



Although the Consolidated Model 28 twin engine flying boat has been in service for a number of years the method by which the wing tip floats are retracted is not widely known. When lowered in the position for landing the float is held in a vertical position through a system of "X" bracing that is joined together at point A. When lowered this bracing is held rigid through an arm B that is connected to the retracting tube at C. When the float is to be retracted the retracting tube moves towards the fuselage moving the arm B upward and inward folding the members D together. This causes the float to swing from the position E to the position E' in which position the drag is greatly reduced.



Looking aft inside of the fuselage of the Model 28 shows the Zee stringers running lengthwise and the beltframes running crosswise. The large bulkheads in the rear are the 'banjo' bulkheads which extend on up into the fin structure. The tunnel door or hatch is shown on the keel while the two vertical tubes

OEING AIRCRAFT
COMPANY
SEATTLE, WASHINGTON

BOEING

STEARMAN
AIRCRAFT DIVISION
WICHITA, KANSAS

American Aviation 9/15/40

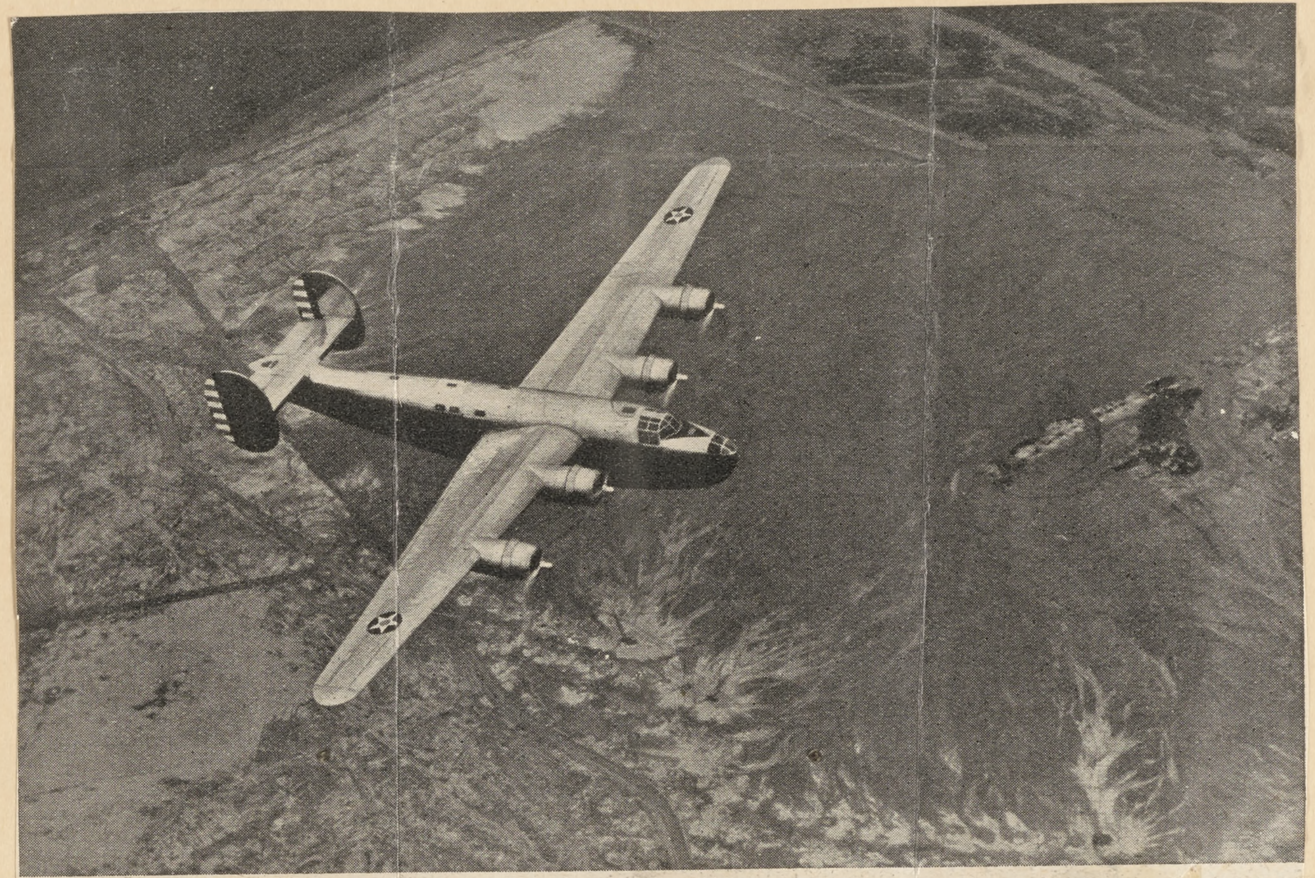
Status of War Dept. Aircraft Orders

Data as to the number and types of military aircraft for which contracts were entered into after June 1, 1940, by the War Dept. became known on Sept. 5. The data follow:

Manufacturer	Type and Army Model Number		Quantity	
Consolidated Aircraft Corp.	4-engine heavy bomber	B-24D	56	
Boeing Aircraft Co.	4-engine heavy bomber	B-17E	277	
Douglas Aircraft Co.	light attack bomber	A-20A	20	
				353 bombers
Lockheed Aircraft Corp.	2-engine pursuit	P-38E	410	
				410 pursuits
Beech Aircraft Corp.	2-engine transport	C-45A	20	
				20 transports
Stearman Aircraft Div.	primary trainer	PT-13B	75	
Stearman Aircraft Div.	primary trainer	PT-17	225	
Fairchild Aircraft Div.	primary trainer	PT-19A	200	
Ryan Aeronautical Co.	primary trainer	PT-20A	100	
				600 primary trainers
Vultee Aircraft Inc.	basic trainer	BT-13A	500	
				500 basic trainers
North American Aviation	advanced trainer	AT-6A	637	
Beech Aircraft Corp.	advanced trainer	AT-7A	150	
Beech Aircraft Corp.	advanced trainer	AT-7	67	
Cessna Aircraft Co.	advanced trainer	AT-8	33	
				887 advanced trainers
Stinson Aircraft Div.	observation	105	6	
				6 observation
Platt-LePage Aircraft Corp.	autogiro	XR-1	1	
				1 autogiro
			Total...	2,777

(Editor's note: The following contracts were announced as let or cleared recently: Consolidated, $14,861,342; Boeing, $70,449,955; Lockheed, $30,278,787; Beech, $3,410,746 and $4,847,217; North American, $11,335,631; Cessna, $900,378; Ryan, $2,074,234; Platt-LePage, $203,375; Vultee, 7,488,782; Stearman, 2,041,947.)

Flight — 7/28/40



A HEAVY AMERICAN: The Consolidated XB-24 bomber (four Pratt and Whitney Twin Wasps) which weighs about 40,000 lb., has a span of 110 ft. and carries a crew of from six to nine persons depending on the job to be undertaken. There is a turret in the tail. The machine is known by the makers as the Model 32 and the wing, of high aspect ratio, is of similar design to that used on the Model 31 flying boat.

THE AIR SERVICES

Consolidated Bomber Tested at San Diego

Now undergoing tests at San Diego, the new Consolidated Model 32 four-engined land bomber marks Consolidated's re-entry into the land plane manufacturing field.

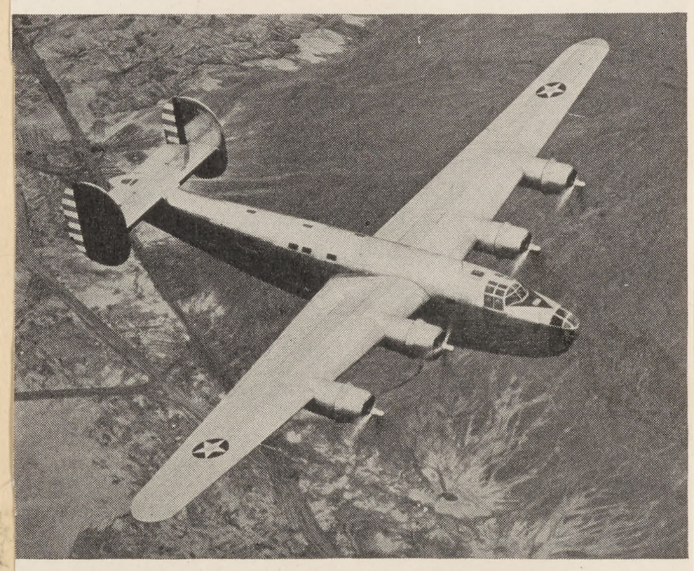
The Model 32 is a full cantilever, all-metal plane, powered with four Pratt & Whitney 14 cylinder twin row radial air-cooled engines rated at 1200 hp each. The propellers are Hamilton Standards of the 3-bladed Hydromatic constant speed type, 12 ft. in diameter. Fowler flaps extend inboard of the ailerons in the wing, with the engine nacelles mounted flush with the upper surface of the center section.

Approximate gross weight of the airplane is 40,000 lbs.; wing span, 110 ft.; length 64 ft.; and overall height, 19 ft. Tactical requirements are for a crew of from 6 to 9, depending upon the mission to be performed.

Control surfaces are fabric covered and fully counterweighted. A full cantilever horizontal stabilizer has twin fins and rudders mounted at the tips. The all-metal stressed skin fuselage is equipped with hatches and windows in the nose, tail, turtledeck, back and bottom. The landing gear is of the tricycle type with a single retractable wheel forward. Main landing wheels retract into the wing wells.

While performance figures are not available, an official release indicates a speed of more than 300 mph, a range of approximately 3000 miles, and a bomb carrying capacity of approximately 4 tons.

(Continued on page 110)



Consolidated's new four-engined XB-24 bomber in flight over San Diego

AERO DIGEST

JUNE '40

and other methods, and as such are used for lateral forming members throughout the flying boat hull, in engine nacelles, and at other points.

Although the draw bench at Consolidated is of standard type, the technique of using it, and the special roller-type dies used for forming the various sections required, have been developed within the department to fit the particular requirements of aircraft manufacture. Single lengths in excess of 50 ft. can be handled on the main draw bench, which is powered by a 50-hp. electric motor, and which handles material up to 0.128 in. thick in present production. In fact, not all of the work of this department is devoted to light alloy structural parts for aircraft; many special parts for tools, jigs and machine guards are drawn or rolled out of various materials including steel up to 1½x3-in. pieces rolled edgewise.

Raw material to be formed is first sheared to required widths from material of the proper alloy, sheet thickness and length. These strips come to the draw bench in rolls and may go through the large draw bench, or be processed on one of several rolling machines, depending on the size and type of shape to be formed. The sections rolled vary widely from simple right-angle bends to multiple curves including "hat" sections with short return bends at the edges to secure maximum structural rigidity. Such a section complicates the rolling process, and requires careful design of the rollers, and demands care in production. The completed sections must conform to strict dimensional requirements. Bend radii must be maintained accurately, and the finished part must not show appreciable loss in section thickness.

Rolls Carefully Designed

All forming dies are of the roll type, as is required to assure maintenance of the protective layer of pure aluminum on the strip stock. Each roller is carefully designed to impart a new shape to the ribbon of metal until it passes through the last set of rollers in finished form. Once drawn to shape the sections are ready for heat-treatment, straightening, pulling, and checking for correct hardness by means of a conventional Rockwell hardness tester.

Forming the sections, as well as heat-treating, results in some distortion of the members from true straightness. Therefore, it is necessary to pass them through a straightening operation. This also serves to work-harden the material to its maximum strength. After heat-treatment, each section to be straightened is placed on a special pneumatic draw-bench machine and pul to just beyond its elastic limit, simneously straightening the section 1 work-hardening the material. Ev section is automatically stamped al its entire length for identificationrposes. This simplifies storing ancnal assembly. After straighteninghe sections are cut into desired lehs and formed where such formins necessary to make the part.

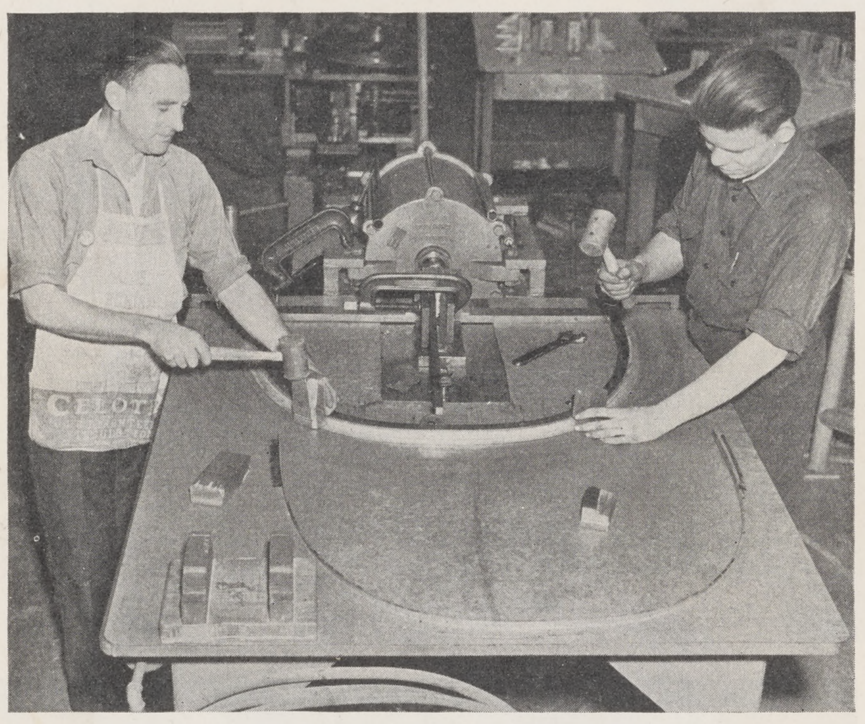
Forming of these light seons is done both by hand and chine. Much of the forming work done on special rolling machines, we the perfection of the finished p depends largely on the skill and istry of the individual operator. s a guide he uses a special masteorm jig, which employs adjustablorm blocks and may be set for any cred form.

The operator checks his ork against this master pattern andlls the part in his machine until ias received the proper round, ovor other form.

Wide use is also made of a pi-matic forming table using stand forming bars usually of semi-circu half-oval or similar shapes. The p to be formed is rolled to approxim shape and is then placed on the for ing, or stretching table, and the op ends of the part are clamped fast. T forming bar is pneumatically force against the part, stretching it t proper shape. Operators usually "set the material by hammering it witl rawhide hammers. Many types o forming require a certain amount o hand hammering with a rawhide hammer to bring the part to the required shape, but the basic work throughout is done by machine.

Many Miscellaneous Parts

Total monthly production of the draw-bench department runs to many thousands of feet cf aluminum alloy material. However,this does not adequately express the mportance of the department since mch of its work is devoted to the formig of miscellaneous parts that are idely used for tooling and jigging urposes. Also, much of the work ofhe department is devoted to formin these sections after they are rollecor drawn to shape. Other functior such as rolling engine mount tubeto shape, are also performed in th department. And out of these drawbenches and rolling machines comthe various parts, straight or forme that are so widely usesd as ribs, fraework, and stiffening members undehe skin of the giant birds which pati America's sea lanes.



This machine stretches a nearly formed angle or other section around a form of the exact final shape. While it is being stretched, a few blows around the edge of the section sets it so that when the stretching force is relieved the work retains the desired shape

---

of them will give the new Douglas bomber a range of 6,000 miles and enable it to carry 18 tons of bombs and a crew of 12.

Mr. Jack Knight, the test pilot, said recently that the new Airacobra fighter had attained a speed of 520 m.p.h., and in a dive could touch 700 m.p.h. From time to time there have been unconfirmed reports that this type has been ordered by the British Purchasing Commission. If it can reach these speeds it would certainly be useful.

Giant Bomber

Much interest has been taken in the United States in an announcement that a new giant Douglas bomber, the B-19, built for the U.S. Air Corps, and about three times as big as the " Flying Fortress," was ready for testing at Santa Monica, California, where it was built. The B-19 is the largest aeroplane ever built, with a wing span of 212ft. It weighs 60 tons fully loaded, and its tanks hold enough fuel for a trip of 7,500 miles—enough for a non-stop return trip across the Atlantic. Its four Wright-Duplex motors of 1,200 h.p. are claimed to give the giant a cruising speed of 200 m.p.h. Officials of the company said that she could carry her crew of 10 with 18 tons of bombs to Europe and back non-stop, or could carry 125 fully armed men to the Philippines as a troop transport. The B-19 has taken four years to build and cost £750,000.

If, as has frequently been reported, an arrangement to standardize British and American aircraft types has been arrived at, it will smooth away a matter which has given rise to a great deal of difficulty and delay in the past. Mr. Henry Morgenthau, United States Secretary of the Treasury, said some time ago that an approximation of design had been brought about in the Curtiss-Wright plant at Buffalo whereby six P40 pursuit aeroplanes were being turned out daily for the two countries. He also believed that Consolidated Aircraft, at San Diego, were building standardized flying-boats and four-motor bombers and would shortly improve output by this means.

With the two countries collaborating so closely in the matter of aircraft production it is only natural that each should profit by the other's experience and embody any features which are likely to be useful in aerial warfare. Thus, a report that the British Fraser-Nash power-operated gun turret had been made available to the United States caused no surprise. This was followed by unofficial reports that a bomb-sight which is described as capable of use " with almost miraculous results " had been released by the United States to Britain.

Britain's Share of Output

From time to time there have been widely differing estimates of the number of United States aircraft which are being sent to Britain. Some of them are clearly wildly inaccurate, and must be taken with great reserve. Although no figure was mentioned the best guide was given by President Roosevelt, when he said that Britain was getting 45 per cent. of new construction, the remainder being retained by the United States. He said also that he had established a " rule of thumb policy " by which Britain and Canada, on the one hand, and the United States on the other, would receive defence items coming off the factory lines on a 50-50 basis. These items included large bombers. The Priorities Board then announced that the British Purchasing Commission would be permitted to negotiate for orders with the American aviation industry for an additional 12,000 aeroplanes. This would bring the total number under order to 26,000.

Discussing this matter, Mr. Morgenthau indicated that a large number of the aircraft would be long-range heavy bombers, while Sir Louis Beale, a member of the British Purchasing Commission, said that Britain was now assured of " an overwhelming mass of power." He revealed that orders worth more than £500,000,000, including those taken over from France, had been placed in the U.S.A. during the first year of war.

This is an impressive figure. It suggests that by the middle of next year Britain should be well on the way to making up the leeway in aircraft strength.

---

of two fast motor passenger ships under construction in Denmark and Sweden respectively, intended for service across the North Sea. No doubt they will be completed, although with some delay, but it is difficult to see upon what work they will be engaged until the war concludes.

From every standpoint they are notable vessels. One is the Saga, which is being built at Gothenburg for the Swedish Lloyd's trade between Gothenburg and Tilbury. In the summer the demand for passenger accommodation on this service has, in the past, been very large, and the two vessels normally engaged, the Suecia and Britannia, have had to be supplemented by an older ship. It was decided to build a vessel somewhat faster than the existing tonnage, with a speed of 18½ knots in service, and Diesel propulsion was adopted. The installation is novel, comprising as it does four engines totalling 6,500 b.h.p. and driving a single shaft through gearing and A.S.E.A. electric couplings. The engines operate at the relatively high speed of 270 r.p.m. and the normal propeller speed is 115 r.p.m. B. & W. trunk-piston machinery of the four-stroke class is installed, the reason for its adoption being, no doubt, the low height of the engine-room thereby rendered possible. This is important in a vessel of the moderate dimensions of the Saga, which is 415ft. long with a beam of 55ft. She will carry 150 first-class, 90 second-class and 100 third-class passengers; in addition there is space for 2,000 tons of cargo, and a substantial number of motor-cars.

The other North Sea passenger ship that has been launched is the Kronprins Frederik for the United Steamship Company's Harwich-Esbjerg service. The four motor-vessels that have already been built for this trade are designed for a speed of 16-17 knots, but the new ship represents a great advance, since she will have a speed of 20¼ knots. Moreover, she is much larger, being 370ft. long with a beam of 49ft. 3in. and a gross register of 3,800 tons or 4,900 tons displacement. With such a ship about five hours would be saved on the journey between Copenhagen and London, and it was the intention, when the order was placed, to contract for a second similar vessel as soon as the Kronprins Frederik had proved her success in service. The machinery installation differs entirely from that of the Saga, although the output is only slightly different, being about 7,000 b.h.p. or 8,400 i.h.p. Two B. & W. single-acting two-stroke ten-cylinder engines are to be installed, driving the propellers direct at 165 r.p.m. She will have accommodation for between 200 and 250 passengers.

Diesel-electric Propulsion

The expectations of many engineers and shipbuilders some years ago, that electric propulsion, particularly in conjunction with Diesel engines, would be widely adopted has not been fulfilled. Admittedly the Hamburg-Amerika Line, three or four years ago, decided to standardize this system for all its new tonnage (including a new transatlantic liner upon which work has been suspended since the war), but no other shipowners have shown any interest in the subject. Particularly significant is the fact that while there are between 150 and 200 cargo ships and passenger liners on order in America, all with indirect drive, not one will have electric transmission.

Nevertheless electric propulsion is not wholly dead. A large proportion of the high-powered motor-tugs, ferries, and self-propelled dredgers, with machinery in some cases up to ,000 b.h.p., are equipped with Diesel-engine generators supplying current to electric-propelling motors. In almost all instances General Motors Corporation are responsible for the equipment, having developed a type of installation which is unusual in several respects. The complete generating unit is identical with the set which is standardized for the large number of passenger locomotives built by the same concern and comprises a 50 b.h.p. two-stroke poppet-valve V-type 2-cylinder engine driving a 600kw. direct-current generator at 750 r.p.m. In some vessels two or even three units are installed, and modifications can be provided by adopting an eight or 16-cylinder design. The motor driving the propeller shaft runs at 750 r.p.m. and is geared down to give a propeller speed of 200 to 250 r.p.m.

Recently three 13½-knot passenger ferries for service at New York were built with machinery of this class, but perhaps the most notable examples are three 3,500 b.h.p. tugs for the U.S. Navy, also recently completed. Most of the big tugs now on order in America will have a similar propulsive system, which is claimed to give a relatively light and flexible installation, the cost of which is rather lower than that of a plant with direct drive. This can be possible only on account of the large output due to the adoption of a standard unit capable of being used for both locomotives and ships.

of triple and quadruple expansion engines, using saturated steam, were being generally adopted for cargo tonnage requiring up to about 3,000 h.p. because of their low first cost and reduced upkeep costs. Various improvements in detail have been introduced during the intervening time to provide economies in thermal performance and meet the competition of more efficient form of propelling machinery. Most modern engines using superheated steam make use of cam-operated valves which result in improved mechanical efficiencies and enable separate passages to be arranged for the admission and exhaust of the steam to and from the cylinders exposed to high temperatures, so that heat transfer losses are minimized. The use of poppet valves in these circumstances finds favour in one quarter, but equally satisfactory results are being obtained with independent quadruple-opening balanced slide valves. A number of designs have made use of the uniflow or semi-uniflow principle to release the steam from the last stage of expansion to the condenser. Large passages are required in the low-pressure cylinders for exhausting the attenuated steam, else the carry-over loss becomes excessive because of the resistance to flow, and these are most effectively provided in this way. Uniflow cylinders have the further advantage of reducing condensation losses at the low-pressure end of the engine where they tend to be greatest.

Superheat

The manner in which superheat improves the performance of steam machinery is, however, being ignored in the persistence with which multi-expansion engines continue to be employed on a wide scale, and this aspect should receive closer study because of the possibilities offered for simplification of the machinery which would enhance the advantages already obtainable with reciprocating engines in respect of maintenance costs. The two-stage compound engine became the accepted type when the advantages of expansive working were first established, but the triple-expansion engine superseded it as working pressures increased because the greater sub-division of heat drop reduced the condensation losses in the individual cylinders. The quadruple-expansion engine, with further increase of working pressure, was adopted later to provide higher economy. Cylinder condensation losses, however, lose much of their importance if sufficiently high superheat is employed to maintain the steam in a dry state through the greater part of its expansion, and this is provided for with the steam temperatures that are being regularly employed at the present time. Experience has shown that two-stage compound working is as efficient as triple or quadruple expansion at normal pressures when steam temperatures of about 600deg. F. are used, and mechanical and manufacturing advantages are gained through the elimination of the third and fourth stages of expansion.

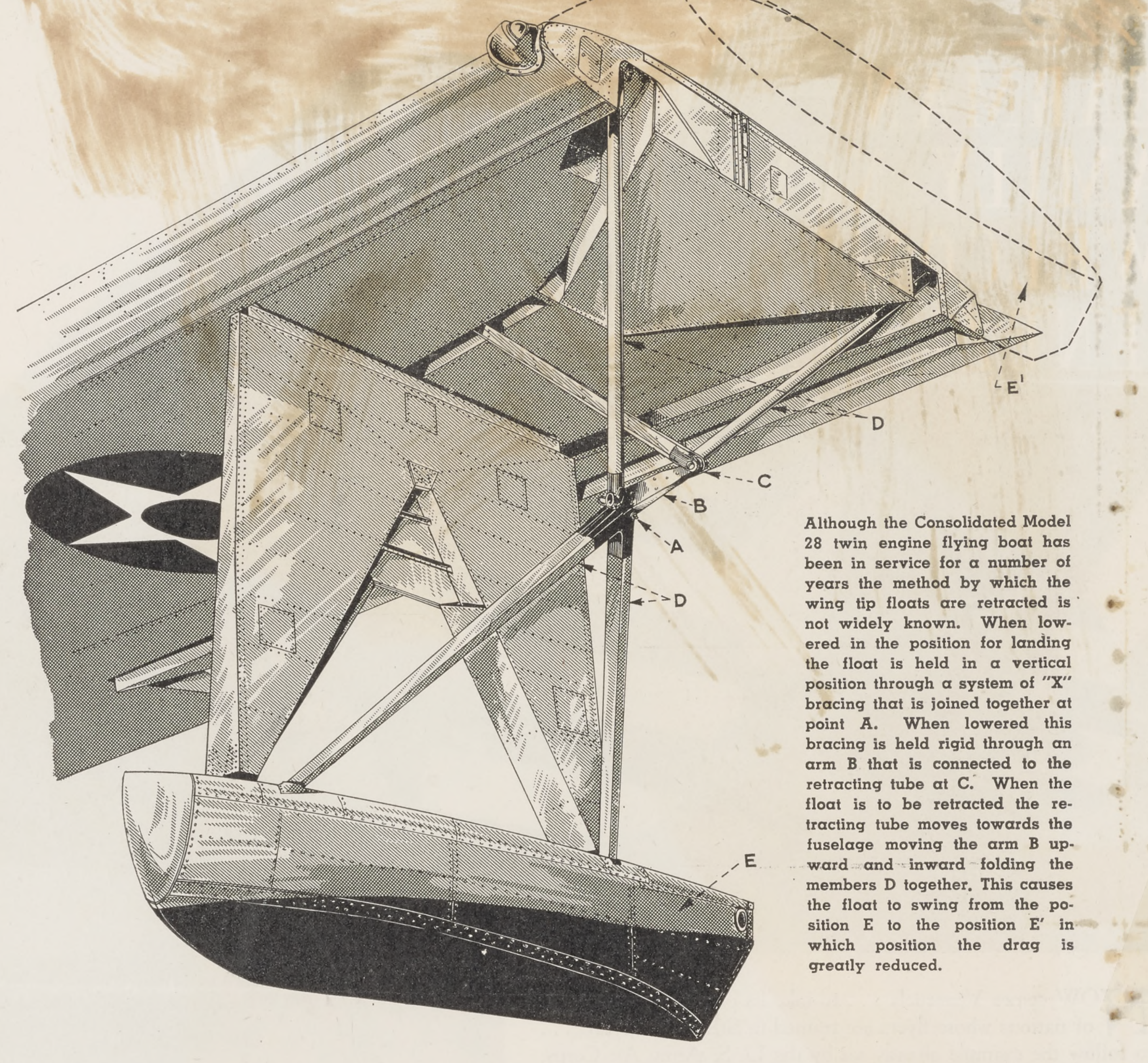
Two-stage Compounds

The earlier designs of the resuscitated two-stage compound engine, developed in Continental practice during recent years, were arranged with four cylinders to give a better degree of balance and turning effort and also for the sake of flexibility in manoeuvring, but the most recent tendency has been to employ three cylinders with the expansion carried out in one high-pressure and two low-pressure cylinders working in parallel. One early design of this type, fitted with hydraulically operated independent steam and exhaust slide valves, was brought out in this country and appeared very promising, but the development was not proceeded with. More recently an engine of somewhat similar design, having separate steam and exhaust double-beat poppet valves, hydraulically operated on the Meier Mattern system, was produced by the Werkspoor Company and fitted in the steamer Batavier III, with very satisfactory results.

Particulars have just been published of another design of two-stage compound engine, developed by the Stork Company at Hengelo, just before the occupation of Holland, which produces an exceptional degree of economy. The engine has one high-pressure cylinder of 550mm. diameter and two low-pressure cylinders of 900mm. diameter, with a common stroke of 800mm., developing 1,500 i.h.p. at about 125 r.p.m. The high-pressure cylinder is fitted with a piston valve having chrome-hardened surfaces on the working parts, and it has been shown that the wear of the liners is greatly minimized when using superheated steam, with a great improvement in steam tightness. Admission to the low-pressure cylinders is controlled by an improved form of balanced slide valve, which incorporates a relief in the valve cage to give communication between the cylinder space and steam receiver if any excessive rise in compression pressure occurs. Hackworth valve gear is fitted to provide an engine of very small dimensions. The low-pressure cylinder exhausts on the uniflow principle, and the trial results showed a fuel consumption of about 1lb. of coal per h.p. hour, an improvement of 15 to 20 per cent. on the standard triple-expansion engine working with similar steam conditions of about 200lb. steam pressure and 600deg. F. temperature.

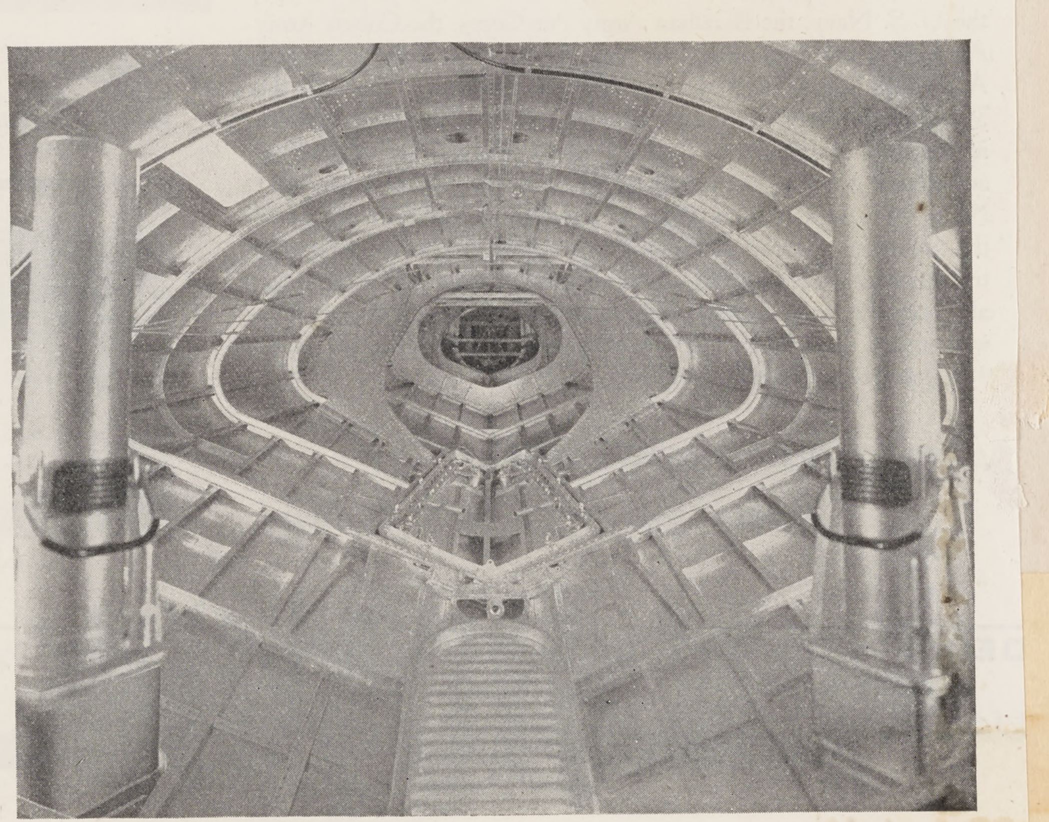
AVIATION - June 1940

Charles F. McReynolds
9121 Dalton Ave., L.A.



Although the Consolidated Model 28 twin engine flying boat has been in service for a number of years the method by which the wing tip floats are retracted is not widely known. When lowered in the position for landing the float is held in a vertical position through a system of "X" bracing that is joined together at point A. When lowered this bracing is held rigid through an arm B that is connected to the retracting tube at C. When the float is to be retracted the retracting tube moves towards the fuselage moving the arm B upward and inward folding the members D together. This causes the float to swing from the position E to the position E' in which position the drag is greatly reduced.

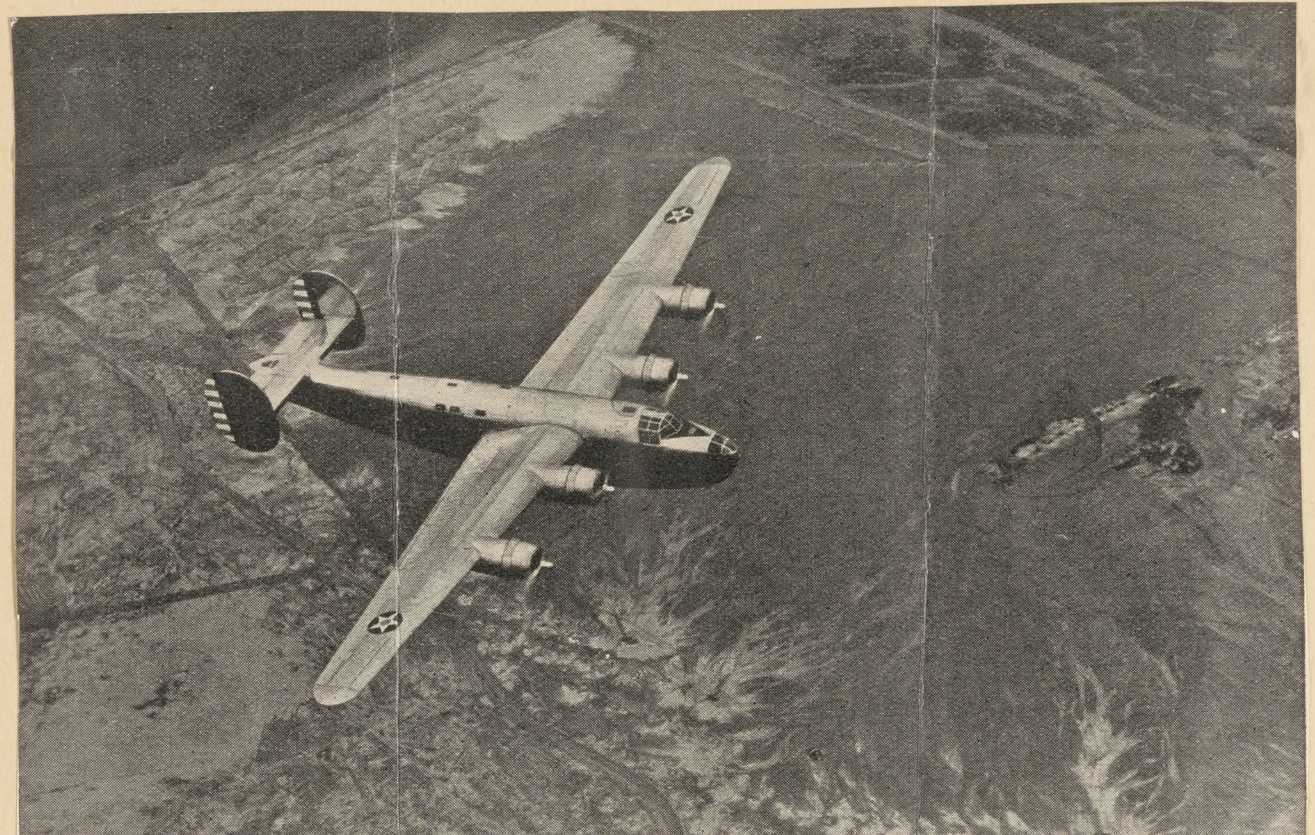
Looking aft inside of the fuselage of the Model 28 shows the Zee stringers running lengthwise and the beltframes running crosswise. The large bulkheads in the rear are the 'banjo' bulkheads which extend on up into the fin structure. The tunnel door or hatch is shown on the keel while the two vertical tubes in the foreground are flare tubes.



				20 transports
Stearman Aircraft Div.	primary trainer	PT-13B	75	
Stearman Aircraft Div.	primary trainer	PT-17	225	
Fairchild Aircraft Div.	primary trainer	PT-19A	200	
Ryan Aeronautical Co.	primary trainer	PT-20A	100	
				600 primary trainers
Vultee Aircraft Inc.	basic trainer	BT-13A	500	
				500 basic trainers
North American Aviation	advanced trainer	AT-6A	637	
Beech Aircraft Corp.	advanced trainer	AT-7A	150	
Beech Aircraft Corp.	advanced trainer	AT-7	67	
Cessna Aircraft Co.	advanced trainer	AT-8	33	
				887 advanced trainers
Stinson Aircraft Div.	observation	105	6	
				6 observation
Platt-LePage Aircraft Corp.	autogiro	XR-1	1	
				1 autogiro
			Total...	2,777

(Editor's note: The following contracts were announced as let or cleared recently: Consolidated, $14,861,342; Boeing, $70,449,955; Lockheed, $30,278,787; Beech, $3,410,746 and $4,847,217; North American, $11,335,631; Cessna, $900,378; Ryan, $2,074,234; Platt-LePage, $203,375; Vultee, 7,488,782; Stearman, 2,041,947.)

Flight — 7/28/40



A HEAVY AMERICAN: The Consolidated XB-24 bomber (four Pratt and Whitney Twin Wasps) which weighs about 40,000 lb., has a span of 110 ft. and carries a crew of from six to nine persons depending on the job to be undertaken. There is a turret in the tail. The machine is known by the makers as the Model 32 and the wing, of high aspect ratio, is of similar design to that used on the Model 31 flying boat.

THE AIR SERVICES

Consolidated Bomber Tested at San Diego

Now undergoing tests at San Diego, the new Consolidated Model 32 four-engined land bomber marks Consolidated's re-entry into the land plane manufacturing field.

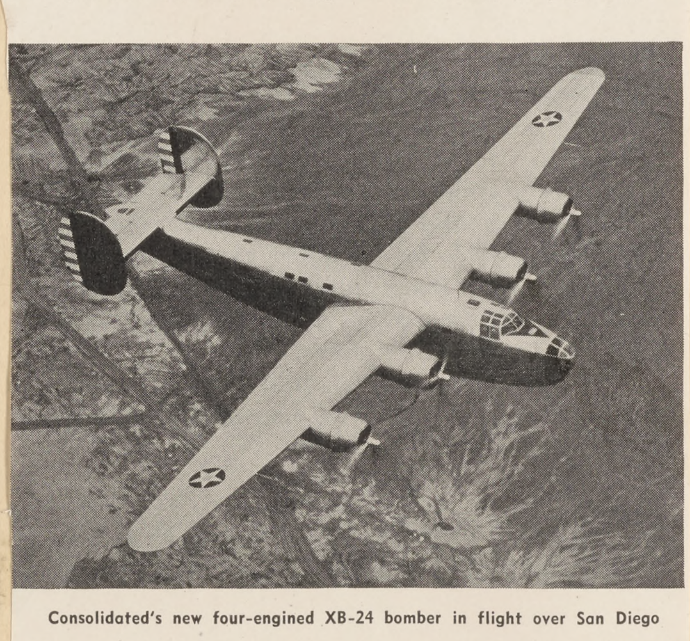
The Model 32 is a full cantilever, all-metal plane, powered with four Pratt & Whitney 14 cylinder twin row radial air-cooled engines rated at 1200 hp each. The propellers are Hamilton Standards of the 3-bladed Hydromatic constant speed type, 12 ft. in diameter. Fowler flaps extend inboard of the ailerons in the wing, with the engine nacelles mounted flush with the upper surface of the center section.

Approximate gross weight of the airplane is 40,000 lbs.; wing span, 110 ft.; length 64 ft.; and overall height, 19 ft. Tactical requirements are for a crew of from 6 to 9, depending upon the mission to be performed.

Control surfaces are fabric covered and fully counterweighted. A full cantilever horizontal stabilizer has twin fins and rudders mounted at the tips. The all-metal stressed skin fuselage is equipped with hatches and windows in the nose, tail, turtledeck, back and bottom. The landing gear is of the tricycle type with a single retractable wheel forward. Main landing wheels retract into the wing wells.

While performance figures are not available, an official release indicates a speed of more than 300 mph, a range of approximately 3000 miles, and a bomb carrying capacity of approximately 4 tons.

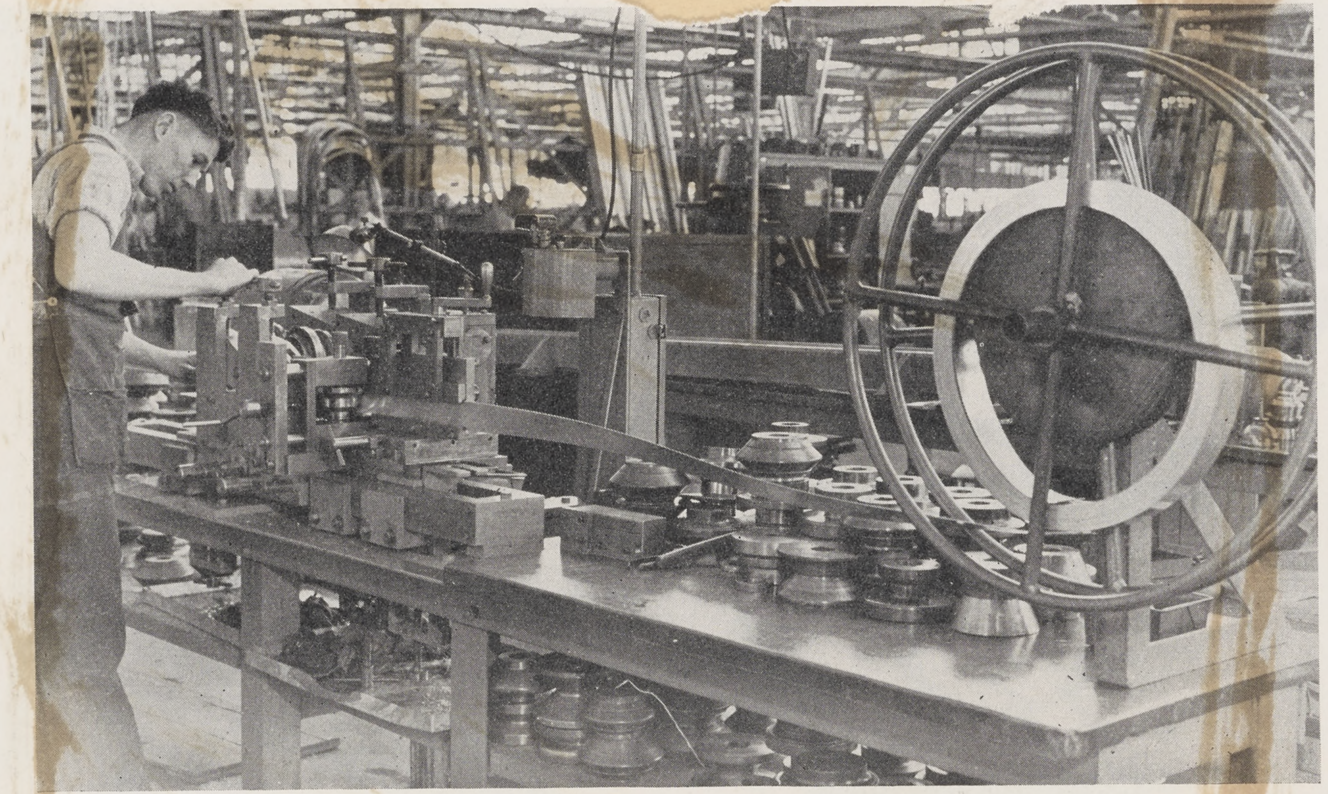
(Continued on page 110)



Consolidated's new four-engined XB-24 bomber in flight over San Diego

JUNE '40

AMERICAN MACHINEST
JUNE 26 1940



In the manufacture of complex structural shapes for plane construction, coiled strip stock is passed through adjustable guides and into a series of forming rolls. The rolling machines, working three shifts a day, turn out thousands of feet of light sections for stringers and reinforcements throughout the airplane

Plane parts from strip stock

BY LARRY BOEING, INSPECTOR, CONSOLIDATED AIRCRAFT CORPORATION

If roller-type dies are used properly, complex structural shapes can be rolled to shape quickly. Easy fastening and speedy production result

MACHINES OF ALL KINDS used in aircraft production work are humming with activity these days in the plant of Consolidated Aircraft Corporation. This firm recently received the largest single aircraft order in the history of American aviation, totaling $20,016,699, including an unspecified number of twin-engine patrol bombers of the PBY type for the United States Navy. (Ed. Note—Since this article was submitted a strong rumor has developed that Consolidated is being favored for a $50,000,000 order from England for patrol bombers similar to the PBY type.)

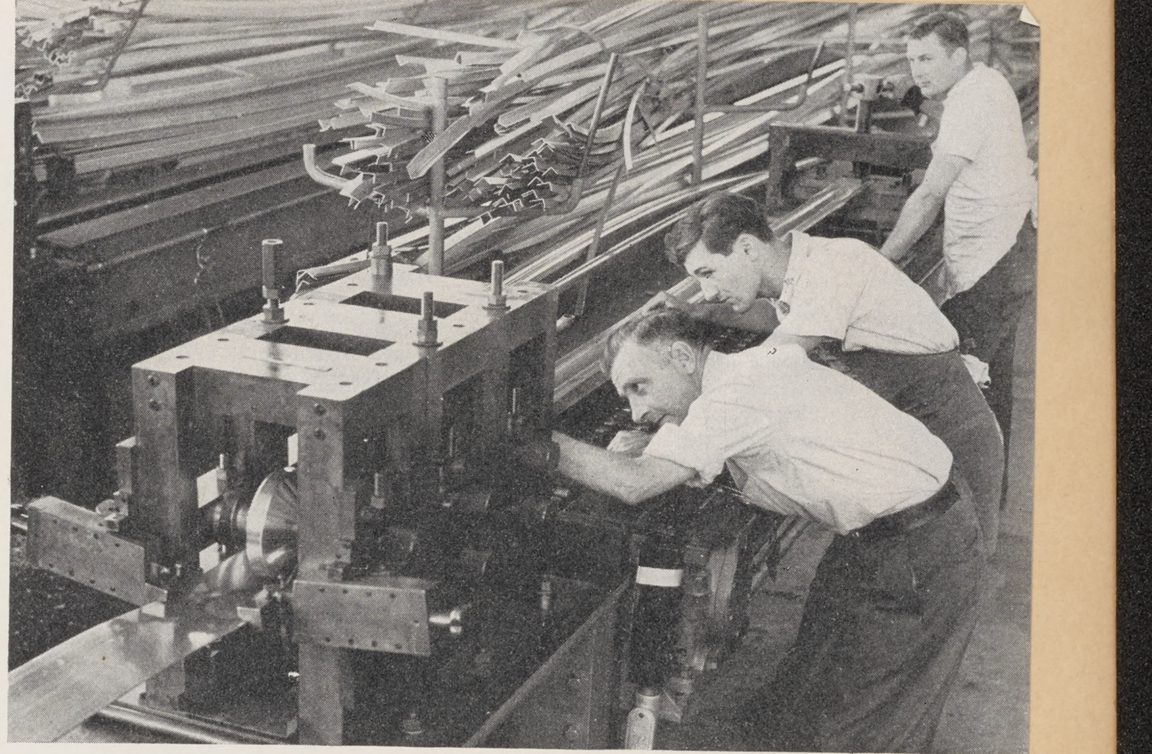
In order to facilitate production of the recent huge order for patrol-bombers, and other types of planes in production, Consolidated is now building plant extensions that will almost double the existing factory. Important additions are being made to the already extensive machine tool equipment, which has been found indispensable to large scale production of such aircraft. One of the key processes among the many employed at Consolidated, is the draw bench.

The draw-bench department is the nearest thing to large quantity production machine operation in the plant. Here many thousand feet of special light alloy structural sections are produced monthly. The department is important because a large proportion of thin-walled light alloy structural members must be used in large aircraft to attain maximum structural efficiency.

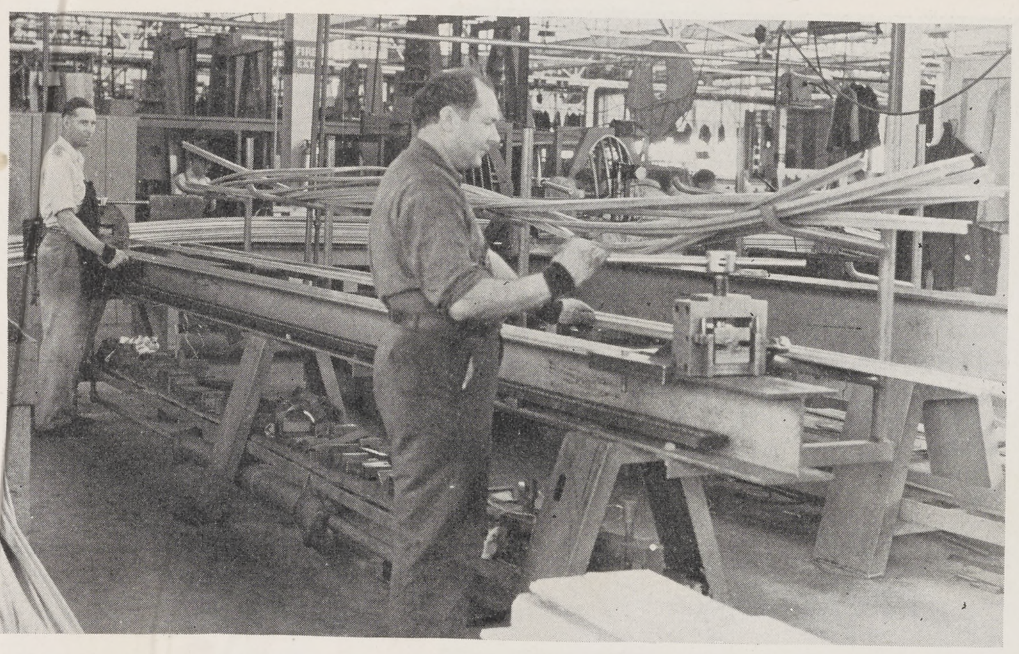
In the past, with certain aircraft designs, wide use has been made of round, square, or oval tubing, and special sections. Considerable use is also made of plain angle sections and of extruded alloy structural members. But for maximum speed and economy of production, and for ease of forming and fastening, the drawn section has been found most suitable.

By use of the drawing process, through employment of suitable rolls, it is practical to form complex sections from tin strip stock, suiting the section to the particular purpose it is to serve in the structure, thus promoting ease of assembly with other structural members, accessibility for riveting, painting and inspection. These parts are usually formed of Alclad, which is a strong aluminum alloy protected on each surface by a thin coating of pure aluminum. Added to other drawing and forming problems is the requirement that this protective coating must not be damaged in the forming process. These light formed sections are used in straight pieces as stringers for both wing and hull, hundreds of feet being incorporated in a single airplane for fore and aft forming in the hull, and as attachment members for the sheet-metal covering, or as attachment supports and skin stiffeners along the span of the wing. Straight drawn sections can also be formed to various contours by rolling

Precisely rolled sections depend on accurate adjustment of the roller-type dies. Such adjustment is here being made to form 50-ft. angle sections from 0.128 in. thick aluminum alloy ➡



Forming and heat-treating the sections result in some distortion. They are straightened in this pneumatically operated stretching machine; the cold-working resulting therefrom increases their strength ⬇



A form jig is used to set some of the rolled sections to final shape. The adjustable blocks are set to a given contour so that sections bent in rolls to approximate shape can be worked with a rawhide hammer to the contour desired ⬇

Consolidated Air Iras

ROMEIKE & CURTICE LTD.

35, Shoe Lane, London, E.C.4

---

owered motor-tugs, ferries, and self-propelled redgers, with machinery in some cases up to ,000 b.h.p., are equipped with Diesel-engine enerators supplying current to electric-ropelling motors. In almost all instances ieneral Motors Corporation are responsible or the equipment, having developed a type of nstallation which is unusual in several espects. The complete generating unit is dentical with the set which is standardized or the large number of passenger locomotives uilt by the same concern and comprises a 50 b.h.p. two-stroke poppet-valve V-type 2-cylinder engine driving a 600kw. direct-urrent generator at 750 r.p.m. In some essels two or even three units are installed, nd modifications can be provided by adopt-ng an eight or 16-cylinder design. The motor riving the propeller shaft runs at 750 r.p.m. nd is geared down to give a propeller

poppet valves, hydraulically operated on the Meier Mattern system, was produced by the Werkspoor Company and fitted in the steamer Batavier III, with very satisfactory results.

Particulars have just been published of another design of two-stage compound engine, developed by the Stork Company at Hengelo, just before the occupation of Holland, which produces an exceptional degree of economy. The engine has one high-pressure cylinder of 550mm. diameter and two low-pressure cylinders of 900mm. diameter, with a common stroke of 800mm., developing 1,500 i.h.p. at about 125 r.p.m. The high-pressure cylinder is fitted with a piston valve having chrome-hardened surfaces on the working parts, and it has been shown that the wear of the liners is greatly minimized when using superheated steam, with a great improvement in steam

CONSOLIDATED AIRCRAFT CORPORATION
SAN DIEGO, CALIFORNIA

MEMO

Date 6/21/40

L. C. MOUNCE

To eng

6/21/40

the current backlog.

Consolidated Aircraft Corp.'s backlog of $71,000,000 is about evenly divided between United States military work and orders for the Anglo-French. Only very recently the Allies came into the market for the flying fortress type of planes, a field in which Consolidated has achieved considerable success. In past years, Consolidated has been a principal source of supply for United States Navy needs. In the light of estimates that the Navy Department will increase its strength to 10,000 planes at a cost of $1,000,000,000, Consolidated should figure prominently in this connection.

The Lockheed Aircraft

Pacific Coast Edition
Wall St. Journal
? 6/6/40 issue

The Main thing to remember when you need printing or lithographing is
MAIN 8175 FRYE & SMITH
850 THIRD AVENUE, SAN DIEGO, CALIFORNIA

6/25/40

Pacific Coast Edition
THE WALL STREET JOURNAL

Approximately half of the $71,000,000 backlog of Consolidated Aircraft is for the account of the United States Army and Navy. However, it is indicated that the backlog includes some substantial business for flying boats from the Allied commission. Vultee Aircraft, Inc.'s backlog of $14,500,000 includes $6,000,000 of work for the United States Army and $9,000,000 for account of the Swedish government, the latter backed by deposit of funds in this country.

These are a few of the stories which have appeared in the past few months in the BOSTON NEWS BUREAU concerning your company.

CONS. AIRCRAFT'S RECORD BACKLOG

With $70,000,000 Business On Its Books Full Operations Of Enlarged Capacity Assured For Next 2½ Or 3 Years

New York—Consolidated Aircraft Corp., with $70,000,000 of business now on its books—$15,000,000 more than its total sales in the previous 16 years of its existence— appears assured of full operations in its enlarged capacity during the next two and a half or three years.

With the recent addition of large orders from the Allies, Consolidated's backlog is believed to be 47% in foreign orders, with the remaining 53% accounted for largely by the United States Army and Navy. Based on past performance and taking into consideration the allowable profits under the Vinson Act, profits on the domestic military business should average about 12% of sales. On foreign deliveries net income of around 20% of sales is a reasonable expectation.

Officials of Condolidated say the company is in an excellent position to expand not only for additional foreign orders, but to meet the demands of the United States Government under President Roosevelt's recommendation of a productive capacity in this country of 50,000 planes.

Aircraft Expansion Those in the trade say the expense of expanding the productive capacity of the American aircraft industry will be lifted substantially if President Roosevelt's suggestion of large plants in the interior areas is accepted. Enlarging capacity by expansion of existing plants is the most economical method, they say, citing as an example the case of Consolidated Aircraft Corp. at San Diego, Calif., which increased its assembly floor space simply by paving its grounds. At present the "plane capacity" is about equally divided between the east and the west coasts.

The Middle West has a number of manufacturers of small commercial craft. Curtiss-Wright is building its new transports at St. Louis. The two big major engine producers are on the Atlantic seaboard,—Curtiss-Wright and United Aircraft. Allison, gearing up for large capacity within a few months, is in Indiana.

JUN 5 1940

Air Consolidated Air

Romeike & Curtice Ltd
Telephone CENTRAL 2781 (2 Lines.)
R&C
35. Shoe Lane. LONDON. E.C.4.

EXTRACT FROM
EDINBURGH EVENING NEWS,
18, Market Street, Edinburgh

4 NOV 1940

ORDER FOR AMERICAN LONG-RANGE BOMBERS

Great Britain, informed sources at San Diego, California, state, has placed a contract with the Consolidated Aircraft Corporation for seven of their new four-engined long-range bombers.

Air Consolidated Air

Romeike & Curtice Ltd
Telephone CENTRAL 2781 (2 Lines.)
R&C
35. Shoe Lane. LONDON. E.C.4.

EXTRACT FROM
NEWCASTLE JOURNAL
Clayton Street, Newcastle-on-Tyne

5 NOV

Long Range Bomber Order

Great Britain, informed sources state, has placed a contract with the Consolidated Aircraft Corporation for seven of their new 4-engined long range bombers, says a Press Association War Special message from San Diego, California, to-day.

Consolidated Air

Romeike & Curtice Ltd
Telephone CENTRAL 2781 (2 Lines.)
R&C
35. Shoe Lane. LONDON. E.C.4.

EXTRACT FROM
DAILY TELEGRAPH,
Fleet Street, E.C.4

5 NOV 1940

Date

NEW BOMBER ORDER

From Our Own Correspondent

SAN DIEGO, California, Monday.

It was learned here to-day that Britain has ordered seven new four-engined long-range bomber, from the Consolidated Aircraft Corporation.

The first machine of this type was tested on Saturday.

Consolidated Air

Romeike & Curtice Ltd
Telephone CENTRAL 2781 (2 Lines.)
R&C
35. Shoe Lane. LONDON. E.C.4.

EXTRACT FROM
Daily Mirror

Date 5.11.40

WE ORDER NEW U.S. BOMBERS

Great Britain has placed a contract with the Consolidated Aircraft Corporation of America for seven of their new four-engined long-range bombers.—Reuter.

Pacific Coast Edition
THE WALL STREET JOURNAL

DOW-JONES
ELECTRIC PAGE NEWS PRINTERS

623 CENTRAL BUILDING
LOS ANGELES
TRINITY 0881

Press Clipping
FROM
ALBERT F. COUDERC

---

ast Edition
REET JO
JUNE 20, 1940 — LOS ANGELE

5

ork on Secon

sition

ng for Huge Task
ca's Defense Needs

on the aircraft manufacturing industry, its
underlying its confidence that it can by its
rearmament. From the men who have
industry to its present stature, and from
the writer sought and obtained views and
acturers base the confident prediction that
ntual production of 50,000 aircraft a year

writer talked with Donald W. Douglas,
Robert E. Gross, president of Lockheed Air-
of Vultee Aircraft, Inc., and representatives
hose production lines roll more than half of
tates, and from whose drafting boards and
ng ships conceded to be second to none in

. HOLTZMAN

arned the nation it must rearm itself to "make
te," by gearing America's productive capacity
stry unhesitatingly said: "We can do it."
ice that time. Powerful nations have disin-
atic institutions in war-torn Europe have given

ince the first of the year,
increased 150% to 3,300
cklog, including $3,000,000
y work, is $14,750,000. The
g on a single turn seven-

viation's Inglewood, Calif.,
of $85,000,000 and employ-
erating only a two-shift
week. Additional person-
ilities would probably en-
ent output if necessary.
on to the ranks of aircraft
Aircraft, Inc., has had its
rne, Calif., operating since
ction started shortly there-
act for tail assemblies for
. The company is employ-
nd plans soon to get into
a military order for the
ent involving initially 24
med navy bombers. Pres-
nd a personnel of 4,000, it
50 single-engined aircraft

nia plants could step up
vity at least 20% without
expansions. With these
h a large backlog of few
can set a much higher
more, or even greater.
modern plants have not
apacity, what factors not
ry's making have combined
nd how the utmost of pro-
ants can be obtained will
uent articles of this series.
e Continued)

		—Wednesday—		—Tuesday—
	Sales	Mkt. value	Sales	Mkt. value
Stock Exchange.....	6,342	$75,531	9,497	$169,416

New York Stock Exchange Transactions

HOUR-BY-HOUR SALES

	Wednesday	Tuesday	Monday
10-11....................	130,000	300,000	440,000
11-12....................	110,000	100,000	180,000
12-1....................	130,000	110,000	250,000
1-2....................	80,000	70,000	150,000
2-3....................	110,000	140,000	190,000
Totals	560,000	720,000	1,210,000

NEW YORK STOCK TRANSACTIONS

	June	May	April	March
1............	273,445	810,050	749,630	601,250
2............	*......	645,420	834,930	274,710
3............	445,705	1,069,590	1,725,340	*......
4............	409,800	316,880	1,994,360	457,670
5............	668,740	*......	1,256,290	572,535
6............	426,915	526,290	710,470	855,030
7............	469,410	580,740	*......	691,446
8............	199,270	693,500	1.260,360	745.050
9............	*......	847,530	2,135,760	331,080
10............	971,540	2,086,040	1,278,290	*......
11............	763,890	671,970	889,490	587,680
12............	1,359,890	*......	826,270	884,240
13............	876,980	2,558,990	495,370	626,090
14............	948,410	3,680,520	*......	662,080
15............	559,170	3,768,310	1,259,540	882,130
16............	*......	2,354,380	1,505,760	478,970
17............	1,210,000	3,074,940	902,110	*......
18............	720,000	1,663,270	1,205,350	512,520
19............	560,000	*......	1,154,990	654,119
20............	......	1,237,280	720,660	644,530
21............	......	3,939,610	*......	579,010
22............	......	2,132,630	868,990	†......
23............	......	1,642,450	880,670	392,470
24............	......	871,460	852,930	*......
25............	......	554,330	815,420	594,990
26............	......	*......	854,240	622,600
27............	......	791,260	349,040	1,191,870
28............	......	1,263,530	*......	1,019,888
29............	......	656,982	568,150	836,530
30............	......	†......	592,280	571,880
31............	......	526,760	......	*......
Total	‡10,863,165	38,964,712	26,695,690	16,270,368
Daily average.	......	1,498,642	1,026,757	650,810

* Sunday. † Holiday. ‡ Month to date.

Bond Averages

Following are the Dow Jones bond averages, at the close of the market, for the period indicated, swings being based on one point or more:

FORTY BONDS

	1940			1939		
	Average	Adv.	Dec.	Average	Adv.	Dec.
June 19......	86.14	.51	..	89.21	.04	..
June 18......	85.63	.38	..	*....	..	..
June 17......	85.25	..	.26	89.17	.01	..
June 15......	85.51	.19	..	89.29	..	.27
June 14......	85.32	.43	..	89.56	..	.11
June 13......	84.89	..	.03	89.67	..	.04
June 12......	84.92	1.18	..	89.71	..	.24
June 11......	83.74	.25	..	*....	..	..

	10 High Grade Rails		10 Second Grade Rails	
	1940	1939	1940	1939
June 19......	89.20 + .34	93.02	42.89 + 1.28	47.70
June 18......	88.86 + .60	*....	41.61 + .85	*....
June 17......	88.26 — .34	92.91	40.76 — .58	47.63
June 15......	88.60 + .02	93.09	41.34 + .48	48.16
June 14......	88.58 + .60	93.35	40.86 + .28	48.71
June 13......	87.98 + .12	93.50	40.50 — .31	48.83
June 12......	87.86 + 1.07	93.58	40.89 + 2.48	49.04
June 11......	86.79 + .03	*....	38.41 + 1.05	*....

	Ten Public Utilities		Ten Industrials	
	1940	1939	1940	1939
June 19......	106.67 + .17	108.71	105.82 + .24	107.42
June 18......	106.50 — .01	*....	105.58 + .09	*....
June 17......	106.51 — .13	108.73	105.49 Unch.	107.41
June 15......	106.64 + .13	108.60	105.49 + .14	107.31
June 14......	106.51 + .56	108.70	105.35 + .29	107.46
June 13......	105.95 — .10	108.81	105.06 + .16	107.54
June 12......	‡106.05 + .47	108.70	104.90 + .70	107.51
June 11......	105.58 — .18	*....	104.20 + .11	*....

‡ United Biscuit of America 3½s due 1955 substituted for General Motors Acceptance Corp. 3½s due 1951.

Packard Mtr 25 3¼ 3¼ 3¼
h .20 Radio Cp Am 10 4¾ 4¾ 4¾
x1.50 So Cal Ed c 22

AVIATION MAN

Allies Take Option on 8000 U. S. Planes More Than 4500 Have Been Delivered

Washington (AVIATION BUREAU)—Reason for all the confusion about what's in the Allied airplane orders is that the estimators, quite literally, don't know what they're talking about. Actually the order is something of a fiction; no contracts have yet been signed. What has happened is that preliminary agreements have been made, but just about as binding commitments have been made on a great many more airplanes. When Chairman Purvis of the Allied Purchasing Commission announces figures he could just as well use a larger or a smaller amount; more dollar figures will be announced at whenever seems to the Commission to be the most politically propitious moment.

Options, of varying degrees of firmness, have been taken on 5,200 bombers and 2,800 pursuit ships for delivery in the next eighteen months or so. The difference between the two types reflects the Allied weakness in long-range equipment which was so graphically revealed in Norway. Engines for the airplanes are being bought separately because the commission is having to pay the cost of the plants to build its orders. About 5,000 engines (3,600 of them Allisons) have been definitely lined up, and more are implicit in the plant construction agreements being worked out with Allison, Pratt & Whitney, and Curtiss-Wright.

Of the medium bombers, it is known that Lockheed will build about 700, and 4,250 will be divided between Martin and Douglas, each producing at a rate of about 150 per month. Martin will fill its entire order, but Douglas will probably subcontract some to Boeing and Consolidated.

Bulk of the pursuits will be furnished by Curtiss-Wright, which is to build 1,500 P-40s; this order will be switched over to the more advanced P-40D as soon as this model gets into production. About 800 P-38s will be bought, but Lockheed, busy with bomber manufacture, will probably subcontract this entire order to its Vega subsidiary and to Vultee. Bell will furnish 200 Airacobras (P-39), and where the remaining 300 will come from is uncertain; perhaps Republic or Vultee or possibly Bell.

Orders are about ready to be signed (this is roughly equivalent to the announced $200,000,000) on the Curtiss and Bell ships, on 250 of the Douglas bombers, and on the engines. Contracts will incorporate very favorable cancellation clauses, providing not only for all the manufacturer's out-of-pocket costs, including commitments to material suppliers, but also for the entire profit which the manufacturer would have made if the order had been completed.

This new program of purchases followed the release for export of nearly all the latest type airplanes available here. These include Lockheed's P-38 two-motored interceptor and Hudson light bomber; Bell's Airacobra and Airacuda, single-engine and two-engine fighters respectively; Curtiss-Wright's P-40 single-engine pursuit and the improved version, the P-40D; two light Douglas and Martin attack bombers; and the big Consolidated four-engine bomber. Also released was the Grumman Skyrocket, a two-engine naval fighter for operation from carriers.

At the same time the Army deferred delivery on its orders for these types to give the Allies right of way. The arrangement is that when the Army does take delivery it will receive the latest models then available instead of the ships called for in its present contracts. The Allies will pay the cost of retooling and research for these hypothetical later models.

Before the new setup went into effect Allied orders since war started amounted to about 4,500 ships, costing something like $400,000,000. About 3,000 of these have already been delivered, according to Admiral Towers of the Navy Bureau of Aeronautics. This is rather higher than previous estimates. In any case it does not mean that 3,000 planes have been sent overseas. Actual shipments are still running around 200 per month, and the warehouses are filling up.

---

air Consolidated
air

Romeike & Curtice Ld.
Telephone
CENTRAL 2781
(2 Lines.)
35. Snoe Lane
LONDON.
E.C.4.

EXTRACT FROM
DAILY HERALD,
67 Long Acre, W.C.2

Date

NEWEST BOMBER TRIED OUT

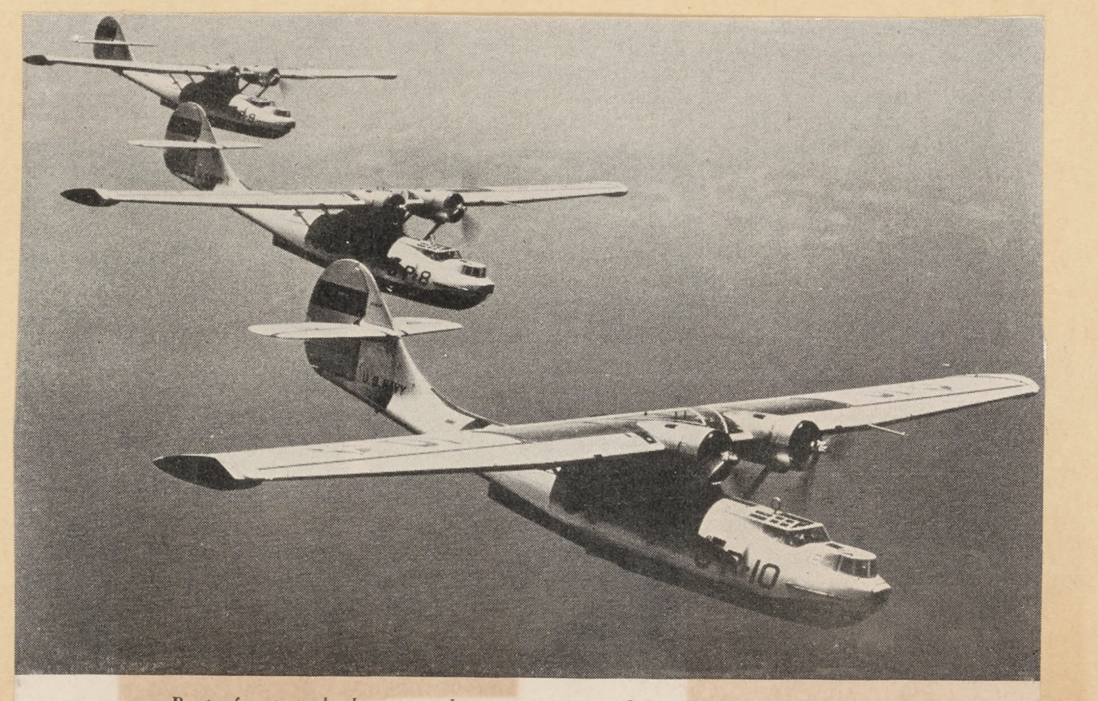
A BIG new United States bomber, first of a fleet which it is reported Britain is to get, has had its first tests at San Diego, California.

It is the Consolidated Aircraft Company's four-motored B24.

The B24, states an Associated Press cable from San Diego, carries four tons of bombs and a crew of nine.

Its top speed is about 300 miles an hour, its maximum flying distance 3,000 miles.

Officials of the company declined to say how many of the planes will be delivered to the R.A.F.

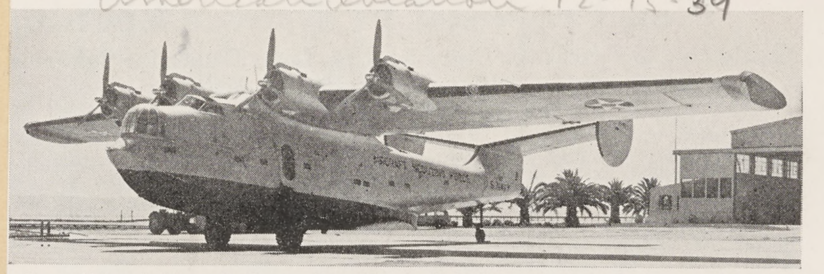


Part of a patrol plane squadron en route to Coco Solo from San Diego

Aero Digest Feb. 1940

XPB2Y-1 Becomes 1st Navy Flagplane

American Aviation 12-15-39



Consolidated Aircraft Corp., San Diego, Cal., has announced that on Aug. 24, 1939, the four-engine XPB2Y-1, shown above, became the first airplane to be officially recognized as a Flagplane of the U. S. Navy. On that date, Adm. A. B. Cook, commanding the aircraft squadron of the Aircraft Scouting Force, by dispatch, removed his flag from the *U.S.S. Memphis* at Seattle, and hoisted it aboard the XPB2Y-1, thereby establishing a precedent in naval history. The plane, by formal procedure, became the first Flagplane ever to fly for the Navy, since never before had such a flag been officially hoisted on an airplane. The plane had been flown to Seattle by Navy personnel commanded by Comdr. Andrew Crinkley. *(Official U. S. Navy photograph).*

NEW PLANE ORDERS FOR CONSOLIDATED

New York—Consolidated Aircraft Corp. announced "large additional orders" from French and British governments. Unfilled orders now approximate $70,000,000. Backlog prior to this business having been estimated at $49,000,000, indicated volume of new Allied orders is around $21,000,000.

CONSOLIDATED AIRCRAFT CORPORATION
SAN DIEGO, CALIFORNIA

MEMO Date 6/21/40

L. C. MOUNCE

To eng

the current backlog.

Consolidated Aircraft Corp.'s backlog of $71,000,000 is about evenly divided between United States military work and orders for the Anglo-French. Only very recently the Allies came into the market for the flying fortress type of planes, a field in which Consolidated has achieved considerable success. In past years, Consolidated has been a principal source of supply for United States Navy needs. In the light of estimates that the Navy Department will increase its strength to 10,000 planes at a cost of $1,000,000,000, Consolidated should figure prominently in this connection.

The Lockheed Aircraft

Pacific Coast Edition
Wall St. Journal
? 6/6/40 issue

The Main thing to remember when you need printing or lithographing is
MAIN 8175 **FRYE & SMITH**
850 THIRD AVENUE, SAN DIEGO, CALIFORNIA

6/25/40

Pacific Coast Edition
THE WALL STREET JOURNAL

Approximately half of the $71,000,000 backlog of Consolidated Aircraft is for the account of the United States Army and Navy. However, it is indicated that the backlog includes some substantial business for flying boats from the Allied commission. Vultee Aircraft, Inc.'s backlog of $14,500,000 includes $6,000,000 of work for the United States Army and $9,000,000 for account of the Swedish government, the latter backed by deposit of funds in this country.

These are a few of the stories which have appeared in the past few months in the BOSTON NEWS BUREAU concerning your company.

CONS. AIRCRAFT'S RECORD BACKLOG

With $70,000,000 Business On Its Books Full Operations Of Enlarged Capacity Assured For Next 2½ Or 3 Years

New York—Consolidated Aircraft Corp., with $70,000,000 of business now on its books—$15,000,000 more than its total sales in the previous 16 years of its existence— appears assured of full operations in its enlarged capacity during the next two and a half or three years.

With the recent addition of large orders from the Allies, Consolidated's backlog is believed to be 47% in foreign orders, with the remaining 53% accounted for largely by the United States Army and Navy. Based on past performance and taking into consideration the allowable profits under the Vinson Act, profits on the domestic military business should average about 12% of sales. On foreign deliveries net income of around 20% of sales is a reasonable expectation.

Officials of Condolidated say the company is in an excellent position to expand not only for additional foreign orders, but to meet the demands of the United States Government under President Roosevelt's recommendation of a productive capacity in this country of 50,000 planes.

Aircraft Expansion Those in the trade say the expense of expanding the productive capacity of the American aircraft industry will be lifted substantially if President Roosevelt's suggestion of large plants in the interior areas is accepted. Enlarging capacity by expansion of existing plants is the most economical method, they say, citing as an example the case of Consolidated Aircraft Corp. at San Diego, Calif., which increased its assembly floor space simply by paving its grounds. At present the "plane capacity" is about equally divided between the east and the west coasts.

The Middle West has a number of manufacturers of small commercial craft. Curtiss-Wright is building its new transports at St. Louis. The two big major engine producers are on the Atlantic seaboard,—Curtiss-Wright and United Aircraft. Allison, gearing up for large capacity within a few months, is in Indiana.

JUN 5 1940

Air) Consolidated air

Romeike & Curtice Ltd
Telephone CENTRAL 2781 (2 Lines.)
35. Shoe Lane. LONDON. E.C.4.

EXTRACT FROM
EDINBURGH EVENING NEWS,
18, Market Street, Edinburgh

4 NOV 1940

ORDER FOR AMERICAN LONG-RANGE BOMBERS

Great Britain, informed sources at San Diego, California, state, has placed a contract with the Consolidated Aircraft Corporation for seven of their new four-engined long-range bombers.

Air Consolidated Air

Romeike & Curtice Ltd
Telephone CENTRAL 2781 (2 Lines.)
35. Shoe Lane. LONDON. E.C.4.

EXTRACT FROM
NEWCASTLE JOURNAL
Clayton Street, Newcastle-on-Tyne

5 NOV 40

Long Range Bomber Order

Great Britain, informed sources state, has placed a contract with the Consolidated Aircraft Corporation for seven of their new 4-engined long range bombers, says a Press Association War Special message from San Diego, California, to-day.

Consolidated Air

Romeike & Curtice Ltd
Telephone CENTRAL 2781 (2 Lines.)
35. Shoe Lane. LONDON. E.C.4.

EXTRACT FROM
DAILY TELEGRAPH,
Fleet Street, E.C.4

5 NOV 1940

Date

NEW BOMBER ORDER

From Our Own Correspondent

SAN DIEGO, California, Monday.

It was learned here to-day that Britain has ordered seven new four-engined long-range bomber, from the Consolidated Aircraft Corporation.

The first machine of this type was tested on Saturday.

Consolidated air

Romeike & Curtice Ltd
Telephone CENTRAL 2781 (2 Lines.)
35. Shoe Lane LONDON. E.C.4.

EXTRACT FROM
Daily Mirror

Date 5.11.40

WE ORDER NEW U.S. BOMBERS

Great Britain has placed a contract with the Consolidated Aircraft Corporation of America for seven of their new four-engined long-range bombers.—Reuter.

Pacific Coast Edition
THE WALL STREET JOURNAL
DOW-JONES
ELECTRIC PAGE NEWS PRINTERS
623 CENTRAL BUILDING
LOS ANGELES
PHONE TRINITY 0881

Press Clipping
FROM
ALBERT F. COUDERC

Pacific Coast Edition
ALL STREET JO
N FRANCISCO — THURSDAY, JUNE 20, 1940 — LOS ANGELE

lay Rush Work on Secor

Aircraft Industry's Position

Coast Plants Preparing for Huge Task Of Supplying America's Defense Needs

This is the first of a series of articles on the aircraft manufacturing industry, its condition, resources and other vital factors underlying its confidence that it can by its own efforts meet demands of our national rearmament. From the men who have played an important role in bringing the industry to its present stature, and from facts gathered from independent sources, the writer sought and obtained views and facts on which American aircraft manufacturers base the confident prediction that President Roosevelt's demand for an eventual production of 50,000 aircraft a year can and will be met.

During the course of the survey, the writer talked with Donald W. Douglas, president of Douglas Aircraft Co., Inc.; Robert E. Gross, president of Lockheed Aircraft Corp.; Richard W. Millar, president of Vultee Aircraft, Inc., and representatives of other units on the West Coast from whose production lines roll more than half of all the aircraft produced in the United States, and from whose drafting boards and research laboratories have come the fighting ships conceded to be second to none in the world.

By Louis F. Holtzman

When President Roosevelt a month ago warned the nation it must rearm itself to "make our defense invulnerable, our security absolute," by gearing America's productive capacity up to 50,000 planes a year, the aircraft industry unhesitatingly said: "We can do it."

Much water has gone under the bridge since that time. Powerful nations have disintegrated, defenses have crumbled and democratic institutions in war-torn Europe have given way before the most powerful war machine in the history of civilization.

In these moving and tragic events, the airplane has played a major role. In the light of its performance, its power of destruction and of defense remain unchallenged. President Roosevelt's demand for immediately increased aircraft production, and the industry's confident assurances that this can be accomplished remain the nation's number one defense problem.

Smooth Acceleration of Output Seen

To get, if possible, an answer to the problem or at least obtain some outline of how the industry stands today after a month of intensive study, preparation and survey, the writer asked the managements of some of America's largest aircraft factories for the facts. Here is the picture as of today, a view produced by a survey of the Pacific Coast segment of the industry which now has more than 50% of the nation's aircraft productive capacity, and is rapidly adding to the whole.

Within the last four weeks the aircraft plants on the Pacific Coast have increased their personnel by 6,000. In addition to the five major plants located in the Los Angeles area, the figures include those of Consolidated Aircraft Corp. at San Diego and Boeing Aircraft Co. at Seattle. Moreover, additions to personnel have been going on steadily and at approximately this pace since last fall. The progress attained within the last month serves to gauge what has been accomplished so far.

Increase in Personnel

Within the last four weeks, additions to personnel by the various companies are as follows: Douglas Aircraft, 1,000; Lockheed, 1,300; Consolidated, 1,000; North American Aviation, 500; Vultee, 1,000; Boeing, 1,000; Northrop Aviation, Inc., 200.

These plants have initiated within recent weeks or have under consideration immediate expansion of plant facilities totaling approximately 2,000,000 square feet, as against the present national productive capacity under roof of approximately 7,000,000 square feet. Large additions to working capacity have been announced or are contemplated by Douglas, Lockheed, Boeing, Consolidated, Vultee, North American, Northrop and Vega Airplane.

By efficient coordination, the manufacturers interviewed say, America's defense problem in the air can be solved without interference with industrial activities in the automotive, ordnance and other industrial lines which make up the sum total of a nation's defense program. In other words, they say, the rapid construction of tanks, machine guns, anti-aircraft guns, ammunition and the hundred and one other items in which skilled labor and machine tools are required can and must be allowed to proceed without interruption while airplanes are being built.

These companies within the last few weeks have completed studies and have accelerated

Continued on Fifth Page, Column 5

x1.50 So Cal Ed c 22
h .20 Radio Cp Am 10
Packard Mtr 25

ince the first of the year,
increased 150% to 3,300
icklog, including $3,000,000
y work, is $14,750,000. The
g on a single turn seven-

viation's Inglewood, Calif.,
of $85,000,000 and employ-
erating only a two-shift
week. Additional person-
ilities would probably en-
ent output if necessary.
on to the ranks of aircraft
Aircraft, Inc., has had its
rne, Calif., operating since
ction started shortly there-
act for tail assemblies for
. The company is employ-
nd plans soon to get into
a military order for the
ent involving initially 24
med navy bombers. Pres-
nd a personnel of 4,000, it
50 single-engined aircraft

nia plants could step up
vity at least 20% without
expansions. With these
h a large backlog of few
can set a much higher
more, or even greater.
modern plants have not
apacity, what factors not
ry's making have combined
nd how the utmost of pro-
ants can be obtained will
uent articles of this series.
e Continued)

---

e to Coco Solo from San Diego

Feb. 1940

AVIATION MAN

Allies Take Option on 8000 U. S. Planes More Than 4500 Have Been Delivered

Washington (Aviation Bureau)—Reason for all the confusion about what's in the Allied airplane orders is that the estimators, quite literally, don't know what they're talking about. Actually the order is something of a fiction; no contracts have yet been signed. What has happened is that preliminary agreements have been made, but just about as binding commitments have been made on a great many more airplanes. When Chairman Purvis of the Allied Purchasing Commission announces figures he could just as well use a larger or a smaller amount; more dollar figures will be announced at whenever seems to the Commission to be the most politically propitious moment.

Options, of varying degrees of firmness, have been taken on 5,200 bombers and 2,800 pursuit ships for delivery in the next eighteen months or so. The difference between the two types reflects the Allied weakness in long-range equipment which was so graphically revealed in Norway. Engines for the airplanes are being bought separately because the commission is having to pay the cost of the plants to build its orders. About 5,000 engines (3,600 of them Allisons) have been definitely lined up, and more are implicit in the plant construction agreements being worked out with Allison, Pratt & Whitney, and Curtiss-Wright.

Of the medium bombers, it is known that Lockheed will build about 700, and 4,250 will be divided between Martin and Douglas, each producing at a rate of about 150 per month. Martin will fill its entire order, but Douglas will probably subcontract some to Boeing and Consolidated.

Bulk of the pursuits will be furnished by Curtiss-Wright, which is to build 1,500 P-40s; this order will be switched over to the more advanced P-40D as soon as this model gets into production. About 800 P-38s will be bought, but Lockheed, busy with bomber manufacture, will probably subcontract this entire order to its Vega subsidiary and to Vultee. Bell will furnish 200 Airacobras (P-39), and where the remaining 300 will come from is uncertain; perhaps Republic or Vultee or possibly Bell.

Orders are about ready to be signed (this is roughly equivalent to the announced $200,000,000) on the Curtiss and Bell ships, on 250 of the Douglas bombers, and on the engines. Contracts will incorporate very favorable cancellation clauses, providing not only for all the manufacturer's out-of-pocket costs, including commitments to material suppliers, but also for the entire profit which the manufacturer would have made if the order had been completed.

This new program of purchases followed the release for export of nearly all the latest type airplanes available here. These include Lockheed's P-38 two-motored interceptor and Hudson light bomber; Bell's Airacobra and Airacuda, single-engine and two-engine fighters respectively; Curtiss-Wright's P-40 single-engine pursuit and the improved version, the P-40D; two light Douglas and Martin attack bombers; and the big Consolidated four-engine bomber. Also released was the Grumman Skyrocket, a two-engine naval fighter for operation from carriers.

At the same time the Army deferred delivery on its orders for these types to give the Allies right of way. The arrangement is that when the Army does take delivery it will receive the latest models then available instead of the ships called for in its present contracts. The Allies will pay the cost of retooling and research for these hypothetical later models.

Before the new setup went into effect Allied orders since war started amounted to about 4,500 ships, costing something like $400,000,000. About 3,000 of these have already been delivered, according to Admiral Towers of the Navy Bureau of Aeronautics. This is rather higher than previous estimates. In any case it does not mean that 3,000 planes have been sent overseas. Actual shipments are still running around 200 per month, and the warehouses are filling up.

---

air Consolidated
air

Romeike & Curtice Ltd.
Telephone
CENTRAL 2781
(2 Lines.)
R&C
35. Snoe Lane
LONDON.
E.C.4.

EXTRACT FROM
DAILY HERALD,
67 Long Acre, W.C.2
Date E-4

NEWEST BOMBER TRIED OUT

A BIG new United States bomber, first of a fleet which it is reported Britain is to get, has had its first tests at San Diego, California.

It is the Consolidated Aircraft Company's four-motored B24.

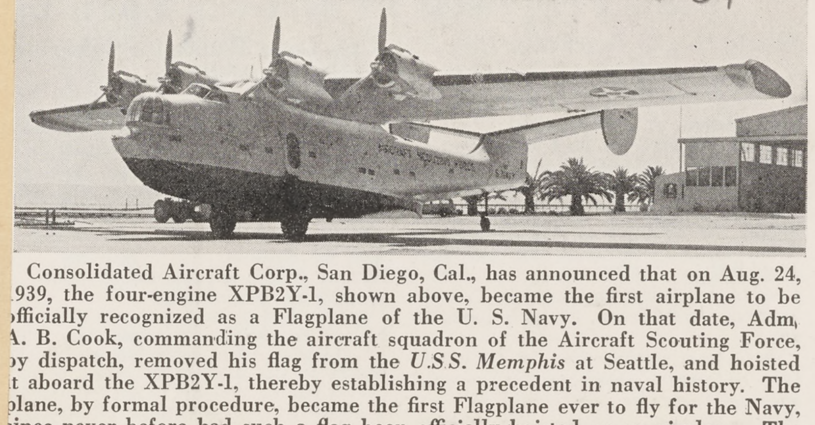
The B24, states an Associated Press cable from San Diego, carries four tons of bombs and a crew of nine.

Its top speed is about 300 miles an hour, its maximum flying distance 3,000 miles.

Officials of the company declined to say how many of the planes will be delivered to the R.A.F.

XPB2Y-1 Becomes 1st Navy Flagplane

American Aviation 12-15-39



Consolidated Aircraft Corp., San Diego, Cal., has announced that on Aug. 24, 1939, the four-engine XPB2Y-1, shown above, became the first airplane to be officially recognized as a Flagplane of the U. S. Navy. On that date, Adm. A. B. Cook, commanding the aircraft squadron of the Aircraft Scouting Force, by dispatch, removed his flag from the *U.S.S. Memphis* at Seattle, and hoisted it aboard the XPB2Y-1, thereby establishing a precedent in naval history. The plane, by formal procedure, became the first Flagplane ever to fly for the Navy, since never before had such a flag been officially hoisted on an airplane. The plane had been flown to Seattle by Navy personnel commanded by Comdr. Andrew Crinkley. *(Official U. S. Navy photograph).*

NEW PLANE ORDERS FOR CONSOLIDATED

New York—Consolidated Aircraft Corp. announced "large additional orders" from French and British governments. Unfilled orders now approximate $70,000,000. Backlog prior to this business having been estimated at $49,000,000, indicated volume of new Allied orders is around $21,000,000.

CONSOLIDATED AIRCRAFT CORPORATION
SAN DIEGO, CALIFORNIA

MEMO

Date 6/21/40

L. C. MOUNCE

To eng

6/21/40

the current backlog.

Consolidated Aircraft Corp.'s backlog of $71,000,000 is about evenly divided between United States military work and orders for the Anglo-French. Only very recently the Allies came into the market for the flying fortress type of planes, a field in which Consolidated has achieved considerable success. In past years, Consolidated has been a principal source of supply for United States Navy needs. In the light of estimates that the Navy Department will increase its strength to 10,000 planes at a cost of $1,000,000,000, Consolidated should figure prominently in this connection.

The Lockheed Aircraft

Pacific Coast Edition
Wall St. Journal
? 6/6/40 issue

The Main thing to remember when you need printing or lithographing is
MAIN 8175 **FRYE & SMITH**
850 THIRD AVENUE, SAN DIEGO, CALIFORNIA

6/25/40

Pacific Coast Edition
THE WALL STREET JOURNAL

Approximately half of the $71,000,000 backlog of Consolidated Aircraft is for the account of the United States Army and Navy. However, it is indicated that the backlog includes some substantial business for flying boats from the Allied commission. Vultee Aircraft, Inc.'s backlog of $14,500,000 includes $6,000,000 of work for the United States Army and $9,000,000 for account of the Swedish government, the latter backed by deposit of funds in this country.

These are a few of the stories which have appeared in the past few months in the BOSTON NEWS BUREAU concerning your company.

CONS. AIRCRAFT'S RECORD BACKLOG

With $70,000,000 Business On Its Books Full Operations Of Enlarged Capacity Assured For Next 2½ Or 3 Years

New York—Consolidated Aircraft Corp., with $70,000,000 of business now on its books—$15,000,000 more than its total sales in the previous 16 years of its existence— appears assured of full operations in its enlarged capacity during the next two and a half or three years.

With the recent addition of large orders from the Allies, Consolidated's backlog is believed to be 47% in foreign orders, with the remaining 53% accounted for largely by the United States Army and Navy. Based on past performance and taking into consideration the allowable profits under the Vinson Act, profits on the domestic military business should average about 12% of sales. On foreign deliveries net income of around 20% of sales is a reasonable expectation.

Officials of Condolidated say the company is in an excellent position to expand not only for additional foreign orders, but to meet the demands of the United States Government under President Roosevelt's recommendation of a productive capacity in this country of 50,000 planes.

Aircraft Expansion Those in the trade say the expense of expanding the productive capacity of the American aircraft industry will be lifted substantially if President Roosevelt's suggestion of large plants in the interior areas is accepted. Enlarging capacity by expansion of existing plants is the most economical method, they say, citing as an example the case of Consolidated Aircraft Corp. at San Diego, Calif., which increased its assembly floor space simply by paving its grounds. At present the "plane capacity" is about equally divided between the east and the west coasts.

The Middle West has a number of manufacturers of small commercial craft. Curtiss-Wright is building its new transports at St. Louis. The two big major engine producers are on the Atlantic seaboard,—Curtiss-Wright and United Aircraft. Allison, gearing up for large capacity within a few months, is in Indiana.

JUN 5 1940

Air Consolidated Air

Romeike & Curtice Ltd
Telephone CENTRAL 2781 (2 Lines.)
35. Shoe Lane. LONDON. E.C.4.

EXTRACT FROM

EDINBURGH EVENING NEWS,
18, Market Street, Edinburgh

4 NOV 1940

ORDER FOR AMERICAN LONG-RANGE BOMBERS

Great Britain, informed sources at San Diego, California, state, has placed a contract with the Consolidated Aircraft Corporation for seven of their new four-engined long-range bombers.

Air Consolidated Air

Romeike & Curtice Ltd
Telephone CENTRAL 2781 (2 Lines.)
35. Shoe Lane. LONDON. E.C.4.

EXTRACT FROM 5 NOV 1940

NEWCASTLE JOURNAL
Clayton Street, Newcastle-on-Tyne

Long Range Bomber Order

Great Britain, informed sources state, has placed a contract with the Consolidated Aircraft Corporation for seven of their new 4-engined long range bombers, says a Press Association War Special message from San Diego, California, to-day.

Consolidated Air

Romeike & Curtice Ltd
Telephone CENTRAL 2781 (2 Lines.)
35. Shoe Lane. LONDON. E.C.4.

EXTRACT FROM

DAILY TELEGRAPH,
Fleet Street, E.C.4

5 NOV 1940

Date

NEW BOMBER ORDER

From Our Own Correspondent

SAN DIEGO, California, Monday.

It was learned here to-day that Britain has ordered seven new four-engined long-range bomber, from the Consolidated Aircraft Corporation.

The first machine of this type was tested on Saturday.

Consolidated Air

Romeike & Curtice Ltd
Telephone CENTRAL 2781 (2 Lines.)
35. Shoe Lane. LONDON. E.C.4.

EXTRACT FROM

Daily Mirror

Date 5.11.40

WE ORDER NEW U.S. BOMBERS

Great Britain has placed a contract with the Consolidated Aircraft Corporation of America for seven of their new four-engined long-range bombers. —Reuter.

s Clipping
FROM
ERT F. COUDERC

E 20, 1940 5

Aircraft

Continued from First Page

engineering on types of military craft which the Government is expected to include in its rearmament program to a point where in many instances only the go-ahead signal is necessary to start augmented large-scale production without delay.

On the basis of the surveys and information obtained from eastern manufacturers, the men at the helms of the large aircraft plants on the Pacific Coast feel confident that they can begin promptly and without much difficulty to fill all demands for airplanes immediately needed by the Government, and at the same time begin to increase their productive facilities as rapidly as additional orders for 1942 and 1943 are placed by the United States Army and Navy.

Plants Not Now at Capacity

In all these surveys and discussions, three things stand out unmistakably:

1. Production of military aircraft in the United States will depend upon the ability of the engine manufacturers to build the necessary power plants.

2. Construction of military aircraft within the next year or two undoubtedly will be in proportion to the Government's ability to absorb into its fighting services this new production. In turn, this is dependent upon the success of the Government's military training program to produce qualified flyers ready to operate these new fighting planes in any large amount.

3. The speed with which President Roosevelt's National Defense Board succeeds in eliminating material and parts bottlenecks will set the tempo of the aircraft industry's acceleration to the goal of 50,000 airplanes a year.

Contrary to popular notion, and with England, France and other countries in desperate need of aircraft, the producing plants have not been working at capacity. They have been awaiting the word from the United States Government, or even from the Allied warring governments, to go ahead at an increased pace if and when they could.

For instance, Douglas Aircraft, operating the largest organization in this country, is one of the few operating a three-shift basis six days a week. Even so, it is at only 80% of capacity.

Present Capacity Not in Full Force

The company's employment roster at the two plants, Santa Monica and El Segundo, Calif., exceeds the 18,000 mark, or roughly 25% of the total of skilled labor in the industry. Douglas' backlog of work is now $140,000,000, including some $23,000,000 of commercial work. Plant capacity without additional physical expansion could probably be extended to 25,000 men, if economy were no consideration.

The Lockheed Aircraft Corp. plants at Burbank, Calif., with 9,000 employes, are operating on one and one-half eight-hour shifts five days a week with a backlog of unfinished work of close to $120,000,000. Establishment of a three-turn eight-hour shift basis seven days weekly could utilize probably 15,000 employes and treble output.

Consolidated Aircraft Corp. at San Diego, with a backlog of $71,300,000 and an employment of 6,650, is operating at 80% of present productive and personnel capacity.

Vultee Aircraft, Inc., plant at Downey, Calif., only last week announced it would step up immediately to full present capacity on production of military aircraft. Since the first of the year, employment has been increased 150% to 3,300 employes. Present backlog, including $3,000,000 of United States Army work, is $14,750,000. The plant is now operating on a single turn seven-day week basis.

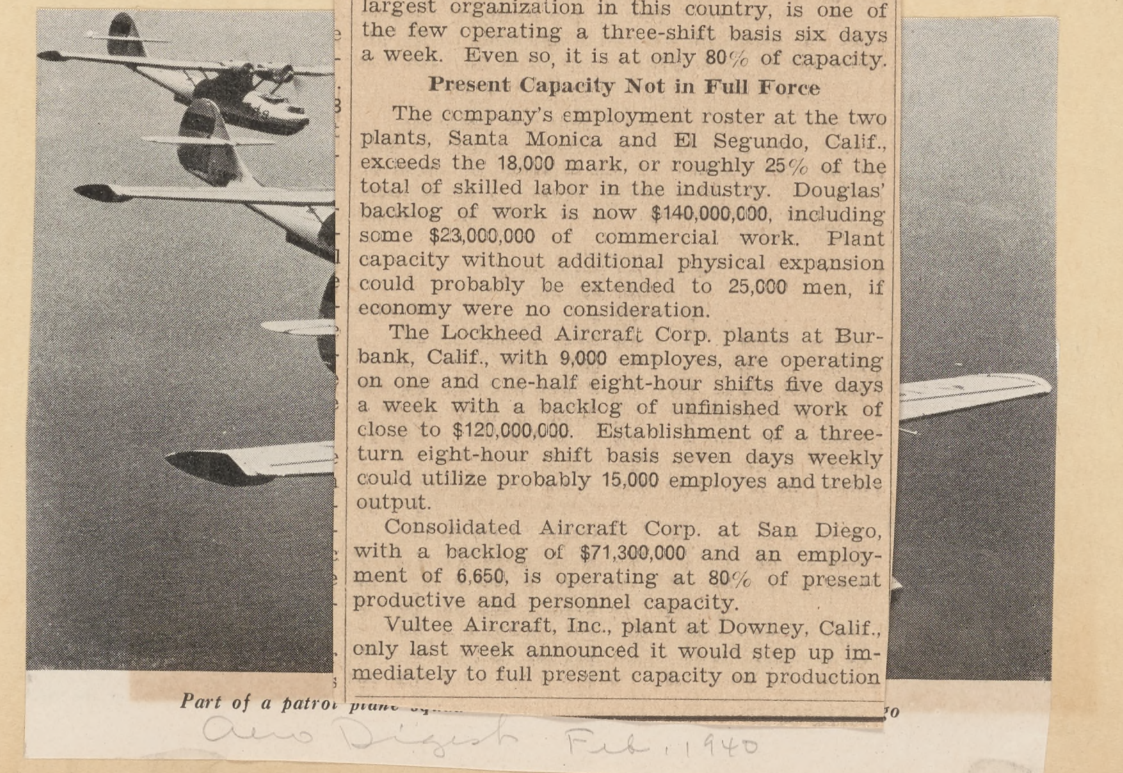
North American Aviation's Inglewood, Calif., plant, with a backlog of $85,000,000 and employing 6,000 men, is operating only a two-shift daily basis six days a week. Additional personnel with present facilities would probably enable doubling of present output if necessary.

Most recent addition to the ranks of aircraft producers, Northrop Aircraft, Inc., has had its new plant at Hawthorne, Calif., operating since last February. Production started shortly thereafter on a sub-contract for tail assemblies for Consolidated Aircraft. The company is employing 700 at present and plans soon to get into actual production on a military order for the Norwegian government involving initially 24 high-speed heavily armed navy bombers. Present plant facilities and a personnel of 4,000, it is claimed, will build 50 single-engined aircraft monthly.

Doubtless, California plants could step up their production activity at least 20% without recourse to the new expansions. With these in full force and with a large backlog of few types, the industry can set a much higher record, probably 50% more, or even greater.

Why these huge, modern plants have not been operating at capacity, what factors not of the aircraft industry's making have combined to hold them back, and how the utmost of production at these plants can be obtained will be treated in subsequent articles of this series.

(To Be Continued)



Part of a patrol plane

Aero Digest Feb. 1940

AVIATION MAN

Allies Take Option on 8000 U. S. Planes More Than 4500 Have Been Delivered

Washington (AVIATION BUREAU)—Reason for all the confusion about what's in the Allied airplane orders is that the estimators, quite literally, don't know what they're talking about. Actually the order is something of a fiction; no contracts have yet been signed. What has happened is that preliminary agreements have been made, but just about as binding commitments have been made on a great many more airplanes. When Chairman Purvis of the Allied Purchasing Commission announces figures he could just as well use a larger or a smaller amount; more dollar figures will be announced at whenever seems to the Commission to be the most politically propitious moment.

Options, of varying degrees of firmness, have been taken on 5,200 bombers and 2,800 pursuit ships for delivery in the next eighteen months or so. The difference between the two types reflects the Allied weakness in long-range equipment which was so graphically revealed in Norway. Engines for the airplanes are being bought separately because the commission is having to pay the cost of the plants to build its orders. About 5,000 engines (3,600 of them Allisons) have been definitely lined up, and more are implicit in the plant construction agreements being worked out with Allison, Pratt & Whitney, and Curtiss-Wright.

Of the medium bombers, it is known that Lockheed will build about 700, and 4,250 will be divided between Martin and Douglas, each producing at a rate of about 150 per month. Martin will fill its entire order, but Douglas will probably subcontract some to Boeing and Consolidated.

Bulk of the pursuits will be furnished by Curtiss-Wright, which is to build 1,500 P-40s; this order will be switched over to the more advanced P-40D as soon as this model gets into production. About 800 P-38s will be bought, but Lockheed, busy with bomber manufacture, will probably subcontract this entire order to its Vega subsidiary and to Vultee. Bell will furnish 200 Airacobras (P-39), and where the remaining 300 will come from is uncertain; perhaps Republic or Vultee or possibly Bell.

Orders are about ready to be signed (this is roughly equivalent to the announced $200,000,000) on the Curtiss and Bell ships, on 250 of the Douglas bombers, and on the engines. Contracts will incorporate very favorable cancellation clauses, providing not only for all the manufacturer's out-of-pocket costs, including commitments to material suppliers, but also for the entire profit which the manufacturer would have made if the order had been completed.

This new program of purchases followed the release for export of nearly all the latest type airplanes available here. These include Lockheed's P-38 two-motored interceptor and Hudson light bomber; Bell's Airacobra and Airacuda, single-engine and two-engine fighters respectively; Curtiss-Wright's P-40 single-engine pursuit and the improved version, the P-40D; two light Douglas and Martin attack bombers; and the big Consolidated four-engine bomber. Also released was the Grumman Skyrocket, a two-engine naval fighter for operation from carriers.

At the same time the Army deferred delivery on its orders for these types to give the Allies right of way. The arrangement is that when the Army does take delivery it will receive the latest models then available instead of the ships called for in its present contracts. The Allies will pay the cost of retooling and research for these hypothetical later models.

Before the new setup went into effect Allied orders since war started amounted to about 4,500 ships, costing something like $400,000,000. About 3,000 of these have already been delivered, according to Admiral Towers of the Navy Bureau of Aeronautics. This is rather higher than previous estimates. In any case it does not mean that 3,000 planes have been sent overseas. Actual shipments are still running around 200 per month, and the warehouses are filling up.

---

an Consolidated

Romeike & Curtice Ltd.

Telephone
CENTRAL 2781
(2 Lines.)

R&C

35. Snoe Lane
LONDON.
E.C.4.

EXTRACT FROM
DAILY HERALD,
67 Long Acre, W.C.2

Date E-4

NEWEST BOMBER TRIED OUT

A BIG new United States bomber, first of a fleet which it is reported Britain is to get, has had its first tests at San Diego, California.

It is the Consolidated Aircraft Company's four-motored B24.

The B24, states an Associated Press cable from San Diego, carries four tons of bombs and a crew of nine.

Its top speed is about 300 miles an hour, its maximum flying distance 3,000 miles.

Officials of the company declined to say how many of the planes will be delivered to the R.A.F.

XPB2Y-1 Becomes 1st Navy Flagplane

American Aviation 12-15-39

Consolidated Aircraft Corp., San Diego, Cal., has announced that on Aug. 24, 1939, the four-engine XPB2Y-1, shown above, became the first airplane to be officially recognized as a Flagplane of the U. S. Navy. On that date, Adm. A. B. Cook, commanding the aircraft squadron of the Aircraft Scouting Force, by dispatch, removed his flag from the *U.S.S. Memphis* at Seattle, and hoisted it aboard the XPB2Y-1, thereby establishing a precedent in naval history. The plane, by formal procedure, became the first Flagplane ever to fly for the Navy, since never before had such a flag been officially hoisted on an airplane. The plane had been flown to Seattle by Navy personnel commanded by Comdr. Andrew Crinkley. *(Official U. S. Navy photograph).*

NEW PLANE ORDERS FOR CONSOLIDATED

New York—Consolidated Aircraft Corp. announced "large additional orders" from French and British governments. Unfilled orders now approximate $70,000,000. Backlog prior to this business having been estimated at $49,000,000, indicated volume of new Allied orders is around $21,000,000.

It Over

BY THOMAS F. WOODLOCK

All historians agree—at least more or less—that the ideology of the French Revolution was furnished by the intelligentzia of the preceding two generations, and the occasion by the collapse of political authority represented by the monarchy. This ideology rested mainly upon a concept of man essentially good, an imaginary being, a sort of noble savage but "adorned with all the graces and all the subtleties of millenary civilizations" (Pierre Gaxotte, *La Revolution Francaise*). "For 40 years France was full of these quite Parisian Iroquois, these highly civilized Persians, these Ingenus without ingenuousness. With their ironical wise-cracks, their contemptuous comparisons, their simulated surprises, they succeeded in troubling people's minds, in throwing doubt and disquiet into the stronger minds so as to represent as violence or usurpation the most ordinary rights, and as disturbing and illegitimate innovations, institutions which for centuries people had regarded it as an honor to respect and to serve." (Op. cit.)

Two foreign currents fed this stream of thought, one German and the other English. The German furnished the emotional element, as the poetry and literature—as distinguished from the philosophy—flowed from beyond the Rhine through Grimm and Huber. From England, through Prevost and Voltaire, came the more intellectual concept, that of a people made up of "savants and thinkers, worthy to give the world models of civism and virtue." (Op. cit.)

Gaxotte quotes Taine on what we might call the "Park Avenue Pinks" of the day as follows: "One sits at table surrounded by the refinements of luxury, among women smiling and well groomed, and men cultivated and charming, a choice company in which intelligence is quick and its give-and-take accurate. By the second course verve is exploding, sallies are crackling, spirits are flaming and sparkling. At dessert it is impossible to hold back the witticisms on the most serious matters. With the coffee come the questions: Is the soul immortal, and does

---

Following are the Dow Jones averages of Coast stocks, with total sales of each group,

80 Industrials

Date	Open	11	12	1	2
June 19	123.32	123.04	123.20	123.46	123.76
June 18	123.61	124.51	124.28	123.79	123.66
June 17	121.98	119.90	120.68	122.71	122.88
June 15	122.57	123.69	....	....	....
June 14	119.23	120.70	121.45	121.46	121.53
June 13	121.87	121.11	120.92	121.11	119.95
June 12	117.50	118.89	121.05	121.51	121.47
June 11	113.54	113.69	113.70	114.17	114.86
June 10	113.89	113.86	111.29	111.57	112.74

20 Railroads

Date	Open	11	12	1	2
June 19	25.50	25.52	25.53	25.73	25.75
June 18	25.48	25.84	25.74	25.61	25.66
June 17	24.68	24.28	24.47	24.90	24.98
June 15	25.00	25.00	....	....	....
June 14	24.25	24.53	24.76	24.78	24.76
June 13	25.00	24.96	24.73	24.96	24.54
June 12	24.33	24.36	24.91	24.90	24.88
June 11	23.41	22.97	23.38	23.33	23.52
June 10	23.13	23.28	22.53	22.68	22.90

15 Utilities

Date	Open	11	12	1	2
June 19	20.86	20.75	20.83	20.98	20.99
June 18	20.72	20.96	21.00	20.90	20.87
June 17	19.85	19.80	19.80	20.51	20.56
June 15	20.00	20.12	....	....	....
June 14	19.14	19.31	19.60	19.65	19.63
June 13	19.47	19.34	19.36	19.34	19.25
June 12	18.77	18.93	19.25	19.25	19.30
June 11	18.14	18.29	18.28	18.29	18.48
June 10	18.34	18.32	18.02	17.99	18.05

65 Stocks Arithmetical Average

Date	Open	11	12	1	2
June 19	41.31	41.22	41.28	41.44	41.51
June 18	41.33	41.71	41.64	41.46	41.44
June 17	40.51	39.89	40.13	40.90	40.98
June 15	40.78	41.07	....	....	....
June 14	39.57	40.04	40.36	40.37	40.38
June 13	40.49	40.28	40.17	40.28	39.85
June 12	39.11	39.48	40.23	40.33	40.33
June 11	37.76	37.70	37.82	37.92	38.18
June 10	37.80	37.84	36.95	37.05	37.40

Pacific Coast Average

	Close	Adv.	Dec.	Shares sold
June 19	26.92	.02	..	1,715
June 18	26.90	.28	..	3,427
June 17	26.62	.10	..	2,380
June 15	26.52	.07	..	1,085
June 14	26.45	.35	..	3,317
June 13	26.10	.08	..	4,131
June 12	26.02	.40	..	5,007
June 11	25.62	.13	..	2,048
June 10	25.49	..	.53	6,092

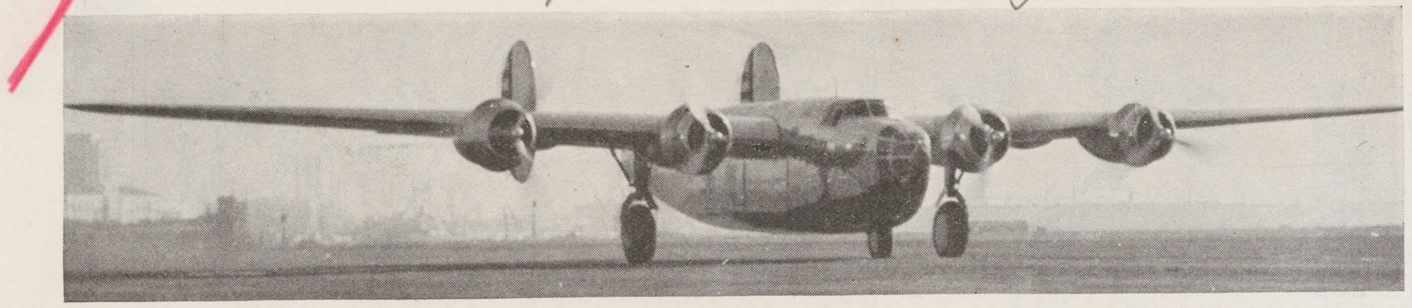
Coast Transactions

SAN FRANCISCO STOCK SALES AND VALUE

	Wednesday Sales	Wednesday Mkt. value	Tuesday Sales	Tuesday Mkt. value
Stock Exchange	13,405	$161,590	14,287	$204,640

LOS ANGELES STOCK SALES AND VALUE

Model Airplane News · June 1940

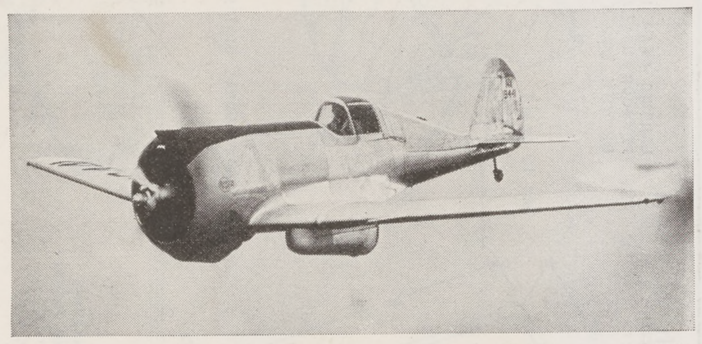


The giant Consolidated bomber landing after a test flight: Capable of 400 m.p.h. fully loaded

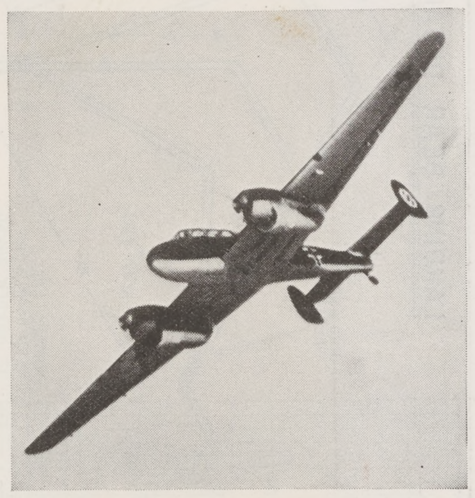
FRONTIERS

Highlights of the Latest Planes Produced For Use Here and Abroad

By ROBERT C. MORRISON



The Curtiss CW-21 climbs over 5,000 feet per minute with 1,000 hp.

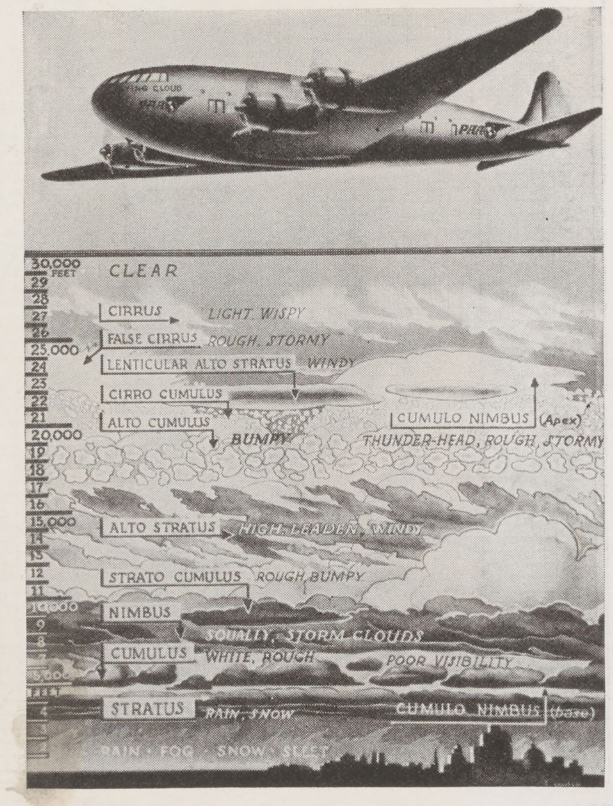


The Messerschmitt 110, latest German pursuit plane designed to protect bombers

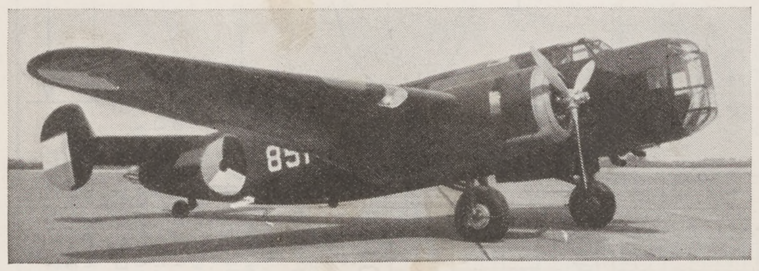
OUR recipe this month is mainly on how to prepare a Hitler stew a la American style . . . a dash of Curtiss and a Douglas here and there. It appears as though it will be Lockheeds that will really get the kettle boiling over there, however, as we hear rumor to the effect that it is not all peaceful twin-engined reconnaisance planes that will wend their way to England from the Lockheed plant. On the contrary, though Lockheed does not admit it, rumor says that they are working on a four-engined bomber for Great Britain . . . a version of the Lockheed Model 44 now abuilding for Pan-American Airways. It is a "small" four-engined airplane with plenty of that all-important speed which is what Great Britain needs in the way of a bombing plane for long expeditions into enemy territory. $1,700,000 now bristle on Lockheed's books as one of the sales for the "largest Lockheed ever built." Another order comes from Pan-American Airways totaling about $710,000 for three transports of similar design with an option on three additional planes that may be purchased at a later date. Though details are lacking on any four-engined bomber at this time, here is the dope on the Model 44 as sold to Pan-American.

Single row Wright GR-1820 Cyclones are intended to power this airplane. Named the "Excalibur" the plane will top 300 m.p.h. with a cruising speed of 262 m.p.h. with 30 passengers, a ton of mail and crew of six on board. Turn the payload into bombs and give the crew machine guns and you have a good eye-opener for any early morning bombing raid. Weighing 40,000 pounds the airplane has a cruising range of 1500 miles . . . and if one of Hitler's cronies should blow one of the engines off, the ship will still be able to fly at around 200 m.p.h. in a hurry-scurry trip back to the home base. But Pan-American has no feud with Hitler as yet; it will be the Andes that will be bothersome in her case. The Model 44 has its best cruising speed at 19,000 feet, and Pan-American will have most troubles in flying the ships at high altitudes and also of convincing the sun-worn natives that her planes are not comets from heaven,

(Continued on page 48)

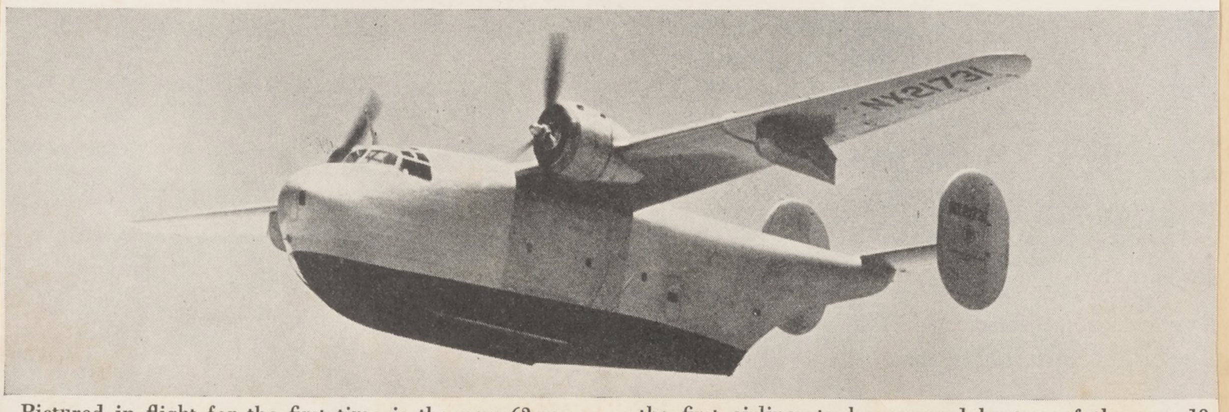


The new Pan-American Boeing Strato-Clipper, Flying Cloud; the first supercharged, sealed-cabin air transport. It will operate in the stratosphere above turbulent weather. The chart shows the various types of clouds and the resulting weather at all levels up to the "weather free" area above 30,000 feet

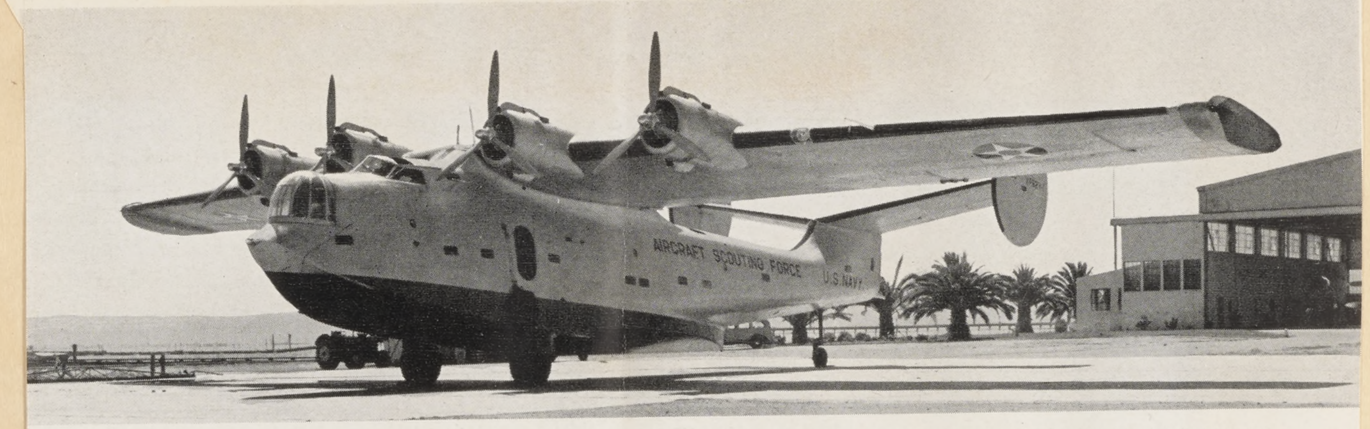


One of Holland's latest long-distance bombers; the Fokker T-5, driven by two 925 hp. engines at 257 m.p.h. (Thorell)

Consolidated 31 In Air For the First Time



Pictured in flight for the first time is the new 62-passenger, long-range flying boat of Consolidated Aircraft Corp., San Diego, Cal. Known as model 31, the boat is the first airliner to be powered by two of the new 18-cylinder, 2,000-hp. Wright Duplex-Cyclone engines. First flight was made May 5 on the Pacific coast.



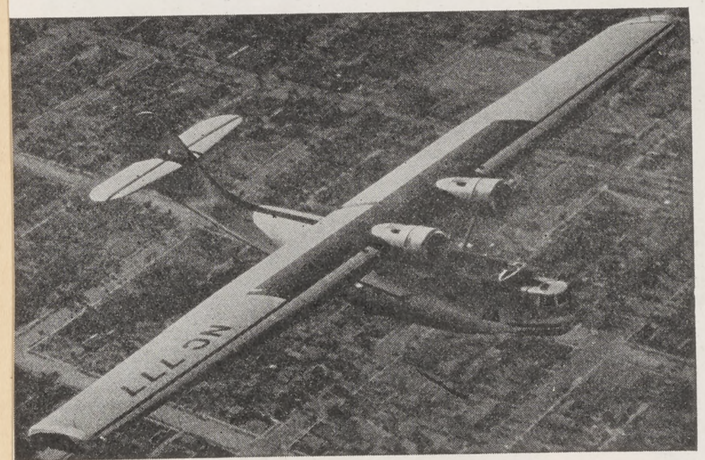
FIRST AIRPLANE TO BE OFFICIALLY RECOGNIZED AS A FLAGPLANE OF THE UNITED STATES NAVY

Consolidated XPB2Y Flying Boat Which on August 24 Carried the Flag of Admiral A. B. Cook, Commanding Aircraft Squadron of the Scouting Forces, thereby Establishing a Precedent in Naval History. Never Before has Such a Flag been Hoisted Officially on an Airplane. This Plane had been Flown to Seattle, Washington, by Navy Personnel Commanded by Comdr. Andrew Crinkley

---

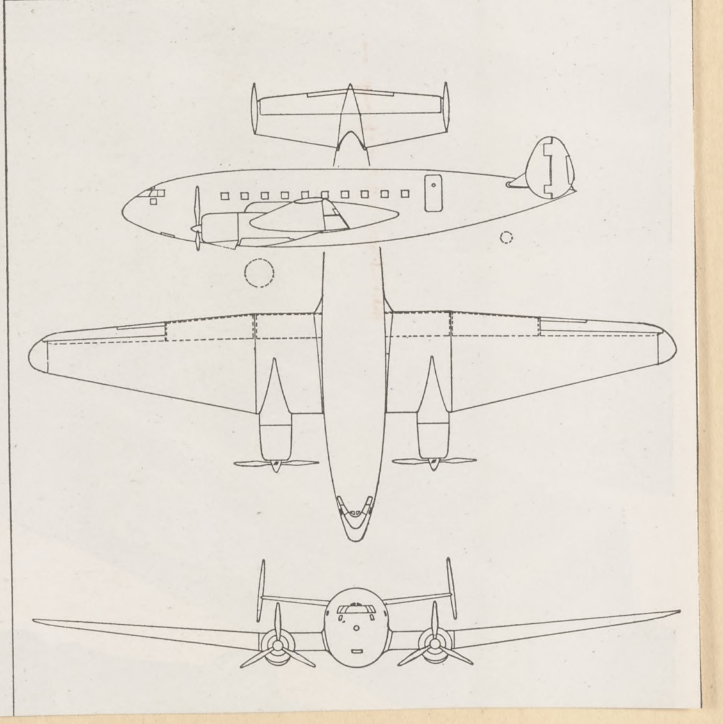
april '39

Model 28 (2 Wasps, 1800 h.p.)

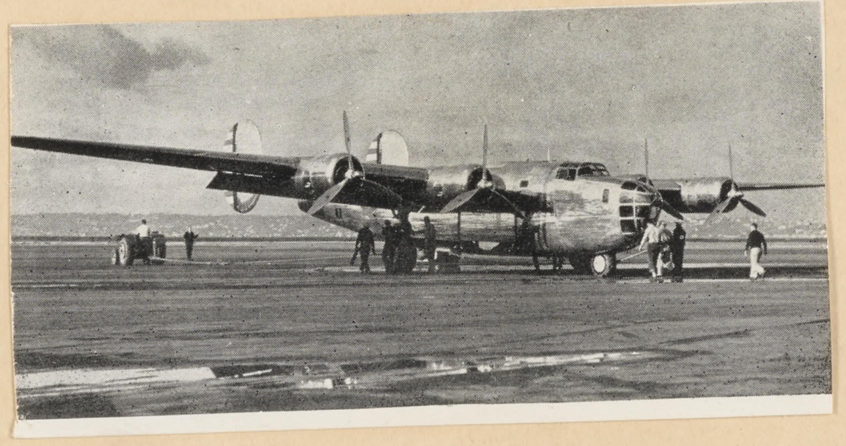


Consolidated Model 28

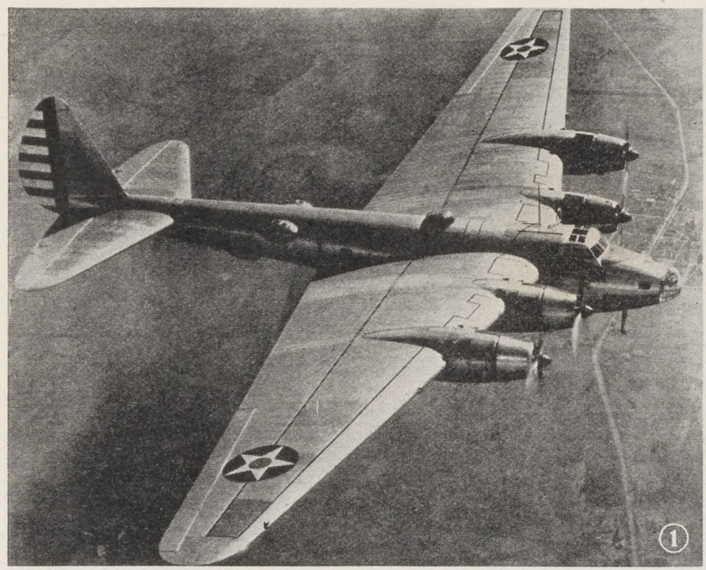
TYPE: Cabin, flying boat, monoplane.
DIMENSIONS: Length overall, 67 ft. 1 in. Span, 104 ft.
WEIGHTS: Gross weight loaded, 27,000 lbs.
POWER PLANT: Two Pratt & Whitney Twin-Row Wasp engines, R1830-SCG., rated 900 h.p.
PERFORMANCE: Maximum cruising distance over 4000 miles.
CONSTRUCTION: Wings, aluminum alloy, stressed skin type construction with fabric-covered ailerons and trailing edges. Hull: All-metal aluminum alloy monocoque type. Empennage, fabric-covered elevators and rudder, stressed skin stabilizer and fin.

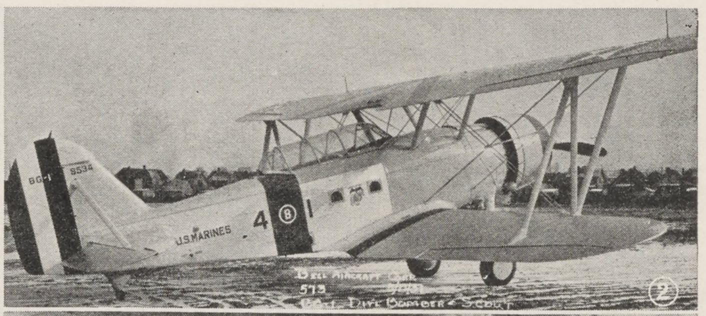


Commercial Aviation June '40

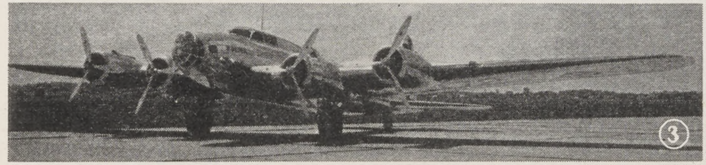


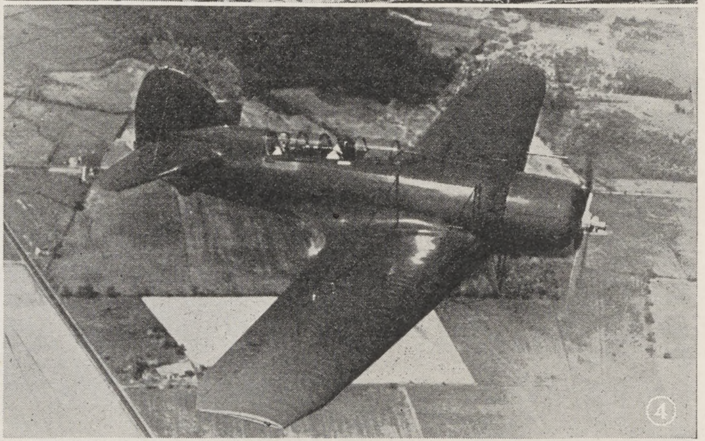
april '40

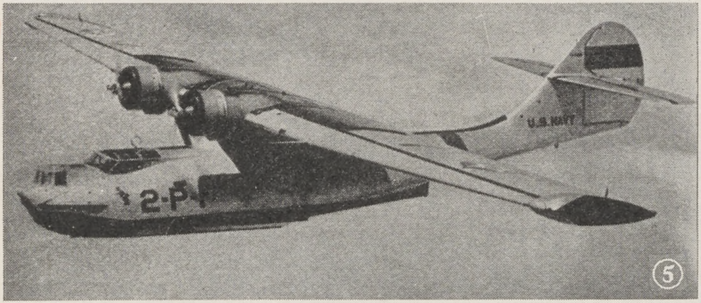

①



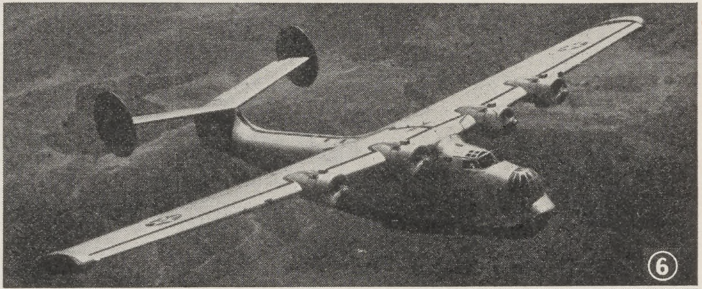
②

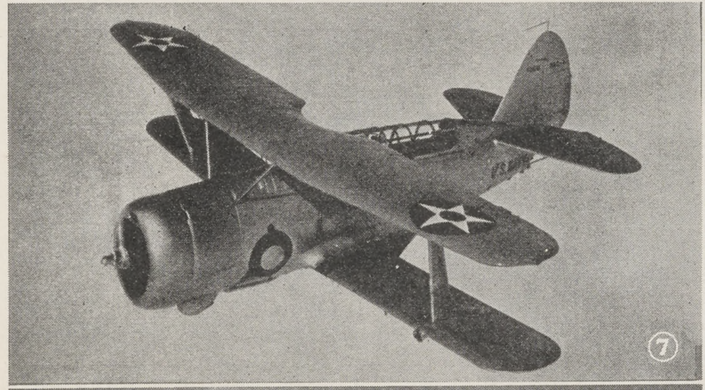

③

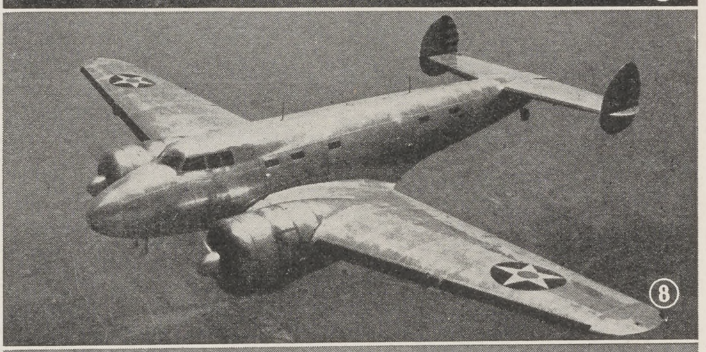

④

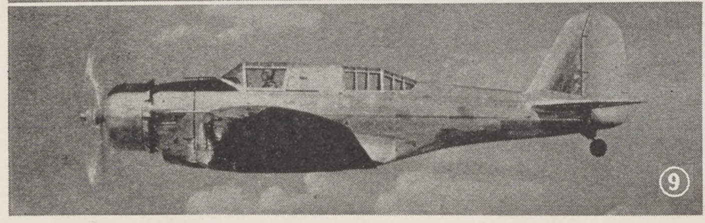


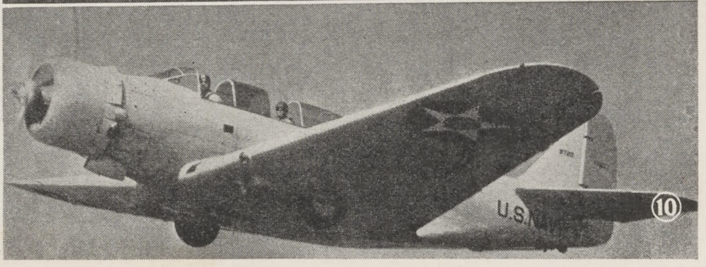
⑤


⑥


⑦


⑧


⑨



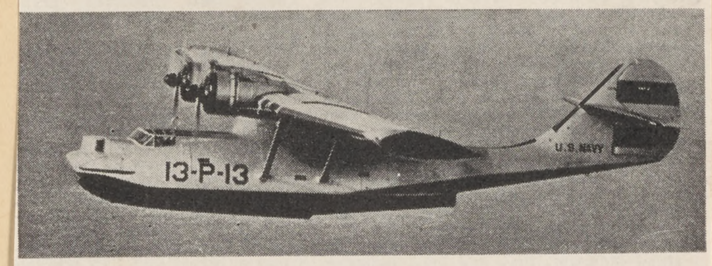
⑩

Bombers

1. The Boeing Bomber B-15, the "Super Fortress," weighing over 30 tons, with four 1,000 h.p. Pratt & Whitney Wasps, is 8 tons bigger than B-17.
2. The Bell BG-1 is an experimental scout-dive bomber, built for the United States Marine Corps by Bell Aircraft Corp. of Buffalo, N. Y.
3. The Boeing Bomber B-17, often called the "Flying Fortress," is powered with four Wright Cyclone engines, delivering 4,000 h.p. at take-off.
4. The Bellanca Model 28-110 Fighter Bomber is powered with one Pratt & Whitney Twin Wasp rated at 1100 h.p., at 2700 r.p.m. at 8,000 ft.
5. The Consolidated Aircraft Corporation's PBY-2, twin-engined flying boat and patrol bomber. This airplane was built for the United States Navy.
6. The XPB2Y-1, a Consolidated product, is a four-engined patrol bomber—the biggest and one of the most secret of the Navy's aerial weapons.
7. The Curtiss SBC-4, a dive-bomber, powered with one 1,000 h.p. Wright Cyclone, is the latest Naval aircraft, designed for use aboard the carriers.
8. The Lockheed XC-35 is the experimental stratosphere plane developed for the Army Air Corps by Lockheed Aircraft for high altitude combat.
9. The Douglas 8A-3P is an attack bomber, developed by the company's El Segundo Division. Powered with a Wright Cyclone engine of 860 h.p.
10. The Douglas TBD-1 is a torpedo bomber, with retracting undercarriage, built for the Navy. This airplane is now in general service in the Navy.

Western Flying April '40

Consolidated Aircraft Corp.
Lindbergh Field, San Diego, Calif.



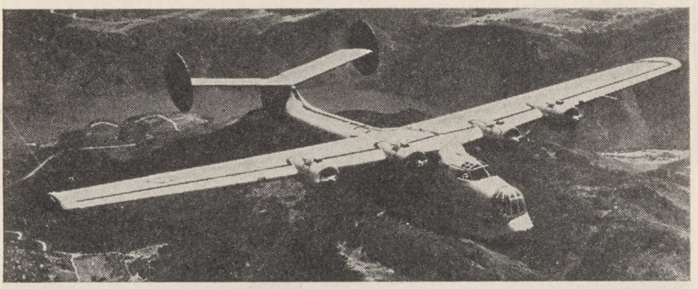
PBY-4 (U. S. Navy) **Patrol Bomber**

TYPE: 5-9- place, closed, flying boat, monoplane.
DIMENSIONS: Length, 65 ft. 1.75 in. Height, 17 ft. 11 in. Span, 104 ft.
AREAS: Wing (incl. ailerons), 1400 sq. ft.
WEIGHTS: Gross weight loaded, 27,413 lbs. Wing loading, 19.3 lbs. per sq. ft. Power loading, 11.4 lbs. per h.p.
POWER PLANT: 2 P&W Twin Wasps, geared. Engine limits, (maximum except takeoff) 1050 h.p. each at 7800 ft., 2550 r.p.m.
PERFORMANCE: Placard speeds: level flight (high speed), 199 m.p.h.; cruising speed, 179 m.p.h.; stalling speed (landing), 69 m.p.h. Climb at sea level, 920 ft. 1st min. Usable ceiling, 24,000 ft. Maximum range 4000 mi.
CONSTRUCTION: Wings, aluminum alloy, stressed skin, Z-bar stiffeners, fabric covered ailerons and trailing edges. Fuselage, monocoque, aluminum alloy construction, smooth skin, re-inforced with Z bars. Empennage, stressed skin, aluminum alloy, fabric covered movable surfaces.
STANDARD EQUIPMENT: Instruments, sensitive altimeters, engine pressure gauge units, carb. temp. gauges, manifold pres. gauge, clock, airspeed ind., thermocouples, oil temp. gauges, ammeters, direct gyro, Gyro horizon and pilot, elec. tach., fuel gauges. Trimming tabs on rudder and elevators. Other equipment, shock mounted instrument panels, batteries, fire extinguishers, flares, starters.
REMARKS: Other data restricted.

XPBY-5A (U. S. Navy) **Amphibian Patrol Bomber**

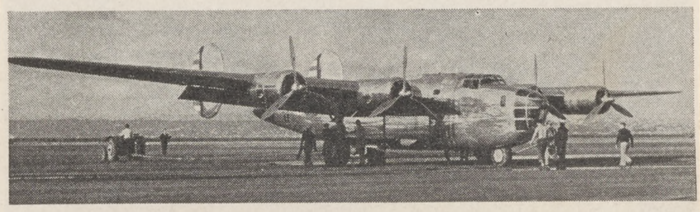
TYPE: 5-9 place, closed, amphibion, monoplane.
DIMENSIONS: Length, 65 ft. 1¾ in. Height, 19 ft. 9 in. Span, 104 ft.
AREAS: Wing (incl. ailerons) 1400 sq. ft.
WEIGHTS: Gross weight loaded, 27,413 normal lbs., 30,500 lbs. (provisional.) Wing loading, 19.6 lbs. per sq. ft. Power loading, 11.4 lbs per h.p.
POWER PLANT: 2 P&W R-1830-S1C3G. Engine limits, (maximum except takeoff) 1050 h.p. each at 2550 r.p.m. Maximum of 1200 h.p. each available for takeoff.
PERFORMANCE: Placard speeds: level flight (high speed), 199 m.p.h. at 7,800 ft.; cruising speed, 179 m.p.h. at 7,800 ft., stalling speed (landing), 69 m.p.h. Climb at sea level, 920 ft. 1st min. Service ceiling, 24,000 ft. Maximum range 4,000 mi.
REMARKS: Basically the Model 28 twin-engined flying boat, with addition of amphibion gear, suitably incorporated in the structure. Landing gear is of the tricycle type with a single wheel forward and two aft.

PB2Y-1 (U. S. Navy) **Patrol Bomber**



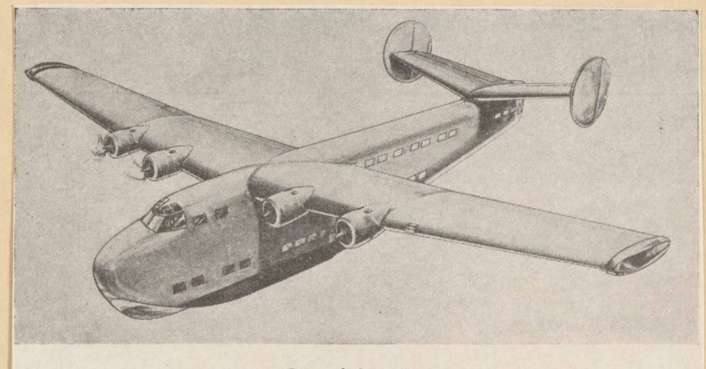
TYPE: Four engine, long range, flying boat, monoplane.
REMARKS: All data restricted.

XB-24 (U. S. Army) **Heavy Bomber**



TYPE: 6-9 place, closed, land, monoplane.
DIMENSIONS: Length, 64 ft. Height, 19 ft. Span, 110 ft.
WEIGHTS: Gross weight loaded, 40,000 lbs.
POWER PLANT: 4 P&W twin-row engines. Maximum of 1200 h.p. each available for takeoff.
PERFORMANCE: Placard speeds: level flight (high speed), more than

---



Consolidated 29

STANDARD EQUIPMENT: Flight instruments, full complement; engine instruments, full complement.
REMARKS: Fuel tanks integral with wing structure. Wing floats retract to wing tips in flight. Dual rudders. Wing trailing edge, movable control surfaces fabric covered. Further data not furnished.
NOTE: All data supplied by manufacturer; subject to revision upon certification.

Pacific Coast Edition
THE WALL STREET JOURNAL

DOW-JONES
ELECTRIC PAGE NEWS PRINTERS

623 CENTRAL BUILDING
LOS ANGELES
PHONE TRINITY 0881

Press Clipping
FROM
ALBERT F. COUDERC

AUG 14 1940 AUG 19 1940

P

THE W

SAN

Congress Cl

COAST AIRCRAFT DUE TO EXPAND

Major Extensions Await Only Clarification of Federal Fiscal Programs

CURRENT STATUS VIEWED

LOS ANGELES—Practically all the major Pacific Coast aircraft plants are viewing seriously plant expansion to meet governmental needs for airplanes, and in several instances plans have already been drawn up for new plant facilities on a scale that will dwarf any previous efforts.

While the expediency of these larger plants has been realized for some time, that the expansion plans have not been put into effect already is due to a disposition to await final word from Washington on developments which will show these companies clearly just where they will stand in this respect. Details on methods of financing, allowances for plant amortization and other pertinent subjects await

---

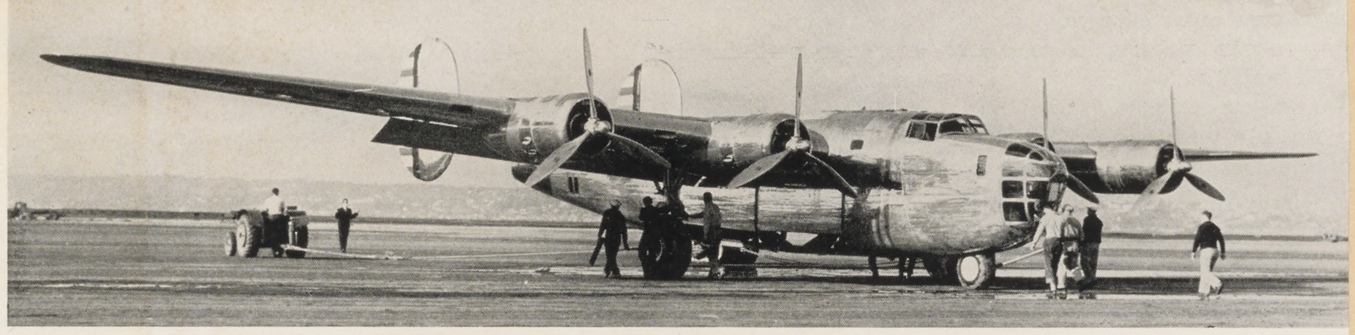
COAST AIRCRAFT DUE TO EXPAND

Continued from First Page

viding their own funds but apparently can have ready access to Government funds if they so elect.

The Lockheed building program provides for immedate erection of 18 additional buildings with a floor area of 520,000 square feet. Vega Airplane has started construction work on its new factory at Burbank, Calif., which is expected to be completed in October at a cost of probably $3,500,000. The plant is on a site adjoining the Union Air Terminal.

Climatic conditions and character of buildings which fit the needs of Southern California manufacturers enable construction of new facilities here in considerably less time than is attainable in many other sections of the country. In the recent past, major additional units have been completed anywhere from three to six months after plans were drawn up and the go-ahead signal was given. Ground was first broken for the new Vega plant the latter part of July, and it is anticipated that facilities will be available the latter part of next October.



U. S. ARMY AIR CORPS XB-24 FOUR-ENGINED BOMBARDMENT AIRPLANE, BUILT BY CONSOLIDATED AIRCRAFT CORPORATION

A High-Wing, All-Metal Airplane, Powered by Pratt & Whitney 18-Cylinder Twin-Row Radial Air-Cooled Engines, Each of 1,200 h-p. The Propellers are Hamilton Standard 3-Bladed Hydromatic Constant Speed Types, 12 Feet in Diameter. Gross Weight of Plane is About 40,000 Pounds; Wing Span, 110 Feet; Length of Fuselage, 64 Feet; Overall Height, 19 Feet. Tactical Requirements are for Crew of 6 to 9, Depending upon Mission. Speed More Than 300 m.p.h., Range About 3,000 Miles, Can Carry About Four Tons of Bombs

US AIR SERVICES - MARCH 1940

American Aviation for May 1, 1940

New York-Rome Line Recommended for American Export Air Lines

CAA Examiner Leasure Finds Need for More Atlantic Service; Sees National Defense Benefits; England, France Applications Dismissed Without Prejudice Because of Neutrality Act

Entrance of American Export Airlines into the trans-Atlantic picture with a mail-passenger-property route from New York or Baltimore to Rome via Lisbon and Barcelona was recommended in a proposed report issued Apr. 19 by CAA Examiner C. Edward Leasure.

It was also recommended that Export's applications for routes between the U. S. and England, the Irish Free State and France be dismissed without prejudice, in view of the President's proclamation under the Neutrality Act.

Temporary mail-property service between the U. S. and Rome via Horta, Lisbon and Barcelona, which Export proposed to inaugurate with a twin-engined Consolidated flying boat, is not required by the public convenience and necessity, Leasure said.

Subject to a showing of the availability of the necessary landing rights, Export is fit, willing and able to perform the proposed transportation, the report stated. Export's witnesses testified at the hearing that the company has such rights in Italy. Designation of Charleston and Norfolk as alternate U. S. termini is not necessary, the report added, explaining that the company could land at those points under emergency conditions without a certificate.

The report, one of the most important issued since establishment of the CAA, found that additional air service between the U. S. and Europe is required by the public convenience and necessity, and added that the facilities of Pan American Airways, the present carrier, are inadequate for the business available at present. Pan Am and its affiliates "control practically all American flag foreign air transportation," the report noted.

Pan American intervened in the Export hearing, strongly opposing entrance of Export into trans-Atlantic air service. The intervener claimed that it can furnish all necessary service at less cost than Export, and that it will have intense competition from foreign carriers.

"It cannot be denied that at the present time the intervener enjoys a practical monopoly over ocean air travel and, that even when foreign carriers commence operations, it will continue to monopolize these routes, including the north Atlantic, insofar as American competition is concerned," Leasure said.

"The record shows that there is sufficient demand, patronage, and commercial life to increase the services over the north Atlantic air transportation route; and all parties predict a rapid increase in these needs. In addition to the commercial advantages to be gained by American supremacy over this route the Authority must, under the Act, consider the advantages that will accrue to the national defense by the development of our oceanic air transportation systems. Admitting that the anticipated foreign competition would cause the intervener to be awake to all new developments in aviation, it would appear that the 'sound development of an air transportation system' would be accelerated by competition from an American carrier.

"It must be admitted that the European carriers would not permit us to utilize the benefits of their research and ingenuity; and our own aviation inventors and manufacturers would have greater incentive to encourage and develop their own research and resources with more than one carrier in the international air transport business.

"Competition does not necessarily mean duplication of service unless the field covered by a monopoly is completely served. It is true that where a territory is served by a utility which (1) has pioneered in the field, (2) is rendering efficient service, and (3) fulfilling adequately the duty which, as a public utility, it owes to the public, and the territory is so generally served that it may be said to have reached the point of saturation as regards the particular commodity in which the utility deals, then certainly the trend today is to protect the utility within such field; but when any one of these conditions is lacking, the public convenience may often be served by allowing competition to come in.

"There is no denying that the intervener pioneered the route in question here and that it is rendering efficient service within the limits of its facilities. However, it is obvious that at present its facilities are inadequate for the business available. Undoubtedly, the saturation point in available traffic is not yet reached and, if its own testimony can be relied upon, such a point is many years away. Futhermore, although this whole discussion is on the basis of north Atlantic traffic generally it must be remembered that the territory to be served by the eastern termini is almost unlimited."

Regarding cost, Leasure pointed out that Export concedes that Pan Am "should be able to furnish two additional frequencies at a lower cost than the applicant can furnish its initial frequencies. The applicant further concedes that the proposed new services would mean an additional heavy annual expenditure by the government. The comparative cost of operation of additional trans-Atlantic air transportation by the applicant and the intervener, and the additional expense to the government, are factors which, while not controlling, must be considered in relation to the public interest to be served." The report said that in this connection it should be noted that in the Pan Am trans-Atlantic certificate case, in which the CAA held that the public convenience and necessity required the service now operated by PAA, no reference was made to the question of the probable cost of the service.

"The applicant submits that the failure of the Authority to grant its application would be tantamount to forever closing the door to competition by any American air carrier over the north Atlantic route," Leasure's 76-page report said. "The applicant and its parent company, American Export Lines Inc., expended large sums of money in its most exhaustive planning for its entrance into the trans-Atlantic air transportation business. The applicant contends that if its request is denied at this time, it will be an absolute deterrent to the entrance of American capital into a similar venture in the next few years. There is no question that an adverse decision by the Authority will cause investors to hesitate before risking their money in any subsequently proposed competitive trans-Atlantic air carrier."

In finding mail-property service with the Consolidated boat not required, Leasure stated that the cost of operating such fortnightly trips would be in excess of $1,000,000 per year. Inasmuch as the primary object of such trips would be the training of personnel, he said that such object "could be better effectuated if the developmental flights were not restricted to the necessity of meeting schedule requirements." Export proposes to operate its mail-passenger-property service, which will be non-stop between New York and Lisbon, with Sikorsky S44 four-engined flying boats.

Export had also asked approval of acquisition of control of the airline by the steamship company, but Leasure found such approval not necessary. The airline, he said, will have the benefit of the steamship company's traffic organization, meteorologists, etc. "It is concluded . . . that the relationship of the steamship company to the applicant does not restrain competition and will promote the public interest," he stated.

OUR EXPANDING UNIVERSE

PROGRESS IN SCIENCE INTERPRETED BY WILLIAM S. BARTON

THE scientist is a man who has the fun of seeing the world through magic spectacles. He possesses the ability all of us have of admiring nature as it appears to us through our unaided eyes and other senses. But he is unique in having half a dozen or more kinds of magic spectacles, each of which reveals an exciting picture of creation which is denied to nonscientific or primitive folk.

A scientist, for example, who puts on his astronomical "specs," views the universe on its grandest scale. He sees himself as a sub-microscopic point being rolled and plunged in twenty directions at once about a limitless sea of space and time punctuated by fireworks. But let him don the glasses of physics and chemistry. Now he sees for the first time that what appear to be solid walls, trees and rocks aren't solid at all. Even the atoms and molecules composing them consist for the most part of empty space. And one reason air and the rocks appear so different to the naked eye is that in rocks each molecule is tied down to a definite position by invisible electric glue.

In fact the scientist now sees that the infinite variety of all the objects we can see and sense by touch is made possible by only one thing. The variety of materials in our environment result only from the infinite variety of ways in which atoms and molecules can be joined together. It is this which explains why iron and cement don't look alike or exhibit the same properties.

Why is iron heavier than wood or human flesh? The answer relates to the difference between the various kinds of atoms and molecules. A molecule usually consists of a union of two or more atoms. But the metals such as iron contain no molecules, only atoms. And atoms stick closer together than molecules. The reason organic substances weigh less than iron is that the former consist of molecules so complicated that each contains hundreds of assorted atoms.

Bricks of identical shapes can be packed more tightly than those of assorted shapes. Protein molecules are so complicated that protein would look almost like lace through the magic spectacles. It can't help being relatively light in weight.

Just as atoms join forces to form molecules, the latter "club together" to form crystals which in turn contribute beauty and variety to material creation.

FRED C. BRUECK PICTURED EXAMINING HUGE QUARTZ CRYSTAL

Weighing sixty-three pounds and costing $1500, a crystal of pure quartz believed to be the largest and finest ever obtained arrived in the United States last week. Brought by mule pack from the diamond section of Brazil, it is said by experts to look like a twenty-five-pound cake of clear ice and to surpass any museum piece in quality. But it will never be placed in a museum.

Before long, its owner, Bausch & Lomb Co., will cut it up into lenses and prisms for use in spectrographs and other scientific optical devices. Some small fragment eventually may make it possible with the combined use of a spectrograph and telescope to discover definitely whether or not the universe actually is expanding. Another fragment may, in a microscope, further disclose the secret of life.

The crystal is solid matter in its most perfectly developed and naturally organized condition. Each molecule in quartz consists of one atom of silicon and two atoms of oxygen, but quartz would not be or look like quartz were it not for the fact that its smallest crystal unit consists of just three such molecules. The huge Bausch & Lomb crystal consists of billions upon billions of these little crystals. But just as a pattern may be repeated over and over again in a rug the pattern of the tiny crystal is reproduced again and again to form a crystal large enough for the human eye to admire. A failure in this analogy, of course, is that whereas the pattern on the rug covers a relatively flat surface the crystal pattern is repeated in three dimensions.

Quartz, it may surprise some persons, is the most abundant mineral in the earth's crust. Its colored varieties include amethyst, onyx, occidental emerald and sapphire.

AMERICAN boys can still aspire to make fortunes, it is indicated by the success of two Iowa country "bumpkins," John and Gerhard Albers. They lived on a farm miles away from any source of electrical power, so rigged up a home-made power plant to supply "juice" to their radio set. Their first electric "plant" consisted only of an automobile generator attached to a windmill and gears borrowed from their father's cream separator. That was three years ago. They devised a more efficient propeller than the windmill provided and finding whittling propellers was too slow for volume production designed a machine for shaping the propellers automatically. Now the brothers are reported to be selling more than 2000 wind-electric plants a month to remote farms in every State. The plants, if used where the wind blows, are said to be powerful enough to light house and barns, operate farm machinery and household electric appliances.

STRENUOUS athletic activities have no bad effect on the heart, in the opinion of Dr. E. L. Cooper of the University of Sydney, Australia, the magazine Science reports. Assisted by other scientists, Dr. Cooper examined a series of oarsmen from universities and colleges before and after going into training, after training and before and after racing. The investigators, as a result of these and similar examinations of bicycle riders and squash players, were unable to detect any permanent change to the heart as a result of training for or taking part in sports.

They concluded that even extreme physical effort such as the final spurt at the end of an exhausting two-mile crew race does no damage to the heart.

STARTING with his hour glasses, sundials, and ranging to the modern master electric clocks kept accurate by radio time signals, man has given free reign to his ingenuity and imagination in devising time-keeping instruments.

Writing in "Telephony," E. K. Gann reports that Morocco boasts a flower pot clock. The clock's "works" consist of twelve flowering pots and twelve rafters, the latter protruding from the side of an old residence. Every hour a servant places a flower pot on one of the rafters. By noon, every rafter end supports one pot. Then, all the pots are removed until 1 p.m., when the first pot of the next time cycle is placed on the first hour rafter.

For years, it is said, P. T. Barnum intrigued the American public with a freak clock. Although the clock kept time, no visible connection was between the works and the dial. Now the secret is announced by the Hayden Planetarium, New York City, where the clock has been exhibited.

"Two clever devices," writes H. S. Federer, "make possible the working of the mystery clock which was built with a few others similar to it about 1823. The apparently single glass rod between the face and works, is really two rods, one within the other, the inner one geared to the works and turned by them. Second, the innocent-looking front of the dial is really two-faced! The numerals are on one dial, and in back of that is another dial, to which is fastened the single hand of the clock, which, however, appears to be connected in orthodox fashion with the front dial. As the inner dial revolves, turning with the works, it carries with it the fixed hand, which thus points to the correct hour and minute."

Clocks are now being made without faces, the Reader's Digest reports. To tell time, a button must be pressed, whereupon, by means of a phonograph attachment, the clock calls out the correct time.

In "The Old Clock Book" is an account of a clock, the hands of which cast shadows on the ceiling of a hospital in such a way as to permit patients to tell the time without moving their heads.

THE modern horse is not yet ready to join his five-toed precursor as an extinct species to be remembered only through fossil bones. On the first of this year there were more than 196,000 horses and 38,000 mules either working or munching lush grass in California. The total value of these 234,000 animals was almost $25,000,000, or three times the amount of money invested in this State's hogs. The United States now has more than $1,500,000,000 worth of horses and mules or something like 15,000,000 of the supposedly vanishing animals. Perhaps Henry Ford should attend to his knitting.

C. H. Howell of the University of California college of agriculture says California horse breeders could compete to better advantage with the machine age by supplementing pasturage with the feeding of more oats during weaned colts' first winters.

Summer Sale
ARCH-AID
SHOES
Entire Stock
$5.95 to $8.95
VAN DEGRIFT'S Inc.
607 W. 7th St.

Naturalizer in white, black, or brown.
6.85
COMFORT in the nth degree in this NATURALIZER!
We recommend it unconditionally to women who are on their feet for hours at a time. It presents a neat, tailored appearance, too!
INNES Shoe Company
642 SOUTH BROADWAY
6501 HOLLYWOOD BLVD.
452 E. Colorado, Pasadena

Pacific Coast Edition
THE WALL STREET JOURNAL

DOW-JONES
ELECTRIC PAGE NEWS PRINTERS

623 CENTRAL BUILDING
LOS ANGELES
PHONE TRinity 0881

Press Clipping
FROM
ALBERT F. COUDERC

AUG 14 1940

AUG 19 1940

P
THE W
SAN

Congress Cl

COAST AIRCRAFT DUE TO EXPAND

Major Extensions Await Only Clarification of Federal Fiscal Programs

CURRENT STATUS VIEWED

LOS ANGELES—Practically all the major Pacific Coast aircraft plants are viewing seriously plant expansion to meet governmental needs for airplanes, and in several instances plans have already been drawn up for new plant facilities on a scale that will dwarf any previous efforts.

While the expediency of these larger plants has been realized for some time, that the expansion plans have not been put into effect already is due to a disposition to await final word from Washington on developments which will show these companies clearly just where they will stand in this respect. Details on methods of financing, allowances for plant amortization and other pertinent subjects await clarification. On the matter of financing, several plants here have inquired and been informed that ample funds will be forthcoming, presumably from the RFC.

Plants East of Rockies Considered

At least two of the Pacific Coast plants, North American Aviation and Consolidated Aircraft Corp. of San Diego are considering seriously almost immediate erection of branch plants east of the Rocky Mountains. This is in line with Government views on decentralization of the aircraft industry, 60% of which is now located on the Pacific Coast. Both Douglas Aircraft and Lockheed have in mind or have already started ambitious programs for major plant expansion confined to Southern California.

In the Southern California area, also, Vultee Aircraft, Inc., is now engaged in a $3,000,000 expansion program which will increase manufacturing floor space to 800,000 square feet from 331,000 square feet. Contingent upon pending orders, Vultee could easily expand further if the need arose by adding another unit. Vultee's ultra modern plant was designed with this in mind. Northrop Aircraft, Inc., has plans in mind contingent upon pending orders for doubling its present 175,000 square feet capacity.

North American Aviation

North American Aviation, Inc., with its single plant at Inglewood, within the Los Angeles city limits, is seriously considering an expansion move which comprises a new huge plant probably at Dallas, Texas.

Consolidated Aircraft, which at San Diego has one of the largest Pacific Coast plants with a floor area of 1,900,000 square feet, is considering plans for a plant in Texas, considerably larger than its present single plant. As a large part of its output is in flying boats, a logical site would be Houston, Texas, which offers ready access to water.

Douglas Aircraft Co., Inc., with two plants in Southern California, main plant at Santa Monica and the El Segundo (Inglewood) branch, is understood to be planning another huge plant either at its present sites or in some nearby Southern California community which offers large labor supplies.

Lockheed Aircraft Corp. and its subsidiary, Vega Airplane Co., already have started an ambitious expansion program which will entail an expenditure of $5,500,000. So far, these units have gone ahead with plans for expansion pro-

Continued on Sixth Page, Column 5

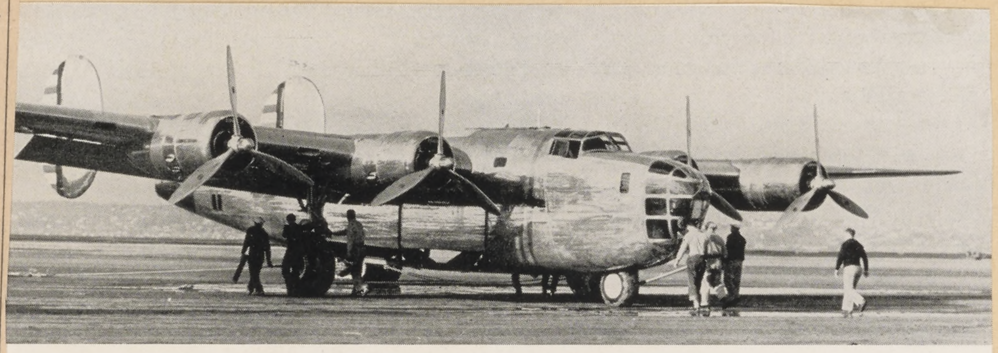
COAST AIRCRAFT DUE TO EXPAND

Continued from First Page

viding their own funds but apparently can have ready access to Government funds if they so elect.

The Lockheed building program provides for immedate erection of 18 additional buildings with a floor area of 520,000 square feet. Vega Airplane has started construction work on its new factory at Burbank, Calif., which is expected to be completed in October at a cost of probably $3,500,000. The plant is on a site adjoining the Union Air Terminal.

Climatic conditions and character of buildings which fit the needs of Southern California manufacturers enable construction of new facilities here in considerably less time than is attainable in many other sections of the country. In the recent past, major additional units have been completed anywhere from three to six months after plans were drawn up and the go-ahead signal was given. Ground was first broken for the new Vega plant the latter part of July, and it is anticipated that facilities will be available the latter part of next October.



XB-24 FOUR-ENGINED BOMBARDMENT AIRPLANE, BUILT BY CONSOLIDATED AIRCRAFT CORPORATION

plane, Powered by Pratt & Whitney 18-Cylinder Twin-Row Radial Air-Cooled Engines, Each of
Hamilton Standard 3-Bladed Hydromatic Constant Speed Types, 12 Feet in Diameter. Gross
,000 Pounds; Wing Span, 110 Feet; Length of Fuselage, 64 Feet; Overall Height, 19 Feet. Tacti-
of 6 to 9, Depending upon Mission. Speed More Than 300 m.p.h., Range About 3,000 Miles,
Can Carry About Four Tons of Bombs

American Aviation for May 1, 1940

New York-Rome Line Recommended for American Export Air Lines

CAA Examiner Leasure Finds Need for More Atlantic Service; Sees National Defense Benefits; England, France Applications Dismissed Without Prejudice Because of Neutrality Act

Entrance of American Export Airlines into the trans-Atlantic picture with a mail-passenger-property route from New York or Baltimore to Rome via Lisbon and Barcelona was recommended in a proposed report issued Apr. 19 by CAA Examiner C. Edward Leasure.

It was also recommended that Export's applications for routes between the U. S. and England, the Irish Free State and France be dismissed without prejudice, in view of the President's proclamation under the Neutrality Act.

Temporary mail-property service between the U. S. and Rome via Horta, Lisbon and Barcelona, which Export proposed to inaugurate with a twin-engined Consolidated flying boat, is not required by the public convenience and necessity, Leasure said.

Subject to a showing of the availability of the necessary landing rights, Export is fit, willing and able to perform the proposed transportation, the report stated. Export's witnesses testified at the hearing that the company has such rights in Italy. Designation of Charleston and Norfolk as alternate U. S. termini is not necessary, the report added, explaining that the company could land at those points under emergency conditions without a certificate.

The report, one of the most important issued since establishment of the CAA, found that additional air service between the U. S. and Europe is required by the public convenience and necessity, and added that the facilities of Pan American Airways, the present carrier, are inadequate for the business available at present. Pan Am and its affiliates "control practically all American flag foreign air transportation," the report noted.

Pan American intervened in the Export hearing, strongly opposing entrance of Export into trans-Atlantic air service. The intervener claimed that it can furnish all necessary service at less cost than Export, and that it will have intense competition from foreign carriers.

"It cannot be denied that at the present time the intervener enjoys a practical monopoly over ocean air travel and, that even when foreign carriers commence operations, it will continue to monopolize these routes, including the north Atlantic, insofar as American competition is concerned," Leasure said.

"The record shows that there is sufficient demand, patronage, and commercial life to increase the services over the north Atlantic air transportation route; and all parties predict a rapid increase in these needs. In addition to the commercial advantages to be gained by American supremacy over this route the Authority must, under the Act, consider the advantages that will accrue to the national defense by the development of our oceanic air transportation systems. Admitting that the anticipated foreign competition would cause the intervener to be awake to all new developments in aviation, it would appear that the 'sound development of an air transportation system' would be accelerated by competition from an American carrier.

"It must be admitted that the European carriers would not permit us to utilize the benefits of their research and ingenuity; and our own aviation inventors and manufacturers would have greater incentive to encourage and develop their own research and resources with more than one carrier in the international air transport business.

"Competition does not necessarily mean duplication of service unless the field covered by a monopoly is completely served. It is true that where a territory is served by a utility which (1) has pioneered in the field, (2) is rendering efficient service, and (3) fulfilling adequately the duty which, as a public utility, it owes to the public, and the territory is so generally served that it may be said to have reached the point of saturation as regards the particular commodity in which the utility deals, then certainly the trend today is to protect the utility within such field; but when any one of these conditions is lacking, the public convenience may often be served by allowing competition to come in.

"There is no denying that the intervener pioneered the route in question here and that it is rendering efficient service within the limits of its facilities. However, it is obvious that at present its facilities are inadequate for the business available. Undoubtedly, the saturation point in available traffic is not yet reached and, if its own testimony can be relied upon, such a point is many years away. Futhermore, although this whole discussion is on the basis of north Atlantic traffic generally it must be remembered that the territory to be served by the eastern termini is almost unlimited."

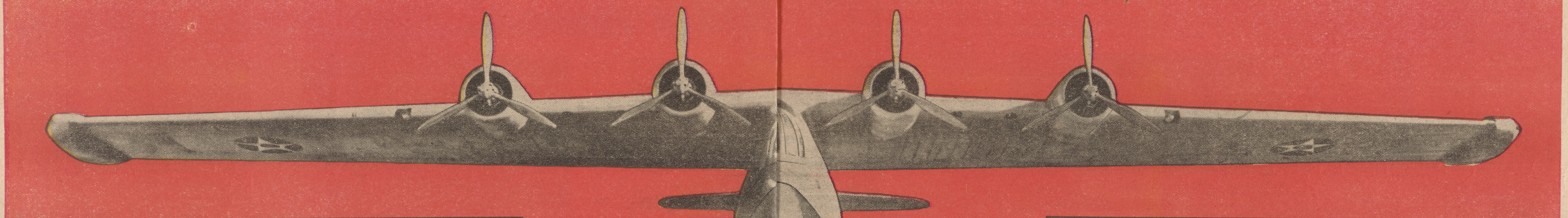
Regarding cost, Leasure pointed out that Export concedes that Pan Am "should be able to furnish two additional frequencies at a lower cost than the applicant can furnish its initial frequencies. The applicant further concedes that the proposed new services would mean an additional heavy annual expenditure by the government. The comparative cost of operation of additional trans-Atlantic air transportation by the applicant and the intervener, and the additional expense to the government, are factors which, while not controlling, must be considered in relation to the public interest to be served." The report said that in this connection it should be noted that in the Pan Am trans-Atlantic certificate case, in which the CAA held that the public convenience and necessity required the service now operated by PAA, no reference was made to the question of the probable cost of the service.

"The applicant submits that the failure of the Authority to grant its application would be tantamount to forever closing the door to competition by any American air carrier over the north Atlantic route," Leasure's 76-page report said. "The applicant and its parent company, American Export Lines Inc., expended large sums of money in its most exhaustive planning for its entrance into the trans-Atlantic air transportation business. The applicant contends that if its request is denied at this time, it will be an absolute deterrent to the entrance of American capital into a similar venture in the next few years. There is no question that an adverse decision by the Authority will cause investors to hesitate before risking their money in any subsequently proposed competitive trans-Atlantic air carrier."

In finding mail-property service with the Consolidated boat not required, Leasure stated that the cost of operating such fortnightly trips would be in excess of $1,000,000 per year. Inasmuch as the primary object of such trips would be the training of personnel, he said that such object "could be better effectuated if the developmental flights were not restricted to the necessity of meeting schedule requirements." Export proposes to operate its mail-passenger-property service, which will be non-stop between New York and Lisbon, with Sikorsky S44 four-engined flying boats.

Export had also asked approval of acquisition of control of the airline by the steamship company, but Leasure found such approval not necessary. The airline, he said, will have the benefit of the steamship company's traffic organization, meteorologists, etc. "It is concluded . . . that the relationship of the steamship company to the applicant does not restrain competition and will promote the public interest," he stated.

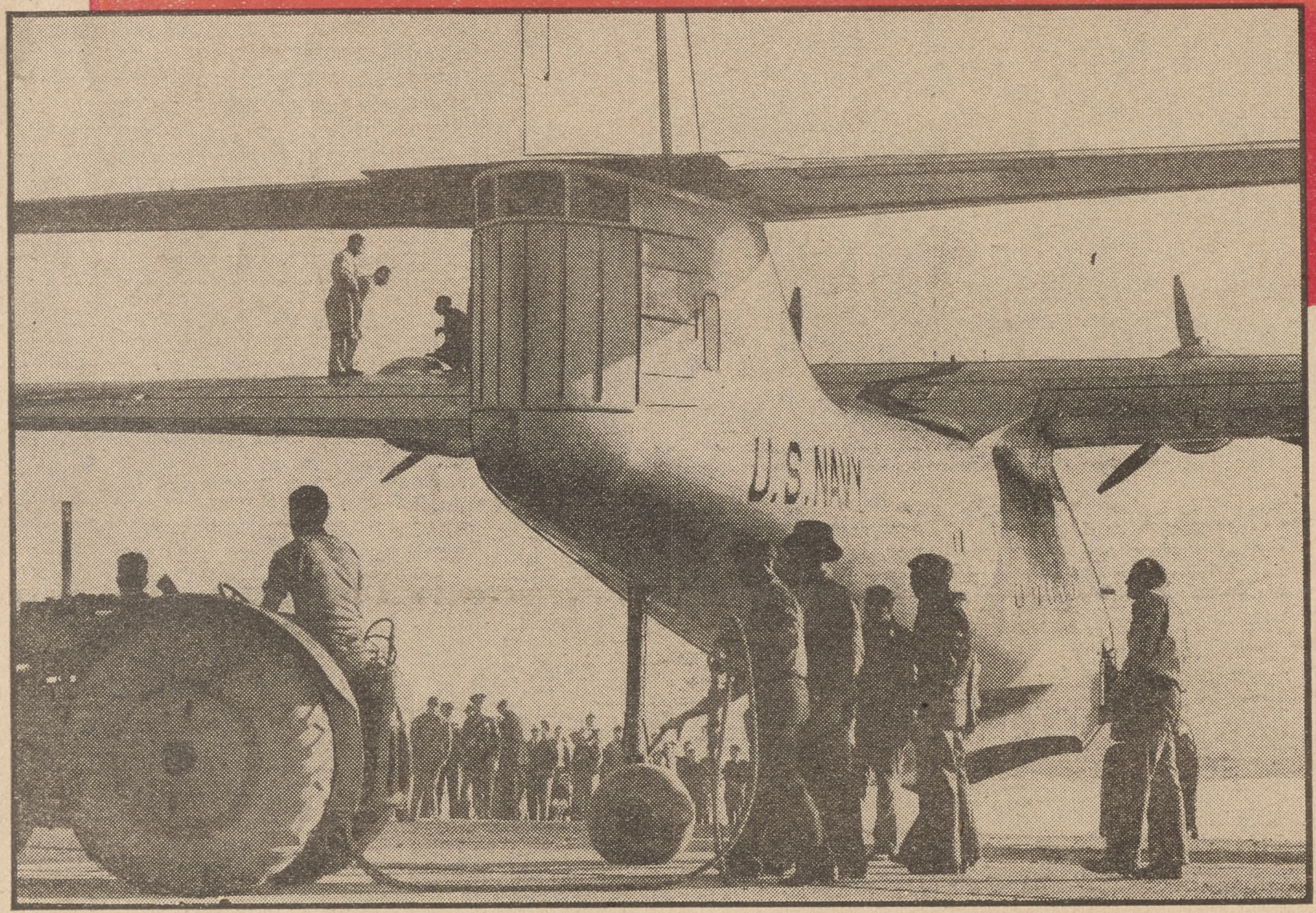
WHEN OUR NAVY "Fences" THE PACIFIC



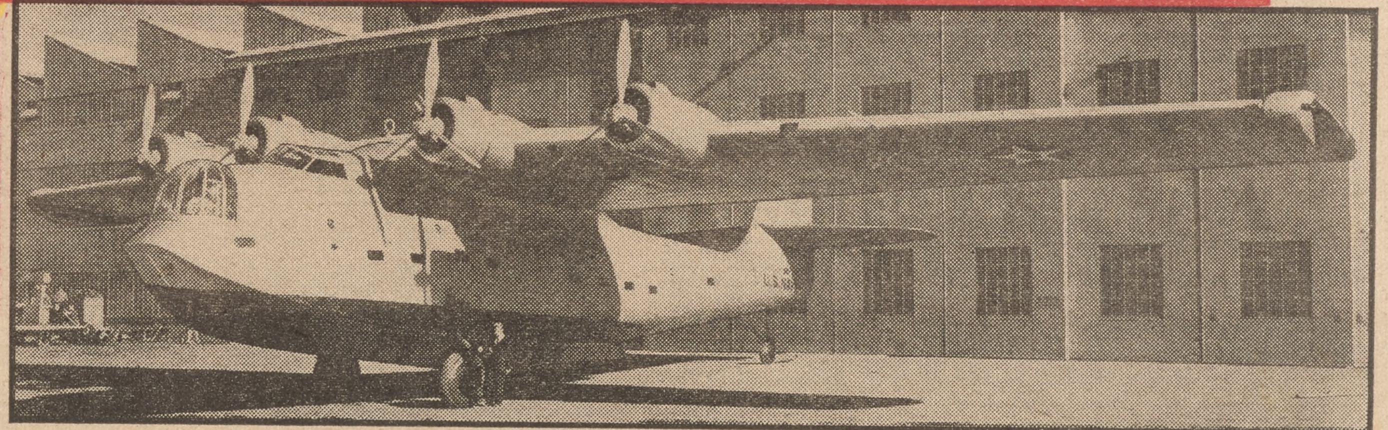
THE XPB2Y-1 WHICH WILL GRAND THE RADIUS OF THE UNITED STATES NAVY PATROL WINGS MAKE THE "FENCE" PRACTICAL

Under construction n"fence" will provide the nation with an ever-rility for information and security. Exact detalosely guarded, but the objective was recenbsed before the House Naval Affairs Co—and now to you

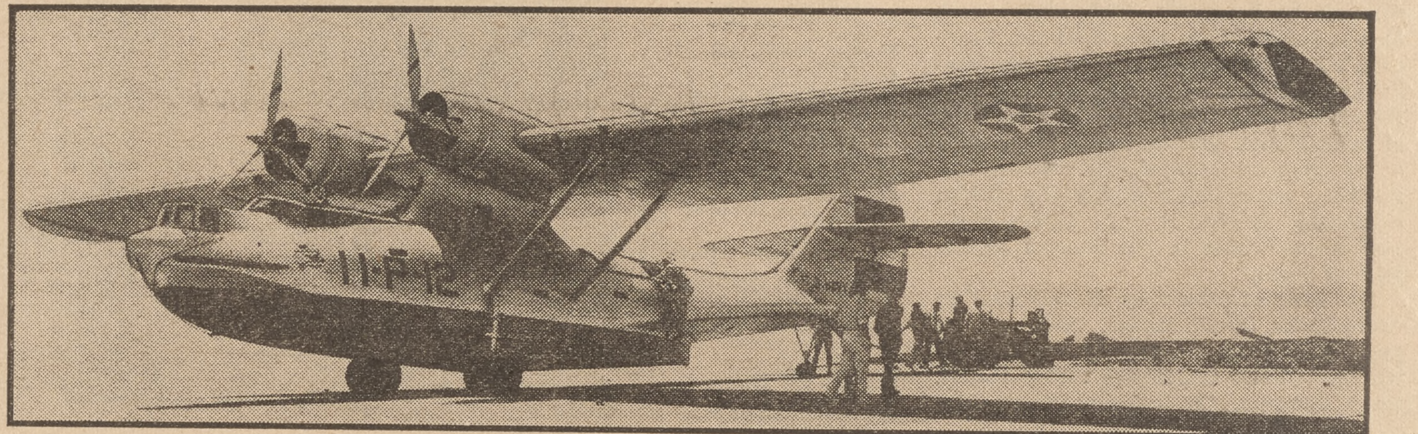
BY WA DRAKE



TAIL VIEW OF THE NEW SHIP, SHOWING TURRET BUILT INTO HUGE CRAFT



ANOTHER VIEW OF THE HUGE $1,000,000 FORTRESS FOR THE NAVY



FORERUNNER OF THE NEW PLANES, THE TWO-MOTORED PBY-2 WHICH HAS PERFORMED BRILLIANTLY FOR THE NAVY

AN 8000-mile "fence" down the center of the Pacific, to provide the nation with an ever-ready facility for information and security, is being quietly built by the Navy.

Briefly, it will consist of bases for both military and commercial seaplanes along this far-flung line; with special attention being focused on facilities to be constructed along its center, at Midway, Wake and Canton islands.

Although exact details are being closely guarded by the Navy, the objective was recently disclosed by Admiral William D. Leahy, Chief of Naval Operations. In testimony before the House Naval Affairs Committee, Admiral Leahy made the following succinct explanation of America's new mid-Pacific frontier:

"It is impossible for anybody to say where the line of defense is going to be. We have a line shown on the map which we are going to cover in in order to obtain information of the enemy.

"It is not a line of defense. The line of defense may be much closer to our own shores than that; it may be beyond that, but that is a line where we expect to obtain sufficient information upon which to base our operations."

The most significant thing about this plan is that it comprises a program which can—in the observable future, at least—be successfully executed, in either peace or war, by just one agency on the face of the earth—the United States Navy.

That is because the Navy has expended ten years of tireless, well-directed effort in the development of the long-range patrol flying boat, together with the perfection of a doctrine for the operation of this type of plane under the most arduous conditions.

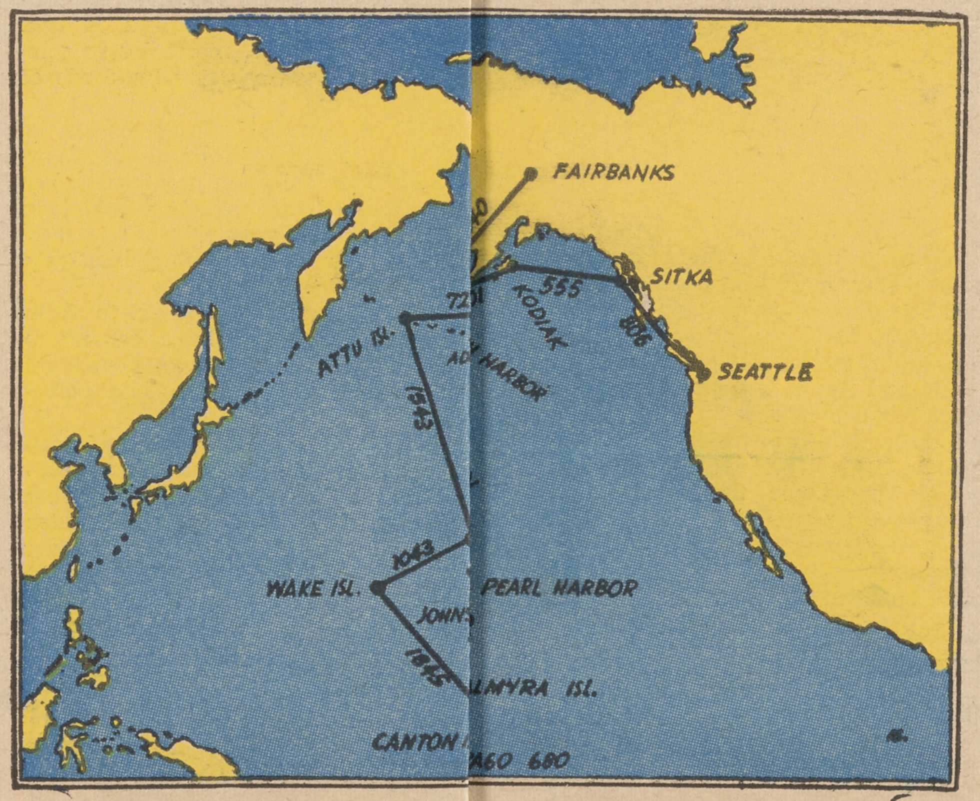
The result is that today the United States Fleet has some 200 huge bimotored flying boats in the five wings of the Scouting Force patrol squadrons; each plane capable of transoceanic flights in excess of 3000 miles. These big air cruisers, carrying and sustaining seven-man crews, are likewise able to land and take off in midocean in any but the most boisterous weather.

THEIR pilots have been schooled and indoctrinated in exact transoceanic navigation. They have proved their efficiency in this respect in the recent numerous mass flights from San Diego to Hawaii and to Panama, and from Seattle to Alaska, all completed without mishap and exactly on schedule. Likewise, the squadrons have maintained constant radio communication with distant bases during these flights.

It is this great aerial patrol force, unequaled in world aviation, that is already prepared to take over the constant patrol of the Pacific if and when danger of war appears. To those familiar with the accomplishments of the patrol squadrons in recent maneuvers it is inconceivable that an enemy naval force of consequence could enter an area under their patrol without being observed and reported.

As indicated by the accompanying chart, the Navy's gigantic "fence" of air observation bases would begin at the Sand Point base near Seattle and continue out and down the center of the Pacific as follows: 806 miles north to Sitka, where an operating base has been in operation for a year; 555 miles across the Gulf of Alaska to Kodiak Island, where $5,000,000 is to be expended for a similar fleet air base; 600 miles down the Alaskan Peninsula to the naval base at Dutch Harbor; thence through the Aleutian island chain to westernmost Attu Island, 729 air miles west of Dutch Harbor.

From Attu, or more properly, Dutch Harbor, the "fence" will run south 1653 miles to Midway Island. At this mid-Pacific atoll, already under development as a station on the California-China route of Pan American Airways, the War Department is preparing to expend more than $1,000,000 to build a breakwater and seaplane basin for the Navy. Before this is published, the Navy transport Sirius will have departed San Francisco for Midway with the Army expedition, headed by Lieut. Henry L. Hille, Jr., Corps of Engineers.



SKETCH SHOWING HYPOTHETICAL LINL BE FORMED WHEN 'FENCE' IS COMPLETE

West of Midway 1034 miles lies Wake Island, where a similar seaplane harbor will be constructed after completion of the Midway project. The next vital "post" in the line is Canton Island, 1845 miles southeast of Wake. From Canton Island, recently annexed to the United States by President Roosevelt's executive order, the line runs 680 miles south to its southern terminus, the magnificent natural harbor at Pago Pago, American Samoa.

Incidentally, it is observed that the line from Wake to Canton Island runs directly in front of the Japanese-mandated Marshall Islands, which, observers believe, would be used by Japan as points d'appui in any trans-Pacific naval expedition.

THE great fleet base at Pearl Harbor, Hawaii, where the bulk of the Navy's transoceanic aerial patrol force is already stationed, would of course play a vital role in this Pacific reconnaissance plan. In fact, Pearl Harbor would most likely prove the keystone of the entire scheme. As indicated on the chart, the squadrons from Pearl Harbor could operate to the south and westward via intermediate bases at Johnston Island and Palmyra Island.

In the remote possibility that enemy air or surface forces did slip by this line unobserved, either to the south or north, there remain strong secondary safeguards. At Fairbanks, 840 miles northeast of Dutch Harbor, the Army is building its primary Alaskan air base. At Panama, the three squadrons of Patrol Wing Three are on station. Their 3000-mile scouting line to the westward could easily be extended, to meet the Pearl Harbor radius, by seaplane tenders.

Pearl Harbor will be the center of a gigantic circle, with a 1500-mile radius, which would be kept under constant patrol by both Army and Navy scouting and bombing squadrons. In addition, air patrols maintaining scouting lines far off the Pacific Coast would operate from Navy bases at San Diego, San Pedro, San Francisco Bay and Puget Sound, from Army airdromes at March Field, San Francisco and Spokane. Finally, there would be the United States Fleet itself, with its hordes of carrier-based aircraft, plus the air and surface scouting of its cruisers and their planes, its destroyers and submarines.

Actually, this "aerial line of observation" plan is only in its infancy. All of the Navy's mass flight records of the past several years have been established by the Consolidated two-motored "PBY" flying boats. These are remarkable planes, but their brilliant performance has already been eclipsed by another Consolidated product, the giant four-motored "XPB2Y-1," now completing rigid Navy tests at San Diego.

This $1,000,000 air-borne cruiser, powered with four 1050-horsepower motors, has a gross weight in excess of 60,000 pounds and an extreme range of nearly 5000 miles. Her two decks contain complete living and sleeping quarters for a crew of twelve, plus two auxiliary engines for supplying current for both lighting and a complex radio equipment.

But, although the "XPB2Y-1" will greatly expand the radius of the Navy patrol wings, she herself is soon to be dwarfed by the Boeing Clippers to be used in trans-Pacific and trans-Atlantic routes by Pan American Airways.

AND the Navy is planning even bigger flying cruisers. When the "XPB2Y-1" was designed the 1050 horsepower motors were the highest-powered engines available. Today, the 1600-horsepower motor is here and the 3000-horsepower plant is in sight. This additional power and advances in design and construction practice promise seaplanes whose size and inherent strength will definitely eliminate existing restrictions of operating radius and seaworthiness of hulls.

Observers regard the scheme of aerial observation bases as the greatest advance in Pacific naval strategy since selection of Pearl Harbor as a naval operating stronghold. Development of the plan was not possible, however, until Japan abrogated the London Naval Treaty of 1936.

Pacific Coast Edition
THE WALL STREET JOURNAL

DOW-JONES
ELECTRIC PAGE NEWS PRINTERS

623 CENTRAL BUILDING
LOS ANGELES
PHONE TRINITY 0881

Press Clipping
FROM
ALBERT F. COUDERC

AUG 14 1940

AUG 19 1940

THE W

SAN

Congress Cl

COAST AIRCRAFT DUE TO EXPAND

Major Extensions Await Only Clarification of Federal Fiscal Programs

CURRENT STATUS VIEWED

LOS ANGELES—Practically all the major Pacific Coast aircraft plants are viewing seriously plant expansion to meet governmental needs for airplanes, and in several instances plans have already been drawn up for new plant facilities on a scale that will dwarf any previous efforts.

While the expediency of these larger plants has been realized for some time, that the expansion plans have not been put into effect already is due to a disposition to await final word from Washington on developments which will show these companies clearly just where they will stand in this respect. Details on methods of financing, allowances for plant amortization and other pertinent subjects await clarification. On the matter of financing, several plants here have inquired and been informed that ample funds will be forthcoming, presumably from the RFC.

Plants East of Rockies Considered

At least two of the Pacific Coast plants, North American Aviation and Consolidated Aircraft Corp. of San Diego are considering seriously almost immediate erection of branch plants east of the Rocky Mountains. This is in line with Government views on decentralization of the aircraft industry, 60% of which is now located on the Pacific Coast. Both Douglas Aircraft and Lockheed have in mind or have already started ambitious programs for major plant expansion confined to Southern California.

In the Southern California area, also, Vultee Aircraft, Inc., is now engaged in a $3,000,000 expansion program which will increase manufacturing floor space to 800,000 square feet from 331,000 square feet. Contingent upon pending orders, Vultee could easily expand further if the need arose by adding another unit. Vultee's ultra modern plant was designed with this in mind. Northrop Aircraft, Inc., has plans in mind contingent upon pending orders for doubling its present 175,000 square feet capacity.

North American Aviation

North American Aviation, Inc., with its single plant at Inglewood, within the Los Angeles city limits, is seriously considering an expansion move which comprises a new huge plant probably at Dallas, Texas.

Consolidated Aircraft, which at San Diego has one of the largest Pacific Coast plants with a floor area of 1,900,000 square feet, is considering plans for a plant in Texas, considerably larger than its present single plant. As a large part of its output is in flying boats, a logical site would be Houston, Texas, which offers ready access to water.

Douglas Aircraft Co., Inc., with two plants in Southern California, main plant at Santa Monica and the El Segundo (Inglewood) branch, is understood to be planning another huge plant either at its present sites or in some nearby Southern California community which offers large labor supplies.

Lockheed Aircraft Corp. and its subsidiary, Vega Airplane Co., already have started an ambitious expansion program which will entail an expenditure of $5,500,000. So far, these units have gone ahead with plans for expansion pro-

Continued on Sixth Page, Column 5

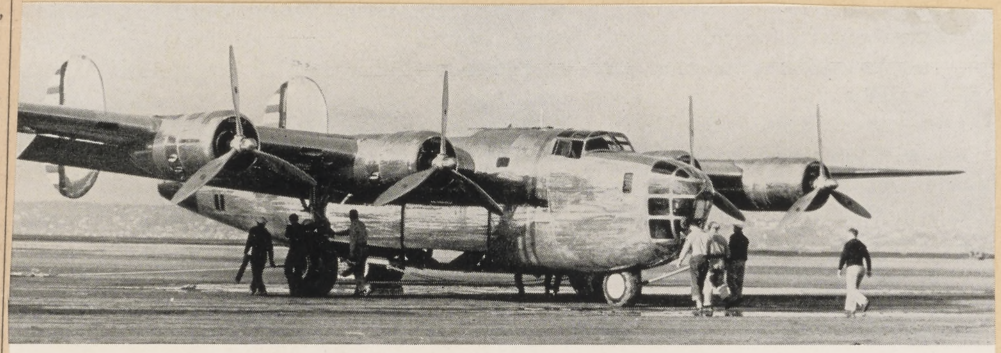
COAST AIRCRAFT DUE TO EXPAND

Continued from First Page

viding their own funds but apparently can have ready access to Government funds if they so elect.

The Lockheed building program provides for immedate erection of 18 additional buildings with a floor area of 520,000 square feet. Vega Airplane has started construction work on its new factory at Burbank, Calif., which is expected to be completed in October at a cost of probably $3,500,000. The plant is on a site adjoining the Union Air Terminal.

Climatic conditions and character of buildings which fit the needs of Southern California manufacturers enable construction of new facilities here in considerably less time than is attainable in many other sections of the country. In the recent past, major additional units have been completed anywhere from three to six months after plans were drawn up and the go-ahead signal was given. Ground was first broken for the new Vega plant the latter part of July, and it is anticipated that facilities will be available the latter part of next October.



XB-24 FOUR-ENGINED BOMBARDMENT AIRPLANE, BUILT BY CONSOLIDATED AIRCRAFT CORPORATION

plane, Powered by Pratt & Whitney 18-Cylinder Twin-Row Radial Air-Cooled Engines, Each of
Hamilton Standard 3-Bladed Hydromatic Constant Speed Types, 12 Feet in Diameter. Gross
,000 Pounds; Wing Span, 110 Feet; Length of Fuselage, 64 Feet; Overall Height, 19 Feet. Tacti-
w of 6 to 9, Depending upon Mission. Speed More Than 300 m.p.h., Range About 3,000 Miles,
Can Carry About Four Tons of Bombs

American Aviation for May 1, 1940

New York-Rome Line Recommended for American Export Air Lines

CAA Examiner Leasure Finds Need for More Atlantic Service; Sees National Defense Benefits; England, France Applications Dismissed Without Prejudice Because of Neutrality Act

Entrance of American Export Airlines into the trans-Atlantic picture with a mail-passenger-property route from New York or Baltimore to Rome via Lisbon and Barcelona was recommended in a proposed report issued Apr. 19 by CAA Examiner C. Edward Leasure.

It was also recommended that Export's applications for routes between the U. S. and England, the Irish Free State and France be dismissed without prejudice, in view of the President's proclamation under the Neutrality Act.

Temporary mail-property service between the U. S. and Rome via Horta, Lisbon and Barcelona, which Export proposed to inaugurate with a twin-engined Consolidated flying boat, is not required by the public convenience and necessity, Leasure said.

Subject to a showing of the availability of the necessary landing rights, Export is fit, willing and able to perform the proposed transportation, the report stated. Export's witnesses testified at the hearing that the company has such rights in Italy. Designation of Charleston and Norfolk as alternate U. S. termini is not necessary, the report added, explaining that the company could land at those points under emergency conditions without a certificate.

The report, one of the most important issued since establishment of the CAA, found that additional air service between the U. S. and Europe is required by the public convenience and necessity, and added that the facilities of Pan American Airways, the present carrier, are inadequate for the business available at present. Pan Am and its affiliates "control practically all American flag foreign air transportation," the report noted.

Pan American intervened in the Export hearing, strongly opposing entrance of Export into trans-Atlantic air service. The intervener claimed that it can furnish all necessary service at less cost than Export, and that it will have intense competition from foreign carriers.

"It cannot be denied that at the present time the intervener enjoys a practical monopoly over ocean air travel and, that even when foreign carriers commence operations, it will continue to monopolize these routes, including the north Atlantic, insofar as American competition is concerned," Leasure said.

"The record shows that there is sufficient demand, patronage, and commercial life to increase the services over the north Atlantic air transportation route; and all parties predict a rapid increase in these needs. In addition to the commercial advantages to be gained by American supremacy over this route the Authority must, under the Act, consider the advantages that will accrue to the national defense by the development of our oceanic air transportation systems. Admitting that the anticipated foreign competition would cause the intervener to be awake to all new developments in aviation, it would appear that the 'sound development of an air transportation system' would be accelerated by competition from an American carrier.

"It must be admitted that the European carriers would not permit us to utilize the benefits of their research and ingenuity; and our own aviation inventors and manufacturers would have greater incentive to encourage and develop their own research and resources with more than one carrier in the international air transport business.

"Competition does not necessarily mean duplication of service unless the field covered by a monopoly is completely served. It is true that where a territory is served by a utility which (1) has pioneered in the field, (2) is rendering efficient service, and (3) fulfilling adequately the duty which, as a public utility, it owes to the public, and the territory is so generally served that it may be said to have reached the point of saturation as regards the particular commodity in which the utility deals, then certainly the trend today is to protect the utility within such field; but when any one of these conditions is lacking, the public convenience may often be served by allowing competition to come in.

"There is no denying that the intervener pioneered the route in question here and that it is rendering efficient service within the limits of its facilities. However, it is obvious that at present its facilities are inadequate for the business available. Undoubtedly, the saturation point in available traffic is not yet reached and, if its own testimony can be relied upon, such a point is many years away. Futhermore, although this whole discussion is on the basis of north Atlantic traffic generally it must be remembered that the territory to be served by the eastern termini is almost unlimited."

Regarding cost, Leasure pointed out that Export concedes that Pan Am "should be able to furnish two additional frequencies at a lower cost than the applicant can furnish its initial frequencies. The applicant further concedes that the proposed new services would mean an additional heavy annual expenditure by the government. The comparative cost of operation of additional trans-Atlantic air transportation by the applicant and the intervener, and the additional expense to the government, are factors which, while not controlling, must be considered in relation to the public interest to be served." The report said that in this connection it should be noted that in the Pan Am trans-Atlantic certificate case, in which the CAA held that the public convenience and necessity required the service now operated by PAA, no reference was made to the question of the probable cost of the service.

"The applicant submits that the failure of the Authority to grant its application would be tantamount to forever closing the door to competition by any American air carrier over the north Atlantic route," Leasure's 76-page report said. "The applicant and its parent company, American Export Lines Inc., expended large sums of money in its most exhaustive planning for its entrance into the trans-Atlantic air transportation business. The applicant contends that if its request is denied at this time, it will be an absolute deterrent to the entrance of American capital into a similar venture in the next few years. There is no question that an adverse decision by the Authority will cause investors to hesitate before risking their money in any subsequently proposed competitive trans-Atlantic air carrier."

In finding mail-property service with the Consolidated boat not required, Leasure stated that the cost of operating such fortnightly trips would be in excess of $1,000,000 per year. Inasmuch as the primary object of such trips would be the training of personnel, he said that such object "could be better effectuated if the developmental flights were not restricted to the necessity of meeting schedule requirements." Export proposes to operate its mail-passenger-property service, which will be non-stop between New York and Lisbon, with Sikorsky S44 four-engined flying boats.

Export had also asked approval of acquisition of control of the airline by the steamship company, but Leasure found such approval not necessary. The airline, he said, will have the benefit of the steamship company's traffic organization, meteorologists, etc. "It is concluded . . . that the relationship of the steamship company to the applicant does not restrain competition and will promote the public interest," he stated.

STRANGE ABODE

Continued from Page Seven

of nine watches concealed within the walls of the home is the key to the music.

The mechanism is simple. He took an ordinary watch, removed the hands and substituted a cam. A pendulum is released every half an hour by the cam. This permits a wire lever to contact a mercury vial. This in turn forms a contact which starts a blower in the basement and the flutes play.

The instruments carved of wood by Dr. Nixon play three tunes, "Waters of Minnetonka," the "Indian Love Call" and "O Sole Mio."

Other watches in the walls with cam arrangements instead of hands form contacts which cause musical notes to come from hidden places. One set of notes is an exact reproduction of the singing of a canary. Another is that of a mocking bird. Several of these are arranged to play every twenty minutes. Another watch completes an electrical contact which causes a music box to run and play the tunes hidden within its mechanism. The box is one the doctor has adapted to his own whims.

A FEW years ago Dr. Nixon was listening to an organ concert. He was so thrilled by the voluminous music that he decided he must have an organ in his house. There was one small room which would be ideal for a small organ. Next day he started out to buy one. Nothing but a good one would do. Such organs are expensive. They cost much more than he could afford to pay. So Dr. Nixon trudged to the public library, obtained all the available textbooks on the art of organ building and made one himself.

Today the mighty pipes from which the fine music comes occupy a major part of the basement. This organ built by the doctor is the marvel of San Francisco's leading organists who declare that its delicate tone is unsurpassed by professional work. By installing a number of microphones and an ingenious system of mechanical control, Dr. Nixon has fixed the organ so it will play at a spoken command. To shut it off he pushes a pin into a small hole in the floor of an adjoining room.

His love of beauty is reflected in every room in the house. Although all you see on the outside is dull-looking window shades which are rarely raised, the windows on the inside are framed by rich drapes and curtains. The sills and casings are beautiful wood carvings.

The walls and ceilings of each room are a series of panel carvings, either of rosewood, walnut or mahogany, giving them a museum beauty, in some effects somber, yet cathedral-like in tone.

Connoisseurs have become excited at the doors in his mystery house. They are exquisite portraits of wood design entirely handmade. The doctor applied sculptural ability to the fashioning of gargoyle heads in several rooms. One of these he calls Bluebeard. It is on the door leading from the organ room to the entrance hall.

This head has discs concealed in its mouth. The voice, acting on a platinum point, forms a contact with the discs. This turns on electricity which sets gears to working and the door opens or closes at your command. There are also two beautiful reproductions in bronze of Parthenon friezes, another accomplishment of the doctor. Even the floors are inlaid in a delicate pattern design.

In the hallway is a disappearing hat rack. He did not want a row of hats to disturb the beauty of line in the panel carvings so he arranged a rack that folds back out of sight into the wall with a simple turn of a couple of hinges.

Near this rack is a telephone concealed behind a panel. When the bell rings, the clapper releases a miniature mouse trap and completes an electrical circuit that sounds buzzers in distant rooms.

HIS drive for beautiful surroundings is deeply reflected in his Death Valley room. Hanging on one wall is a beautiful and huge panoramic painting of the famous desert. A fountain plays in the center of the room among rocks and sand brought from Death Valley. Two other large paintings decorate the walls. One is of Yosemite Valley, the other of a woman.

The accomplishments of this man are not confined to these ingenious arrangements. If his house needs wiring he does it himself, for he is a qualified electrician. He has complete knowledge of architecture and building construction and also does his own remodeling. If he is ill he treats himself for he has mastered medicine. He can also compound his own prescriptions for he has a thorough knowledge of pharmacy. These are some of the trades he has followed during his life. Shipbuilding was another.

He quite often entertains friends in the haunted house on Saturday evenings. A favorite form of entertainment is to prove to them that the hand is faster than the eye. He is an accomplished magician, having been on the stage entertaining with magic when a young man.

When asked why the exterior of his home is in such startling contrast to the interior he declares there are several reasons. First, he lives within the house and it is there he wishes his beauty. Second, he does not want the house to be too attractive for it attracts enough people now who bother him and keep him from his work.

His principal reason for leaving the outside weather-beaten, he says, is because "no haunted house has a fresh coat of paint."

Lighting

A NEW vista is opening in the field of artificial lighting as a result of bombarding fluorescent powders with ultraviolet rays.

Cool light is thus being produced which duplicates all the pastel tints of the rainbow. It is announced by the General Electric laboratories that these new lumiline lamps provide hitherto unobtainable tints of colored light with as much as 120 times the illumination which could be produced by filament lamps of the same color. And the latest fluorescent lamps not only consume less current, but generate next to no heat.

The Weekly PUZZLE

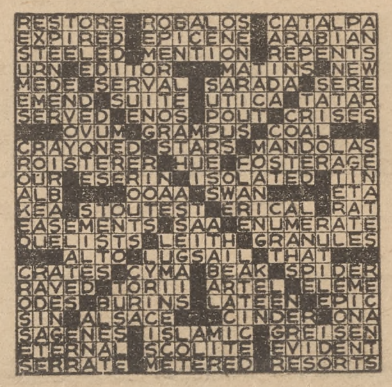
ACROSS

1—Presses firmly together
8—A traverse fortification to protect from a rear attack
15—East Indian coasting vessel
22—To dispose in order
23—Indulge in too much food
24—Kind of shellfish
25—To make ready
26—Perceive by the senses
27—Directed toward the side
28—A little island
29—Small lizards
31—Accomplished
32—In a canted position, as a boat
34—Closing period of life
35—Forces the air noisily through the nostrils
37—Possessive case of she
39—An African
41—The flight of Mahomet from Mecca
43—People of Asia
44—Beggarly
45—Overpowered by emotion
47—Ruling chiefs in certain parts of India
48—Irish Gaelic
49—Any fragrant ointment
51—Those who satisfy the appetite
53—An idol of the Antillean Indians: var.
54—Feminine personal name
56—East Indian split pulse
58—Arbitrate
60—Machine for glazing
63—A nest: rare
65—Pear-shaped vessels fitting into each other
69—Winglike part
70—Binds
71—Bishop's crown
73—British peninsula of Arabia
74—Falsehood
75—Thick woolen twilled stuff
77—Pieces of spun yarn for fastening sails
79—Wooden pins
80—Mahometan governors
81—Soaked through
82—Neckcloth
84—Cover with wax
85—Was like another thing
86—Prelate highest in rank in a nation
87—Feminine personal name
88—A motion forward
90—Portentous
91—Volcanic scoria
92—Little child
93—Transparent case protecting a light
95—Friction
96—Suppliers of food
98—Indifferent to pain
102—Crafty
104—To anoint
105—Foreign quarter of Constantinople
108—Near the back
110—Birds of prey
112—Implements used in mining
116—Asserts formally
118—A thrusting sword
120—Small piece of ground
121—East Indian cereal grass
122—Smaller
124—Border
125—Disconsolate
126—To reenact
127—Adopted son of Mahomet
128—One who takes notes
130—Turkish landowner
132—A drink of wine, hot water, sugar
134—Jutting rock
135—A plastic product of cotton-fiber used for sizing
137—Ironical
140—Cause to function
142—Went into
143—Recluse
144—Signifies
145—Elects again
146—Made hard
147—Long, wooden seats

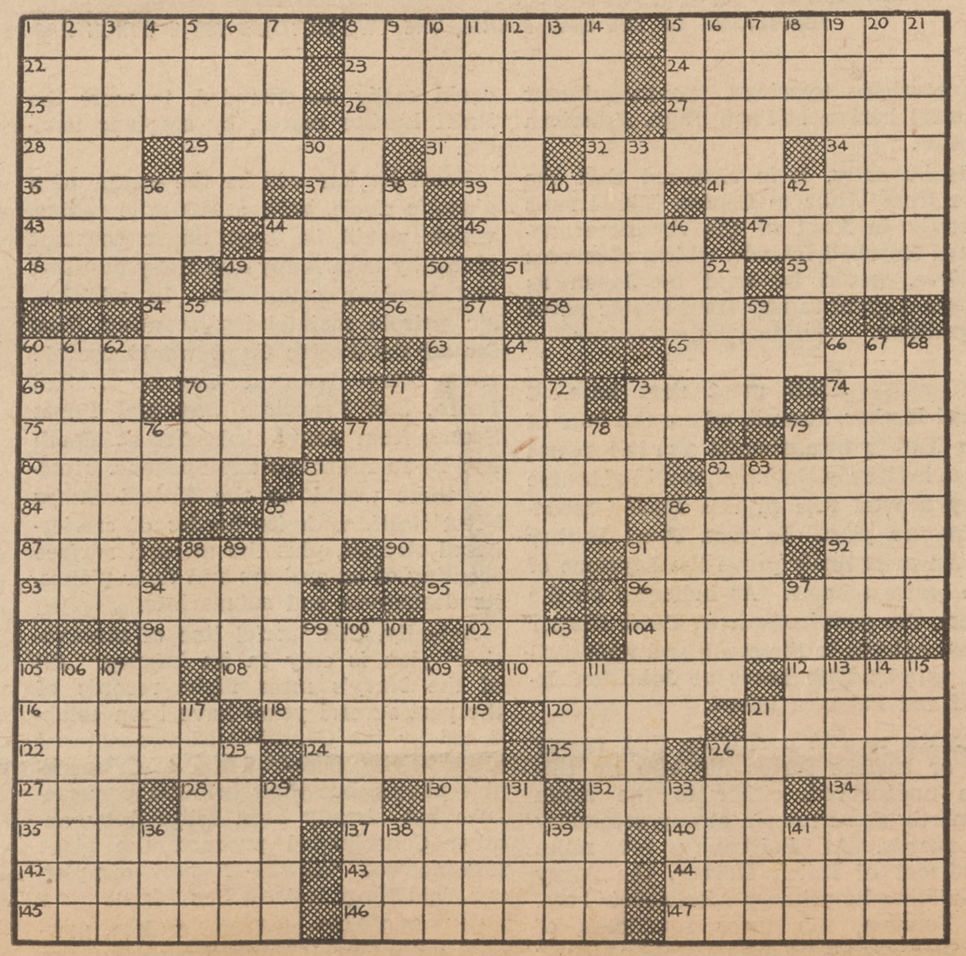
DOWN

1—A passage open only at one end
2—Sailor
3—Magistrates of ancient Rome
4—Viper
5—Praises continually
6—Weeds
7—Killed
8—Have
9—Hail!
10—Sunder
11—Arseniureted hydrogen
12—Diminishes the force of
13—Cereal plant
14—Salt of stearic acid
15—Sacred language of the Buddhistic literature
16—Confound
17—Rag
18—Malt beverage
19—Debris of earth and rock collected by a glacier
20—A word puzzle
21—Let go
30—German dollars
33—Went at a certain pace
36—To pass a rope through a hole
38—Peruse
40—The fundamental unit of mass in the metric system
42—Looked steadily
44—Whalebone
46—Groups of three
49—Collective masses
50—Concerning handling
52—Auction
55—Bury
57—A man of letters
59—Large cask
60—The Persian lynx
61—A shaded walk
62—The basilica of Rome
64—Can be considered
66—Heighten
67—Surgical instrument used in ligation
68—Six-line stanzas
71—Principal feature
72—A musteloid animal
73—Annex
76—Golf term
77—Butt
78—Masculine nickname
79—Knave of clubs
81—A little taste
82—Slatted boxes
83—Star in the constellation of Orion
85—Older in years
86—An opaque body of the solar system
88—Place
89—Walked
91—Scaling ladder
94—Absolute monarchs
97—Stately
99—Desire greatly
100—Maligns
101—Den
103—Barks or yelps
105—Speak profusely
106—Feminine personal name
107—Strives against
109—Recipient of a legacy
111—Looked quickly
113—Perturb
114—Zealot
115—Prophetess
118—Madam in Spanish
119—Social system
121—Be indignant at
123—A painter's red color
126—Monetary unit of British India
129—Spreads
131—Accessory covering of a seed
133—Images
136—The letter C
138—Facility
139—A follower of an ism
141—Corrupt

SOLUTION OF LAST WEEK'S PUZZLE



RESTORE ROBALOS CATALPA
EXPIRED EPICENE ARABIAN
STEELED MENTION REPENTS
URN EDITOR MATINS NEW
MEDE SERVAL SARADA SERE
EMEND SUITE UTICA TATAR
SERVED ENOS POUT CRISES
OVUM GRAMPUS COAL
CRAYONED STARS MANDOLAS
ROISTERER HUE FOSTERAGE
OUR ESERIN ISOLATED TIN
ALB OOAA SWAN ETA
KEA STOUTEST ERICAL RAT
EASEMENTS SAA ENUMERATE
DUELISTS LEITH GRANULES
ALTO LUGSAIL THAT
CRATES CYMA BEAK SPIDER
RAVED TORII ARTEL ELEME
ODES BURINS LATEEN EPIC
SIN ALSACE CINDER ONA
SAGENES ISLAMIC GREISEN
ETERNAL SCOLITE EVIDENT
SERRATE METERED RESORTS



Dickerson VERIFIED FOOTWEAR

For Coolness with Comfort

DICKERSON ARCH-RELIEF FOOTWEAR

Condition your feet for the warm days of summer with Dickerson footwear of cool white kid. Every model with the concealed comfort features of the arch-cushioning metatarsal pad, and the insulated sole that protects feet from hot pavements........... 10.50

Verified Footwear Street Floor

The BROADWAY

Broadway, Fourth and Hill

Women, Men and Children Should WEAR Flexible SHOES for COMFORT

GROUND GRIPPER

C. H. FONTIUS, 728 South Olive Street

Twin Brand

Large Stock of Imported & Domestic

FINE CUTLERY

Pocket and Table Knives — Scissors
Razors — Clippers — Prof. Cutlery

WIELPUTZ, Exclusive Cutlery Shop

TU-7072

45 Broadway Arcade Building
Expert Grinding and Repairing

Steel Horizons
Fall, 1940

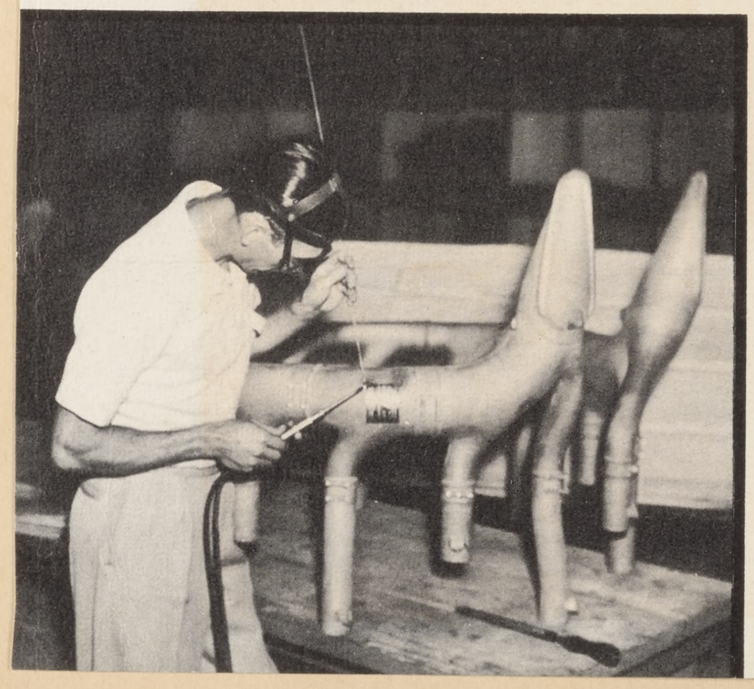
been in supplies for installation in military aircraft, but it is significant that in the last year 23% of the total sales were for commercial purposes. While prepared to do its part in making the United States self-sufficient from a military and naval standpoint, Solar officials have set their sights on a long-range program designed to assure virtually uninterrupted output of its products; this to be accomplished through diversification, already begun. By so doing, Solar is confident that its position will be strong enough to meet any readjustments necessitated by changing world conditions.

First steps have been taken in this direction. The company holds an exclusive license to manufacture and distribute Airmax Exhaust Type Cabin Heating Systems. In the last year another type of heating installation known as the Airmax Central Heating System was developed in the company's laboratories. Sales of both types have reached encouraging proportions. Further diversification of products is contemplated through other licenses secured from owners of patents applicable to aircraft. Research in these new fields is being conducted by Solar technicians.

Additions to its plant, under construction and projected, will give the company 35,700 sq. ft. of new floor space for a total of 112,000 sq. ft. Larger quarters are required by the engineering, research and pattern departments, while provision is being made for the new development department.

Established in 1927, destinies of Solar Aircraft Co. have been directed by Edmund T. Price, president. As an example of Solar's progress, for the fiscal year ending in 1936, net sales were $224,024; for the last corresponding period the figure was $1,065,672 (double that of a year ago). Unfilled orders at the close of the last fiscal year were $932,190, compared to $301,979 for the same period in 1939. Despite shipments which have been averaging more than $100,000 for months, an unbroken stream of orders has sent the backlog well past the $1,000,000 mark. Moreover, contracts under negotiation will, when signed, place another million dollars on the books. Further attesting the company's strong position is the fact that it has registered a net profit for the eighth consecutive year. » »

Lon E. Wheeler, Solar vice-president, welded up the 5000th manifold.



CONSOLIDATED AIRCRAFT CORPORATION

THE tremendous expansion program currently being completed at Consolidated Aircraft Corporation gives San Diego the distinction of having the largest integrated covered and uncovered aircraft manufacturing plant in America. Consolidated's manufacturing space, exclusive of field, ramp and railroad sidings, now occupies over 1,910,000 square feet of area—an 87 percent increase over the previous figure. The company holds an option on adjacent land equal to an added 50 percent of this area, and plans exist for its potential use.

This expansion brings Consolidated into full step with the national defense program. Operating as of July 1 with a backlog in excess of $70,000,000, it had contracts for additional work under negotiation which, if accepted, would build orders on hand to well over $100,000,000.

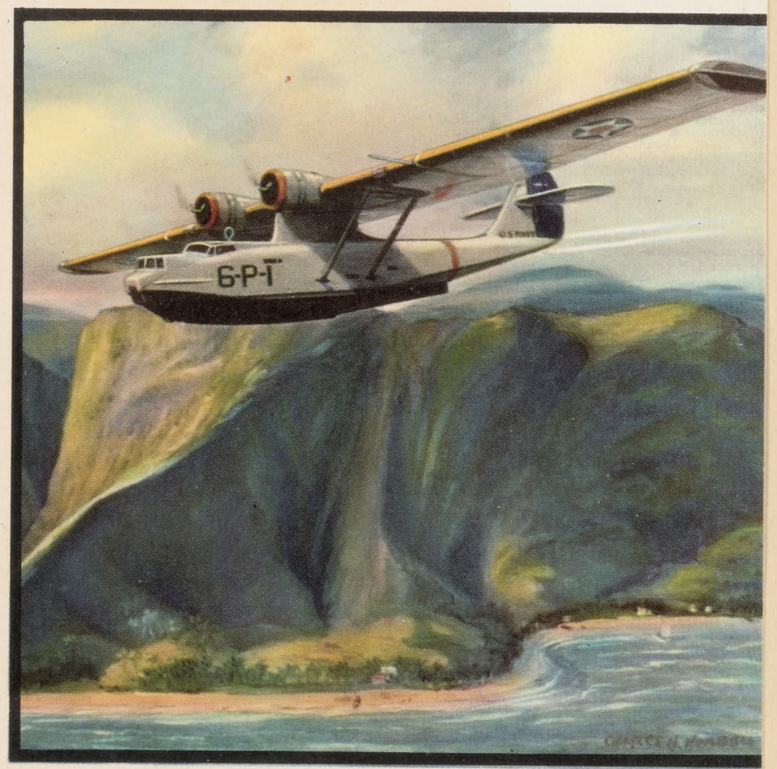
Working in three shifts, and employing more than 7000 skilled workmen, Consolidated's huge plant utilizes all the latest features of aircraft plant design. The plant now extends for a half mile along Pacific Highway, and the new Final Assembly building at the north end of the plant is more than a city block in size.

A new four-engined land bomber, designated by the Army as the XB-24, marks the company's re-entry into the land plane manufacturing field, breaking a virtual specialization which has brought Consolidated the distinction of being the world's largest manufacturer of flying boats. Data on the big 20-ton ship have been kept well in hand by the War Department. The first flight pictures of it were not released until May, at which time the plane was undergoing final tests.

The powerful new XB-24 is a full cantilever, all metal plane, powered with four Pratt and Whitney 14-cylinder twin row radial air-cooled engines rated at 1200 h.p. each, giving the plane 4800 available horsepower in flight to hurtle it through the air. The propellers are Hamilton Standards of the 3-bladed hydromatic constant speed type, 12 feet in diameter.

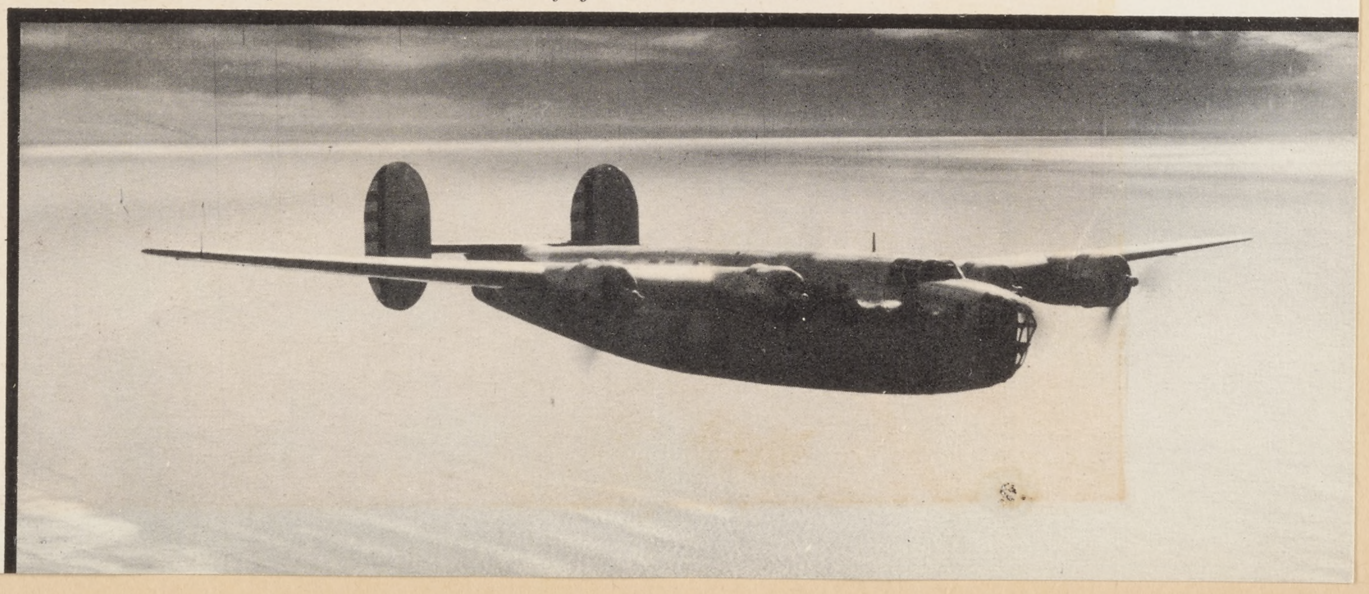
Tactical requirements are for a crew of from 6 to 9 persons, depending upon the mission to be performed. The fuselage is equipped with hatches and windows in the nose, tail, turtle-deck, back and bottom. The landing gear is of the tricycle type with single wheel forward. This retracts into the fuselage. The rear, or main landing wheels retract into the wing wells.

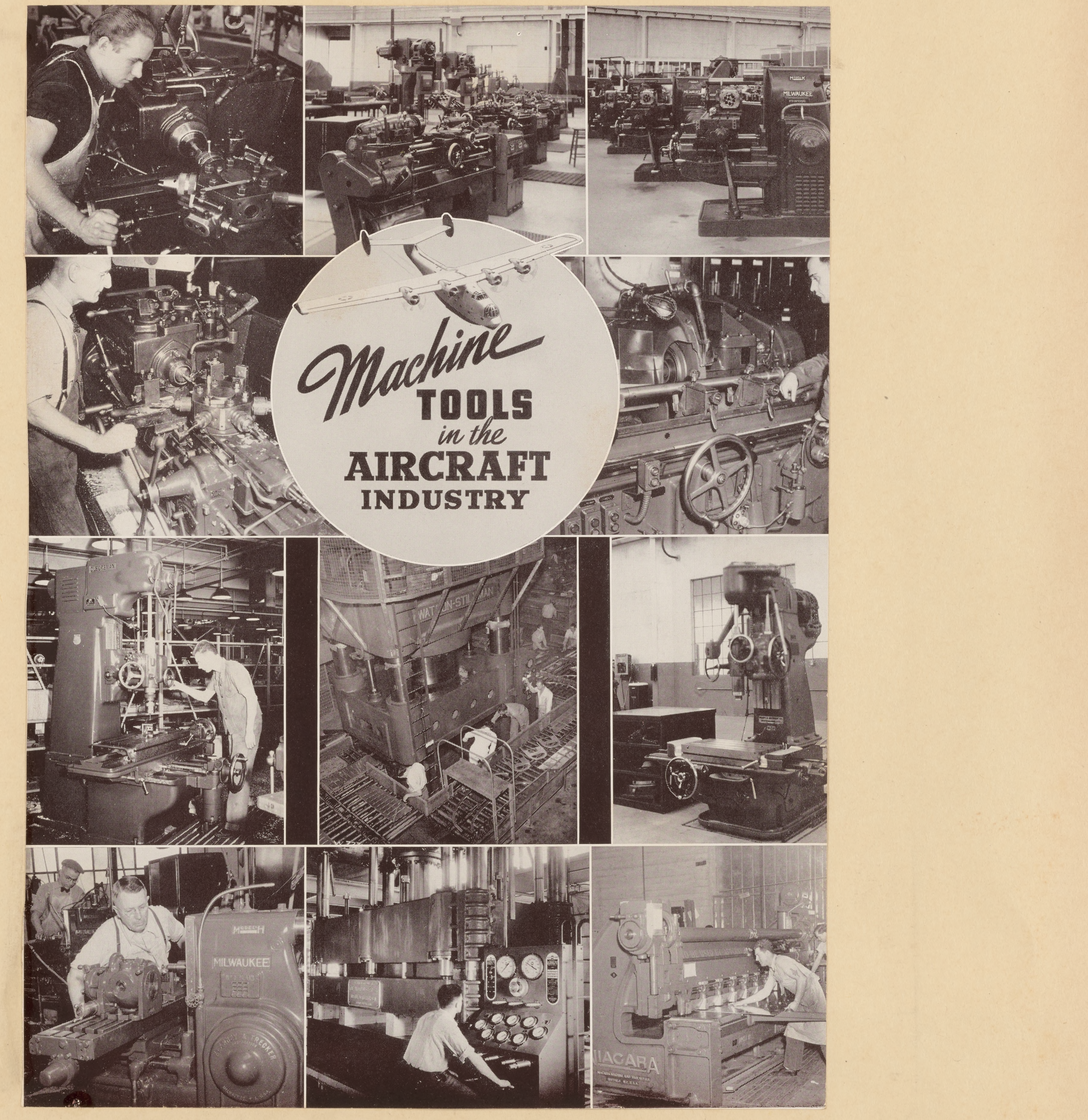
While the performance figures are strictly confidential, an official release states: "This airplane, from preliminary examinations, gives evidence of living up to the advancements in aerodynamic and performance characteristics predicted. These include a speed of over 300 miles per hour, a range of approximately 3000 miles, and a bomb-carrying capacity of approximately 4 tons." » »



"Coast Patrol"—Consolidated PBY Flying Boat, P & W twin-row Wasps (U. S. Navy).

Consolidated new Army Bomber, the XB-24, on flight tests over the coast.




MILWAUKEE
WATSON-STILLMAN
MILWAUKEE
NIAGARA

Machine TOOLS *in the* AIRCRAFT INDUSTRY

Popular Aviation - March 1940

8
P-8
10
P-10
6
P-6

Remarkable BOAT

By HAROLD KEEN

★

The U. S. Navy has about 225 PBY's and is expected to order more in the form of the latest PBY-5.

THE world's most remarkable flying boat is an American product—the creation of an American concern's inventive genius, engineering skill and manufacturing efficiency. Snow and ice fields of the Arctic, the uncharted airways over the Indian Ocean, the peaks and plains of America, and the brooding majesty of a mountain-imprisoned lake 11,500 feet above the sea in an equatorial wilderness have known this rugged lord of the skies.

Little more than four years have elapsed since the Consolidated PBY-type seaplane emerged from the experimental stage and stood acceptable to the United States Navy. In that period, its utility as a scouting instrument has been so dramatically demonstrated that this country now can be said to possess a chain of outposts along a defense frontier 2,000 miles from its own shores or those of any of its possessions.

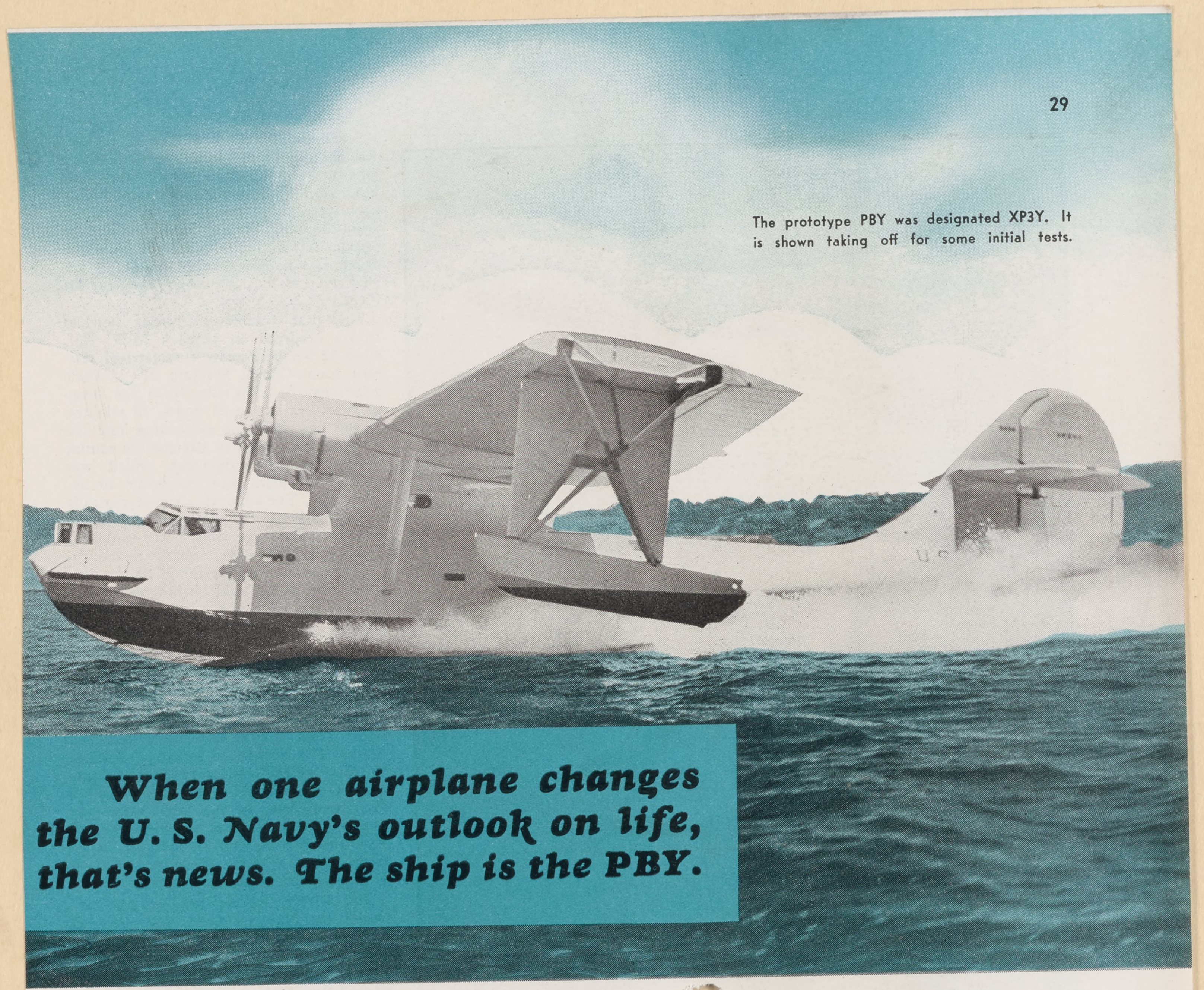
Outposts in the ocean? Yes, they're out there and none the less effective because they don't *seem* to exist. For, if the time comes that they must be occupied, whole fleets of PBY's will hover above the outermost line of defense to spot the enemy and will range the trackless thousands of square miles to the rear, back toward the visible bases on land.

These 13-ton craft won't have to be sent out merely to locate and then run for cover. With giant bombs or torpedoes secured to the 104-foot wing, they can deliver mighty deadly wallops. Well aware of the versatility, the reliable performance and the longevity of the PBY, the Navy has in operation more than 200 and before this is published will have ordered a substantial increase to this long-range sky armada. The PBY, after a thorough, extensive trial, has been adopted as the keystone of American aerial intelligence, to which is entrusted the obtaining of information on hostile Fleet movements long before enemy warships could be seen from American waterfronts. With U. S. naval strategy essentially that of engaging the enemy many miles from our territory, the role of the PBY has become a vital one, indeed.

Non-stop mass flights across great oceans and between far-distant bases have been made to appear so simple by the Navy's present-day patrol bombers that it is difficult to realize the first of such feats was accomplished only six years ago. In January, 1934, half a dozen P2Y's, sesquiplane predecessors of the PBY, commanded by Lieut.-Comm. Knefler McGinnis, took off from San Francisco harbor in an event of epochal importance. They were headed for Pearl Harbor, Hawaii—an unprecedented attempt which was authorized only after the Navy had probed completely the planes' long-range capabilities. Material failure could prove fatal. No stopping-off points existed between San Francisco and Hawaii. Faith in the P2Y's was rewarded and a new era in Naval aviation launched when the intrepid flyers landed at Pearl Harbor 24 hours, 56 minutes later, without mishap or untoward incident. The big flying boat had come of age. The P2Y now was in demand, not only here but abroad. They were sold to Colombia, Argentina and even one to Japan.

I. M. Laddon

H. L. Mandolf



The prototype PBY was designated XP3Y. It is shown taking off for some initial tests.

When one airplane changes the U. S. Navy's outlook on life, that's news. The ship is the PBY.

All the outstanding characteristics of this series were merged with unique new features in engineering of the PBY. An Austrian-born engineer, Henry Ikarus Mandolf—he is a graduate of the Austrian Naval Academy and now a loyal American citizen—conceived the important "disappearing pontoon" which helped increase the efficiency of the PBY's to such an extent they became comparable in load carrying and cruising speed to the much larger, four-engined transoceanic clippers. The pontoons were designed to retract outward and form the wing tip of the bomber in flight, thus reducing drag and improving the effective aspect ratio of the wing.

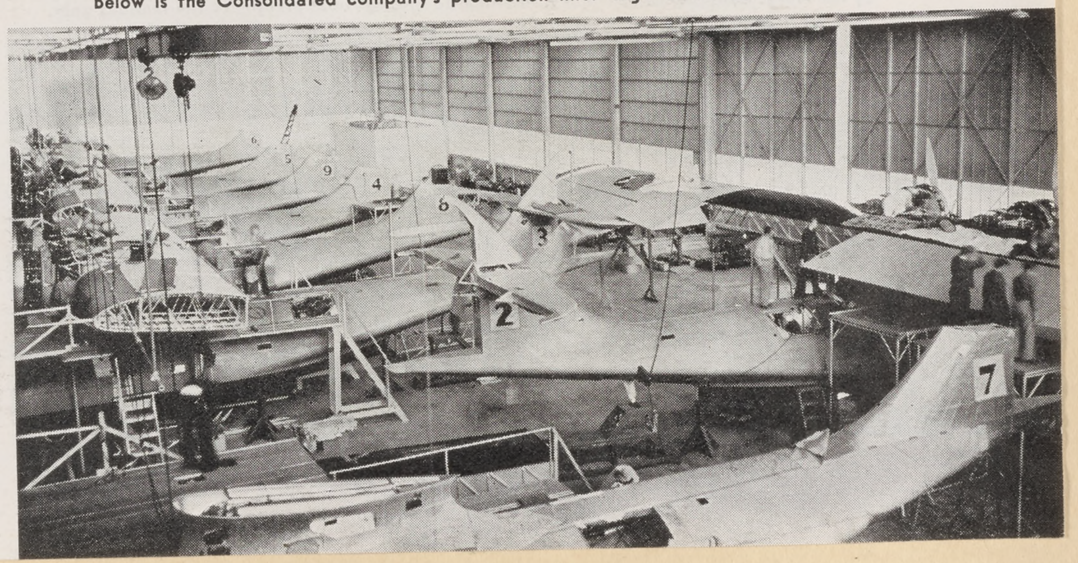
A further contribution to the PBY's great performance characteristics was the location of the fuel tanks, which were built integrally with the wing, allowing for large gasoline capacity at a minimum of additional structure weight which would be entailed by separate tanks. The entire hull, thus, is available for crew, passengers and cargo.

The Model 28—Consolidated's designation for the PBY—has exceeded 190 m.p.h. top speed, has a maximum range of 4,200 miles, a service ceiling of 29,200 feet, can climb to 15,000 feet in 13.4 minutes and requires less than a minute for full-load take-off. Russell Rogers, chi[illegible]ot of Richard Archbold's airboat "Guba"—a commercial version of the PBY—who is considered one of the world's greatest large airboat aviators, has been known to lift his craft off the water in 20 seconds.

Full cantilever tail and stressed skin monoplane wing were innovations in a seaplane of this size when introduced, with resounding success, by the PBY.

Approximately 225 of these high-performance craft, at about $150,000 each, have been delivered to the Navy. Since acceptance of the PBY in 1936, its achievements have amazed the world—not primarily because of the distance or duration of flights, but because of the never-failing dependability of the planes, the lack of incident that characterized each new lengthy journey and the ease with which vast areas of land, as well as water, were spanned. Forerunner of all these flights

Below is the Consolidated company's production line. Eight PBY's are shown.



PLANE FUNDAMENTALS FOR FLYER'S LICENSE
Government Requirements Fully Covered

PLANE FUNDAMENTALS FOR FLYER'S LICENSE

5 VOLUMES IN (1)

1. AIRPLANES 50 Questions, 50 answers, 103 illustrations in detail.
2. ENGINES 56 Questions, 56 answers, 66 illustrations in detail.
3. NAVIGATION 50 Questions, 50 answers, 57 illustrations in detail.
4. METEOROLOGY 50 Questions, 50 answers, 36 illustrations in detail.
5. CIVIL AIR REGULATIONS (Latest) AIR TRAFFIC RULES 176 Questions, 176 answers. 7 illustrations in detail.

382 questions and answers!
A complete text for every pilot seeking higher rating.

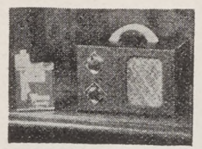
269 Illustrations

NEW SECOND EDITION.
Approved by more than 10,000 pilots.
VALUE $5.00!

NOW $1.50

MAIL COUPON NOW TO:
POWER PUBLISHING CO., DEP'T P
40 Clinton St., Newark, N. J.

Sir: Forward me......copies of PLANE FUNDAMENTALS FOR FLYER'S LICENSE.
I am enclosing money order ☐ Check ☐
I will pay postman on delivery ☐ (Plus few cents C.O.D. charge
Name ....
Address ....
City .... State............



LOOK! World's Smallest Portable Radio

Size only 3¾"x5¾"x4" and WEIGHS ONLY 2 LBS. complete with batteries—self contained loop—NO AERIAL—NO GROUND! Dynamic speaker, Transformer A F. stage & multi-purpose tubes—hi gain type. Can actually be carried in your coat pocket! Receives local and semidistant stations. Strong, neat, waterproof airplane cloth covered case. The first REALLY portable radio that won't break your arm to carry it! Costs little to operate—uses cheap flashlight batteries! Just the thing for picnics, bedrooms, offices, games, etc. OPERATES WHILE WALKING—ANYWHERE!
SEND ONLY $1.00 (currency, M.O., Check) and pay postman $8.95 plus postage on arrival. Sent absolutely complete ready to play the moment you get it! LESS WEIGHT, cost, size and upkeep—highest value! Order your midget today! GUARANTEED!
MIDGET RADIO CO. Dept. PA-3 KEARNEY, NEBR.

DO YOU WANT A JOB IN AVIATION?

IF YOU DO, the Luscombe School of Aeronautics can train you to take advantage of the better paid positions in the aircraft industry.

By obtaining the proper foundation for your future career at Luscombe, you are assured of the logical advancement that comes as a result of thorough and modern preparation. WRITE FOR DETAILS IMMEDIATELY and let us explain how we can put YOU in aviation. A free copy of "Opportunity in Aviation" and our School Paper, the "Luscombe Highlight" will be mailed to you.

Featuring a ONE YEAR GOVERNMENT APPROVED COURSE leading to an A.&E. License or to Specialization in Factory Production of Modern Airplanes.

OVER 90% OF OUR GRADUATES PLACED

Next Class Starts April 1, 1940

West Trenton New Jersey

LUSCOMBE SCHOOL OF AERONAUTICS

Division of Luscombe Airplane Corp.

Remarkable Boat

(Continued from page 30)

minutes (the present record) was required by 15 PBY's led by the same Lieutenant-Commander LaHache last June. And Coco Solo, 3,087 miles away, has been reached from San Diego in only 22 hours, 20 minutes, by a 14-plane squadron. These feats by no means exhaust the admirable potentialities of the PBY-type.

Fletcher Pratt, the eminent Naval expert, is authority for the astounding, virtually unbelievable revelation that a PBY, in the 1939 Caribbean maneuvers, remained in the air *three days continuously,* traveling 15,000 miles as it kept on the tail of the "enemy" fleet. Just how this was accomplished has not been disclosed, officially or unofficially, as the PBY's 1,700-gallon gasoline capacity allows a non-stop range of only 4,200 miles. Were extra tanks installed in the hull? Was the working crew reduced to save weight? The Navy has not confirmed this sensational report, but if any element of truth exists in it, startling are the possibilities of day-and-night scouting thousands of miles from the United States.

Meanwhile, a private citizen—the wealthy Standard Oil heir, Richard Archbold—and the flight crew of his $250,000 "Guba", showed the Navy what terrific punishment its patrol planes will take under the most severe flying conditions conceivable and in widely varying climes. Archbold and his chief pilot, Russ Rogers, were the first to fly non-stop across the United States in a seaplane. This was done in the "Guba" on June 24-25, 1937—from San Diego to New York, 2,700 miles, in 17 hours, 3 minutes. And, to prove this could be made as much a routine as the Navy's ocean hops, Archbold did it again the following December—San Diego to Miami, 2,300 miles, in 14 hours, 10 minutes. He did it still a third time, again to Miami, on Feb. 26, 1938, in the creditable time of 12 hours, 35 minutes.

After due consideration of these performances, the Navy decided they were not mere stunts and had tremendous tactical value. They sent one of their own ships across—not quite as far, but nevertheless on a transcontinental trip, from San Diego to Pensacola. This has been done several times since with individual PBY's, the Navy having yet to risk a mass flight of seaplanes across the nation.

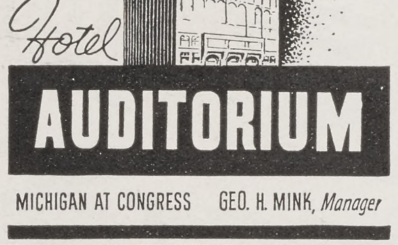
Aviation experts will tell you this is not as hazardous as it appears at first. There are plenty of sufficiently large water bodies to accommodate a PBY in an emergency during a transcontinental crossing. These water bodies, they will assure you, are closer together than emergency landing fields capable of harboring today's giant transports or Army bombers.

All this was done by Mr. Archbold in the same "Guba". There have been two "Gubas" (the name is native Papuan for "Sudden Storm"), with the first one purchased by the Russian government for Sir Hubert Wilkins shortly after the initial cross-country trip to New York in 1937. In this craft and with the Archbold flight crew, Wilkins searched for the Russian ace, Levanevsky, and his lost shipmates in the polar regions north of Latitude 80. The manner in which this airboat performed again found keen interest among Navy officials. Nineteen thousand miles were covered in flights of tremendous non-stop distances. To the 1,700 gallons of gas contained in the wings were added a large quantity in drums carried within the hull. This, in addition to the bulky supplies and equipment and the heavy drag of ice coatings on wings and tail surfaces, at times put the boat to tests possibly more severe than any ever administered under normal operating conditions.

A startling sample of the PBY-type's versatility was again afforded by Archbold, in the second "Guba", acquired after he disposed of Number One to the Soviet Union. This ship, perhaps the most famous privately-owned airplane in the world, has an amazing record of "firsts" to its credit. In its use as a transport for an American Museum of Natural History expedition in Netherlands New Guinea, and as a survey ship for a new commercial route planned by the Australian government, it accomplished the following:

1. First to fly from Guam to Netherlands New Guinea, 1,900 miles.
2. First to operate from a lake 11,500 feet above sea level (Lake Habbema in Netherlands New Guinea), where dozens of landings and take-offs were made in rarefied air that deprived the two 1,000 h.p. Pratt & Whitney engines of almost half their power.
3. First airboat to span the Australian continent non-stop, 2,200 miles from Sydney to Port Hedland.
4. First airboat to cross the Indian Ocean, 5,400 miles from Port Hedland to Mombasa, Africa, on a survey flight for the Australian government to demonstrate feasibility of a new commercial air route.

(Continued on page 82)



MICHIGAN AVENUE
WHERE CHICAGO Lives

● The pulse of the city — Michigan Avenue. Chicago works and plays to the tune of its rhythmic hum. In the most convenient location on this famous thoroughfare, Hotel Auditorium provides spacious pleasant rooms, excellent service and superb cuisine, at reasonable rates.

WITH BATH FROM $2.50 WITHOUT BATH FROM $1.50

Hotel AUDITORIUM

MICHIGAN AT CONGRESS GEO. H. MINK, *Manager*

AERO FIRE PREVENTION

It is proper and wise that airplane fire risks be faced squarely, their causes studied and precautions taken to minimize them. The Aero Insurance Underwriters have made a careful study of air safety, particularly relating to fire and fire hazards. Jerome Lederer, Chief Engineer of the Aero Insurance Underwriters, brings the findings of their study to the readers of POPULAR AVIATION. Don't miss this informative article in the

APRIL ISSUE

POPULAR AVIATION

ON SALE MARCH 10

(Continued from page 80)

5. First to fly from the west coast of Africa to the Virgin Islands, making it holder of the world's record for non-stop over-water flying, 3,300 miles on this jump.
6. First airboat to circumnavigate the globe the longest way—25,000 miles—with San Diego as the starting and ending point.

When Russ Rogers and company returned to San Diego last July they stepped out of the "Guba" and into another Model 28, with markings of the British Royal Air Force on its wing and hull. In this they demonstrated to the United States Navy another stunning possibility—easily accomplished flights of bombers across the Atlantic between Europe and the North American continent. They took the PBY replica, which the English government bought for experimental purposes with a view to possible large-scale production, from San Diego to Buffalo, N. Y., then to Botwood, Newfoundland, and finally directly across to Felixstowe, marine aircraft experimental establishment of the Royal Air Force on the North Sea.

That gave the Navy experts plenty of food for thought, not only as to the ability of the PBY. A horde of bombers flying in the opposite direction could no longer be considered as pure fancy. There is irony in the sale of a PBY to England. Glowering at Great Britain from the other side of the diplomatic fence is Russia which also boasts not only a PBY but a complete set of plans and tools for the mass production of these airboats. In 1937, Consolidated sent a corps of 10 engineers to Taganrog, Russia, on the Sea of Azov, where the technique of American manufacturing was introduced at a huge plant. Preceding the technicians were a complete PBY, parts for another and the design and tools. The enigmatic Russians claimed the ships were to be used for commercial, cargo-carrying purposes. Yes, it was all done with the consent of the U. S. Navy, whose strategists are well aware of the fact that Alaska is not too comfortably distant from Siberia.

The Atlantic was transversed half a dozen times last summer by another Model 28, purchased by American Export Airlines for survey flights preparatory to establishing a regular service.

American aviation knows no more glorious chapter than the military and commercial saga of the PBY-type flying boat. And from it greater developments have sprung. There is the mighty four-engined XPB2Y-1, several of which are under construction for the Navy, and the experimental twin-motored (2,000 h.p. Wright *Cyclones* each, the largest ever installed in a plane) Model 31, said to be the fastest and longest-range airboat in the world.

But engineers are looking beyond these, to the other side of the horizon, where the flying wing is awaiting practical application. As for the airplane of tomorrow, based on proved principles of design and construction, the PBY's chief engineer, I. M. Laddon, has this to say:

"It will carry up to 300 passengers with baggage, mail and baggage, or mail and express and have a range sufficient to cross any ocean or continent with a safe reserve of fuel. Flying at well over 300 m.p.h. in the stratosphere where ideal conditions for smooth, fast flight exist, the passenger will find a modern expression of the fundamental urge to travel, in keeping with an age of speed."

END

It Takes Headlines

(Continued from page 53)

tion announced some ground schools in the Wisconsin vocational schools, the W.C.A.C. wrote the district NYA supervisor offering corps members as volunteer speakers and equipment for part time use. That also got publicity and it was a worthy public service.

When the Community Chest drive starts let your organization offer a couple of planes to fly signs over the city. Organize a speakers bureau and let the various civic clubs know that the emminent attorney, Joe Doakes, is a member of the Whoosis Aviation club and he'll be glad to talk free at one of their noon luncheons. Send your speakers before high school and grade school assemblies, to Boy Scout and Girl Scout meetings, down to the Y.M.C.A. You'll be amazed how gladly they will be received.

If possible, get an unusual twist on your normal activities. That makes for news. For example, the W.C.A.C. planned a navigation race from Milwaukee to Kohler, Wis., back to West Bend, Wis., and then into the Curtiss-Wright airport at Milwaukee. Normally that would have been worth maybe two paragraphs in the newspapers—one to announce the race was to be held, another telling the winners. Some wise member of the corps remembered the state and nation was wrought up over the dual Thanksgivings; one on November 23 for FDR, the other on November 30 for the Republican governors.

So the group announced a Turkey Day race to be held the Sunday before Thanksgiving the First with turkeys, geese, ducks and chickens (all donated) for prizes and got themselves a couple of good feature stories.

At the annual hobby show in Milwaukee's huge auditorium, the same organization carted a small plane from an airport through the downtown streets, set it up along with other things as an exhibit and kept someone on duty to explain controls, struts and whatnot to the thousands who saw the hobby show.

The possibilities for legitimate publicity for your aviation organization are bounded only by your imagination and the worthwhileness of your activities. But remember—only *good* publicity is news.

END

Government Sailplane

THE first sailplane ever to be ordered directly by the U. S. Government recently was delivered to a Government soaring school project at Cassidy Lake, Michigan. The sailplane was completed 19 days after the order was received, although the order itself called for 30-day delivery. The ship was built by the Bowlus Sailplane Company, San Fernando, Cal.

South Wales Post 7/5/40

BRITAIN IS BUYING 9,500 PLANES FROM UNITED STATES: 3,000 HAVE BEEN SENT

From Our Own Correspondent

NEW YORK, Sunday.

NEARLY half of the American planes delivered to the Allies to date are training machines unsuited for use at the front, it is revealed.

The fact that 1,188 North American (Harvard) trainers have been delivered to Britain and 524 to France, from a total of 2,827 of this type ordered, indicates that future deliveries will consist of a far larger proportion of fighter planes of various categories.

Detailed figures of Allied plane purchases in the United States are now available for the first time

Until now only the value of the orders placed in this country has been made public, while the information about deliveries has been of the vaguest.

HALF DELIVERED

It can now be said that Britain, by taking over the French orders, holds contracts for 9,512 American planes, of a total value of over £250,000,000.

Nearly half of these planes have been delivered to Allied agents here, and about 3,000 have been shipped to Europe. French orders, taken over by Britain, total 4,934 planes, of which 1,858 have been delivered and an unknown number shipped, leaving 3,076 which will be diverted to Britain.

Of planes ordered by Britain alone, 2,028 have been delivered and 3,886 are to come.

Total figures can be shown as follows:

North American (Harvard) trainers, 2,837; Curtiss pursuits, 1,900; Lockheed (Hudson) bombers, 1,860; Douglas bombers, 1,335; Martin bombers, 870; Bell Air Cobras, 240; Brewster fighters, 250; Consolidated flying-boats, 96; Grumman fighters, 84; Vought-Sikorsky dive-bombers, 40.

The arrival here of Mr. Harold James, of the British Ministry of Aircraft Production, who expressed the hope that American manufacturers would be able to speed-up production to the point of delivering 5,000 planes monthly, is taken as an indication that even larger British orders are in prospect.

South Wales Post 7/5/40

AMERICAN AIRCRAFT

SOME TYPES IN USE IN THIS COUNTRY

A few types of military aircraft from the United States have already become familiar in this country through their use in the air services of the Allies.

Probably the best known are the Lockheed Hudson reconnaissance aircraft adopted early in the war by the R.A.F. Coastal Command, and the Curtiss Hawk 75A fighters of the French Armee de l'Air. Both are straightforward designs whose features are strength and power of manœuvre rather than high speed.

But there are a number of other types of U.S.A. aircraft not yet so well known, some of which are rather less conventional in appearance and design, and which may have interesting possibilities in war.

Among the two-motor fighters is a single-seat 400 m.p.h.-plus machine with superfine streamlining, the Lockheed P-38. A characteristic feature is the way in which the two engine-nacelles are extended to form the tail units, and a central fuselage dispensed with. The motors are 1,250 h.p. Allisons, an in-line type of liquid-cooled engine reminiscent of the Rolls-Royce Merlin. Allison is a relatively new name in U.S.A. engines, and the type is now fitted to a number of America's newest fighters.

Another interesting American is the Bell Airacobra—a single-seat fighter for which a speed of over 400 miles an hour is also claimed. In silhoutte not unlike the British Spitfire, it is unique among contemporary aircraft in mounting the engine amidships, behind the pilot, and driving the airscrew by a long extension shaft. Another Bell product is the two-motor, multi-seat Airacuda, in which the propellers are fitted behind the wings. Forward extensions of the engine nacelles are used to house gunners.

A more conventional type of single-seat fighter from which a high performance may be expected is the Curtiss P.40. This sturdily built fighter, designed for the U.S. Army, is also powered with a single 1,250 h.p. Allison motor. The latest version is known as the P.40.D. The wing span, 37-ft. 4-in., is just a little more than that of the Spitfire. Another interesting design is the little, high-powered Vultee Vanguard. Although only a single-seater with a wing span of 36-ft., it houses a 1,600 h.p. Pratt and Whitney motor under its cowling. For fleet work the Americans have a useful four-gun fighter in the Brewster F2A-1. This has an air-cooled Wright Cyclone motor of 800 h.p. Its short chubby fuselage and stiff wings give it a distinctive appearance, rather like a flying barrel.

ARMAMENT OF THE FIGHTERS

Not much information has been released about the armament of these new fighters. In general U.S.A. aircraft are less heavily armed than their British counterparts, but it may be remembered that the fire power of the Curtiss Hawks supplied to the French Air Force was increased to meet modern war requirements.

America's new-type bombers include a number of fast, medium-sized two-motor types with a useful range. Some are fitted with diving brakes and other devices for close attack duty and are known as attack-bombers. The Douglas B-23 is an interesting example of American bomber design. Fitted with two Wright Cyclone motors it is claimed to have a speed of 375 miles an hour. This is some seventy-five miles an hour faster than the British Blenheim, a somewhat comparable type. An earlier type of Douglas, the DB-7, has much the same characteristics but a lower performance. Its wing span of 60-ft. is about midway between that of the Bristol Blenheim and the Handley Page Hampden.

Another good U.S.A. bomber is the Glenn-Martin 167-W, which has seen considerable service with the French Air Force. Not so fast as the new Douglas—315 miles an hour is about the maximum it can do—it is nevertheless a generally useful type, being designed not only for bombing, but also for fighting, reconnaissance and ground attack work.

Besides fighters and bombers America also produces a number of trainer aircraft and flying boats. The North America Harvard trainer was one of the first U.S. aircraft to fly the R.A.F. colours, several hundred having been bought before the war. So far no flying boats have been in service with the R.A.F. except for experimental purposes. Among the American flying-boats those constructed by the Consolidated concern are perhaps the most well known.

Northern Evening Dispatch 7/9/40

PLANE OUTPUT IN U.S.A.

Speeding Up On Pacific Coast

LOS ANGELES, Thursday.

Most of the 50,000 planes which President Roosevelt wants America to produce will be manufactured at factories along the Pacific coast. Sixty per cent. of the country's aircraft is now being produced at these West Coast factories, and they are now engaged on plans to double or treble their capacity.

A census by the Vultee Aircraft Company shows that the production facilities of seven leading manufacturers will be increased by 70 per cent. by 1941, and the Vultee Company has announced that its own production will be doubled. The Douglas and Lockheed Aircraft companies have both announced expansion programmes.

The seven companies announced in the census, were not named, but are presumed to include the Boeing Aircraft Company of Seattle, Consolidated Aircraft of San Diego, and the North American Aircraft Company of Los Angeles, in addition to the Vultee, Douglas and Lockheed companies.

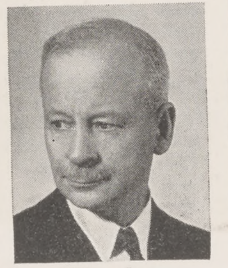
The expansion programme undertaken by these companies will cost £5,000,000.

More than 40,000 men are working on aircraft production, while the South Californian plants alone have accumulated orders for more than £100,000,000, which must be filled before starting on the new expansion programme.—British United Prss.

EDUCATOR JOINS UNITED

Prof. William A. Wheatley Is Line's New Director of School and College Relations

Prof. William A. Wheatley, former professor of education and guidance at State Teachers College, Edinboro, Pa., has been appointed director of school and college relations for United Air Lines, it was announced on Apr. 2 by Harold Crary, vice-president of traffic. Prof. Wheatley's son, William B. Wheatley, is chief test pilot for Consolidated Aircraft Corp.



Wheatley

Importance of air transportation, economically, civically and vocationally, is expanding so rapidly that United felt the need of adding an educator to its executive staff, Crary said. Prof. Wheatley is a co-author of two high school textbooks, "Occupations" and "Building Character and Personality."

4-15-40
American Aviation

Union Tribune 7/10/40

BENBOUGH NOTE TO N. Y. MAYOR ABOARD GUBA

7/10/40

Greetings from Mayor P. J. Benbough, of San Diego, to Mayor Fiorella LaGuardia, of New York, were to be aboard Richard Archbold's Consolidated flying boat Guba when it took off for Port Washington, Long Island, at 2 p.m. today.

The flight originally was scheduled to begin yesterday, but was delayed on instructions from Archbold in New York, who notified the crew members by telephone that the navy, which is interested in the non-stop, overland flight, was planning a reception for them at Floyd Bennett airport.

Benbough's greetings follow:

Dear Mr. Mayor:

It gives me great happiness to take this occasion to send greetings to you, the mayor of the world's greatest city, from the city which encompasses the largest naval base on the Pacific coast.

The records held by the "Guba," and the remarkable flights made by the navy long-range patrol boats, of which the "Guba" is a counterpart, not only testify to the splendid ships flown by the navy but demonstrate how these "flying battleships" could span a great continent in a few hours to confound an enemy on either coast should the need arise.

It is my hope that this flight of Richard Archbold's famous ship will do its share to convince Americans that many more such flying boats, as well as additional military and naval equipment provide the safest way to preserve our democracy.

(Signed) P. J. BENBOUGH.

The trip was expected to require 17 hours. Crew members were Russell Rogers, chief pilot; Douglas Kelley, co-pilot; Stephen Barrinka, flight engineer; Harold Ramm, radioman, and Hector Nicholson, assistant flight engineer.

Aviation July 1940

American Export Announces Plans

Trans-Atlantic air service to carry mail and express between New York and Lisbon, Portugal, will be established by American Export Airlines, Inc., within 60 days and a new non-stop New York-Lisbon passenger service will be begun next year.

This was announced today by J. E. Slater, executive vice president of the company, following the granting by the Civil Aeronautics Board of temporary certificates of public convenience and necessity in a decision in which it held that continued monopoly of the trans-Atlantic airways by Pan American is not in the public interest.

The mail-express service will be started with a Consolidated Model 28 twin-engined monoplane which made three successful round-trip survey flights across the Atlantic last summer. Plans call for two round-trips monthly with Horta, the Azores, as an intermediate stop.

The non-stop passenger service, which also will carry mail and express, will be provided by three S-44 Vought-Sikorsky flying boats, the commercial version of the Navy's flying dreadnaughts, which are being built by the United Aircraft Corporation. The proposed schedule calls for two round-trips a week.

Consolidated Air

Romeike & Curtice Ltd

Telephone
CENTRAL 2781
(2 Lines)

R&C

35. Shop Lane
LONDON.
E.C.4

EXTRACT FROM

DAILY MIRROR

Geraldine Hse, Rolls Bldgs, Fetter Lane, E.C.4.

4.10.40

Monday, November 4, 1940

U.S. 'Tremendous Boost' for R.A.F.

In about two months Britain's air strength will be "tremendously boosted" by United States planes of all descriptions—especially bombers—Major V. Bertrandias, vice-president of the Douglas Aircraft Company, said at Toronto.

The Consolidated Aircraft Company's big B 24 bomber—first of a fleet of long-range four-motored planes which, it is reported, is to be delivered to Great Britain—has been given its first test.

Officials of the company declined to say how many of the planes will be delivered to the R.A.F.

The bomber, with wingspan of 110ft., carries four tons of bombs and a crew of nine at a top speed of about 300 miles an hour.

Its cruising radius is 3,000 miles.—Associated Press and Exchange.

Wiltshire News 7/13/40

AMERICAN AIRCRAFT

SOME TYPES IN USE IN THIS COUNTRY

A few types of military aircraft from the United States have already become familiar in this country through their use in the air services of the Allies.

Probably the best known are the Lockheed Hudson reconnaissance aircraft adopted early in the war by the R.A.F. Coastal Command, and the Curtiss Hawk 75A fighters of the French Armee de l'Air. Both are straightforward designs whose features are strength and power of manœuvre rather than high speed.

But there are a number of other types of U.S.A. aircraft not yet so well known, some of which are rather less conventional in appearance and design, and which may have interesting possibilities in war.

Among the two-motor fighters is a single-seat 400 m.p.h.-plus machine with superfine streamlining, the Lockheed P-38. A characteristic feature is the way in which the two engine-nacelles are extended to form the tail units, and a central fuselage dispensed with. The motors are 1,250 h.p. Allisons, an in-line type of liquid-cooled engine reminiscent of the Rolls-Royce Merlin. Allison is a relatively new name in U.S.A. engines, and the type is now fitted to a number of America's newest fighters.

Another interesting American is the Bell Airacobra—a single-seat fighter for which a speed of over 400 miles an hour is also claimed. In silhoutte not unlike the British Spitfire, it is unique among contemporary aircraft in mounting the engine amidships, behind the pilot, and driving the airscrew by a long extension shaft. Another Bell product is the two-motor, multi-seat Airacuda, in which the propellers are fitted behind the wings. Forward extensions of the engine nacelles are used to house gunners.

A more conventional type of single-seat fighter from which a high performance may be expected is the Curtiss P.40. This sturdily built fighter, designed for the U.S. Army, is also powered with a single 1,250 h.p. Allison motor. The latest version is known as the P.40.D. The wing span, 37-ft. 4-in., is just a little more than that of the Spitfire. Another interesting design is the little, high-powered Vultee Vanguard. Although only a single-seater with a wing span of 36-ft., it houses a 1,600 h.p. Pratt and Whitney motor under its cowling. For fleet work the Americans have a useful four-gun fighter in the Brewster F2A-1. This has an air-cooled Wright Cyclone motor of 800 h.p. Its short chubby fuselage and stiff wings give it a distinctive appearance, rather like a flying barrel.

ARMAMENT OF THE FIGHTERS

Not much information has been released about the armament of these new fighters. In general U.S.A. aircraft are less heavily armed than their British counterparts, but it may be remembered that the fire power of the Curtiss Hawks supplied to the French Air Force was increased to meet modern war requirements.

America's new-type bombers include a number of fast, medium-sized two-motor types with a useful range. Some are fitted with diving brakes and other devices for close attack duty and are known as attack-bombers. The Douglas B-23 is an interesting example of American bomber design. Fitted with two Wright Cyclone motors it is claimed to have a speed of 375 miles an hour. This is some seventy-five miles an hour faster than the British Blenheim, a somewhat comparable type. An earlier type of Douglas, the DB-7, has much the same characteristics but a lower performance. Its wing span of 60-ft. is about midway between that of the Bristol Blenheim and the Handley Page Hampden.

Another good U.S.A. bomber is the Glenn-Martin 167-W, which has seen considerable service with the French Air Force. Not so fast as the new Douglas—315 miles an hour is about the maximum it can do—it is nevertheless a generally useful type, being designed not only for bombing, but also for fighting, reconnaissance and ground attack work.

Besides fighters and bombers America also produces a number of trainer aircraft and flying boats. The North America Harvard trainer was one of the first U.S. aircraft to fly the R.A.F. colours, several hundred having been bought before the war. So far no flying boats have been in service with the R.A.F. except for experimental purposes. Among the American flying-boats those constructed by the Consolidated concern are perhaps the most well known.

Newcastle

SUNDAY SUN 7/14/40

HERE'S SOME HEARTENING NEWS FOR DOUBTERS

U.S. Air Armada Hustle-Up

SUPER-PLANES TAKE WING OVER BRITAIN

By WILLIAM COURTENAY, "SUNDAY SUN" AIR CORRESPONDENT

THERE ARE MANY HEARTENING FEATURES IN A REVIEW OF THE AIR ARMADA WHICH AMERICA IS RUSHING TO THE AID OF BRITAIN.

ALREADY SUPER-AIRCRAFT ARE ARRIVING IN THIS COUNTRY, ARE UNLOADED, ASSEMBLED, AND IN MANY CASES TAKE THE AIR WITHIN FIVE HOURS OF THEIR ARRIVAL.

By next spring the invasion of American aircraft will be in full flood, and these 10,000 machines, plus others which will follow, will help to redress the balance of numbers against the foe.

Twenty thousand aero engines are on order

of the way down the fuselage to protect the tail from attack.

They have proved most effective against German bombers.

They have been flying 400 miles from their home bases, over Norway, have shot down enemy aircraft, and have defended themselves from air attack. They are now being used on bomber duties and have considerably augmented our bomber fleets.

The new Douglas twin-engined bomber, reputed to have a top speed of 330 m.p.h., figures among our orders. Up to 1,335 are on order and, in addition, 870 Martin bombers are due to come over.

Also, we are buying 240 of the Bell Airacobra fighters, which have the engine amidships in the fuselage, a propeller shaft to the nose for the airscrew, and fly at 400 m.p.h.

The long range Consolidated flying boats, of which one flew from San Francisco to Felixstowe will also be seen. There are nearly 100 on order

WITH A RANGE OF 4,000 MILES, WITH RETRACTABLE WING-TIP FLEETS, AND A SPEED OF OVER 200 M.P.H., THEY WILL SCOUR THE WIDE ATLANTIC AND THE WHOLE OF THE ARCTIC TO DEAL WITH SUBMARINES AND ATTEMPTS BY THE GERMAN NAVY TO BREAK OUT FROM ITS IMPRISONMENT IN NORTH SEA HARBOURS.

Raids by isolated aircraft, writes the "Sunday Sun" Military Correspondent, may in favourable circumstances, as in the Spanish civil war, achieve considerable material damage.

Even in those favourable conditions—which do not exist here—they cannot paralyse industry or cause casualties which will affect the morale of a population, whose faith in its cause remains intact.

The only grave effect small air raids could have would be if they were sufficiently frequent and widespread to keep a large number of people every night from bed.

INVASION BOGY RECEDES

This they have not been, and evidence suggests that they will not be allowed to become so.

The battle of the South-East Coast has a far wider significance than any other air encounter, well though our air defences have so far emerged from all tests imposed on them.

In order to effect a successful invasion of this country the enemy must have one of two things—sea power or air power.

He must not only be able to land a force, but also to maintain communications adequate for its supply and reinforcement.

The Nazis' sea power has—at any rate since the actions at Oran and Dakar—not been sufficient for their purpose. Was their air power?

With their admitted superiority in numbers, this was a question which seemed to admit of a good deal of doubt.

There are various ways in which air power might conceivably be used to cover an invasion.

A channel for boats or barges might be made by the dropping of magnetic mines, the invaders being protected by escorting aircraft, or

The seizure of a landing-ground by parachutists might be followed by the arrival of large aircraft, carrying troops and equipment including artillery and light tanks.

With an air force so alert and so capable of dealing with large air formations as the R.A.F., however, the escorting aircraft in the one case, the troop-carrying a material-carrying craft in the other would certainly suffer.

WHILE RECENT OPERATIONS HAVE NOT BEEN SENSATIONAL, THE LESSONS LEARNED FROM THEM MAKE THE SPECTRE OF INVASION DEFINITELY LESS GRIM THAN WHEN IT FIRST CONFRONTED US.

Consolidated Air

Air 7.

Romeike & Curtice Ltd
Telephone CENTRAL 2781 (2 Lines.)
R&C
35. Shoe Lane, LONDON. E.C.4.

EXTRACT FROM

Western Independent

Date 14 JUL 1940

PLANE OUTPUT IN UNITED STATES

Speeding Up on the Pacific Coast

MOST of the 50,000 planes which President Roosevelt wants America to produce will be manufactured at factories along the Pacific coast, says a British United Press message from Los Angeles.

Sixty per cent. of the country's aircraft is now being produced at these West Coast factories, and they are now engaged on plans to double or treble their capacity.

A census by the Vultee Aircraft Company shows that the production facilities of seven leading manufacturers will be increased by 70 per cent. by 1941, and the Vultee Company has announced that its own production would be doubled.

The Douglas and Lockheed Aircraft companies have both announced expansion programmes.

The seven companies announced in the census were not named, but are presumed to include the Boeing Aircraft Company of Seattle, Consolidated Aircraft of San Diego, and the North American Aircraft Company of Los Angeles, in addition to the Vultee, Douglas and Lockheed companies.

The expansion programme undertaken by these companies will cost £5,000,000.

More than 40,000 men are working on aircraft production, while the southern Californian plants alone have accumulated orders for more than £100,000,000, which must be filled before starting on the new expansion programme.

Consolidated Air

Romeike & Curtice Ltd

Telephone
CENTRAL 2781
(2 Lines.)

R&C

35. Shoe Lane.
LONDON.
E.C.4.

EXTRACT FROM

Also appeared in Herne Bay Press - 7/13/40

Glasgow Herald

Date 15 JUL 1940

UNITED STATES AIRCRAFT

'PLANES USED BY BRITAIN

A few types of military aircraft from the United States have already become familiar in this country through their use in the air Services of the Allies. Probably the best known are the Lockheed Hudson reconnaissance aircraft adopted early in the war by the R.A.F. Coastal Command, and the Curtiss Hawk 75 A fighters of the French Armée de l'Air. Both are straightforward designs whose features are strength and power of manœuvre rather than high speed.

But there are a number of other types of U.S.A. aircraft not yet so well known, some of [illegible] silhouette not unlike the British Spitfire, it is unique among contemporary aircraft in mounting the engine amidships, behind the pilot, and driving the airscrew by a long extension shaft.

CONVENTIONAL TYPE

Another Bell product is the two-motor, multi-seat Airacuda, in which the propellers are fitted behind the wings. Forward extensions of the engine nacelles are used to house gunners.

A more conventional type of single-seat fighter from which a high performance may be expected is the Curtiss P.40. This sturdily built fighter, designed for the United States Army, is also powered with a single 1250 h.p. Allison motor. The latest version is known as the P.40D. The wing span, 37ft. 4in., is just a little more than that of the Spitfire.

Another interesting design is the little, high-powered Vultee Vanguard. Although only a single-seater with a wing span of 36ft., it houses a 1600 h.p. Pratt and Whitney motor under its cowling. For fleet work the Americans have a useful four-gun fighter in the Brewster F2A-1. This has an air-cooled Wright Cyclone motor of 800 h.p. Its short, chubby fuselage and stiff wings give it a distinctive appearance, rather like a flying barrel.

Not much information has been released about the armament of these new fighters. In general, U.S.A. aircraft are less heavily armed than their British counterparts, but it may be remembered that the fire-power of the Curtiss Hawks supplied to the French Air Force was increased to meet modern war requirements.

NEW BOMBERS

America's new-type bombers include a number of fast, medium-sized two-motor types with a useful range. Some are fitted with diving brakes and other devices for close attack duty, and are known as attack-bombers. The Douglas B-23 is an interesting example of American bomber design. Fitted with two Wright Cyclone motors, it is claimed to have a speed of 375 m.p.h. This is some 75 m.p.h. faster than the British Blenheim, a somewhat comparable type. An earlier type of Douglas, the DB-7 has much the same characteristics but a lower performance. Its wing span of 60 feet is about midway between that of the Bristol Blenheim and the Handley Page Hampden.

Another good U.S.A. bomber is the Glenn-Martin 167-W, which has seen considerable service with the French Air Force. Not so fast as the new Douglas—315 m.p.h. is about the maximum it can do—it is nevertheless a generally useful type, being designed not only for bombing but also for fighting, reconnaissance, and ground-attack work.

Besides fighters and bombers, America also produces a number of trainer aircraft and flying-boats. The North America Harvard trainer was one of the first United States aircraft to fly the R.A.F. colours—several hundred having been bought before the war. So far no flying-boats have been in service with the R.A.F. except for experimental purposes. Among the American flying-boats those constructed by the Consolidated concern are perhaps the most well known.

Union 7/27/40

Water Supply Urgent, Says Consair Official

Increased housing facilities, approval of San Vicente reservoir and water distribution bonds at the Nov. 5 election and adequate sewage disposal facilities are three major needs in San Diego if proposed vast industrial expansion is to be encouraged here, Maj. Edgar N. Gott, Consolidated Aircraft Corp., vice president, told chamber of commerce directors yesterday. Other problems needing solution, such as traffic congestion, were mentioned by the official.

After lauding the chamber of commerce, city officials, county officers and the community's citizens for their cooperation to date, Gott delved into a discussion of "added responsibilities which the community must meet" if it is to enjoy benefits of a great industrial growth.

HUGE PAYROLL CITED

"Our firm," Gott declared, "is not inclined to add to our facilities except in San Diego, provided this community can lend the facilities demanded by an expansion program.

"Our plant employs 11,500 men now," he said, "and by July, 1941, it is probable that 30,000 will be employed. This means an approximate $1,000,000 weekly payroll for San Diego, but to get it, certain things must be done."

Commenting on the housing problem, Gott said that the navy department now has this "under its wing" with every indication pointing to a solution of it.

WATER NEED STRESSED

On the question of water, Gott declared that "self preservation demands that San Diego's citizens vote for the increased water supply to be provided by construction of San Vicente dam and for the $1,300,000 water distribution system.

Gott warned that unless the bonds do win a favorable vote "industry will be forced to go elsewhere."

Maj. T. C. Macaulay, chamber secretary-manager, informed Gott that every problem mentioned in his discussion is being accorded attention by the chamber of commerce, the navy department, city and council officials and others that "an adequate solution of each should be obtained."

Aeronautique Canadienne July 1940

"America at Work"

NEWS OF THE MONTH

Consolidated Bomber Undergoes Tests

The new Consolidated Model 32 four engined land bomber is now undergoing tests at San Diego. Release data on this new plane for the U. S. Army Air Corps has been kept well in hand by the War Department as heretofore only a few ground pictures have been officially permitted.

Designated by the Army as the XB-24, the plane marks Consolidated Aircraft Corporation's re-entry into the land plane manufacturing field, breaking a virtual specialization which has brought Consolidated the distinction of being the world's largest manufacturer of flying boats. The years of valuable experience garnered from the building of thousands of smaller land planes, and the advanced manufacturing methods evolved in the production of large flying boats, have been poured into this powerful new land plane for our armed forces.

The Model 32 is a full cantilever, all metal plane, powered with four Pratt & Whitney 14 cylinder twin row radial air-cooled engines rated at 1200 h.p. each, giving the plane 4,800 available horsepower in flight to hurtle it thru the air. The propellers are Hamilton Standards of the 3-bladed hydromatic constant speed type, 12 feet in diameter. Fowler flaps extend inboard of the ailerons in the wing of high aspect ratio, with the engine nacelles mounted flush with the upper surface of the center section.

The approximate gross weight of the airplane is 40,000 lbs; wing span, 110 ft.; length of fuselage, 64 ft.; and over-all height, 19 ft. Tactical requirements are for a crew of from 6 to 9 persons, depending upon the mission to be performed.

Control surfaces are fabric covered and fully counterweighted. A full cantilever horizontal stabilizer has twin fins and rudders mounted at the tips. The all-metal stressed skin fuselage is equipped with hatches and windows in the nose, tail, turtledeck, back and bottom. The landing gear is of the tricycle type with single wheel forward. This retracts into the fuselage. The rear, or main landing wheels retract into the wing wells.

While the performance figures are strictly confidential, an official release states: "This airplane, from preliminary examinations, gives evidence of living up to the advancements in aerodynamic and performance characteristics predicted. These include a speed of over 300 miles per hour, a range of approximately 3000 miles, and a bomb carrying capacity of approximately 4 tons."

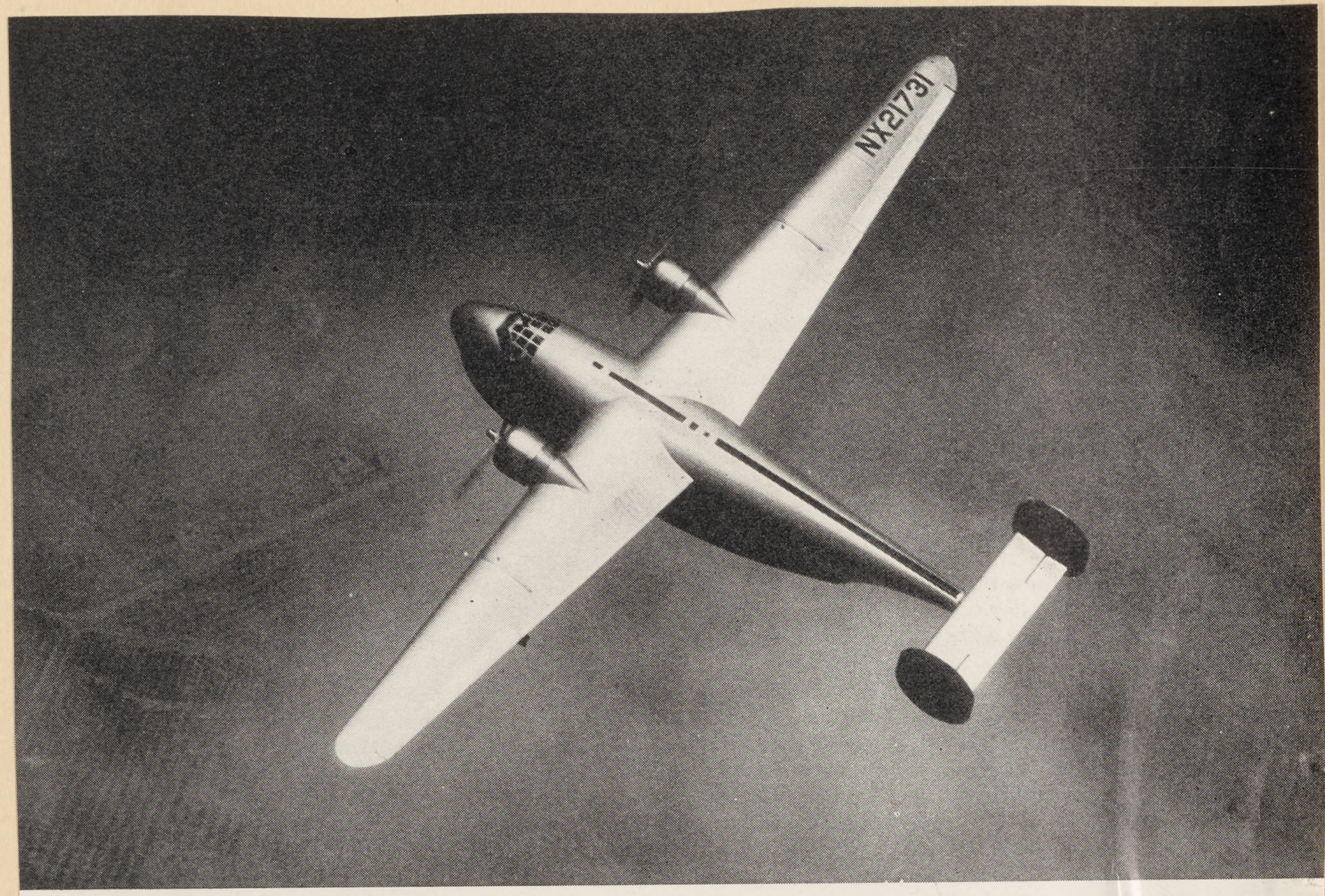
UNION 8/22-40

Consair Employment Hits New High of 9485

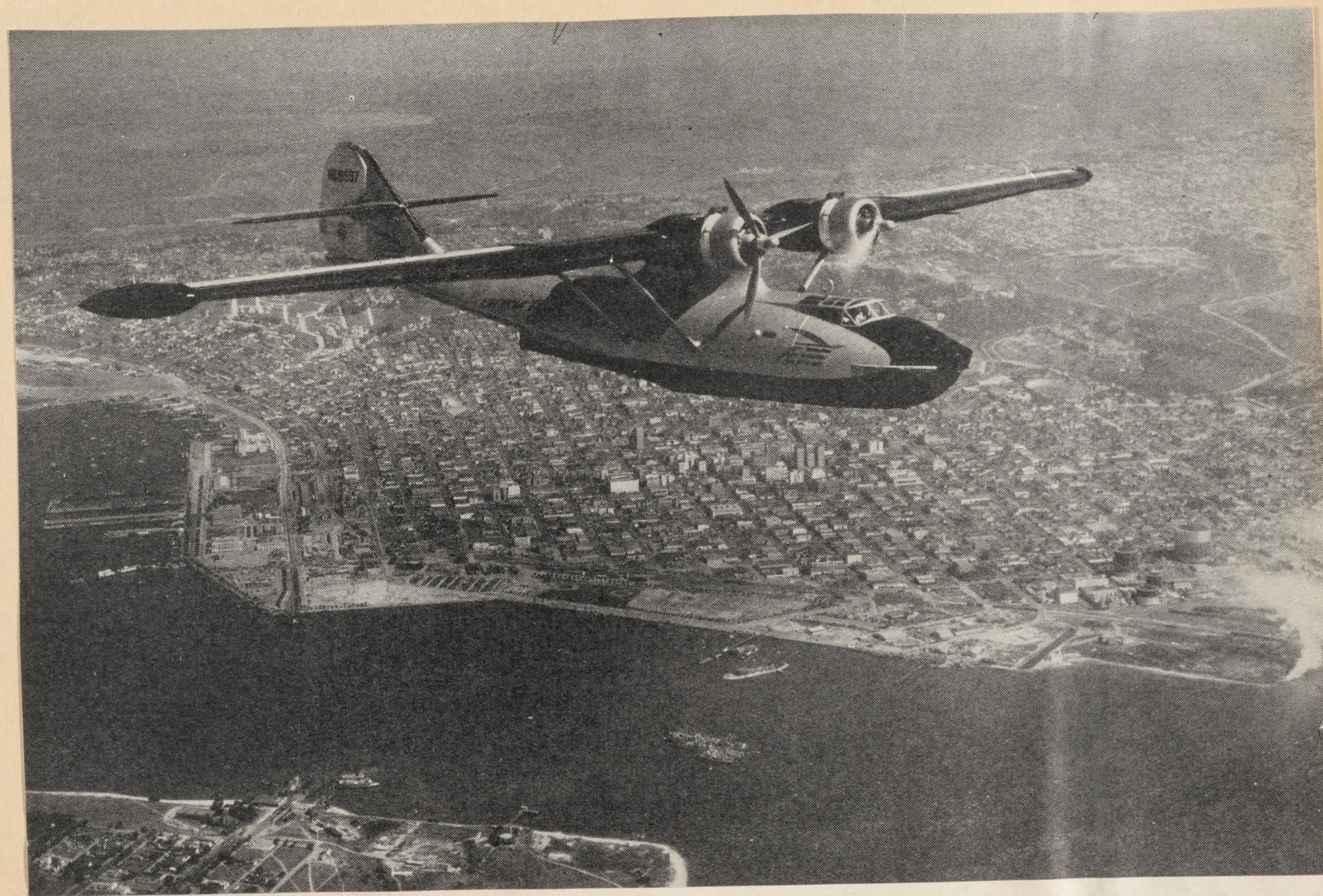
With a backlog in excess of $120,000,000, employment at Consolidated Aircraft Corp. yesterday reached an all-time high of 9485, it was reported at the municipal airport plant. Hundreds of men are yet to be employed in the new huge final assembly building and other new additions to the factory which will be officially dedicated Sept. 2.

For a conference with Consolidated officials Maj. Gen. Henry H. Arnold, chief of the army air corps, and William S. Knudson, production chief national defense commission, are expected here this afternoon or early tomorrow from Washington. Gen. Arnold and Knudson are in Los Angeles inspecting aircraft factories in that area.

Aeronautique Canadienne - July 1940



The Consolidated Aircraft Model 31 twin engined flying boat as seen from above in flight. The span and narrowness of the 'perfect wing' may be easily seen.



The Model 28 twin engined Consolidated Flying boat which was built for the American Export Airline for use in surveying trans-Atlantic flying routes. The feathering propeller operation is here being tested on the right engine, while the plane maintains flight on one engine.

"Guba" Records

A recapitulation of the around-the-world flight of the Consolidated "Guba" flown by Richard Archbold, shows that the following records were established:

1. The first airplane to fly around the world at its greatest diameter.
2. The longest over-ocean non-stop flight by a flying boat, Dakar to St. Thomas, Virgin Islands, 3300 miles.
3. The first flying boat to fly around the world.
4. The first airplane to cross the Indian Ocean from Australia to Africa.
5. The first flying boat to fly across Africa.
6. The first flying boat to fly across Australia.

During the time Archbold operated the Guba in New Guinea, more than 500 hours were flown under extremely primitive operating and service conditions, transporting hundreds of thousands of pounds of supplies and hundreds of people to various points in the interior.

AIRCRAFT NEWS

New Airplane Plant Pushed

7/25/40

DALLAS—It is announced that the Hall-Aluminum Aircraft Copr. will construct an 8,000,000 plant here for the manufacture of warplanes—both bombers and pursuit planes. Employment will be given to approximately 5000 persons.

The new industry will be devoted largely to filling orders sublet to it by Consolidated Aircraft Corp. of San Diego, Cal., it was stated.

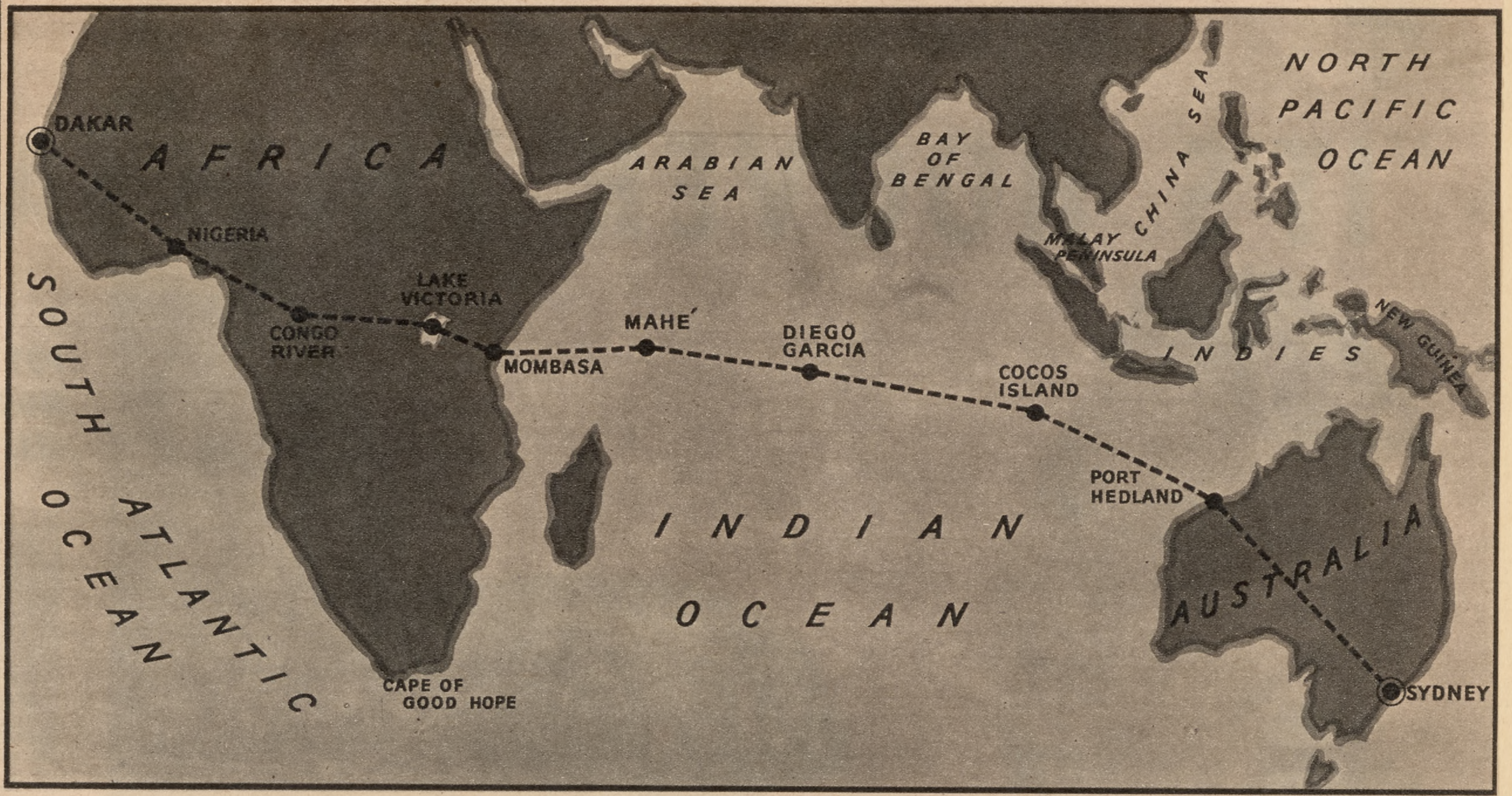
Land, water and other facilities for testing the planes here have been granted.

Plans for the new plant will be finished soon and the first units completed and production started in six to eight months.

Los Angeles Times Sunday Magazine "This Week" July 1940

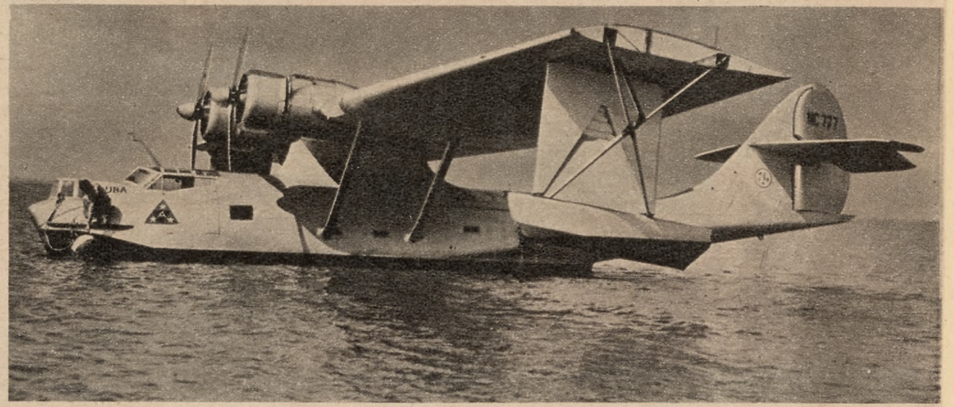
TRAIL BLAZER

Acme



There was an ocean that no one had ever flown before — he flew it. There was a vast jungle that no white man had ever entered — he explored it. Yet few people have even heard of Richard Archbold — publicity scares him!

by Lowell Thomas



Wide World

Richard Archbold and the strategic route that he opened up for Britain in his giant "Guba" plane

ON THE banks of the Gila River in Arizona there is an expedition afield whose leader is as remarkable as any of the fauna he is investigating. In the first place, you would not expect to find a rich man's son exploring the Arizona desert to scrutinize the private lives of its mammals. In the second place it is unusual, in these days, to find an explorer who is not only merely modest but so reticent about his achievements that he actually dodges reporters.

The man I am talking about is young Richard Archbold, and I will lay a bet that a huge number of readers do not know or remember that he has made three voyages of exploration to New Guinea, that he added a new chapter to the history of aviation by flying around the world at its greatest diameter (which was what Amelia Earhart had dreamed of doing) or that he was the first to fly across the Indian Ocean. The last he tackled in the summer of 1939 at the request of Australia's war-wary air ministry, who wished to establish an alternate route to England that would be entirely over Allied soil. Archbold proved the route feasible — a service that proved invaluable to Britain, when war came — and in doing so, he established six separate records.

He has created still another record by getting less publicity than any other living explorer or aviator. And that, I submit, stamps him as pretty remarkable. There have been a few other great travelers — but only a few — with a predilection for silence.

As a child, the "toys" Dick Archbold preferred were cameras and microscopes. What he did with them could hardly have been child's play, since he was making experiments for the Lumière and Agfa firms in color photography and photomicrography when he was only twelve years old.

From this early propensity of his, you might picture to yourself a pale, anemic young student forever poring over a desk. On the contrary, the Archbold lad was and is strong, healthy and, like Kipling's Elephant's Child, of an insatiable curiosity. He attended a prep school in Arizona — not one of the gilded, fashionable kind. For diversion he went off on pack trips into the desert, hunting fossils and exploring caves.

Archbold did not go through college or university in the ordinary way. The explanation he offers is that nobody could read his handwriting and, besides, he had some trouble making up deficiencies in English courses. I suspect a young man so far advanced in mathematics and the sciences would have been excessively bored by campus life anyway. But, though he never enrolled as a freshman anywhere, and acquired most of his higher education from tutors, Archbold took special postgraduate courses at Columbia in biology and comparative anatomy.

Conqueror of Mountains

AS HE grew up he became keen on mountaineering. By the time he was twenty-two he had clambered up all the difficult peaks in the United States and then went on to scale the most hazardous in the Monte Rosa, the Bernese Oberland in Switzerland, and the district around Mont Blanc.

With these accomplishments under his belt he was ready for serious work in the field of exploration. He did not try to begin at the top all at once by dint of his money. He went at the job of equipping himself methodically, starting in as a subordinate. His first voyage of scientific exploration was to Madagascar, where he remained from 1929 to 1931 as assistant mammalogist and photographer to a zoological mission.

By 1933 Archbold had joined the staff of the American Museum of Natural History and become Research Associate in Mammalogy. In collaboration with other scientists he had written several monographs on new species of mammals. To make work easier for himself and others he compiled a bibliography on the mammals of Australasia, a formidable job; it is considered one of the most complete in the scientific world.

The first expedition he took out as leader was to the British part of New Guinea in 1933, where it obtained valuable specimens. But Archbold was dissatisfied. He had not penetrated as far as he wanted because of the tremendous difficulties of transport in New Guinea. Going by foot, it takes a large safari months to march a hundred miles. The country's interior is separated from the seacoast by mountain ranges that are covered with almost impenetrable jungle, the clearings inhabited by head-hunters. An airplane, decided Archbold, was a necessity for thorough scientific discovery in those Papuan wilds.

He returned to the States, studied all types of aircraft and bought the one best suited to his needs. The plane would be used to transport the expedition and all its supplies from the coast to the interior. But it was necessary also to establish a regular service of supply, so Archbold devised a method of dropping food and other necessities down on the camps by parachute.

By 1936 he was ready and took his second expedition to New Guinea. Using Port Moresby for a base, he took his men to a point six hundred miles inland up the Black River, in a region theretofore uninvestigated by white men, let alone scientists. They had collected a mass of invaluable specimens when disaster swept down in the shape of one of the sudden storms that afflict those latitudes. The natives call them *gubas*. It did not strike the camp itself but it completely wrecked the plane as it lay at anchor in the seeming safety of Port Moresby harbor.

The plight of the expedition was perilous. The only way of returning to the coast and safety was to build rafts and float down the Black River. Bringing that outfit back to civilization was a job to try the mettle of a great leader of men. Archbold had to win a race not only against the elements and the dangers of an uncharted stream but also against a rapidly shrinking food supply. He did it, and not a man was lost or even seriously injured. What's more, he salvaged every case of specimens.

As soon as he had returned to the States he started getting ready for his third attack on the Papuan wilderness. Disaster had given him experience and knowledge. Your real explorer does not believe in hazard for excitement's sake. Archbold declares that adventure is frequently the consequence of incompetence, carelessness or ignorance. This time he bought himself a twin-engined bomber such as the United States Navy uses. He thumbed his nose at superstition by christening her Guba in memory of the guba that had destroyed his amphibian at Port Moresby. He replaced her bombing apparatus with equipment of his own design for dropping provisions by parachute, and with navigation instruments. As just one test of the plane, he flew her from San Diego to New York — the first nonstop crossing of the American continent by a flying boat.

When he was almost ready to leave, the world was stunned by a calamity. Sigismund Levanevsky and his companions were reported lost in the Arctic in an attempt to fly from Moscow to New York. The Soviet government engaged Sir Hubert Wilkins to find them, but the only available craft stout enough for those prolonged polar flights was the Guba. Archbold relinquished her for Sir Hubert's rescue mission.

In a few months he had another Guba, and began to put her through exhaustive test flights. His principal camp in New Guinea was to be on the shore of Lake Habbema, 11,500 feet above sea level. So he needed to be sure the Guba would be able to lift a payload of 23,700 pounds at that altitude. Archbold's tests convinced him the plane would do this — and how well he calculated we shall see shortly.

Flight Over the Pacific

THE Guba took off from San Diego for New Guinea on June 2, 1938, and made Honolulu, the first stop, in eighteen hours. From there, fighting their way through ice when they were directly over the equator, they flew to Hollandia in Dutch New Guinea, making only one stop on the way — at Wake Island. Archbold's was the first scientific expedition on a big scale to explore the Dutch half of that huge island. It was infested with head-hunters, so the government of the Netherlands Indies supplied an escort of ninety soldiers, as well as a party of Dutch scientists, to have a share in the investigation and its results.

At this stage of the game, the important question was: had Archbold's weight tests at

(Continued on page 15)

Lake Tahoe been accurately calculated? The Guba not only had to carry a heavy load of men and supplies

Lake
Wilh
but
back.
a poi
ing a
carrie
station
could
case th
maroon
Guba o

"The
she had
no troub
then pil
course th
people a

They were in San Diego twelve thousand miles away! But we were the jumpiest crowd you ever saw. We got onto the water at the lake, all right, but then came a bunch of questions. What would happen when we rowed ashore? We had heard plenty about the head-hunters and, as we hadn't made friends with them, how could we know what the reception committee would have for us?"

Crucial Tests

THE short of it was that they lightened ship at first and made tests to see whether she would make an emergency take-off at that altitude. She made it, one test after another. At the last trial the Guba lifted 25,500 pounds gross weight off the surface of Lake Habbema — just 1,800 pounds more than Archbold calculated after his tests on Lake Tahoe.

That rescue force camped on the bank of the Idenburg River never was needed. Not once was there any difficulty getting the Guba off the surface of the lake, nor was the main body of scientists or any of the smaller parties ever in danger of being marooned. Archbold made no fewer than 168 flights, and the company obtained literally thousands of animals, birds and plants, many of which, upon examination, turned out to be entirely new to biologists.

Even more colorful was a discovery made by Archbold in most unexpected fashion. He was flying up a valley of the Balim River, a valley that had never been mapped, apparently quite unknown to cartographers. To the astonishment of the leader and his companions he espied beneath him miles of terraces, held up by stone retaining walls, with gardens ditched as though they had been laid out by a surveyor. In New Guinea this was extraordinary. Such signs of cultivation as had been seen before were crude clearings in the forest, rough, weedy patches. When they descended they came upon the tribe that had made those gardens, a tribe new to the ken of civilized man. They proved to be a peaceable lot, which was fortunate, since they numbered some 60,000.

"They had wrested those gardens from the forest," said Archbold, "and it was the more amazing when you consider their tools. The trees they had felled with stone axes, for plows and cultivators they used heavy wooden sticks. Good farmers they are, with a sound understanding of drainage and soil conservation. They also turned out to be good engineers. They had

across the Balim, made

demonstrate flights over the Indian Ocean were practical, there would be an airway from Australia to England over Allied territory all the way.

The idea struck the American as not only a sporting proposition but a serious venture. So, having completed his work in New Guinea, he took off from Sydney in the Guba on June 3, 1939. Captain P. G. Taylor went along as observer for the Commonwealth government. The first stage was a nonstop flight across the Australian continent to Port Hedland, from whence he took off immediately for the Cocos Islands. The Guba reached there June 7, and six days later took off on the longest stage of the flight, heading for the tiny island of Diego Garcia, whither the British Admiralty had sent the cruiser H.M.S. Manchester. Archbold was in constant touch with the man-of-war by radio and alighted on the water alongside her after a flight of thirteen hours. He proved to have been dead on his course all the time. His next hop was to Mahé in the Seychelles and the final stage was from Mahé to Mombasa on the Kenya coast, where the Guba arrived June 21, eighteen days out from Sydney. They had established beyond doubt that the route across the Indian Ocean was quite practicable.

Perfect Trip

FROM Mombasa, Archbold continued his flight around the world at its largest diameter. His voyage across Africa was entirely without incident — a demonstration of perfect preparation. He was at Kisumu on Lake Victoria by June 22, Coquilhatville on the Congo River June 24, Lagos in Nigeria on June 25, and reached Dakar June 26.

From Dakar he wanted to try a nonstop flight to New York but, receiving unsatisfactory weather reports, stopped at St. Thomas in the Virgin Islands. He flew the distance, 3,160 statute miles, in 19 hours, 33 minutes. Leaving St. Thomas July 1, he arrived in New York on the same day, landed at Floyd Bennett field, and was immediately rushed over to the World's Fair, together with all his crew. There they had a triumphant reception but, except for a paper he read later before the New York Academy of Sciences, it was Archbold's only public appearance after such a succession of exploits.

In addition to his other accomplishments, Richard Archbold and a collaborator have obtained basic patents on a new sextant by the use of which a navigator can make an instantaneous reading of his position with approximate accuracy.

YOU AN

by Lyle M. Spencer

Director, Science Research Associates

What Are the Real Openings in Latin Ameri

THE latest employment will-o'-the-wisp among youth these days is Latin-American jobs. Ever since the European war began, my mail has been piling up with letters from young people inquiring about

duces a surplus of most of the goods South America wants to export.

There's no doubt that Latin America would like to be a good customer of ours. She needs our refrigerators, our automobiles and our machinery. But

done much the
a law, for exa
thirds of the
to be Brazilian
that employe
their availabl

Consolidated Air

Romeike & Curtice Ltd

Telephone
CENTRAL 2781
(2 Lines.)

35. Shoe Lane.
LONDON.
E.C.4.

EXTRACT FROM

Also appeared in Herne Bay Press - 7/15/40

Glasgow Herald.

Date 15 JUL 1940

UNITED STATES AIRCRAFT

'PLANES USED BY BRITAIN

A few types of military aircraft from the United States have already become familiar in this country through their use in the air Services of the Allies. Probably the best known are the Lockheed Hudson reconnaissance aircraft adopted early in the war by the R.A.F. Coastal Command, and the Curtiss Hawk 75 A fighters of the French Armée de l'Air. Both are straightforward designs whose features are strength and power of manœuvre rather than high speed.

But there are a number of other types of U.S.A. aircraft not yet so well known, some of [illegible] silhouette not unlike the British Spitfire, it is unique among contemporary aircraft in mounting the engine amidships, behind the pilot, and driving the airscrew by a long extension shaft.

CONVENTIONAL TYPE

Another Bell product is the two-motor, multi-seat Airacuda, in which the propellers are fitted behind the wings. Forward extensions of the engine nacelles are used to house gunners.

A more conventional type of single-seat fighter from which a high performance may be expected is the Curtiss P.40. This sturdily built fighter, designed for the United States Army, is also powered with a single 1250 h.p. Allison motor. The latest version is known as the P.40D. The wing span, 37ft. 4in., is just a little more than that of the Spitfire.

Another interesting design is the little, high-powered Vultee Vanguard. Although only a single-seater with a wing span of 36ft., it houses a 1600 h.p. Pratt and Whitney motor under its cowling. For fleet work the Americans have a useful four-gun fighter in the Brewster F2A-1. This has an air-cooled Wright Cyclone motor of 800 h.p. Its short, chubby fuselage and stiff wings give it a distinctive appearance, rather like a flying barrel.

Not much information has been released about the armament of these new fighters. In general, U.S.A. aircraft are less heavily armed than their British counterparts, but it may be remembered that the firepower of the Curtiss Hawks supplied to the French Air Force was increased to meet modern war requirements.

NEW BOMBERS

America's new-type bombers include a number of fast, medium-sized two-motor types with a useful range. Some are fitted with diving brakes and other devices for close attack duty, and are known as attack-bombers. The Douglas B-23 is an interesting example of American bomber design. Fitted with two Wright Cyclone motors, it is claimed to have a speed of 375 m.p.h. This is some 75 m.p.h. faster than the British Blenheim, a somewhat comparable type. An earlier type of Douglas, the DB-7 has much the same characteristics but a lower performance. Its wing span of 60 feet is about midway between that of the Bristol Blenheim and the Handley Page Hampden.

Another good U.S.A. bomber is the Glenn-Martin 167-W, which has seen considerable service with the French Air Force. Not so fast as the new Douglas—315 m.p.h. is about the maximum it can do—it is nevertheless a generally useful type, being designed not only for bombing but also for fighting, reconnaissance, and ground-attack work.

Besides fighters and bombers, America also produces a number of trainer aircraft and flying-boats. The North America Harvard trainer was one of the first United States aircraft to fly the R.A.F. colours—several hundred having been bought before the war. So far no flying-boats have been in service with the R.A.F. except for experimental purposes. Among the American flying-boats those constructed by the Consolidated concern are perhaps the most well known.

Union 7/27/40

Water Supply Urgent, Says Consair Official

Increased housing facilities, approval of San Vicente reservoir and water distribution bonds at the Nov. 5 election and adequate sewage disposal facilities are three major needs in San Diego if proposed vast industrial expansion is to be encouraged here, Maj. Edgar N. Gott, Consolidated Aircraft Corp., vice president, told chamber of commerce directors yesterday. Other problems needing solution, such as traffic congestion, were mentioned by the official.

After lauding the chamber of commerce, city officials, county officers and the community's citizens for their cooperation to date, Gott delved into a discussion of "added responsibilities which the community must meet" if it is to enjoy benefits of a great industrial growth.

HUGE PAYROLL CITED

"Our firm," Gott declared, "is not inclined to add to our facilities except in San Diego, provided this community can lend the facilities demanded by an expansion program.

"Our plant employs 11,500 men now," he said, "and by July, 1941, it is probable that 30,000 will be employed. This means an approximate $1,000,000 weekly payroll for San Diego, but to get it, certain things must be done."

Commenting on the housing problem, Gott said that the navy department now has this "under its wing" with every indication pointing to a solution of it.

WATER NEED STRESSED

On the question of water, Gott declared that "self preservation demands that San Diego's citizens vote for the increased water supply to be provided by construction of San Vicente dam and for the $1,300,000 water distribution system.

Gott warned that unless the bonds do win a favorable vote "industry will be forced to go elsewhere."

Maj. T. C. Macaulay, chamber secretary-manager, informed Gott that every problem mentioned in his discussion is being accorded attention by the chamber of commerce, the navy department, city and council officials and others that "an adequate solution of each should be obtained."

"Guba" Records

A recapitulation of the around-the-world flight of the Consolidated "Guba" flown by Richard Archbold, shows that the following records were established:

1. The first airplane to fly around the world at its greatest diameter.
2. The longest over-ocean non-stop flight by a flying boat, Dakar to St. Thomas, Virgin Islands, 3300 miles.
3. The first flying boat to fly around the world.
4. The first airplane to cross the Indian Ocean from Australia to Africa.
5. The first flying boat to fly across Africa.
6. The first flying boat to fly across Australia.

During the time Archbold operated the Guba in New Guinea, more than 500 hours were flown under extremely primitive operating and service conditions, transporting hundreds of thousands of pounds of supplies and hundreds of people to various points in the interior.

Aeronautique Canadienne July 1940

"America at Work"

NEWS OF THE MONTH

Consolidated Bomber Undergoes Tests

The new Consolidated Model 32 four engined land bomber is now undergoing tests at San Diego. Release data on this new plane for the U. S. Army Air Corps has been kept well in hand by the War Department as heretofore only a few ground pictures have been officially permitted.

Designated by the Army as the XB-24, the plane marks Consolidated Aircraft Corporation's re-entry into the land plane manufacturing field, breaking a virtual specialization which has brought Consolidated the distinction of being the world's largest manufacturer of flying boats. The years of valuable experience garnered from the building of thousands of smaller land planes, and the advanced manufacturing methods evolved in the production of large flying boats, have been poured into this powerful new land plane for our armed forces.

The Model 32 is a full cantilever, all metal plane, powered with four Pratt & Whitney 14 cylinder twin row radial air-cooled engines rated at 1200 h.p. each, giving the plane 4,800 available horsepower in flight to hurtle it thru the air. The propellers are Hamilton Standards of the 3-bladed hydromatic constant speed type, 12 feet in diameter. Fowler flaps extend inboard of the ailerons in the wing of high aspect ratio, with the engine nacelles mounted flush with the upper surface of the center section.

The approximate gross weight of the airplane is 40,000 lbs; wing span, 110 ft.; length of fuselage, 64 ft.; and over-all height, 19 ft. Tactical requirements are for a crew of from 6 to 9 persons, depending upon the mission to be performed.

Control surfaces are fabric covered and fully counterweighted. A full cantilever horizontal stabilizer has twin fins and rudders mounted at the tips. The all-metal stressed skin fuselage is equipped with hatches and windows in the nose, tail, turtledeck, back and bottom. The landing gear is of the tricycle type with single wheel forward. This retracts into the fuselage. The rear, or main landing wheels retract into the wing wells.

While the performance figures are strictly confidential, an official release states: "This airplane, from preliminary examinations, gives evidence of living up to the advancements in aerodynamic and performance characteristics predicted. These include a speed of over 300 miles per hour, a range of approximately 3000 miles, and a bomb carrying capacity of approximately 4 tons."

AIRCRAFT NEWS

New Airplane Plant Pushed

7/25/40

DALLAS—It is announced that the Hall-Aluminum Aircraft Copr. will construct an 8,000,000 plant here for the manufacture of warplanes—both bombers and pursuit planes. Employment will be given to approximately 5000 persons.

The new industry will be devoted largely to filling orders sublet to it by Consolidated Aircraft Corp. of San Diego, Cal., it was stated.

Land, water and other facilities for testing the planes here have been granted.

Plans for the new plant will be finished soon and the first units completed and production started in six to eight months.

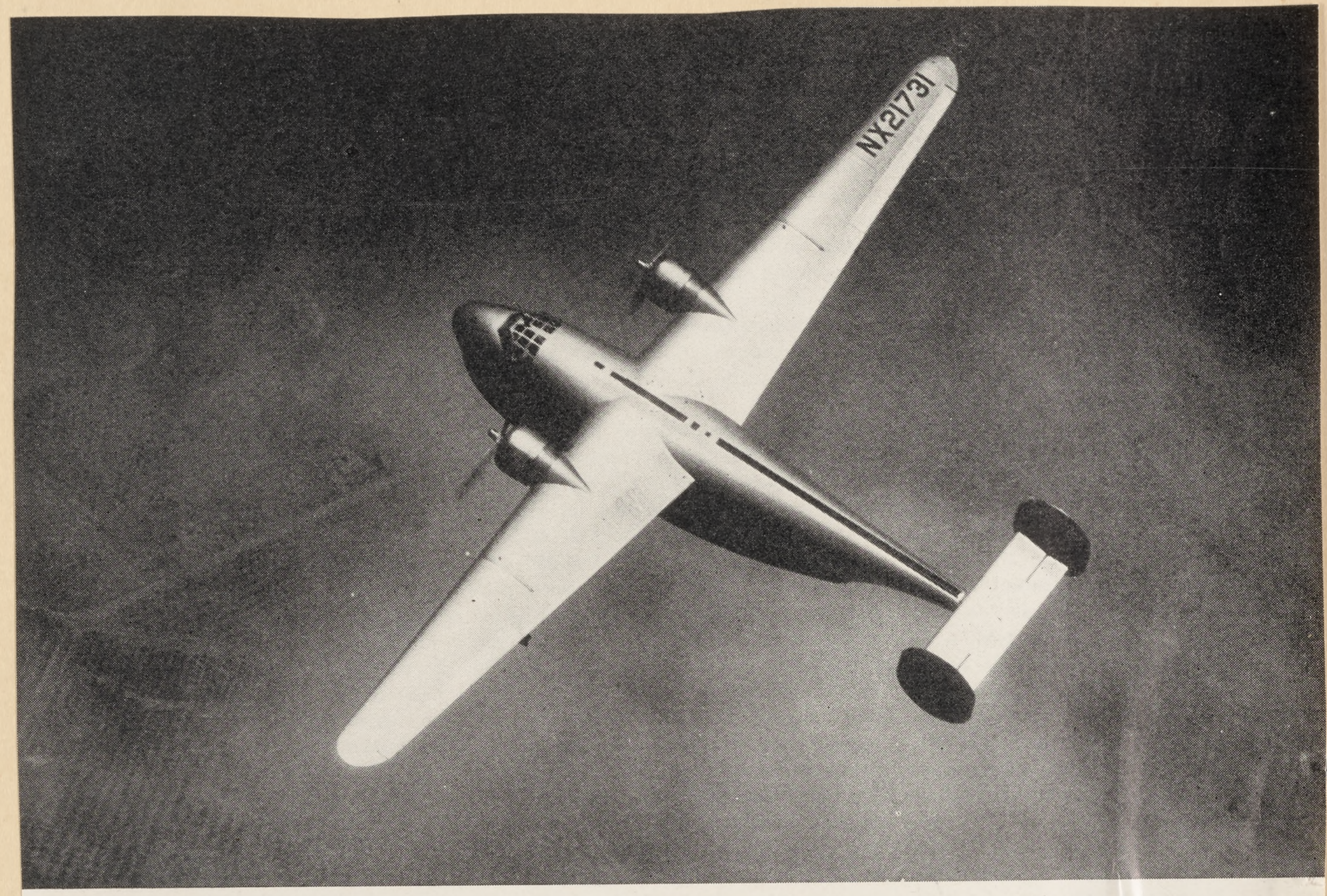
UNION 8/22-40

Consair Employment Hits New High of 9485

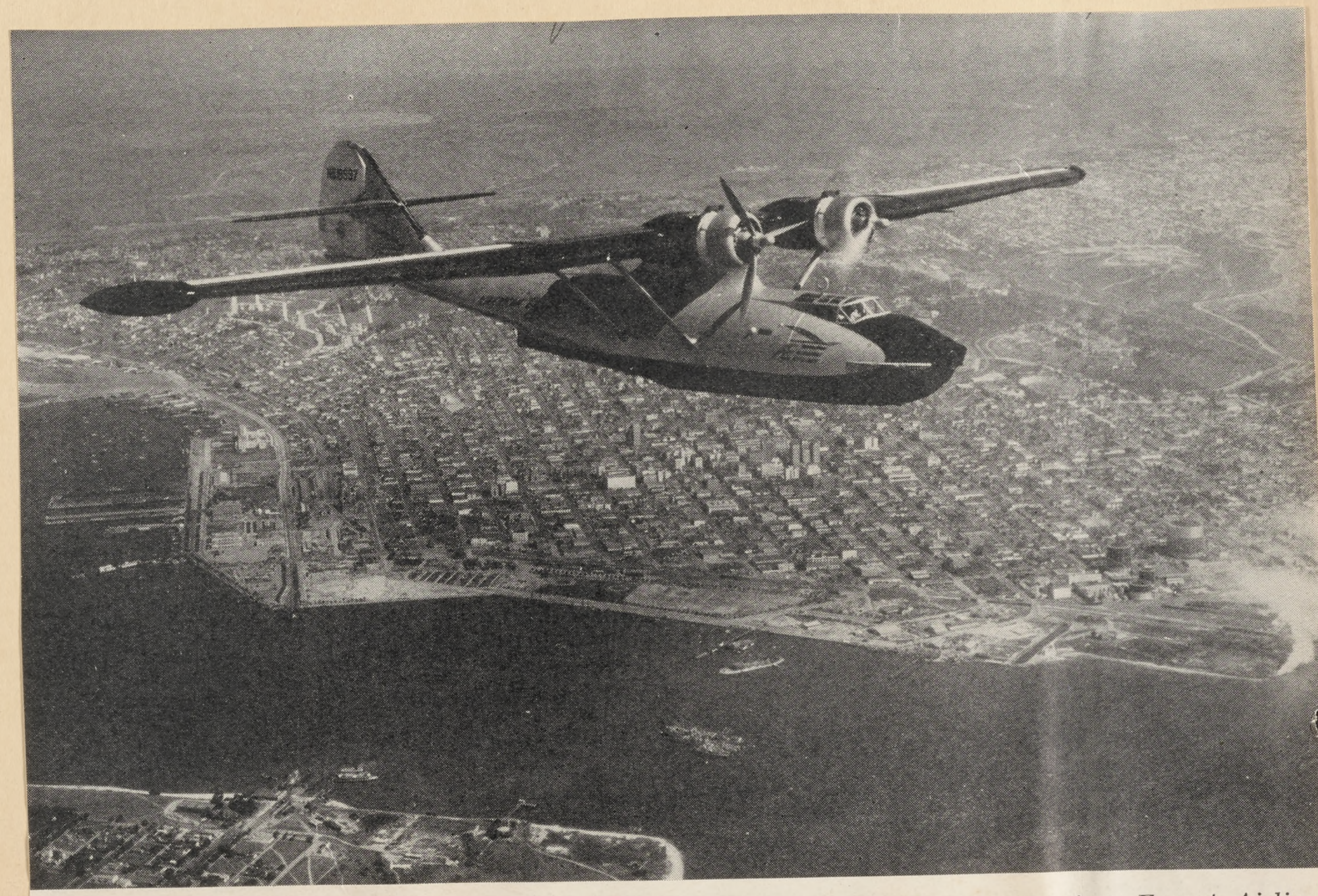
With a backlog in excess of $120,000,000, employment at Consolidated Aircraft Corp. yesterday reached an all-time high of 9485, it was reported at the municipal airport plant. Hundreds of men are yet to be employed in the new huge final assembly building and other new additions to the factory which will be officially dedicated Sept. 2.

For a conference with Consolidated officials Maj. Gen. Henry H. Arnold, chief of the army air corps, and William S. Knudson, production chief national defense commission, are expected here this afternoon or early tomorrow from Washington. Gen. Arnold and Knudson are in Los Angeles inspecting aircraft factories in that area.

Aeronautique Canadienne - July 1940



The Consolidated Aircraft Model 31 twin engined flying boat as seen from above in flight. The span and narrowness of the 'perfect wing' may be easily seen.

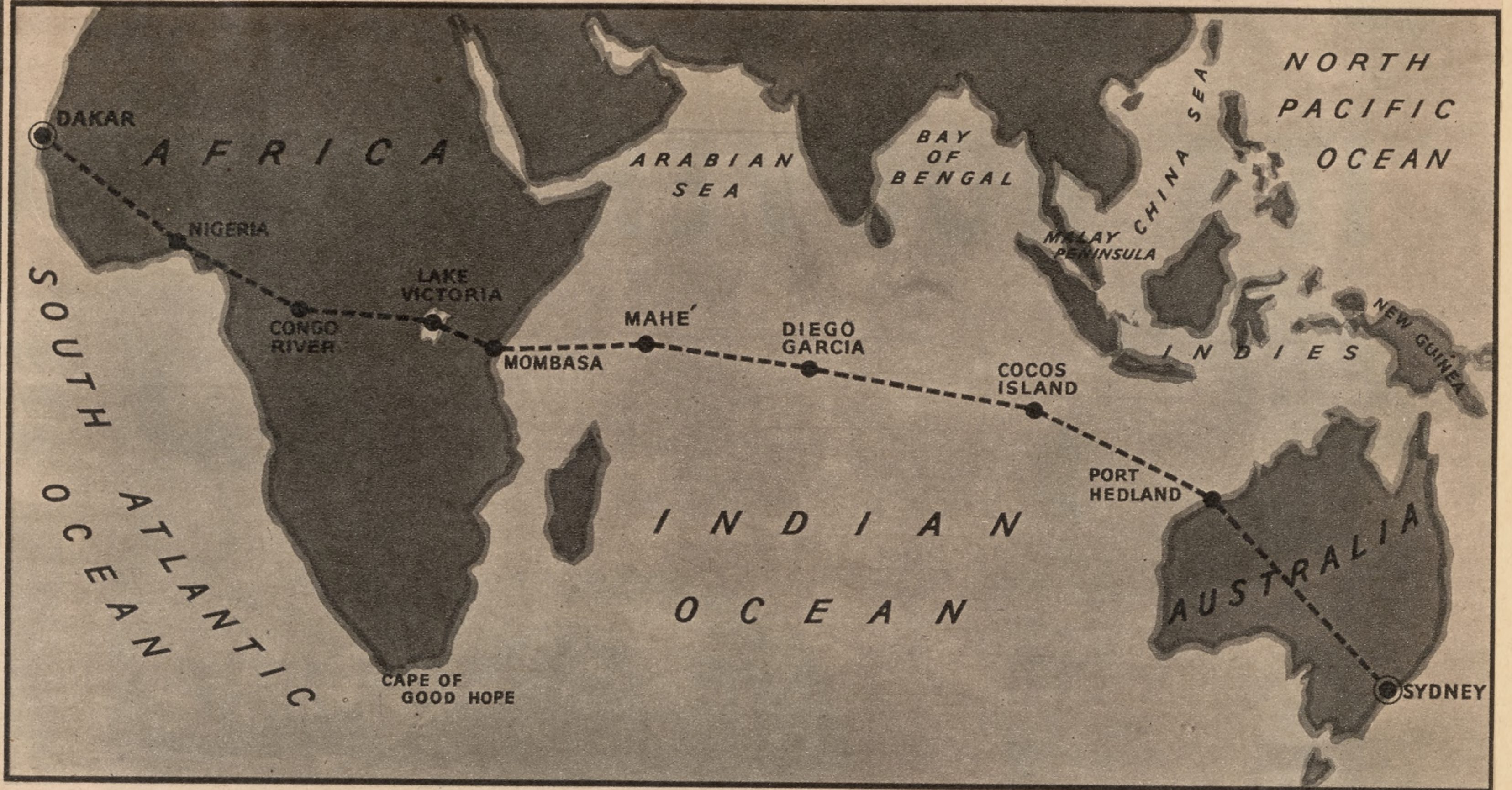


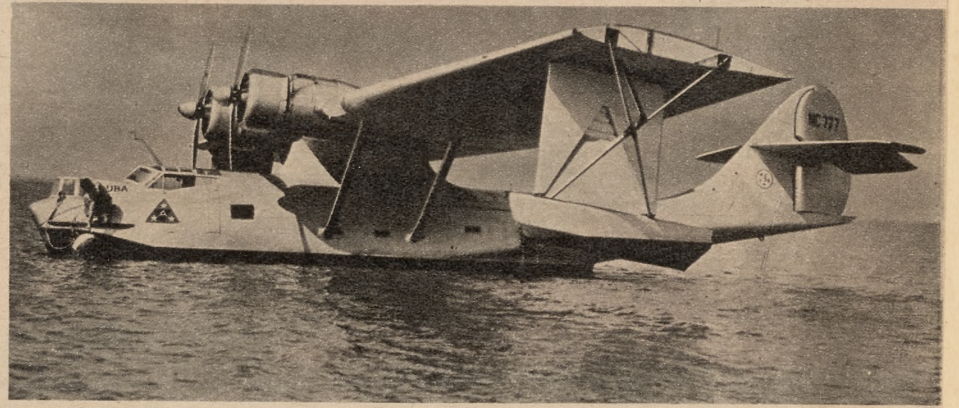
The Model 28 twin engined Consolidated Flying boat which was built for the American Export Airline for use in surveying trans-Atlantic flying routes. The feathering propeller operation is here being tested on the right engine, while the plane maintains flight on one engine.

Los Angeles Times Sunday Magazine "This Week" July 1940

TRAIL BLAZER

Acme




Wide World

Richard Archbold and the strategic route that he opened up for Britain in his giant "Guba" plane

There was an ocean that no one had ever flown before — he flew it. There was a vast jungle that no white man had ever entered — he explored it. Yet few people have even heard of Richard Archbold — publicity scares him!

by Lowell Thomas

On the banks of the Gila River in Arizona there is an expedition afield whose leader is as remarkable as any of the fauna he is investigating. In the first place, you would not expect to find a rich man's son exploring the Arizona desert to scrutinize the private lives of its mammals. In the second place it is unusual, in these days, to find an explorer who is not only merely modest but so reticent about his achievements that he actually dodges reporters.

The man I am talking about is young Richard Archbold, and I will lay a bet that a huge number of readers do not know or remember that he has made three voyages of exploration to New Guinea, that he added a new chapter to the history of aviation by flying around the world at its greatest diameter (which was what Amelia Earhart had dreamed of doing) or that he was the first to fly across the Indian Ocean. The last he tackled in the summer of 1939 at the request of Australia's war-wary air ministry, who wished to establish an alternate route to England that would be entirely over Allied soil. Archbold proved the route feasible — a service that proved invaluable to Britain, when war came — and in doing so, he established six separate records.

He has created still another record by getting less publicity than any other living explorer or aviator. And that, I submit, stamps him as pretty remarkable. There have been a few other great travelers — but only a few — with a predilection for silence.

As a child, the "toys" Dick Archbold preferred were cameras and microscopes. What he did with them could hardly have been child's play, since he was making experiments for the Lumière and Agfa firms in color photography and photomicrography when he was only twelve years old.

From this early propensity of his, you might picture to yourself a pale, anemic young student forever poring over a desk. On the contrary, the Archbold lad was and is strong, healthy and, like Kipling's Elephant's Child, of an insatiable curiosity. He attended a prep school in Arizona — not one of the gilded, fashionable kind. For diversion he went off on pack trips into the desert, hunting fossils and exploring caves.

Archbold did not go through college or university in the ordinary way. The explanation he offers is that nobody could read his handwriting and, besides, he had some trouble making up deficiencies in English courses. I suspect a young man so far advanced in mathematics and the sciences would have been excessively bored by campus life anyway. But, though he never enrolled as a freshman anywhere, and acquired most of his higher education from tutors, Archbold took special postgraduate courses at Columbia in biology and comparative anatomy.

Conqueror of Mountains

As he grew up he became keen on mountaineering. By the time he was twenty-two he had clambered up all the difficult peaks in the United States and then went on to scale the most hazardous in the Monte Rosa, the Bernese Oberland in Switzerland, and the district around Mont Blanc.

With these accomplishments under his belt he was ready for serious work in the field of exploration. He did not try to begin at the top all at once by dint of his money. He went at the job of equipping himself methodically, starting in as a subordinate. His first voyage of scientific exploration was to Madagascar, where he remained from 1929 to 1931 as assistant mammalogist and photographer to a zoological mission.

By 1933 Archbold had joined the staff of the American Museum of Natural History and become Research Associate in Mammalogy. In collaboration with other scientists he had written several monographs on new species of mammals. To make work easier for himself and others he compiled a bibliography on the mammals of Australasia, a formidable job; it is considered one of the most complete in the scientific world.

The first expedition he took out as leader was to the British part of New Guinea in 1933, where it obtained valuable specimens. But Archbold was dissatisfied. He had not penetrated as far as he wanted because of the tremendous difficulties of transport in New Guinea. Going by foot, it takes a large safari months to march a hundred miles. The country's interior is separated from the seacoast by mountain ranges that are covered with almost impenetrable jungle, the clearings inhabited by head-hunters. An airplane, decided Archbold, was a necessity for thorough scientific discovery in those Papuan wilds.

He returned to the States, studied all types of aircraft and bought the one best suited to his needs. The plane would be used to transport the expedition and all its supplies from the coast to the interior. But it was necessary also to establish a regular service of supply, so Archbold devised a method of dropping food and other necessities down on the camps by parachute.

By 1936 he was ready and took his second expedition to New Guinea. Using Port Moresby for a base, he took his men to a point six hundred miles inland up the Black River, in a region theretofore uninvestigated by white men, let alone scientists. They had collected a mass of invaluable specimens when disaster swept down in the shape of one of the sudden storms that afflict those latitudes. The natives call them *gubas*. It did not strike the camp itself but it completely wrecked the plane as it lay at anchor in the seeming safety of Port Moresby harbor.

The plight of the expedition was perilous. The only way of returning to the coast and safety was to build rafts and float down the Black River. Bringing that outfit back to civilization was a job to try the mettle of a great leader of men. Archbold had to win a race not only against the elements and the dangers of an uncharted stream but also against a rapidly shrinking food supply. He did it, and not a man was lost or even seriously injured. What's more, he salvaged every case of specimens.

As soon as he had returned to the States he started getting ready for his third attack on the Papuan wilderness. Disaster had given him experience and knowledge. Your real explorer does not believe in hazard for excitement's sake. Archbold declares that adventure is frequently the consequence of incompetence, carelessness or ignorance. This time he bought himself a twin-engined bomber such as the United States Navy uses. He thumbed his nose at superstition by christening her Guba in memory of the guba that had destroyed his amphibian at Port Moresby. He replaced her bombing apparatus with equipment of his own design for dropping provisions by parachute, and with navigation instruments. As just one test of the plane, he flew her from San Diego to New York — the first nonstop crossing of the American continent by a flying boat.

When he was almost ready to leave, the world was stunned by a calamity. Sigismund Levanevsky and his companions were reported lost in the Arctic in an attempt to fly from Moscow to New York. The Soviet government engaged Sir Hubert Wilkins to find them, but the only available craft stout enough for those prolonged polar flights was the Guba. Archbold relinquished her for Sir Hubert's rescue mission.

In a few months he had another Guba, and began to put her through exhaustive test flights. His principal camp in New Guinea was to be on the shore of Lake Habbema, 11,500 feet above sea level. So he needed to be sure the Guba would be able to lift a payload of 23,700 pounds at that altitude. Archbold's tests convinced him the plane would do this — and how well he calculated we shall see shortly.

Flight Over the Pacific

The Guba took off from San Diego for New Guinea on June 2, 1938, and made Honolulu, the first stop, in eighteen hours. From there, fighting their way through ice when they were directly over the equator, they flew to Hollandia in Dutch New Guinea, making only one stop on the way — at Wake Island. Archbold's was the first scientific expedition on a big scale to explore the Dutch half of that huge island. It was infested with head-hunters, so the government of the Netherlands Indies supplied an escort of ninety soldiers, as well as a party of Dutch scientists, to have a share in the investigation and its results.

At this stage of the game, the important question was: had Archbold's weight tests at Lake Tahoe been accurately calculated? The Guba not only had to carry a heavy load of men and supplies up to Lake Habbema, in the shadow of Mt. Wilhelmina, which towers 15,580 feet, but must also be able to bring them back. He first made several flights to a point on the Idenburg River, ferrying a detachment of soldiers and Dyak carriers. There they established a station from which a rescue party could march overland to Habbema in case the scientists were in danger or marooned. Then they started the Guba on her crucial flight to the lake.

(Continued on page 15)

"The people at the factory where she had been built told us there'd be no trouble," said the late Lon Yancey, then pilot of the expedition. "And of course there was no trouble — for the people at the factory! They were in San Diego twelve thousand miles away! But we were the jumpiest crowd you ever saw. We got onto the water at the lake, all right, but then came a bunch of questions. What would happen when we rowed ashore? We had heard plenty about the head-hunters and, as we hadn't made friends with them, how could we know what the reception committee would have for us?"

Crucial Tests

The short of it was that they lightened ship at first and made tests to see whether she would make an emergency take-off at that altitude. She made it, one test after another. At the last trial the Guba lifted 25,500 pounds gross weight off the surface of Lake Habbema — just 1,800 pounds more than Archbold calculated after his tests on Lake Tahoe.

That rescue force camped on the bank of the Idenburg River never was needed. Not once was there any difficulty getting the Guba off the surface of the lake, nor was the main body of scientists or any of the smaller parties ever in danger of being marooned. Archbold made no fewer than 168 flights, and the company obtained literally thousands of animals, birds and plants, many of which, upon examination, turned out to be entirely new to biologists.

Even more colorful was a discovery made by Archbold in most unexpected fashion. He was flying up a valley of the Balim River, a valley that had never been mapped, apparently quite unknown to cartographers. To the astonishment of the leader and his companions he espied beneath him miles of terraces, held up by stone retaining walls, with gardens ditched as though they had been laid out by a surveyor. In New Guinea this was extraordinary. Such signs of cultivation as had been seen before were crude clearings in the forest, rough, weedy patches. When they descended they came upon the tribe that had made those gardens, a tribe new to the ken of civilized man. They proved to be a peaceable lot, which was fortunate, since they numbered some 60,000.

"They had wrested those gardens from the forest," said Archbold, "and it was the more amazing when you consider their tools. The trees they had felled with stone axes, for plows and cultivators they used heavy wooden sticks. Good farmers they are, with a sound understanding of drainage and soil conservation. They also turned out to be good engineers. They had built a bridge across the Balim, made of limbs and branches of trees held together by rattan. We examined it carefully and found it had many tricks of modern suspension-bridge construction!"

It was on one of his flights to Australia in search of supplies that Archbold received the request from the Ministers of Civil Aviation to make a pioneer flight of a new route to England. The Australians wanted to be sure of having an alternate route in case the usual one by way of Singapore should become impossible in time of war. If Archbold could demonstrate that flights over the Indian Ocean were practical, there would be an airway from Australia to England over Allied territory all the way.

The idea struck the American as not only a sporting proposition but a serious venture. So, having completed his work in New Guinea, he took off from Sydney in the Guba on June 3, 1939. Captain P. G. Taylor went along as observer for the Commonwealth government. The first stage was a nonstop flight across the Australian continent to Port Hedland, from whence he took off immediately for the Cocos Islands. The Guba reached there June 7, and six days later took off on the longest stage of the flight, heading for the tiny island of Diego Garcia, whither the British Admiralty had sent the cruiser H.M.S. Manchester. Archbold was in constant touch with the man-of-war by radio and alighted on the water alongside her after a flight of thirteen hours. He proved to have been dead on his course all the time. His next hop was to Mahé in the Seychelles and the final stage was from Mahé to Mombasa on the Kenya coast, where the Guba arrived June 21, eighteen days out from Sydney. They had established beyond doubt that the route across the Indian Ocean was quite practicable.

Perfect Trip

From Mombasa, Archbold continued his flight around the world at its largest diameter. His voyage across Africa was entirely without incident — a demonstration of perfect preparation. He was at Kisumu on Lake Victoria by June 22, Coquilhatville on the Congo River June 24, Lagos in Nigeria on June 25, and reached Dakar June 26.

From Dakar he wanted to try a nonstop flight to New York but, receiving unsatisfactory weather reports, stopped at St. Thomas in the Virgin Islands. He flew the distance, 3,160 statute miles, in 19 hours, 33 minutes. Leaving St. Thomas July 1, he arrived in New York on the same day, landed at Floyd Bennett field, and was immediately rushed over to the World's Fair, together with all his crew. There they had a triumphant reception but, except for a paper he read later before the New York Academy of Sciences, it was Archbold's only public appearance after such a succession of exploits.

In addition to his other accomplishments, Richard Archbold and a collaborator have obtained basic patents on a new sextant by the use of which a navigator can make an instantaneous reading of his position with approximate accuracy.

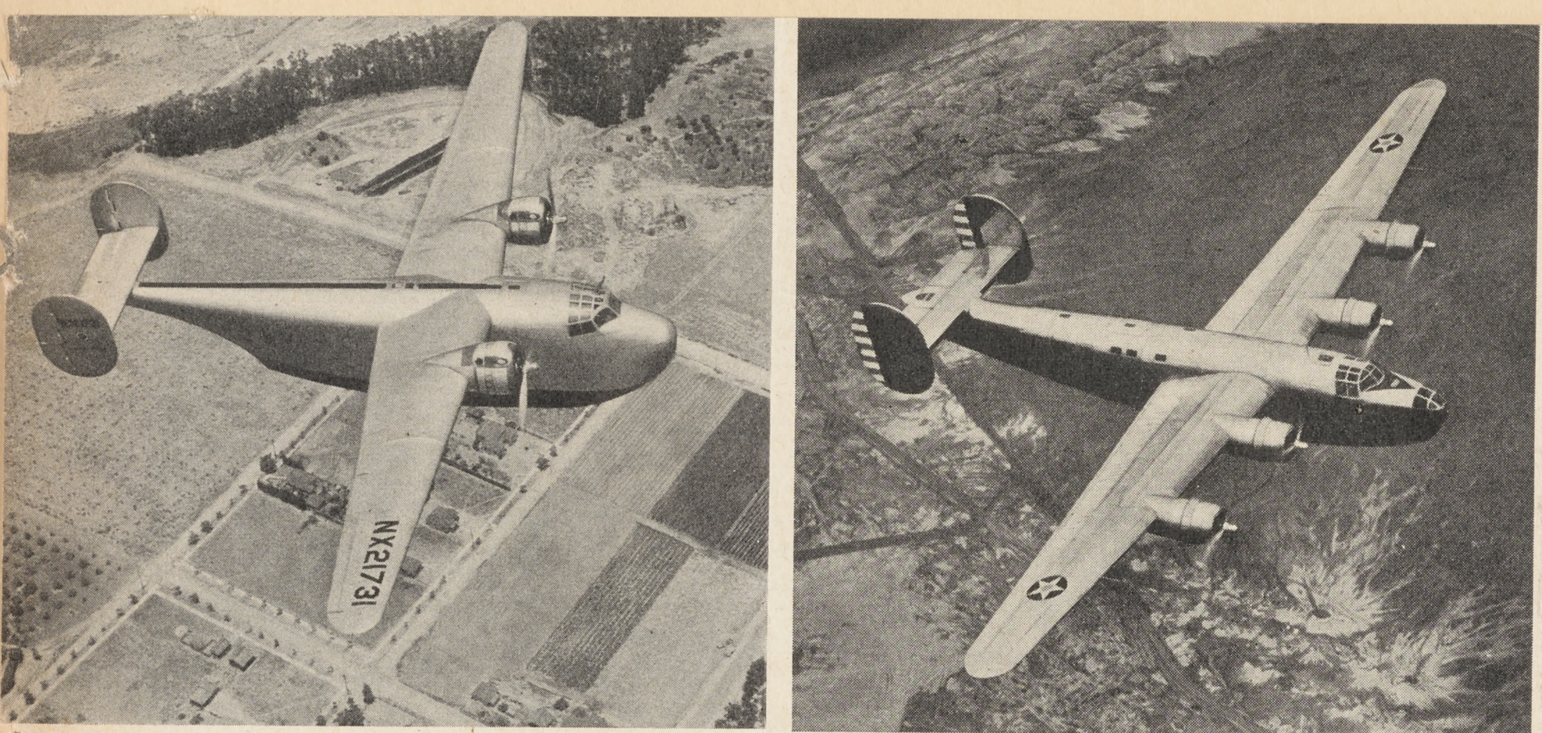
So much for his achievements. You never would gather even a faint idea of their scope and importance from Archbold himself. If you press him to give an account of his experiences he will tell them with all the color and vividness of a man reading from a telephone directory. But men like to be with him in a tough spot because they find him not only an imperturbable leader but a master of unforeseen situations.

His exterior is as singular as his character and talents. More than six feet tall, he has a copious head of black hair, bushy eyebrows and a black mustache. He apparently presses his clothes by crushing them into a bunch and throwing them into the corner. It is difficult to prevail upon him to wear a hat. When he is going somewhere he never walks but lopes, never rides on a train if an airplane is available.

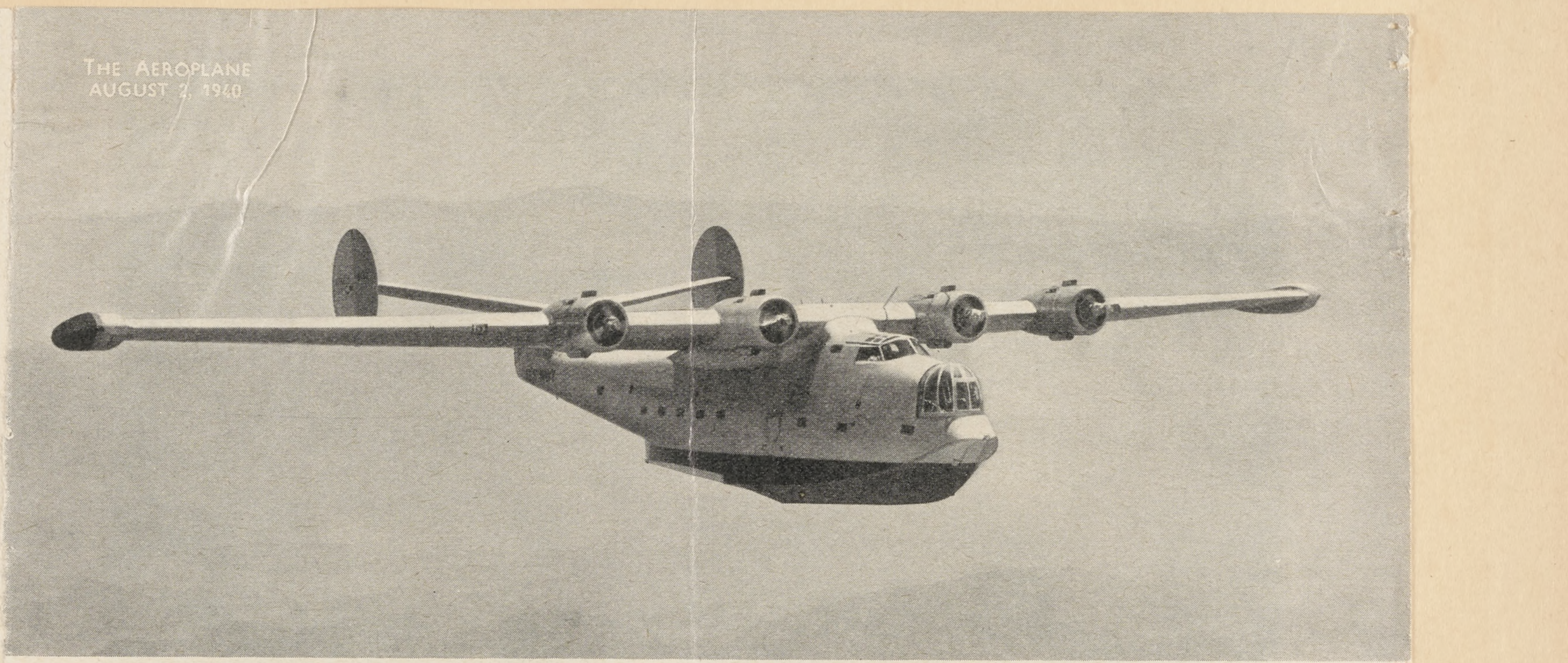
Upon his return from New Guinea and his flight around the world, he wanted to pitch in and make ready for a fourth expedition to the Papuan wilderness. But the war had broken out, making conditions too unsettled for exploration. He declined to stick around quietly awaiting developments, so he arranged his expedition to Arizona, advertising the Guba for sale.

"Since the situation in Europe is forcing scientists there to mark time," he said, "we in this country must carry on the work of advancing scientific knowledge more intensively than ever."

The End

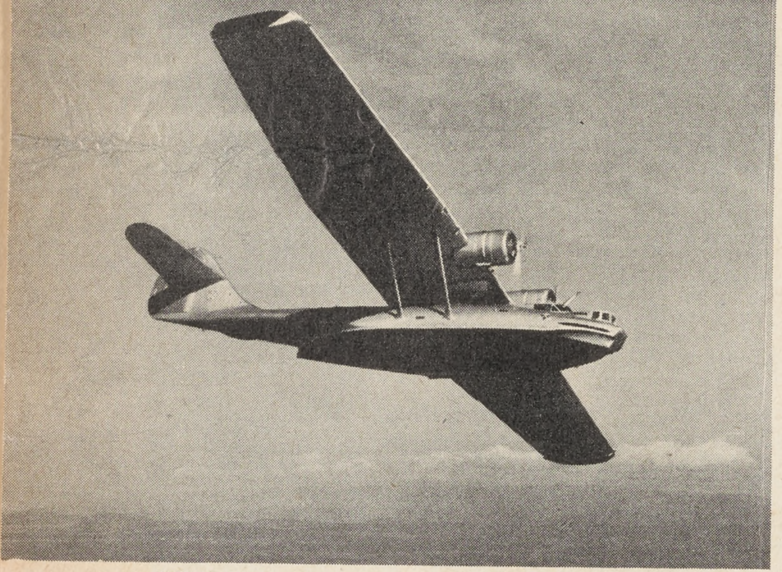


HIGH ASPECT RATIO.—Both the Consolidated Model 31 two-motor flying-boat (left) and the Consolidated Model 32 four-motor landplane bomber (right) have the same highly tapered "Davies" wing of exceptionally low drag. Both have outstanding performance. With two 2,000 h.p. Wright Duplex Cyclones, the Model 31 does nearly 300 m.p.h. and carries half its loaded weight of 50,000 lb. as disposable load. The Model 32, of which 120 are being supplied to the R.A.F., has a top speed of more than 300 m.p.h. on its four 1,200 h.p. Pratt and Whitney Twin Wasps.



THE AEROPLANE
AUGUST 2, 1940

A PATROL BOMBER.—The Consolidated Model 29 long-range patrol bomber supplied to the U.S. Navy. The four 1,050 h.p. Pratt and Whitney Twin Wasp motors give it a top speed of about 230 m.p.h. and it has a range of 4,000 miles cruising at about 200 m.p.h. A new version of this with a bigger hull, and a loaded weight of about 65,000 lb., is now in production for the U.S. Navy and may be ordered for the Royal Air Force. The photograph shows the wing-tip floats retracted to form end plates at the tips. This reduces the take-off run as well as increasing the cruising speed.



SUPPLIED TO THE R.A.F.—The Consolidated Model 28-5 (two 1,200 h.p. Pratt and Whitney Hornets), a large number of which are on order for the Coastal Command of the Royal Air Force. They will be delivered by air across the Atlantic.

CONSOLIDATING THE THIN WING

THIN WING SECTIONS are no mystery aerodynamically. But they have been something of a problem structurally since the size of aeroplanes has increased. The success of the aircraft produced recently by the Consolidated Aircraft Corporation has rested largely on the solution of that problem. Just as the geodetic system of Vickers presented the designer of the Wellesley with the high aspect ratio, so the Consolidated construction has yielded the wing of low drag which may also be given a high aspect ratio. The development is of importance and the illustrations on these pages show its first fruits.

Major Reuben Fleet, President and General Manager of the Consolidated Aircraft Corporation, has, since 1923, built up that concern from a small beginning until now at Lindbergh Field, San Diego, California, it is being expanded into the biggest single aircraft plant in the United States. When the extension is finished the works will occupy 1,910,000 square feet of covered and uncovered manufacturing space—the uncovered portion is made possible because in the Californian climate 30 per cent. of the manufacturing processes can be done out of doors. At present the Consolidated Corp. has $70,000,000 (£17,500,000) worth of unfulfilled orders on its books for Great Britain and for the expansion of the U.S. Naval Air Service.

The present and future prosperity of the Consolidated concern rests on four outstanding types of aeroplane.

The first is the Consolidated Model 28 (PBY-5), a two-motor flying-boat supplied in hundreds to the U.S. Navy and now being built for Great Britain. One boat of this type was flown non-stop across the Atlantic to Felixstowe in July, 1939, for delivery to the R.A.F. It has since been written-off but more will follow. The range is 4,000 miles at about 130 m.p.h.

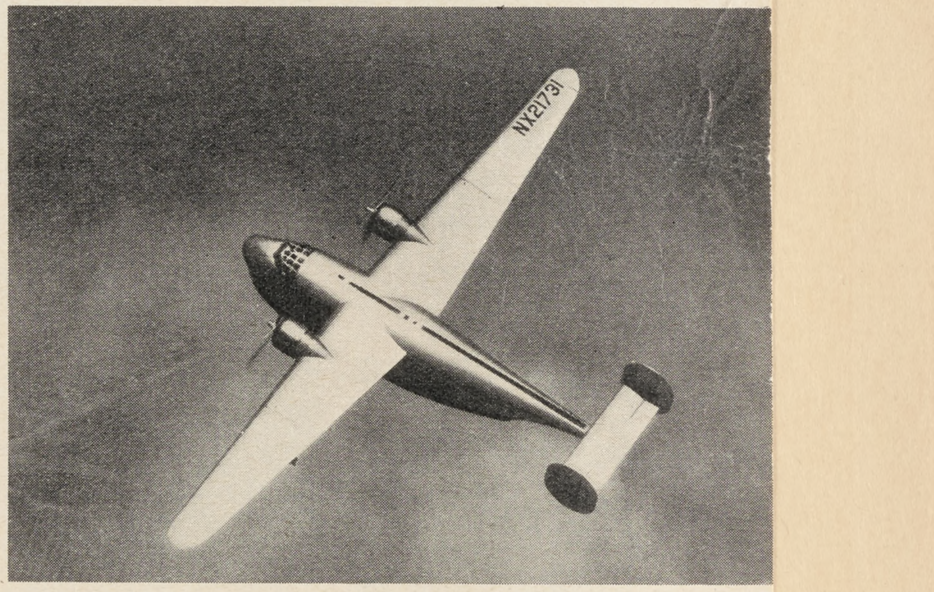
An interesting amphibian, the Model 28-5A XPBY-5A has been developed from the Model 28. It has a tricycle landing gear which can be retracted into the hull.

The second type of Consolidated flying-boat is the big Model 29 PB2Y-1 equipped with four Pratt and Whitney Twin Wasps. An enlarged version of this boat, the PB2Y-2, is in production for the U.S. Navy and may be for Great Britain.

The Consolidated Model 31 two-motor flying-boat is one of the World's most efficient aeroplanes and the biggest twin-engined seaplane in the World. It is also the World's fastest flying-boat with a top speed of nearly 300 m.p.h.

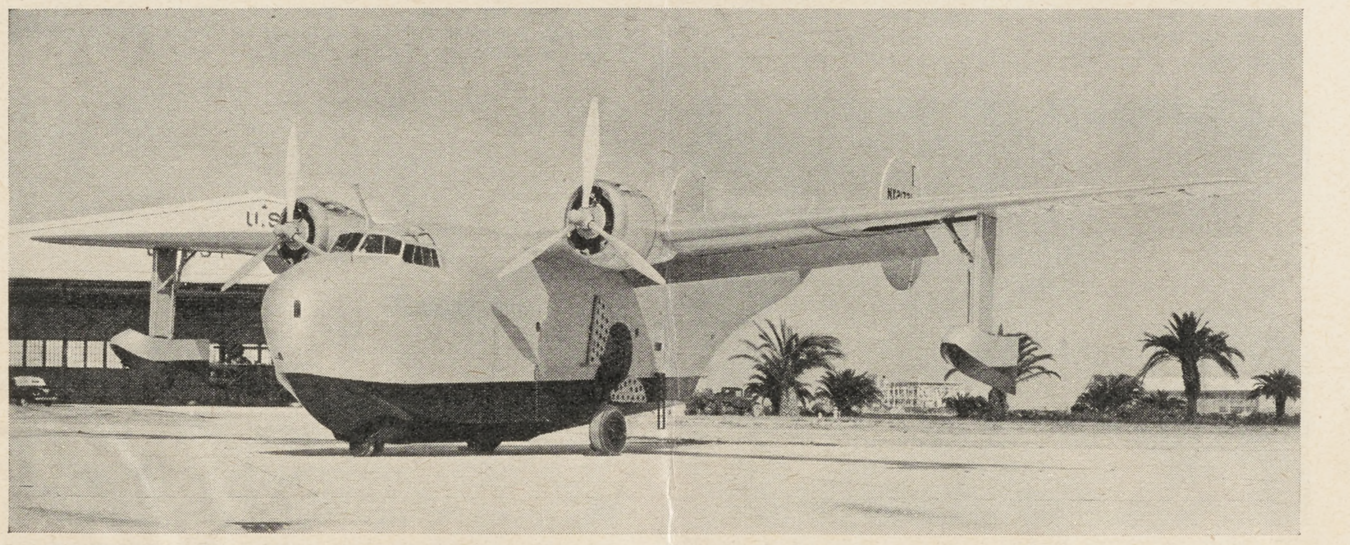
The latest Consolidated product is the Model 32 four-motor tricycle bomber which has a top speed of more than 300 m.p.h. France had ordered 120 of these before it was overwhelmed and they will now be supplied to Great Britain. As the wing of the four-motor Model 32 is the same as the two-motor Model 31 there is a possibility that a still higher performance may be gained by the substitution of two motors of about 2,000 h.p. each for the present installation of four 1,200 h.p. Cyclones.

The record of Consolidated aeroplanes in service is such that they can be expected to do well in the Royal Air Force. The Consolidated concern has been represented in this country for the past two years by Mr. John Millar of Aviation Corporates Ltd.



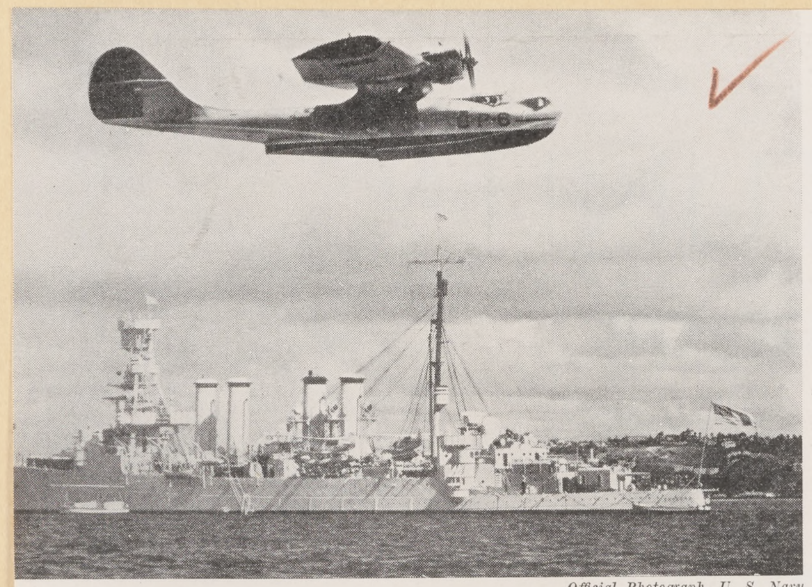
PLAN FORM.—The extraordinary wing of the Consolidated Model 31 is well shown in this photograph. It has an area of about 1,050 sq. ft., which gives a wing loading of more than 48 lb. per sq. ft. The Model 31 was designed and built in seven months.

AMPHIBIOUS.—The Consolidated Model 28-5a two-motor amphibian which, by virtue of its range and impartiality in alighting on sea or land, could be operated from anywhere to anywhere in the World, international politics permitting. The photograph shows the wing-tip floats in the extended position.

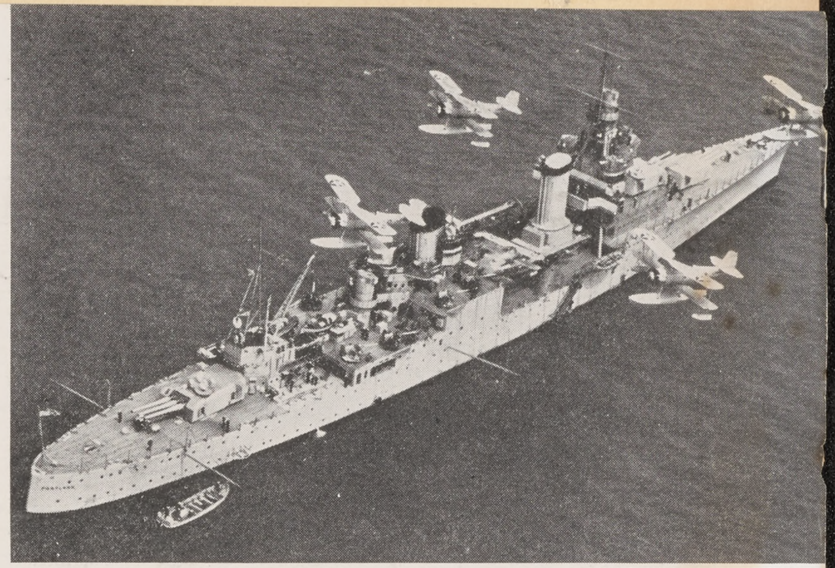


EFFICIENCY.—The Consolidated Model 31 flying-boat, one of the most efficient aeroplanes in the World. It is not an amphibian but has a retractable beaching chassis for ease of handling. The semi-retractable floats are shown in the extended position and so are the Fowler flaps.

RELATIONSHIP BETWEEN AIR POWER AND NAVAL FORCE


Official Photograph, U. S. Navy

Patrol Bomber over U. S. S. Concord.


Official Photograph, U. S. Navy

U. S. S. Portland with Formation of Planes.

By Rear Admiral John H. Towers, U.S.N.

Chief, Bureau of Aeronautics

THE policy which governs the United States Navy also governs Naval Aviation. This encompassing policy is possible because Naval Aviation is as definitely a part of the Navy as your right arm is a part of you; its separation would be as crippling to the Navy as the loss of your arm to you.

The more or less continuing agitation for an independent or separate air force —independent of the Army and the Navy, separate to the extent of depriving those services of their present air arms—has been conducted before the Congress and in the press to such an extent that the arguments used have become very worn.

In setting forth the arguments in favor of a separate air force, the finger of finality is generally pointed to the countries which have such organizations — Great Britain, France, Italy, Germany. Upon even casual examination, we find that our situation is far different. The European powers have far more vulnerable frontiers than we. The present war has demonstrated that for them air attack may materialize in hours rather than in days or weeks.

The English Channel, once a safeguard controlled by British naval forces, may be crossed in a few minutes by hostile aircraft. France, whose borders abut on those of traditional enemies, finds her capital city and her great industrial centers now subject to overpowering air attacks. Italy, too, must be concerned by the possibility of devastating air raids.

Our Policy Based on Our Problems

Those responsible for the national security of those countries adopted separate air forces, or departments of air, by reason of the fact that their strategic situations appeared to demand it. The determination of their requirements was based on their own particular problems. Likewise, we have determined our needs — based on our problems. Our probable enemies include neither Canada nor Mexico, whose territories adjoin our own. No potential enemy can reach our shores except by way of the seas. Our overseas possessions — Puerto Rico, Canal Zone, the Philippines—must also be reached via the seas and, in addition, we, ourselves, must proceed by those routes in order to protect them. The only answer is the possession of sea power; a mobile fleet, adequately equipped in all branches, which includes a complete and powerful air arm and the necessary supporting shore establishment.

It is of great interest to note the attitude of Admiral of the Fleet Sir Roger Keyes in his speech delivered in the House of Commons on February 27, 1940. Sir Roger pointed out that he had been striving for years to regain for the Admiralty the right to develop naval aviation; to have aircraft designed which could carry out the functions required by the Navy in war; to train the necessary personnel and to operate those aircraft in wartime. His statement, made six months after the entry of Great Britain into the present European war, stated that because the government failed to provide the Navy with the air service that it needed to carry out its responsibilities, the price had been the lives of many men which otherwise would have been spared.

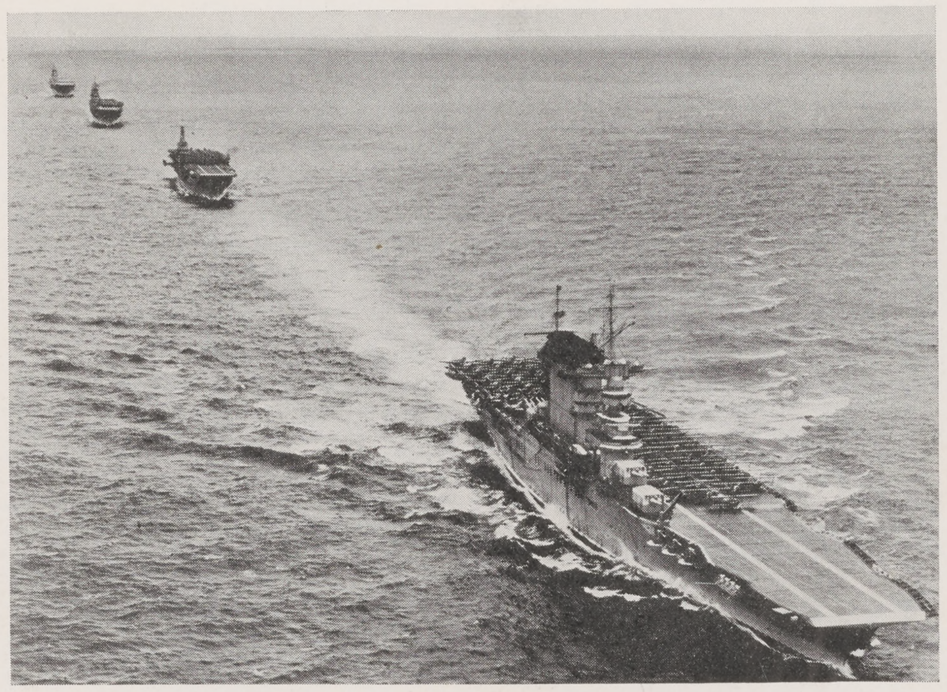
Separate Control A Basic Error

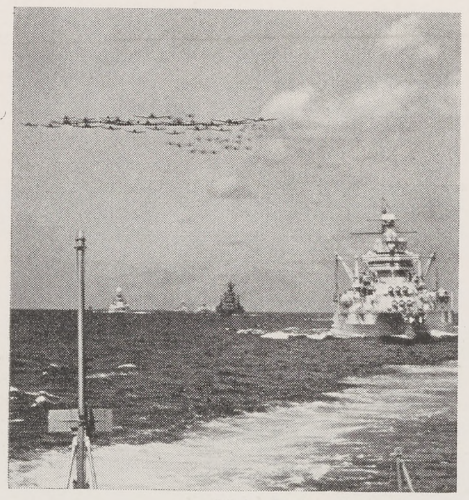
As far back as 1923, Lord Beatty, a great sea officer who bore the heaviest responsibilities in the last war and who had the insight to see what was likely to happen in the next war, said, referring to the working of the dual control of the fleet air arm: "This is no inter-service quarrel capable of compromise but a serious cause of reduced efficiency which time cannot correct, as it is due to a fundamental error in principle which no compromise can possibly bridge over."

The British Navy has no control over the nature of the aircraft employed, the strength of the squadrons, the training of the personnel, or even the operation of aircraft on which the Admiralty has to rely for information about enemy ships. Neither has the Navy any control over the aircraft which should be in a position to deliver attacks on enemy ships at sea immediately when they are located; nor other fighter aircraft which should be available at a moment's notice to attack enemy aircraft.

Four of the aircraft carriers are shown here. In the foreground U. S. S. Lexington, U. S. S. Ranger, U. S. S. Yorktown and U. S. S. Enterprise.

Official Photograph, U. S. Navy




Official Photograph, U. S. Navy

"United States Naval Aviation consists of all the aircraft units operating as component parts of the fleet."

For purposes of comparison, let us look at our own Navy and its aviation organization. It is not a separate force, but one which dovetails smoothly and efficiently into the organization of which it is a part. Its very functions are derived from the functions of the Navy; its capabilities and endeavors are directed toward the promotion of naval efficiency and the fulfillment of the basic policy.

The Bureau of Aeronautics is specifically charged with providing the best material that authorized funds can procure. In carrying out its material duties, the Bureau must consider both quantity and quality. It must ensure the maintenance of the full complement of airplanes for aircraft carriers, tenders, battleships, cruisers, the shore establishment, and the Fleet Marine Force. At the same time, it must develop the types of airplanes and appliances best suited for increased effectiveness of naval objectives. These steps are of vital importance if Naval Aviation is to assist in carrying the brunt of national defense—that of the first phases of operations in the preservation of our country's safety.

Mutual Dependence

That the developments in the art of war and in the international situation may change the composition of the Fleet and cause modification in the characteristics of both ship and aircraft is an accepted fact, but the underlying mutual dependence of one upon the other continues. Aircraft alone, or battleships, cruisers, destroyers, or submarines alone, are unable to carry out an adequate defense of this country, much less an effective offense. Taken together, however, in well-balanced proportions, they form the Fleet, which, supported by properly equipped and properly located shore bases, can do either assigned task.

United States Naval Aviation consists of all the aircraft units operating as component parts of the Fleet, plus the necessary supporting establishments such as training schools, overhaul and operating bases, and experimental facilities. The various types of aircraft of this aeronautic organization are divided and employed as follows:

(1) Four landplane squadrons of eighteen planes each are assigned to each of our six aircraft carriers. Each carrier group consists normally of one fighter squadron, two scout-bombing squadrons, and one torpedo-bombing squadron. These carrier groups comprise the principal air striking force of the Fleet.

(2) Each battleship carries three seaplanes, primarily for controlling the ship's long-range gunfire.

(3) Each cruiser carries four seaplanes, primarily for scouting and secondarily for controlling the ship's long-range gunfire.

(4) Twenty long-range patrol-bombing squadrons, operating from harbors of our continental and insular possessions and the Canal Zone, are used for long-range overseas scouting and heavy bombing. Because of their long range, these patrol squadrons are highly mobile; they can be shifted rapidly from one area to another, and from the West Coast to the Hawaiian Islands; from San Diego to Coco Solo in the Canal Zone; or from the East Coast to the West Coast. Advance operations by these squadrons are aided by the employment of ships called tenders, which carry gasoline and oil for servicing the planes operating far from their shore bases, and are equipped to carry out repairs and to provide facilities for messing and berthing the planes' crews.

(5) The Fleet Marine Force has nine squadrons trained to support the Marine Force wherever it may be employed. This force is also trained to operate from the aircraft carriers.

Time At Shore Bases

Airplanes in themselves are not capable of operating over the vast areas of the open sea for indefinite periods. For this reason no fleet operating in the various sea areas at great distances can be assured of the vital assistance afforded by airplanes unless that fleet provides within itself the means of basing, maintaining, and efficiently operating such airplanes. While this is an accomplished fact in our Navy, it has been determined that time spent at shore bases, primarily for purposes of economy, is most efficiently employed in the carrying out of gunnery training schedules and major overhauls. These land periods coincide with periods needed by the parent ships for repairs, provisioning, and fueling.

The Naval Aviation Shore Establishment, so necessary for the proper operation of the Fleet, may be divided into four general categories: Naval Air Stations, Naval Aviation Facilities, Naval Reserve Aviation Bases, and Temporary Naval Aviation Facilities in support of the neutrality patrol.

The foregoing is, briefly, a picture of the present set-up of Naval Aviation. It is based on the results of careful study in the past which are definitely supported by the demonstrations in the day-to-day conflicts now going on in Europe. Control of the sea is a vital factor under many circumstances, but control of the land is always vital. The inability of air forces ALONE to seize and hold territory is obvious. Every attack by planes must be followed immediately by the ground forces in order that the land may be ac-

Consolidated Aircraft, with a $70,000,000 backlog, has $15,000,000 more business on its book than total sales in the previous sixteen years of its existence. Full operations appear assured for more than two years. Nearly 50 percent of the backlog is in foreign orders.

Aviation July 1940

Swedlow Plastics Shares Offered

Public offering of 64,500 shares of capital stock in the Swedlow Aeroplastics Corp. was made early in July at an offering price of $1.25 per share. Proceeds were to be used for machinery and equipment, working capital and other purposes.

The company is to engage in the manufacture of products from acrylic (methyl methacrylate) resins, which are the plastics used, among other purposes, as substitutes for glass.

Officers and directors of the new company are Dave Swedlow, president and director; Lawrence Green, secretary-treasurer and director; Hall L. Hibbard, chief engineer of Lockheed Aircraft Corp., vice president and director; Wolfgang Klemperer, Douglas Aircraft, director; Richard W. Millar, president of Vultee Aircraft, director; John K. Northrop, president of Northrop Aircraft, director; Charles H. Van Dusen, vice president and works manager of Consolidated Aircraft at San Diego, director.

Col 8696 O.K
Cot 9.

24 FLIGHT JULY 11, 1940

AMERICAN PRODUCTION

A Mid-June News-letter from a Correspondent in Washington

THIS letter is being written as the final act in France's present tragedy is unrolled. The Anglo-French Purchasing Board has not yet made any public statement regarding the disposition of the French part (slightly more than half) of the 1,600,000,000 dollars (£400,000,000) of Allied orders placed in the United States so far. Not much more than 250,000,000 dollars (£63,000,000) worth of equipment has yet been delivered, but informed sources are certain that remaining French contracts will be taken over by the British Purchasing Commission, unless an émigré Government is set up to carry on the war. If this happens, it is possible that the present form of the Anglo-French board will be continued.

As British readers undoubtedly know, buying has been proceeding at a greatly accelerated rate during the last five weeks. Contracts totalling some 600,000,000 dollars (£150,000,000) have been signed in that time, according to a statement by the purchasing group. Of the grand total spent to date, more than 1,000,000,000 dollars (£250,000,000) is for aircraft—8,500 of them.

The Anglo-French Purchasing Board says that more than 2,000 of these have already been shipped. Some 500 others (Hudsons, Hawk 75As and Harvards) were delivered before September 3. Another 500 await shipment. About 3,300 of the still-awaited 6,000 were ordered for France. Yet another source just opened up, of course, is Army and Navy air service equipment declared obsolete and traded in by the Government to the manufacturers for resale to Britain—a nice legal manœuvre which should show where American sympathies lie. Less than 200 Army and Navy machines have been turned over to Britain in that way at the time of writing. The release programme has slowed down in the last couple of days, either because shipping facilities for additional machines are not immediately available or until the uncertainty over the French surrender and its effect on the war is cleared up. But other aircraft will undoubtedly be made available shortly. Army types will predominate. The Navy is still the first line of American defence and its active squadrons will be the last to be stripped. The first aircraft released were Navy machines, but they were from reserve units whose personnel had, in any case, been called to serve as instructors in training schools.

Variety of Types

Just about every military type currently made in the United States is under order for England. Besides the types previously reported by this correspondent, England will shortly receive 120 Vultee Vanguards, originally ordered by Sweden, and 24 Northrop single-engined twin-float seaplanes intended for Norway. (John K. Northrop, one of America's most talented engineers, is back in the manufacturing field with his own company and several revolutionary ideas. Northrop's older company was absorbed by Douglas some years ago.) The Vanguard, an easily assembled fighter, does about 320 m.p.h. when powered with a Pratt and Whitney Twin Wasp C 14-cylinder air-cooled radial (1,200 h.p., take-off). A version powered with the Double Wasp (18 cylinders, 1,600 h.p., take-off) and capable of 370 m.p.h. was built for the Army, but the Army turned thumbs down.

The Purchasing Board has ordered (originally for French use) as many Douglas B-20 and Martin 167W attack bombers as can be built, up to 150 each a month. Most of the Douglases (15,000 lb. gross weight; two two-row Cyclones; 375 m.p.h. (?)) will be built in the Boeing (Seattle) and Consolidated (San Diego, Calif.) plants, as Douglas is not interested in further plant expansion. This is the first time a large-scale licensing arrangement has ever been made in the United States, and is a major step toward standardisation of the industry. Earlier Allied attempts to secure industry-wide standardisation on three models were unsuccessful. Martin will build all of the 167Ws—not nearly so speedy a type (16,000 lb.; two Twin Wasps; 315 m.p.h.).

Just three days before Marshal Pétain sued for an armistice the French mission signed for delivery of 120 Consolidated B-24s in 1941. These are the 20-ton four-engined (Twin Wasps) bombers with a speed of nearly 300 m.p.h. They are in the "flying fortress" class, but cannot be called that because Boeing had the forethought to register the title as a trade mark. Boeing, builders of the original "F.F." type, the B-17, are also building long-range high-speed machines to Allied orders. They are known as the B-17D model. Redesigned from the landing wheels up, the new B-17 is said to be good for 330 m.p.h. top speed. Both Consolidated and Boeing types are also on order for the Army, but the Army will wait. The French had also contracted for 110 four-engined Consolidated flying boats of the PB2Y-1 U.S. Navy model.

Two further items may be of some, though very small, comfort in these trying days. First, production of the Curtiss P-40D fighter is really under way at a good rate, and secondly, the Allison Engineering Company, whose V-1710-C6 twelve-cylinder diethylene-glycol-cooled engine has been so eagerly awaited, finally got production started two months ago in its first plant. A second plant, paid for by the Allies, is nearing useful work. But production of this engine still lags behind airframes designed to take it.

The only important new aircraft types to make their appearance in the last two months are the Grumman Skyrocket twin-engined fighter designed for aircraft carrier operation, and the Bell XFL-1, fleet fighter version of the Airacobra. The Skyrocket uses Twin Wasps (the prototype had Cyclones.—Ed.) and the Navy swears it will outpace Lockheed's Allison-powered P-38. No data are yet released. This type and single-engined Grumman and Brewster monoplanes (just over 300 m.p.h.) have been ordered by the Allies. Eighty Grumman F4-F3s were to go to France.

Rates of Production

Actual production of military aircraft (and the Allies are getting practically every one built) is now running at the rate of about 500 a month, with a good likelihood of reaching 700 or 800 monthly by the end of the summer. Deliveries have been consistently ahead of schedule, although almost the only large plant which is actually now working at all-out capacity is Douglas. Eighteen thousand men are employed around the clock at the Santa Monica factory in California. (A three-shift maximum of 17,000 is the designed capacity labour force.) At several plants this winter there were slight delays due to engine shortages, but this has been corrected.

The Wright Aeronautical Corporation the other day dedicated the fourth major engine plant addition to go into service in the United States since war began. Production is currently for over 1,000 engines a month and should pass 2,000 by the end of the year. Further expansion plans are liable to boost even this output.

At one other aircraft factory, an airscrew shortage was reported, but Curtiss now has about as large a plant as Hamilton Standard, and Hamilton Standard has grown mightily. At some plants visited recently by the writer aircraft were quite often being turned out faster than the Allies could take them away. Recent easing of flight delivery regulations under the Neutrality Act (non-stop into-Canada trips by American delivery pilots are now allowed) should at least get the machines as far as Canada's Atlantic ports.

This survey of American production as it affects the Allies would be incomplete without one final note: North America is reported to be building a single-engined fighter around that Allison W-shaped engine of 2,000 h.p. The new N.A. prototype has not flown yet. Will it be in the 500-mile-an-hour class? (No!—Ed.) More important, will it be ready in time?

Life July 1940

WEST COAST AIRCRAFT PLANTS, PREDICT U. S. WILL HAVE 5,500 PLANES BY APRI

↑ **In San Diego** they marched through vast hangars of Consolidated Aircraft Corp., where they inspected bombers and seaplanes. Here they pass a huge wing sectio with mountings for engine nacelles. Backlog of orders now exceeds $120,000,000. B April, General Arnold said, the Army would have 5.500 first-line fighting planes

---

Wall St. Journal 7-24-40

Cons. Aircraft Bookings

LOS ANGELES—Consolidated Aircraft Corp. in the six months ended June 30, 1940, booked $55,136,721 in new aircraft orders, increasing its total backlog at the end of the period to $96,870,008. Sales represented by products delivered and billed for the six months' period totaled $408,407. During the period the company was engaged primarily in making parts and subassemblies for airplanes which will be delivered commencing in August, this year, and continuing throughout 1941.

DIVIDEND

Union 7/30/40

British Buy Guba From·Archbold

NEW YORK, July 29 (U.P.)—Britain has purchased the seaplane Guba from Richard Archbold, explorer, it was understood today. The Guba, built in San Diego, was flown around the world in 1938.

The purchase was negotiated by Harold James, representative of the British ministry of aircraft production. The plane will be used to transport aluminum from the United States to England.

It was understood the plane would make semi-weekly trips to England, carrying 3½ tons of aluminum on each trip. Clyde Pangborn, long-distance flier, will command a crew of four.

The Guba now is at Port Washington, N. Y. It has a cruising range of 4000 miles and is a duplicate of the PBY long-range bombers used by the U. S. navy except that it carries no armament. Last month the Guba was flown from San Diego to Floyd Bennett field in Brooklyn in 15 hours, 49 minutes, a new transcontinental seaplane record.

PRINTED MATERIAL FOR THE MONTH
OF AUGUST, 1940

---

aircraft news 8/29/40

New Plane Factory To Be Opened Monday

SAN DIEGO—Consolidated Aircraft Corp.'s new factory, completed in a $2,000,000 expansion program this summer, will be dedicated at 2 p.m. Monday by Rear Admiral Charles Blakely, 11th Naval District commandant.

Maj. H. R. Fleet, Consolidated president, said because of lack of space to accommodate visitors, the dedication will not be an open house, but that invitations had been issued to State, county, city, Navy, Army, Marine Corps and Coast Guard officials.

Because of work under way in connection with the national defense program, cameras will not be allowed in the plant without government permission.

Tribune — 8/22/40

Will Build Again, Consair Decision

Further expansion of the Consolidated Aircraft Corp.'s extensive airplane construction plant here was disclosed today when plans were filed with the planning commission for a new building to cost $800,000. The new structure will be 200 feet wide by 1500 feet long and will occupy that portion of the corporation's lease west of Pacific highway and north of the last new structure to be completed, which is to be dedicated Sept. 2.

The plans were filed by E. L. Freeland, structural engineer. It is to be entirely of steel, with the latest improved mechanical and electrical equipment. Contract for the steel placement has been let to the National Iron Works, San Diego, said Freeland. Estimates for general construction are being prepared by B. O. Larson, local contractor. Test pilings for the foundation now are being driven and work on the superstructure will begin within a short time.

Approval Forecast

The plans were checked by the planning engineer today when they were taken to the building department. It was said they would be approved there later today, when a building permit would be issued.

The $800,000 will add materially to the city's August construction record, said Glenn Rick, planning engineer.

Freeland said the new building is to be equipped for construction of land planes alone, and that it would make room for employment of additional skilled workmen. The new structure also will add to the large acreage of structures built by the Consolidated Corp. since it began operation in San Diego several years ago, said Rick.

Air Plants Raise Building Permits

Un— 8/25/40

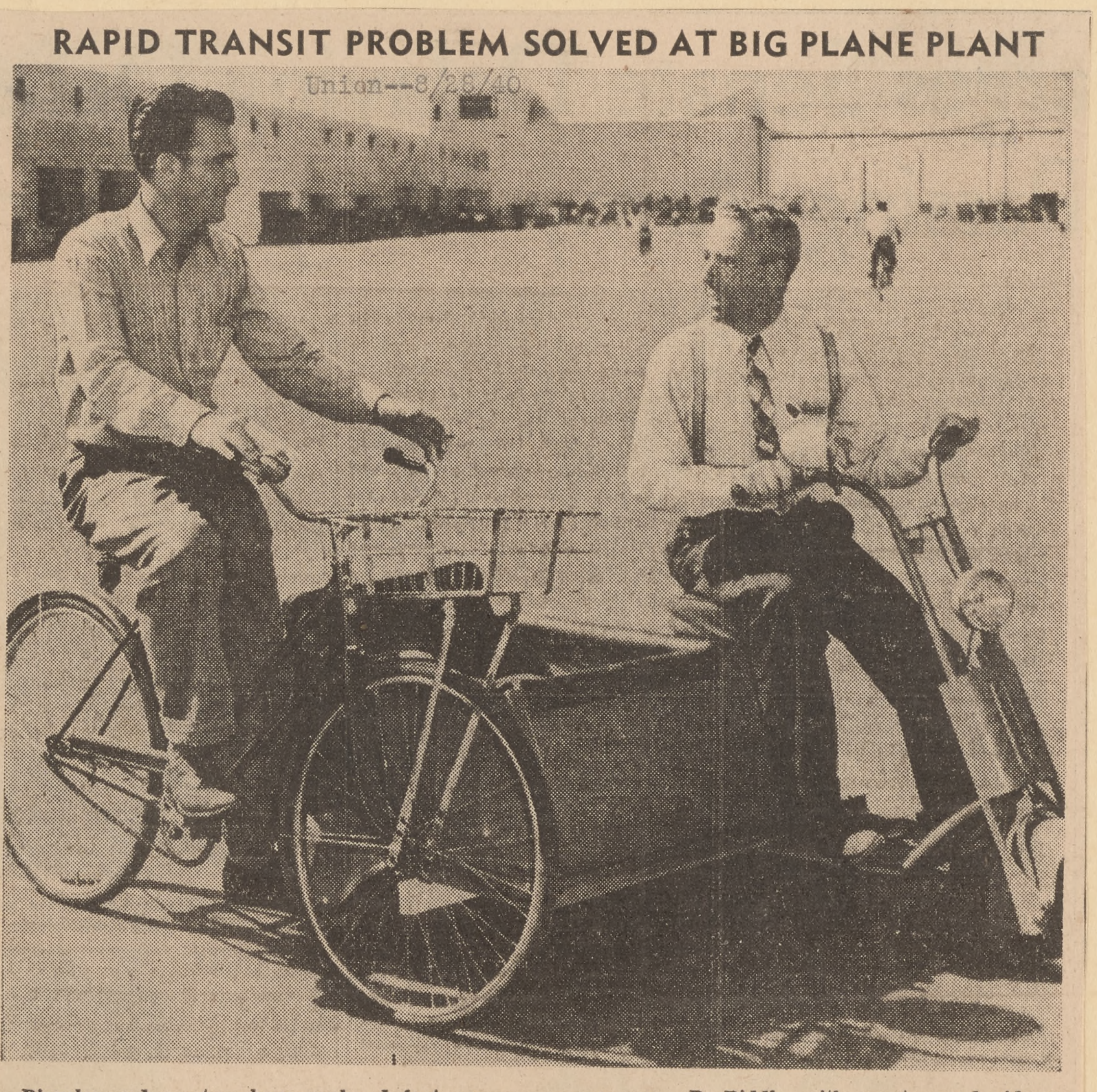
Permits for construction of an $800,000 unit at Consolidated Aircraft Corp.'s plant, a $1000 addition at the Solar Aircraft Co.'s factory and for a $21,250 church in East San Diego were issued by the city building department yesterday.

The new Consolidated unit, according to the permit, will be a single-story structure with a mezzanine floor, and will have a total of 300,000 square feet. Solar's addition will be 18 by 26 feet.

Seventh Day Adventist church obtained the $21,250 permit for a 7000-square-foot frame and stucco building on the northwest corner of Polk ave. and Illinois st. The improvement is to be erected on a 140 by 150 foot site.

RAPID TRANSIT PROBLEM SOLVED AT BIG PLANE PLANT

Union--8/28/40



Bicycles and scooters have replaced foot power and roller skates for Consolidated Aircraft Corp. messengers. R. Biddle with scooter and sidecar and Eddie Holmes on bicycle are ready for action.

* * *

CONSAIR PROVIDES BIKES, SCOOTERS FOR MESSENGERS

When Consolidated Aircraft Corp. built its San Diego plant five years ago, a number of messengers were employed to carry memoranda and supplies to the various plant units. A year later, the factory was enlarged and the messengers equipped themselves with roller skates on which to reach more speedily the distant parts of the big plant.

Then came the third enlargement and Consair expanded until now it stretches a full half-mile along Pa-

Meanwhile, plans for dedication of the latest plant addition were completed yesterday with Rear Adm. Charles Blakely, 11th Naval district commandant, named to preside. Due to lack of room, the public has not been invited but each employe may bring a guest, it was announced from the office of Maj. R. H. Fleet, Consair president. The ceremony will be held on the northwest side of the plant.

In addition to Adm. Blakely and state, city, county, army, navy, marine corps and coast guard officials, others present will be Rear Adm. A. B. Cook, aircraft scouting force commander; Maj. Gen. William P. Upshur, commanding Ft. Rosecrans, and Gen. F. D. Lackland, March field, representing the army air corps.

Union 8/17/40

Consair Gets Huge Contract

Award of a $14,861,342 war department contract for purchase of 54 four-engine bombing planes was acknowledged by Consolidated Aircraft Corp. yesterday.

The plane is said to be similar to those built and building at the San Diego factory under two previous contracts.

Orders for the Consolidated bombers include a $3,000,000 contract in April, 1939, and an $8,600,000 contract in August, 1939. The number of planes has been kept secret in previous announcements.

Consolidated Corp.'s backlog of army, navy and foreign government plane orders totals $132,000,000, according to unofficial estimates.

Requests for bids on materials have been issued on the new order although work has not yet started, it was reported here.

Date of delivery on the planes was not announced.

Also awarded yesterday was a $1,038,000 order for 100 training planes to the Fairchild Engine & Airplane Corp., Hagerstown, Md., The Associated Press reported from Washington, D. C.

The orders were the third of a group announced since congress voted $400,000,000 for 4200 additional army planes last June.

Union July 26-40

Coast Aircraft Backlogs Show Rapid Gains

SAN FRANCISCO, July 25 (A.P.) — California aircraft builders reported rapidly rising backlogs of unfilled orders today.

North American Aviation Corp. reported its books held $83,534,306 in orders June 30 compared with a little over $50,000,000 March 31.

Vultee Aircraft, Inc., incorporated in its present form late in 1939, had $14,494,744 orders on hand, Vice-President V. C. Schorelemmer said, reporting as of May 31. No comparison was available.

Solar Aircraft had $1,084,538 unfilled orders before receipt today of an additional $130,000 order for exhaust manifolds.

President J. H. Kindelberger of North American said his firm was negotiating for construction of a new plant. Consolidated net profit for the six months ended June 30 amounted to $2,367,638 compared with $2,781,682 in the first half of last year. Indicated June quarter profit was $1,846,979 after all charges including estimated income taxes.

First half sales of North American totaled $14,578,317 against $12,965,836 last year.

Consolidated Aircraft, with a $70,000,000 backlog, has $15,000,000 more business on its book than total sales in the previous sixteen years of its existence. Full operations appear assured for more than two years. Nearly 50 percent of the backlog is in foreign orders.

Aviation
July
1940

Swedlow Plastics Shares Offered

Public offering of 64,500 shares of capital stock in the Swedlow Aeroplastics Corp. was made early in July at an offering price of $1.25 per share. Proceeds were to be used for machinery and equipment, working capital and other purposes.

The company is to engage in the manufacture of products from acrylic (methyl methacrylate) resins, which are the plastics used, among other purposes, as substitutes for glass.

Officers and directors of the new company are Dave Swedlow, president and director; Lawrence Green, secretary-treasurer and director; Hall L. Hibbard, chief engineer of Lockheed Aircraft Corp., vice president and director; Wolfgang Klemperer, Douglas Aircraft, director; Richard W. Millar, president of Vultee Aircraft, director; John K. Northrop, president of Northrop Aircraft, director; Charles H. Van Dusen, vice president and works manager of Consolidated Aircraft at San Diego, director.

Col 8696 O.K
Col 9.

24 FLIGHT JULY 11, 1940

AMERICAN PRODUCTION

A Mid-June News-letter from a Correspondent in Washington

THIS letter is being written as the final act in France's present tragedy is unrolled. The Anglo-French Purchasing Board has not yet made any public statement regarding the disposition of the French part (slightly more than half) of the 1,600,000,000 dollars (£400,000,000) of Allied orders placed in the United States so far. Not much more than 250,000,000 dollars (£63,000,000) worth of equipment has yet been delivered, but informed sources are certain that remaining French contracts will be taken over by the British Purchasing Commission, unless an émigré Government is set up to carry on the war. If this happens, it is possible that the present form of the Anglo-French board will be continued.

As British readers undoubtedly know, buying has been proceeding at a greatly accelerated rate during the last five weeks. Contracts totalling some 600,000,000 dollars (£150,000,000) have been signed in that time, according to a statement by the purchasing group. Of the grand total spent to date, more than 1,000,000,000 dollars (£250,000,000) is for aircraft—8,500 of them.

The Anglo-French Purchasing Board says that more than 2,000 of these have already been shipped. Some 500 others (Hudsons, Hawk 75As and Harvards) were delivered before September 3. Another 500 await shipment. About 3,300 of the still-awaited 6,000 were ordered for France. Yet another source just opened up, of course, is Army and Navy air service equipment declared obsolete and traded in by the Government to the manufacturers for resale to Britain—a nice legal manœuvre which should show where American sympathies lie. Less than 200 Army and Navy machines have been turned over to Britain in that way at the time of writing. The release programme has slowed down in the last couple of days, either because shipping facilities for additional machines are not immediately available or until the uncertainty over the French surrender and its effect on the war is cleared up. But other aircraft will undoubtedly be made available shortly. Army types will predominate. The Navy is still the first line of American defence and its active squadrons will be the last to be stripped. The first aircraft released were Navy machines, but they were from reserve units whose personnel had, in any case, been called to serve as instructors in training schools.

Variety of Types

Just about every military type currently made in the United States is under order for England. Besides the types previously reported by this correspondent, England will shortly receive 120 Vultee Vanguards, originally ordered by Sweden, and 24 Northrop single-engined twin-float seaplanes intended for Norway. (John K. Northrop, one of America's most talented engineers, is back in the manufacturing field with his own company and several revolutionary ideas. Northrop's older company was absorbed by Douglas some years ago.) The Vanguard, an easily assembled fighter, does about 320 m.p.h. when powered with a Pratt and Whitney Twin Wasp C 14-cylinder air-cooled radial (1,200 h.p., take-off). A version powered with the Double Wasp (18 cylinders, 1,600 h.p., take-off) and capable of 370 m.p.h. was built for the Army, but the Army turned thumbs down.

The Purchasing Board has ordered (originally for French use) as many Douglas B-20 and Martin 167W attack bombers as can be built, up to 150 each a month. Most of the Douglases (15,000 lb. gross weight; two two-row Cyclones; 375 m.p.h. (?)) will be built in the Boeing (Seattle) and Consolidated (San Diego, Calif.) plants, as Douglas is not interested in further plant expansion. This is the first time a large-scale licensing arrangement has ever been made in the United States, and is a major step toward standardisation of the industry. Earlier Allied attempts to secure industry-wide standardisation on three models were unsuccessful. Martin will build all of the 167Ws—not nearly so speedy a type (16,000 lb.; two Twin Wasps; 315 m.p.h.).

Just three days before Marshal Pétain sued for an armistice the French mission signed for delivery of 120 Consolidated B-24s in 1941. These are the 20-ton four-engined (Twin Wasps) bombers with a speed of nearly 300 m.p.h. They are in the "flying fortress" class, but cannot be called that because Boeing had the forethought to register the title as a trade mark. Boeing, builders of the original "F.F." type, the B-17, are also building long-range high-speed machines to Allied orders. They are known as the B-17D model. Redesigned from the landing wheels up, the new B-17 is said to be good for 330 m.p.h. top speed. Both Consolidated and Boeing types are also on order for the Army, but the Army will wait. The French had also contracted for 110 four-engined Consolidated flying boats of the PB2Y-1 U.S. Navy model.

Two further items may be of some, though very small, comfort in these trying days. First, production of the Curtiss P-40D fighter is really under way at a good rate, and secondly, the Allison Engineering Company, whose V-1710-C6 twelve-cylinder diethylene-glycol-cooled engine has been so eagerly awaited, finally got production started two months ago in its first plant. A second plant, paid for by the Allies, is nearing useful work. But production of this engine still lags behind airframes designed to take it.

The only important new aircraft types to make their appearance in the last two months are the Grumman Skyrocket twin-engined fighter designed for aircraft carrier operation, and the Bell XFL-1, fleet fighter version of the Airacobra. The Skyrocket uses Twin Wasps (the prototype had Cyclones.—Ed.) and the Navy swears it will outpace Lockheed's Allison-powered P-38. No data are yet released. This type and single-engined Grumman and Brewster monoplanes (just over 300 m.p.h.) have been ordered by the Allies. Eighty Grumman F4-F3s were to go to France.

Rates of Production

Actual production of military aircraft (and the Allies are getting practically every one built) is now running at the rate of about 500 a month, with a good likelihood of reaching 700 or 800 monthly by the end of the summer. Deliveries have been consistently ahead of schedule, although almost the only large plant which is actually now working at all-out capacity is Douglas. Eighteen thousand men are employed around the clock at the Santa Monica factory in California. (A three-shift maximum of 17,000 is the designed capacity labour force.) At several plants this winter there were slight delays due to engine shortages, but this has been corrected.

The Wright Aeronautical Corporation the other day dedicated the fourth major engine plant addition to go into service in the United States since war began. Production is currently for over 1,000 engines a month and should pass 2,000 by the end of the year. Further expansion plans are liable to boost even this output.

At one other aircraft factory, an airscrew shortage was reported, but Curtiss now has about as large a plant as Hamilton Standard, and Hamilton Standard has grown mightily. At some plants visited recently by the writer aircraft were quite often being turned out faster than the Allies could take them away. Recent easing of flight delivery regulations under the Neutrality Act (non-stop into-Canada trips by American delivery pilots are now allowed) should at least get the machines as far as Canada's Atlantic ports.

This survey of American production as it affects the Allies would be incomplete without one final note: North America is reported to be building a single-engined fighter around that Allison W-shaped engine of 2,000 h.p. The new N.A. prototype has not flown yet. Will it be in the 500-mile-an-hour class? (No!—Ed.) More important, will it be ready in time?

Life July 1940

WEST COAST AIRCRAFT PLANTS, PREDICT U. S. WILL HAVE 5,500 PLANES BY APRI

↑ **In San Diego** they marched through vast hangars of Consolidated Aircraft Corp. where they inspected bombers and seaplanes. Here they pass a huge wing sectio with mountings for engine nacelles. Backlog of orders now exceeds $120,000,000. B April, General Arnold said, the Army would have 5.500 first-line fighting planes

---

Wall St. Journal

Cons. Aircraft Bookings 7-24-40

LOS ANGELES—Consolidated Aircraft Corp. in the six months ended June 30, 1940, booked $55,136,721 in new aircraft orders, increasing its total backlog at the end of the period to $96,870,008. Sales represented by products delivered and billed for the six months' period totaled $408,407. During the period the company was engaged primarily in making parts and subassemblies for airplanes which will be delivered commencing in August, this year, and continuing throughout 1941.

DIVIDEND

Union 7/30/40

British Buy Guba From·Archbold

NEW YORK, July 29 (U.P.)—Britain has purchased the seaplane Guba from Richard Archbold, explorer, it was understood today. The Guba, built in San Diego, was flown around the world in 1938.

The purchase was negotiated by Harold James, representative of the British ministry of aircraft production. The plane will be used to transport aluminum from the United States to England.

It was understood the plane would make semi-weekly trips to England, carrying 3½ tons of aluminum on each trip. Clyde Pangborn, long-distance flier, will command a crew of four.

The Guba now is at Port Washington, N. Y. It has a cruising range of 4000 miles and is a duplicate of the PBY long-range bombers used by the U. S. navy except that it carries no armament. Last month the Guba was flown from San Diego to Floyd Bennett field in Brooklyn in 15 hours, 49 minutes, a new transcontinental seaplane record.

PRINTED MATERIAL FOR THE MONTH
OF AUGUST, 1940

---

aircraft news 8/29/40

New Plane Factory To Be Opened Monday

SAN DIEGO—Consolidated Aircraft Corp.'s new factory, completed in a $2,000,000 expansion program this summer, will be dedicated at 2 p.m. Monday by Rear Admiral Charles Blakely, 11th Naval District commandant.

Maj. H. R. Fleet, Consolidated president, said because of lack of space to accommodate visitors, the dedication will not be an open house, but that invitations had been issued to State, county, city, Navy, Army, Marine Corps and Coast Guard officials.

Because of work under way in connection with the national defense program, cameras will not be allowed in the plant without government permission.

Air Plants Raise Building Permits

Un 8/25/40

Permits for construction of an $800,000 unit at Consolidated Aircraft Corp.'s plant, a $1000 addition at the Solar Aircraft Co.'s factory and for a $21,250 church in East San Diego were issued by the city building department yesterday.

The new Consolidated unit, according to the permit, will be a single-story structure with a mezzanine floor, and will have a total of 300,000 square feet. Solar's addition will be 18 by 26 feet.

Seventh Day Adventist church obtained the $21,250 permit for a 7000-square-foot frame and stucco building on the northwest corner of Polk ave. and Illinois st. The improvement is to be erected on a 140 by 150 foot site.

Tribune - 8/22/40

Will Build Again, Consair Decision

Further expansion of the Consolidated Aircraft Corp.'s extensive airplane construction plant here was disclosed today when plans were filed with the planning commission for a new building to cost $800,000. The new structure will be 200 feet wide by 1500 feet long and will occupy that portion of the corporation's lease west of Pacific highway and north of the last new structure to be completed, which is to be dedicated Sept. 2.

The plans were filed by E. L. Freeland, structural engineer. It is to be entirely of steel, with the latest improved mechanical and electrical equipment. Contract for the steel placement has been let to the National Iron Works, San Diego, said Freeland. Estimates for general construction are being prepared by B. O. Larson, local contractor. Test pilings for the foundation now are being driven and work on the superstructure will begin within a short time.

Approval Forecast

The plans were checked by the planning engineer today when they were taken to the building department. It was said they would be approved there later today, when a building permit would be issued.

The $800,000 will add materially to the city's August construction record, said Glenn Rick, planning engineer.

Freeland said the new building is to be equipped for construction of land planes alone, and that it would make room for employment of additional skilled workmen. The new structure also will add to the large acreage of structures built by the Consolidated Corp. since it began operation in San Diego several years ago, said Rick.

Union 8/17/40

Consair Gets Huge Contract

Award of a $14,861,342 war department contract for purchase of 54 four-engine bombing planes was acknowledged by Consolidated Aircraft Corp. yesterday.

The plane is said to be similar to those built and building at the San Diego factory under two previous contracts.

Orders for the Consolidated bombers include a $3,000,000 contract in April, 1939, and an $8,600,000 contract in August, 1939. The number of planes has been kept secret in previous announcements.

Consolidated Corp.'s backlog of army, navy and foreign government plane orders totals $132,000,000, according to unofficial estimates.

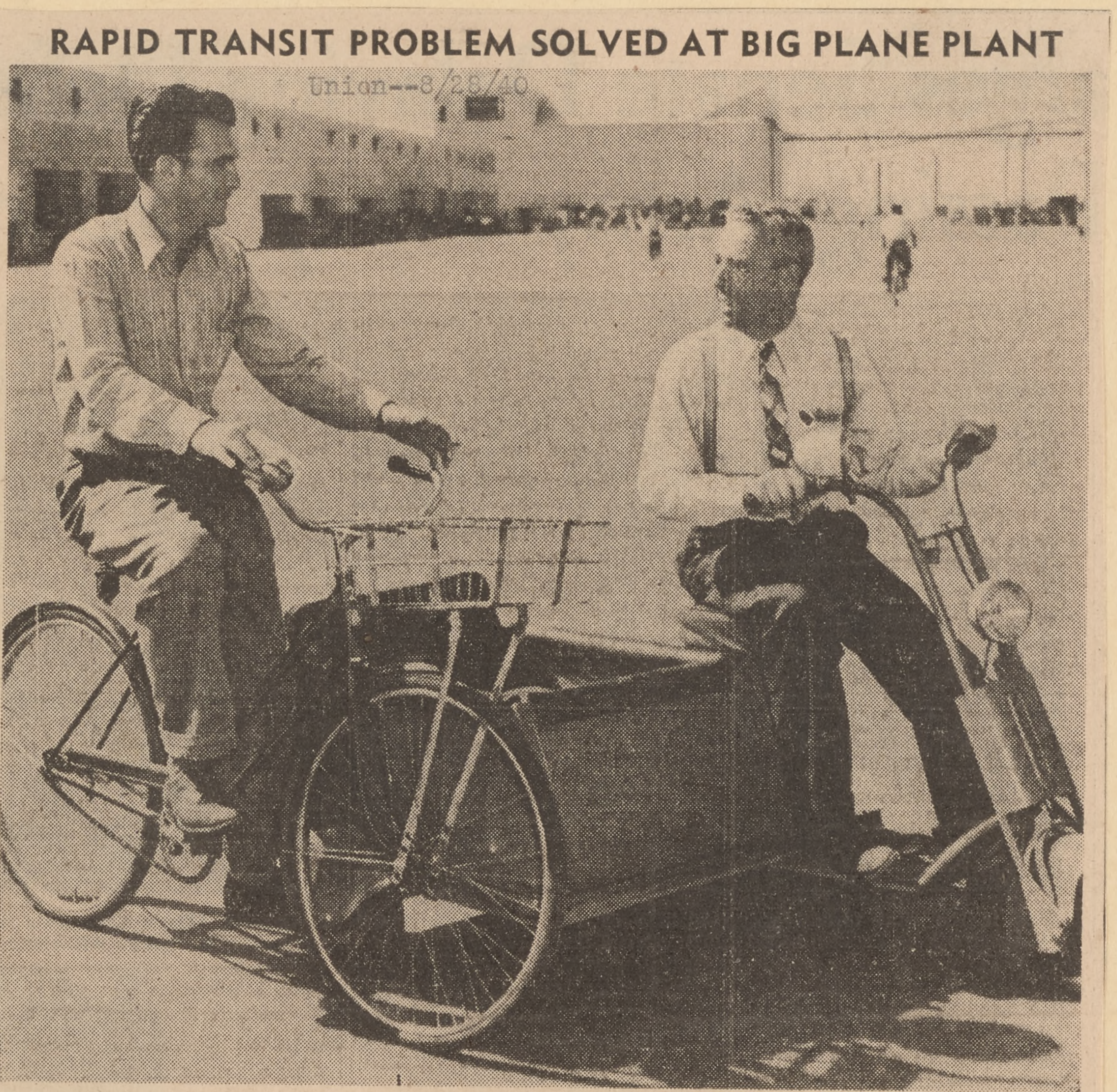
Requests for bids on materials have been issued on the new order although work has not yet started, it was reported here.

Date of delivery on the planes was not announced.

Also awarded yesterday was a $1,038,000 order for 100 training planes to the Fairchild Engine & Airplane Corp., Hagerstown, Md., The Associated Press reported from Washington, D. C.

The orders were the third of a group announced since congress voted $400,000,000 for 4200 additional army planes last June.

RAPID TRANSIT PROBLEM SOLVED AT BIG PLANE PLANT



Union--8/28/40

Bicycles and scooters have replaced foot power and roller skates for Consolidated Aircraft Corp. messengers. R. Biddle with scooter and sidecar and Eddie Holmes on bicycle are ready for action.

* * *

CONSAIR PROVIDES BIKES, SCOOTERS FOR MESSENGERS

When Consolidated Aircraft Corp. built its San Diego plant five years ago, a number of messengers were employed to carry memoranda and supplies to the various plant units. A year later, the factory was enlarged and the messengers equipped themselves with roller skates on which to reach more speedily the distant parts of the big plant.

Then came the third enlargement and Consair expanded until now it stretches a full half-mile along Pacific highway. The messengers had to speed their tempo and the roller skates were discarded in favor of bicycles. Recently, a fleet of gasoline propelled skooters with side cars was added. The huge plant yard where hundreds of workmen are employed, is dotted with speeding messengers, hastening parts and orders from one section to another.

The navy has awarded Consolidated Aircraft Corp. a contract for plane parts, The Associated Press reported from Washington. Amount involved is $34,112. Delivery date was not announced.

Consolidated employs 9500 workers with more being added daily. The monthly payroll is nearing the $2,000,000 mark and will exceed that amount by Jan. 1. Still further plant enlargement soon will be under way, officials announce.

DEDICATION PLANS

Union July 26-40

Coast Aircraft Backlogs Show Rapid Gains

SAN FRANCISCO, July 25 (A.P.) — California aircraft builders reported rapidly rising backlogs of unfilled orders today.

North American Aviation Corp. reported its books held $83,534,306 in orders June 30 compared with a little over $50,000,000 March 31.

Vultee Aircraft, Inc., incorporated in its present form late in 1939, had $14,494,744 orders on hand, Vice-President V. C. Schorelemmer said, reporting as of May 31. No comparison was available.

Solar Aircraft had $1,084,538 unfilled orders before receipt today of an additional $130,000 order for exhaust manifolds.

President J. H. Kindelberger of North American said his firm was negotiating for construction of a new plant. Consolidated net profit for the six months ended June 30 amounted to $2,367,638 compared with $2,781,682 in the first half of last year. Indicated June quarter profit was $1,846,979 after all charges including estimated income taxes.

First half sales of North American totaled $14,578,317 against $12,965,836 last year.

Knudsen Due To Inspect S. D. Plane Plants

Tribune 8/21/40

After completing an inspection of plane manufacturing plants in the Los Angeles area, William S. Knudsen, production chief of the national defense commission, and Maj. Gen. Henry H. Arnold, army air corps chief, will fly here to inspect local establishments, it was reported at Los Angeles today.

The officials arrived at Los Angeles last night from Washington, D. C., aboard an army transport plane. Their inspection of Vultee, Northrop, North American, Douglas, Lockheed, Menasco and Kinner plants was expected to be completed tomorrow, when they will proceed here.

Checking on Expansion

In San Diego, it was expected that Knudsen and Arnold will visit the Consolidated, Ryan and Solar factories, all of which are engaged in turning out government defense orders. They may be accompanied by Brig. Gen. Jacob E. Fickel, assistant air corps chief, who was scheduled to arrive at Los Angeles today.

At Los Angeles, Knudsen said the object of his inspection was to determine the amount of expansion in the coast airplane industry and the class and types of planes being turned out, and stated that the national production scale has jumped from 250 planes a month in January to 900 a month now.

More than $2,000,000,000 in defense contracts has been let in six weeks, he said. Under defense appropriations made available last month by congress, he stated, 48 percent of army contracts and 75 percent of navy contracts have been let.

"To Spread Contracts"

"We want to spread these contracts—spread the work of building our national defenses," said Knudsen. "When we get all of the United States working toward our common goal, then we will make progress.

"As to shortage of skilled labor, we've heard about that and we expect to hear more about it. Wherever the skill is, the job will gravitate to that point. We must spread out the national defense program over the entire country to obtain maximum production and make everyone realize that he is working for the proper defense of the United States."

After completing their inspection here, Knudsen and Arnold will fly to Seattle to inspect plane-building facilities in that area before returning to Washington. Their tour will include visits to about half the plane factories in the country.

8/22/40- Tribune

KNUDSEN EXPECTED WITH ARMY CHIEFS FOR S.D. INSPECTION

William S. Knudsen, chairman of the national defense advisory board, and four high-ranking army air corps officers, are expected to arrive at San Diego late today for an inspection of the Consolidated Aircraft Corp. and Ryan Aeronautical Co. plants, The Associated Press reported from Los Angeles. In the party with Knudsen will be Maj. Gen. Henry H. Arnold, army air corps chief; Brig. Gen. Jacob E Fickel, assistant chief of the air corps; Col. M. S. Harmon, in charge of the advanced training school at Randolph field, San Antonio, Tex., and Maj. K. B. Wolfe, air corps chief of production engineers.

"These factories are booming and expanding under the accelerated program," said Knudsen after an inspection of aircraft factories in the Los Angeles area. "Their methods appear exceedingly efficient and their ships, I am assured, are second to none."

"Nation Needs Mechanics"

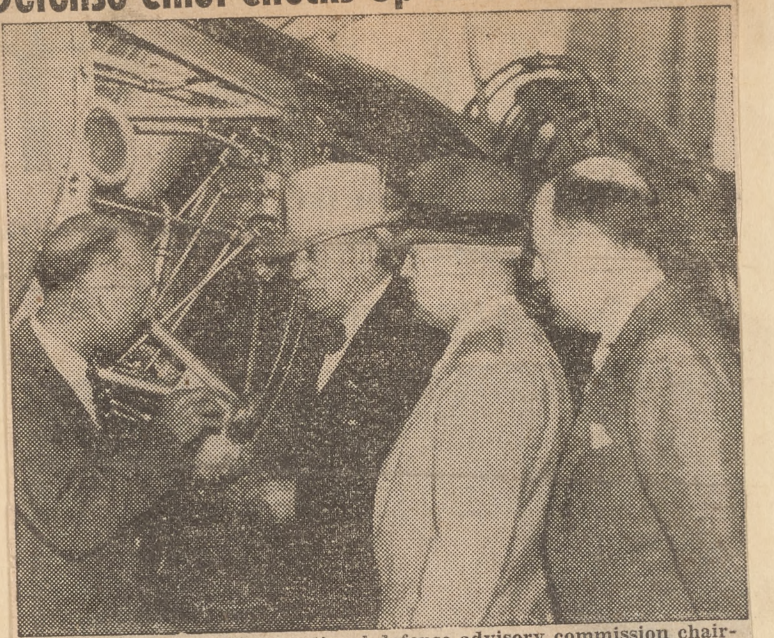
"The production of American aircraft factories is very encouraging," said Arnold. "Nevertheless, the factories will have to keep digging if they are to reach the production numbers set for the deadline next April 1."

Knudsen, Arnold and Wolfe visited the Vultee plant at Downey and the North American plant at Inglewood yesterday. They were to tour Douglas, Lockheed and Northrop plants before leaving for San Diego.

Fickel, who was accompanied by Harmon on a tour of air training schools at Los Angeles, declared that the nation "needs mechanics, more than we originally figured. I would say 26,000 mechanics will be needed, and well-trained ones."

Knudsen, according to United Press, disclosed that southern California factories are at work on 2100 military planes. He said the orders would be increased shortly to 4200 ships at a cost of $450,000,000. San Diego's Consolidated plant has a backlog of approximately $120,000,000, and now employs an all-time high of 9485.

Defense Chief Checks Up on Plane Plants



William S. Knudsen, national defense advisory commission chairman, and Maj. Gen. H. H. Arnold, chief of the army air corps, are shown looking over a Vultee plane under construction for the army as they began an aircraft inspection tour in Los Angeles. Left to right: Maj. K. B. Wolfe, army production engineer; Knudsen, Arnold and Richard W. Millar, Vultee president.

Aug. 22-40 Trib

KNUDSEN EXPECTED WITH ARMY CHIEFS FOR S.D. INSPECTION

William S. Knudsen, chairman of the national defense advisory board, and four high-ranking army air corps officers, are expected to arrive at San Diego late today for an inspection of the Consolidated Aircraft Corp. and Ryan Aeronautical Co. plants, The Associated Press reported from Los Angeles. In the party with Knudsen will be Maj. Gen. Henry H. Arnold, army air corps chief; Brig. Gen. Jacob E Fickel, assistant chief of the air corps; Col. M. S. Harmon, in charge of the advanced training school at Randolph field, San Antonio, Tex., and Maj. K. B. Wolfe, air corps chief of production engineers.

"These factories are booming and expanding under the accelerated program," said Knudsen after an inspection of aircraft factories in the Los Angeles area. "Their methods appear exceedingly efficient and their ships, I am assured, are second to none."

"Nation Needs Mechanics"

"The production of American aircraft factories is very encouraging," said Arnold. "Nevertheless, the factories will have to keep digging if they are to reach the production numbers set for the deadline next April 1."

Knudsen, Arnold and Wolfe visited the Vultee plant at Downey and the North American plant at Inglewood yesterday. They were to tour Douglas, Lockheed and Northrop plants before leaving for San Diego.

Fickel, who was accompanied by Harmon on a tour of air training schools at Los Angeles, declared that the nation "needs mechanics, more than we originally figured. I would say 26,000 mechanics will be needed, and well-trained ones."

Knudsen, according to United Press, disclosed that southern California factories are at work on 2100 military planes. He said the orders would be increased shortly to 4200 ships at a cost of $450,000,000. San Diego's Consolidated plant has a backlog of approximately $120,000,000, and now employs an all-time high of 9485.

Knudsen Lauds Airplane Plants

8/24/40 Union

Defense Chairman Leaves for North

"They're big!"

This is the way tall, Danish-born William S. Knudsen, chairman of the national defense advisory commission, described San Diego airplane plants after a four-hour inspection yesterday.

Inside the Ryan and Consolidated plants, thenoted engineer, who rose from immigrant workman to leadership of General Motors before the government borrowed him to expediate defense preparation, was greatly interested. He was right at home along the assembly lines and made brisk, meaty suggestions on how plane construction could be aided.

AT RYAN PLANT

At the Ryan plant, which he inspected first after arriving at 10:22 in an army transport with Maj. Gen. H. H. Arnold, army air corps chief, he showed great interest in methods of applying metal surfacing to the small ships.

"Could you do it on bigger planes?" he asked, indicating his belief in the advantages of the methods used.

"We can and have," responded T. Claude Ryan, head of the plant.

"I want to talk some more with you," said Knudsen, and when the defense chief left at 2:30 for San Francisco, Ryan was a passenger.

SHIP LEAVES LINE

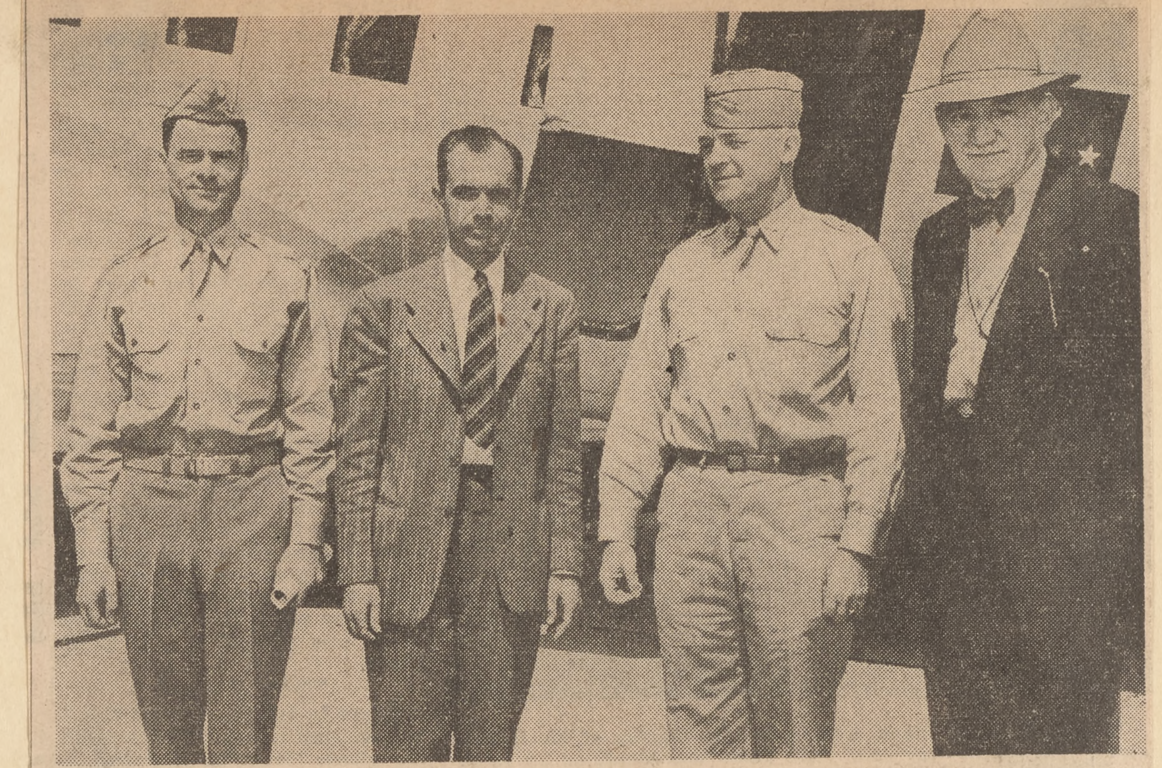
After leaving Ryan's plant he went over to Consolidated where, incidentally, the first production ship in months rolled off the assembly line yesterday. Consolidated has been tooling up and expanding its plant to prepare for fast production under its defense contract.

"You've got a wonderful plant," he told Maj. R. H. Fleet, head of Consolidated, as the inspection party traveled through the giant plant which soon is to be augmented by addition of almost nine more acres of buildings.

"It is interesting that in San Diego you seem to be building the biggest and smallest planes," Knudsen said, with a twinkle in his eye as he prepared to board

---

Knudsen, Arnold Inspect San Diego Plane Plants



William S. Knudsen, chairman of the national defense advisory committee, is shown here at the extreme right upon his arrival at Lindbergh field from Los Angeles. In the group, left to right, are Capt. J. C. Horton, in charge of the air corps cadet training at the Ryan School of Aeronautics; T. Claude Ryan, president of the Ryan school; Maj. Gen. Henry H. Arnold, chief of the army air corps, who accompanied Knudsen here, and Knudsen.

Trib 8-23-40

OFFICIAL PLEASED WITH EXPANSION PLAN PROGRESS

Expressing satisfaction over America's air expansion program, William S. Knudsen, chairman of the national defense advisory commission, arrived here aboard an army transport plane at 10:22 a.m. today, accompanied by Maj. Gen. Henry H. Arnold, chief of the army air corps. The two left at once for whirlwind inspections of the Ryan Aeronautical Co. and Consolidated Aircraft Corp. plants.

"We have seen about 70 percent of the aircraft factories in the United States since leaving Washington early this week," said Knudsen. "The remaining 30 percent are here and at Seattle, and we will inspect them before starting east."

Knudsen, tall and soft-spoken, intimated he would like to remain longer at San Diego, declaring, "this is a pretty good looking place." He and Arnold, scheduled to be back in Washington next week, were to depart this afternoon for Sacramento, going from there to Seattle.

Cooperation Cited

The two arrived here from Los Angeles, where they inspected aircraft plants yesterday and Wednesday. Knudsen said the factories are showing splendid cooperation in the government's need for more planes.

Touring the Consolidated plant at noon, Knudsen could not be reached for comment on an Associated Press dispatch from Pittsburgh which stated that the Pittsburgh commis-

(Continued on Next Page, Col. 4)

Tribune 8/28/40

DEDICATION SET FOR MONDAY AT CONSAIR PLANT

Consolidated Aircraft Corp.'s new factory, completed in an expansion program at the plant this summer, will be dedicated Monday at 2 p.m. by Rear Adm. Charles Blakely, commandant, 11th Naval district, it was announced at the office of Maj. R. H. Fleet, Consair president, today.

"Because of lack of space to accommodate visitors, the dedication will not be an open house," states the announcement. "However, each employe may bring one guest, and invitations have been issued to state, county, city, navy, army, marine corps and coast guard offiicals."

The dedication ceremony will be held at the northwest side of the plant. Visitors will not be allowed in the factory.

Others, in addition to Blakely and Fleet, who will be at the ceremony include Rear Adm. A. B. Cook, commander of aircraft, scouting force; Maj. Gen. William P. Upshur, commanding the fleet marine force and local marine corps base; Col. Peter Otteson, commanding Ft. Rosecrans, and Gen. F. D. Lackland, coming here from March field to represent the army air corps.

'IT'S BIG,' COMMENT BY KNUDSEN ON S. D. AIRCRAFT INDUSTRY

Tribune 8/23

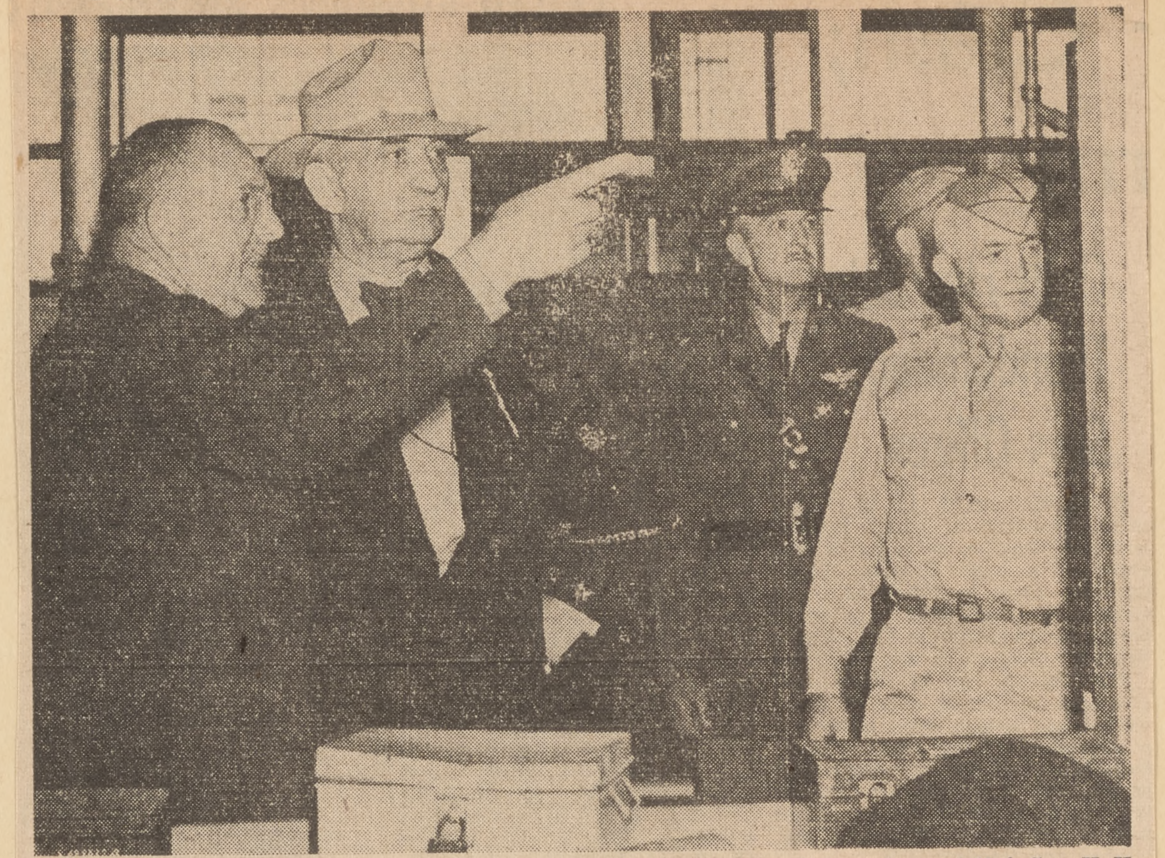
"It's big," was the terse comment offered this afternoon by William S. Knudsen, chairman of the national defense advisory commission, on San Diego's aircraft industry as he concluded an inspection of Consolidated Aircraft and Ryan Aeronautical Co. plants.

Accompanied by Maj. Gen. Henry H. Arnold, chief of the army air corps, the industrialist left at 2:30 for Sacramento. They were traveling by army air transport.

"A wonderful set of buildings and a beautiful plant," was Arnold's comment about Consolidated.

"I do not wish to make any comment until I get back to Washington and see the letter from Pittsburgh," Knudsen said concerning an Associated Press dispatch that the Pittsburgh commission for industrial expansion, contending the east offers the best sites for defense factories, had charged "political pressure" was being used to obtain government plants for nine midwestern states "unsuited to industry."

CONSAIR HEAD SHOWS GROUP SAN DIEGO 'BIG SHIP'



"Now there is one of our big ships," says Maj. R. H. Fleet, Consair head, to William S. Knudsen, chairman of the national defense council. Maj. E. R. McReynolds, aircraft inspector, and Maj. Gen. H. H. Arnold (right), army air corps head, also take a good look on a trip through Consolidated's factory.

CONSOLIDATED BACKLOG IN HUGE INCREASE

AIRCRAFT NEWS

SAN DIEGO.—Consolidated Aircraft Corporation's total of unfilled orders neared the $100,000,000 mark.

7/25/40

New contracts totaling more than $26,000,000 have been received since last May, when work on hand totaled $70,000,000, company officials disclosed.

Because of the "nature of conditions today" executives refused to divulge whether the latest orders for military planes are for foreign or domestic purchasers.

The current backlog, $96,870,000, is one of the highest in the nation's aircraft industry, and full speed in meeting it will be possible soon after August 1, when a $2,000,000 plant expansion program will be completed, it was stated.

Operations during the first six months of 1940 were limited to manufacture of parts and sub-assemblies for planes to go through final assembly for delivery later thi year and in 1941. Value of this work totaled only $408,407.

Almost 8000 employes are on the pay roll of San Diego's largest industry, with a peak of 10,000 anticipated this fall.

---

* * *

Knudsen Lauds Airplane Plants

(Continued from Page 1)

the army transport after his quick inspection.

"We've already seen 70 percent of the airplane plants in the country," he said before the local inspection. "When we get through here and at Seattle, we shall have seen all of them."

The visiting production chief expressed himself as greatly interested in processes and operations in the local plane plants. Asked to comment on reports that moves are afoot to build more plane plants in the middle of the country he said:

"They're already building factories there." He added that at the present juncture there hardly could be too many plants to expedite the rearming of America.

TOUR IN PLANE

Gen. Arnold and Knudsen are making their transcontinental inspection tour in a plane from Bolling field, piloted by Capt. E. H. Beebe. The visit to San Diego followed an inspection of plants in the Los Angeles vicinity.

Before reaching San Diego, Knudsen expressed belief that to get real production going, the number of types of planes might have to be descreased, The Associated Press reported.

Knudsen Arrives in S. F.

SAN FRANCISCO, Aug. 23 (A.P.)—William S. Knudsen, chairman of the national defense advisory committee, arrived in San Francisco tonight to inspect facilities in the bay region. He reserved comment on the defense situation. Accompanying Knudsen was Maj. Gen. Henry A. Arnold, chief of the army air corps. They will proceed from here to Seattle.

Manchester Evening News 9/12/40

SOON YOU MAY SEE THESE

American Planes in Our Skies

Says

Frederick Tomlinson

IT is not long since some experts were moaning about the advantages this war would give to commercial aviation in America. We were told that our starved commercial lines would become emaciated while those in the U.S.A. with all the great facilities for technical development behind them would fatten ready to kill all markets as soon as European peace was restored.

Now we hear no comments about passenger planes. No doubt the need for preparing for peace-time flying is as great as ever. But the over-riding importance of building up a great military aircraft industry in the United States has made the claims of civil flying appear unimportant

We want every plane we can buy—buy is the operative word at the moment—and there will be a time when Hitler and his merry gang will be made to realise that collaboration between the aircraft industries of two democracies can beat any opposition.

Rivalry Gone

AMERICA is new, big, alive and virile. Its aircraft industry has everything it needs—skilled engineers, abundant raw materials, clever technicians and drive. The time for rivalry between designers of planes and engines has gone.

One day the aviation history of this war will allow us to compare the relative merits of our own aircraft and those of the United States. For the time being we are content to know that every American plane brought here or flown to Canada is knocking one more nail in the inevitable coffin of the Nazis.

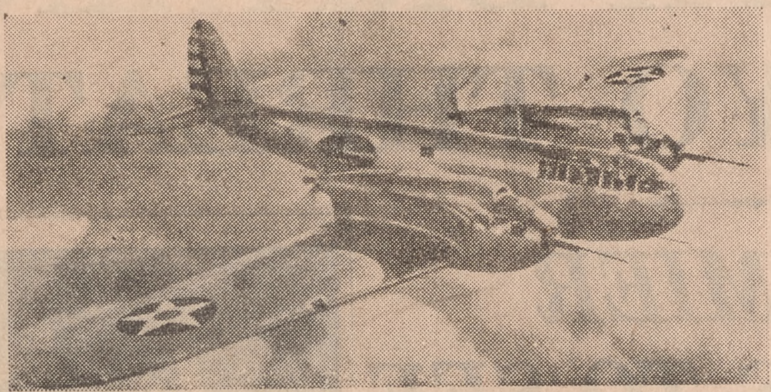
Lord Beaverbrook has told us he is budgeting for 3,000 planes a month from the United States. No doubt he will get them if he has set his mind on achieving this figure. But laymen must not run away with the idea that thousands of planes fit to out-fight the Nazi machines can be turned out every week in the United States just because it is a go-ahead country.

Too Many Fords

WHEN they analysed Henry Ford's idea for producing 1,000 aeroplanes a day experts here refused to take him seriously. They felt that even if he achieved his object the machines would make the pilots mere gun fodder for the enemy. They reminded him that there would have to be thousands of machine-guns produced every day; radio apparatus, oxygen masks, variable pitch propellers, and a dozen other adjuncts to modern military flying.

What we prefer the Americans to concentrate on is not mere numbers but quality. Our own experiences have shown the wisdom of that. We know that any plane with eight gun armament that can turn inside the enemy and withstand gun fire and air pressure stresses will win the fight.

Fortunately, America has names which the world's aircraft experts conjure with. There is Allison, Pratt and Whitney; Wright, Douglas, and so on. Their counterparts here are Rolls-Royce, Bristol, Saunders-Roe, Armstrong. While they are helping to establish Roosevelt's 50,000 machine air force they are paving the way to British aerial supremacy.



[By courtesy of "Jane's All the World's Aircraft."

The Bell XFM1 "Airacuda" Multi-gun Fighter

Their Machines

LET us analyse a few of the better - known American machines. The Harvard we all know as a training aircraft. The Hudson we know better because it has been used so often to destroy enemy shipping and oil tanks.

The miles flown by Hudsons over the North Sea and other seas could be calculated only by a battery of comptometers. With their 1,100 horse-power Wright "Cyclone" engines and their rear gun turrets away back almost against the twin rudders they have proved invaluable machines. Lockheed Hudsons of the Coastal Command—they are roughly the counterpart of our own Avro Ansons—located the Altmark. So far these machines have helped to destroy millions of gallons of precious Nazi fuel oil.

Perhaps the next best known American machine is the Curtiss Hawk fighter, which the unfortunate French airmen were given instead of home-produced fighters. I say unfortunate because the French aircraft industry was in such a pitiable state; not because the Hawk is a bad machine. Far from it. The French had to be convinced that it would catch a dive-bomber after it had gone into the dive before they placed an order.

With a Pratt and Whitney twin wasp engine this machine flies at 310 miles an hour and has an armament of six rifle-calibre machine-guns. Perhaps the Germans have taken over a good many of these machines. Yet we are scarcely likely to want any for ourselves. We prefer somewhat faster and more heavily armed aircraft, rather after the style of our own Hurricanes and Spitfires.

Yet we may be glad of the Curtiss Wright CW21, a lightly-armed single-seater fighter, which will climb to 20,000 feet in six minutes and has the highest ceiling of any fighter in the world—35,000 feet.

Reply to Messerschmitt

THE Bell "Airacobra," with its Allison engine of 1,100 horse power has probably had more varied publicity than any other American aircraft. It has the engine behind the pilot and drives the air-screw by an extension shaft. It carries several machine-guns and a cannon-gun, and one has good reason to believe that the first doubts about the efficiency of its somewhat unusual design have proved unfounded. But only those who have flown it can confirm whether it is the fastest and most deadly fighter the world has known. If it is we shall have it here.

The Messerschmitt 110 has had so much publicity that one is tempted to remind Goering that Bell, makers of the "Airacobra," are also the producers of the world's largest specialised twin-engine fighter aircraft, the "Airacuda." With its pusher propellers it seems to bristle with guns. For attacking bombers it would be a first-class machine, for there are both shell guns ("guns," I said, not "gun") and machine-guns too.

V.V.

ANOTHER American fighter in which our purchasing experts have no doubt been interested is the Vultee Vanguard, which is in the Spitfire speed class. This firm has visualised a twin-engine single seater fighter with at least four cannon-guns. But then America has for some time been interested in the 500-mile-an-hour fighter. One wonders whether she will be the first country to achieve it. If she is she will make the Heinkel HE113 and the new Messerschmitts one hears of look like cart-horses at a race meeting.

There are varied opinions about American bombers though some are undoubtedly splendidly efficient. The Boeing XB-15, a four-engined affair, is unquestionably good in its class, but it has been suggested that machines of such a size present too big a target to anti-aircraft gunners. "Sunderland" pilots do not seem to notice the point of this argument.

To answer the Dorniers, Heinkels, and Junkers we have several good bombers of our own. The Nazis have already good reason to remember the names of Whitley, Wellington, Bristol, and Hampden. But America, too, has not forgotten to develop bombing machines which are fast and heavily armed for their own or mutual protection.

There is the North American NA-40A, which has three gun positions behind the wings and carries a crew of seven. Those we are specially interested in, however, are the Douglas DB 7 with its tricycle under-carriage and the Martin 167, both of which were supplied to France. Perhaps the outstanding orders will be diverted here.

The Douglas, particularly, is reported to be a nice machine to handle. The Martin is a little larger than the Bristol Blenheim and slightly faster, and it carries six machine guns.

And Dive Bombers

THEN there are dive bombers about which much nonsense has been talked. Some of the American Vought dive bombers which were delivered to France have been used against us by the Germans. But if we want to buy none of these we can take our choice from the Bell, Brewster, Curtiss, and Douglas factories in the United States.

The Brewster dive bomber has the fastest level speed of the American specialised diving aircraft, but since experts consider it admirable when design will limit a vertical dive to about 250 miles an hour the slower Bell, Curtiss, and Douglas productions must be interesting our professional buyers. The greatest level flight speed of the infamous Junkers JU87, by the way, is reported to be only 240 miles an hour.

Although we have the utmost faith in our own Sunderland and Saro Lerwick flying boats (there are others, of course), America can help us to keep Nazi submarines in their proper place with several types of marine aircraft. The American Consolidated PBY flying boat is nearly nine feet shorter in span than the Sunderland, but has an almost exactly similar maximum speed. The new Consolidated 31 has engines which develop 2,000 horse power each for the take off.

Expanding Industry

AMERICA can help us, too, with trainers and military transports, and if we are helping her to build up one of the finest and most modern aircraft industries the world is ever likely to see we must realise that every dollar we spend is helping us as well as the United States.

This article, of course, cannot pretend to do more than sketch an outline of the help the United States is giving and will continue to give. But we may be assured that Hitler's thoughts are not pleasant when he hears how rapidly the American industry is being expanded.

Flight - 8/1/40

Transatlantic Deliveries

THE Canadian paper *Commercial Aviation,* in its June number, draws attention to what must be always at the back of our Air Ministry's mind as an alternative method of delivery to shipping from America to England—that is, flying the Atlantic.

"And while Blitzkrieg and counter-Blitzkrieg eat into both Germany's and Britain's supply of 'planes, the Empire is holding an ace in the hole which may be used before the summer is out—mass transatlantic flight deliveries.

"Any doubt as to the possibilities of such deliveries may be dispelled now that Britain has occupied Iceland. The lonely [but it has a population of 100,000. —Ed.] Arctic island can now be used as a refuelling base by the British, although all five bomber types now in production for the Allies in the United States are capable of flying from Newfoundland to Ireland non-stop."

Being able to land and refuel at Iceland is some help, but it does not shorten the distance by any very great fraction. It reduces the 2,000-odd miles between Botwood and Foynes by about 300, at the expense of increasing the total distance to England. The five types spoken about are given as the Consolidated 28-5 flying boat, the Douglas DB-7 attack bomber, the Douglas B-20, also given as an attack bomber (or should this be the B-23?), the Lockheed Hudson and the Martin 167W. (The Martin ordered by France had the model number 167F.) All the types mentioned could not fly the Atlantic with standard tankage, but they could be specially tanked up for the occasion.

We agree with what is said on the subject of the greatest difficulty. "Biggest problem the Allies will face in the high-speed transatlantic shipment will be the securing of pilots with adequate experience. American pilots may be hired as 'ferrymen' similar to the many who have been hired as instructors under the Empire Air Training Plan. Their work would violate no American law."

SEP 12 1940

Consolidated a/c

Romeike & Curtice Ltd

Telephone
CENTRAL 2781
(2 Lines.)

35. Shoe Lane.
LONDON.
E.C.4.

EXTRACT FROM

DAILY MIRROR

Geraldine Hse, Rolls Bldgs, Fetter Lane, E.C.4.

12-8-40

Date

THE PRICE the British Purchas Commission paid for the fl boat Guba, owned by Mr. Ri Archbold, is believed to be £50,00 Mr. Archbold said he presu Guba would be used for ferryi across the Atlantic.

SEP 12 1940

Consolidated a/c

Romeike & Curtice Ltd

Telephone
CENTRAL 2781
(2 Lines.)

35. Shoe Lane.
LONDON.
E.C.4.

EXTRACT FROM

FOUNDRY TRADE JOURNAL,

49, Wellington Street, Strand, W.C.2.

AUG 1940

THE MINISTRY OF AIRCRAFT PRODUCTION has purchased a large privately-owned seaplane in New York in which 3½-ton cargoes of aluminium will be transported from the United States to Great Britain twice a week.

Flight - 7/23/40

Ferrying Across the Atlantic

CAPN. A. S. WILCOCKSON, who is in charge of the Atlantic Division of the Airways Corporation, is to supervise arrangements which are being made to fly American bombers and flying-boats for the R.A.F. across the Atlantic. With Capn. D. C. Bennett and Mr. Ian Ross of the Airways Corporation, and Wing Commander Griffiths Powell, Capn. Wilcockson arrived in Canada last week. The Airways Corporation pilots have been lent to the Ministry of Aircraft Production for the scheme.

The first delivery flight of bombers is expected to be made this month. Reports from America suggest that American pilots may help in this ferry work and that fees of £250 to "several thousand dollars" may be offered to them for each trip. Another suggestion is that the crews should be flown back to Canada in British long-range bombers, which would naturally save time. The main difficulty in ferrying across the Atlantic in any great numbers is the lack of trained Atlantic crews.

Canadian crews are to be trained and it is believed that flights may be continued during the Winter whenever the weather is suitable. The types to be flown across are said to include the Lockheed bombers and Consolidated flying-boats.

Dr. Archbold's Consolidated Model 28 flying-boat "Guba" is reported to have been bought by the Ministry of Aircraft Production and may be used over the Atlantic. It has a range of more than 3,000 miles with nearly a ton of payload. Thus it should be able to fly the Atlantic from the U.S.A. with mails and urgent freight and return with crews which had ferried bombers across.

An interesting point is likely to be raised over the position of Ireland should a bomber be forced to land there during its crossing. Presumably it and its crew would have to be interned.

SEP 12 1940

air Consolidated a/c

Romeike & Curtice Ltd

Telephone
CENTRAL 2781
(2 Lines.)

35. Shoe Lane.
LONDON.
E.C.4.

EXTRACT FROM

SCOTTISH DAILY EXPRESS

196, Albion Street, Glasgow

12 AUG 1940

Britain buys "Atlantic ferry"

£50,000 flying boat

NEW YORK, Sunday.—The price the British Purchasing Commission paid for the flying-boat Guba, owned by Mr Richard Archbold, is believed to be £50,000. The plane is a replica of the American Navy's "Flying Fortress."

Mr Archbold said he presumed the Guba would be used for ferrying metals across the Atlantic.

The "flying laboratory" in which Mr Howard Hughes, the millionaire film producer, made a record round-the-world dash two years ago, arrived here last night for shipment to Britain. It has also been bought by the British Purchasing Commission.—A.P.

---

to the Science Museum in South Kensington. They saw photographs of aeroplanes flown before the War of 1914, aeroplanes flown during the two decades of uncertain peace, and aeroplanes which are now engaged in mortal conflict. Only a few visitors, perhaps, found their way to an A.R.P. screen which hid "the first aeroplane of history." This was the machine which the Wright Brothers flew over Kittyhawk in 1903. The Wright Brothers entertained no thoughts of war. The aeroplane was, in fact, flown for the first time over the North American Continent, where not a single fortress or defence barrier separates the subjects of the King in Canada from the republican citizens of the United States. Civil aviation was to narrow the frontiers of the world. Citizens were to travel from one country to another speedily and without inconvenience. Ambitious young men adopted the career of civil air pilots. They were in Brussels at one hour and at Cologne or Prague at another. Between the civil air pilots of Europe there developed a friendliness and understanding which seemed to foreshadow a new Europe in which the people lived in harmony with each other. Undoubtedly civil aviation was one of the principal agencies for peace, but it was not powerful enough to exorcise the spectre of war in the air.

Progress Before the War

Less than two months after the signing of the Munich Agreement Sir Kingsley Wood told the House of Commons that Imperial Airways and British Airways were to be merged in a statutory Corporation. The period between November, 1938, and September, 1939, was hectic but marked by substantial gains to civil aviation. It presented, for one thing, the panorama of British aircraft crossing Europe to Warsaw and Budapest and flying over many countries, British and other, on their way to Durban, Sydney, and Hongkong. Last August, when the clouds of war were gathering over Poland, the flying-boat Caribou made the inaugural flight of the British North Atlantic air mail service between Great Britain, Eire, Newfoundland, Canada, and the United States. The flying-boat Aotearoa left Southampton Water on her delivery flight to New Zealand. A new air service was begun between Great Britain, Norway, Sweden, and Finland. British civil aircraft were carrying His Majesty's mails to some 40 countries. The penny-halfpenny "all-up" air mail was strengthening the bonds of trade and friendship between the various parts of the Empire. The demand for passenger accommodation was increasing. Civil aviation had, in fact, become a commonplace of life.

These gains, however, were wrested at a time of particular strain. Munich had become a landmark in war preparedness. We had to meet a potential foe whose supremacy in the air was as yet unchallenged. The Air Ministry necessarily obtained a priority in deliveries. Recruiting for the Royal Air Force became more insistent. Aircraft, spare parts, and pilots for civil aviation were harder to come by.

Services Suspended

The outbreak of war brought necessary limitations in service. At first all the Continental services, except the new one to Helsinki, were suspended. The "all-up" air mail charges disappeared. But the companies, having placed their aircraft at the disposal of the Air Ministry, assumed two major and important duties. The first was to keep open the air communications between Great Britain and the countries of the British Empire. The second was to fulfil special charter duties for the Air Ministry.

Navigational difficulties were immediately increased. Meteorological services were restricted. Ships were silenced and unable to give weather reports. Many restrictions were imposed throughout the war zone. Aircraft designed for flying at great heights were henceforth compelled to keep below the clouds. Night flying in the war zone was forbidden, and at certain airports it was not possible for overhauling and repairs to be done after dusk. Delays were inevitable. In the face of these difficulties, however, the British North Atlantic service continued to operate until the 16 scheduled flights were completed. The officers and crews of the North Atlantic division were confident that they had added an important chapter to oceanic flying. On the last flight from Foynes to Botwood in the autumn of 1939 a new record of 13 hours was set up for the crossing.

Some months were to pass before the war entered its totalitarian phase. So long as Italy retained her status of non-belligerency British civil flying-boats could cross her territory. Day after day British civil aircraft were flying over countries where no Service machines could follow them. Their regular flights helped to "show the flag" in non-British countries and to maintain confidence in those owing allegiance to the British Crown. Among their passengers were many whose activities promoted British export trade. The demand for passenger accommodation was soon unprecedented; there was general relief when, a few weeks after the war had begun,

---

Tribune 7/24/40

NO JOBS, WARNING TO UNSKILLED BY AIRCRAFT PLANTS

With a federal-state program for the training of thousands for naional defense taking form rapidly, a double-barreled warning was issued today to unskilled workers against a "job stampede" to California's major defense industry — aircraft manufacturing, The International News Service reported from San Francisco. Consolidated Aircraft Corp., San Diego, is among the firms listed where announcement has been made that unskilled men can not get work.

"The aircraft industry, which is centered in Southern California, is continuing to add new employes from all parts of the state," reported the Aircraft Information Bureau, of San Francisco.

"But these employes are all skilled craftsmen, trained in such trades as aluminum and alloy welding, precision machine work, loft work, jig making, etc.

"We are advised by leading aircraft plants—Consolidated, Douglas, Lockheed, North American, Northrop and Vultee—that it is utterly useless for men without proper training to seek jobs there."

This was supported by the San Francisco office of the state department of employment which in the past year has placed more than 100 skilled workers from the bay area in aircraft jobs.

UNION 8/23

Consair to Build 8-Acre Addition

Test piles for an $800,000 addition to Consolidated Aircraft Corp.'s plant were being driven yesterday as plans for the building which, factory officials said, will be rushed to completion, were approved at the city planning commission's office.

Floor space in the new structure, according to Harry Haelsig, asistant city planning engineer, will cover 8 1-3 acres to make the building the largest, in this respect, in San Diego.

The addition, he said, will be 200 feet wide and 1500 feet long. The roof will be of the saw-tooth type with its highest elevations 41 feet from the ground.

At the factory, executives were guarded in their statements, but said that work "will be started as soon as possible and will be rushed to completion." Asked whether the building will be used exclusively to construct land planes, they said it will be used "to fill orders for both the army and navy." The structure is to be of the steel-frame type.

---

2 British Fliers Expected Here On 'Ferry' Duty

Union 8/6/40

Organizing a transatlantic system for delivering bombers from west coast aircraft plants to Britain, two British Royal Air force pilots were in Los Angeles yesterday and were expected to visit San Diego.

The pilots, Capt. Donald C. T. Bennett, transatlantic flier, and Capt. R. H. Page, left New York Sunday by plane, The Associated Press reported.

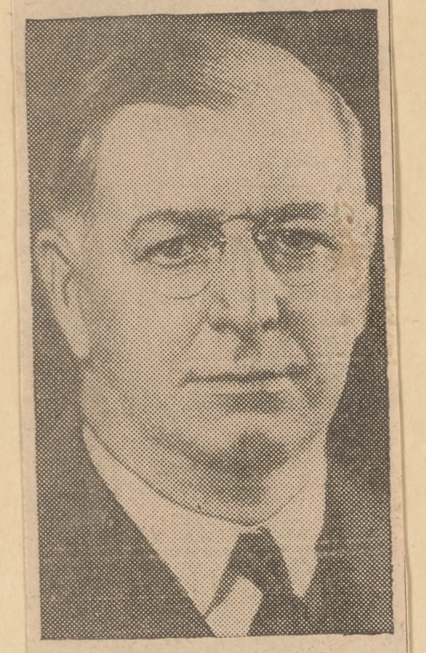
Informed that the pilots were in southern California, a Consolidated Aircraft Corp. official indicated that the San Diego firm "knew of a plan to fly ships to Britain."

At Lockheed Aircraft plant, Los Angeles, the pilots said they would be in southern California for 10 days.

The two, employed by the British Imperial airways as civil pilots, were assigned to the British aircraft production ministry to develop a transatlantic plane-ferrying system. They said American neutrality laws prohibited American pilots from participating in such a service and that they were "only in the market for Canadian pilots."

Union 9/14/40

Plans Inspection



COL. FRANK KNOX
. . . navy secretary, will fly from Honolulu to San Diego.

* * *

Navy Secretary To Fly Here

Knox Due Sept. 16 After Hawaii Tour

Col. Frank Knox, secretary of the navy, will visit San Diego Sept. 16.

In the first long overwater flight ever made by a navy secretary, Col. Knox will leave San Francisco Thursday aboard the flagplane of Rear Adm. Arthur B. Cook, commander of the scouting force aircraft and the navy's fleet patrol wings. He will leave Hawaii for San Diego in the San Diego-built 4-motored bomber Sept. 15.

Accompanying Col. Knox on the 10,000-mile inspection trip will be Adm. Cook, Col. William J. Donovan, who recently completed a special tour of duty in England for the navy department; Capt. M. L. Deyo, aid, and John O'Keefe, special assistant.

TO BOARD CARRIER

Col. Knox will leave Manchester, N. H., his summer home, tomorrow for California, The Associated Press reported yesterday. His plane will take off from San Francisco bay for Honolulu Thursday afternoon, arriving at Pearl Harbor Friday morning.

After an inspection of Pearl Harbor naval base, one of the most strongly fortified in the world, Col. Knox will board the aircraft carrier Enterprise, temporary flagship of Adm. J. O. Richardson, U. S. fleet commander, for five days' manuvers at sea with the fleet. The Enterprise will sail from Pearl Harbor Sept. 9 and return Sept. 14.

The navy's chief executive will leave Pearl Harbor the afternoon of Sept. 15, arriving here the following morning. He is scheduled to inspect naval activities at Long Beach and San Pedro Sept. 17, leaving the same day by plane for Washington.

FOUR-MOTORED PLANE

The four-motored plane in which the navy's chief executive will fly to the crossroads of the Pacific and return was delivered to the navy by Consolidated Aircraft Corp. last year. For the last several months it has been used at North Island in training personnel in airboat flying. It has a speed in excess of 150 miles an hour and is equipped for flying at high altitudes.

The course followed by Pan American Airways clippers will be flown by Col. Knox' plane in the flight from San Francisco to Hawaii. From Honolulu to San Diego the route will be that traversed by navy patrol wing bombers.

Tribune 8/17/40

Award Contract For 56 Bombers

Consolidated Aircraft Corp., of San Diego, has been awarded a contract for $14,861,342 for the purchase of 56 four-engine bombing planes, by the war department, it was announced today from Washington in dispatches of The Associated Press.

This is one of two contracts awarded, the other going to the Fairchild Engine & Airplane Corp., of Hagerstown, Md., for $1,038,000 for 100 training planes.

According to officials of the local concern, the order signed by war department officials today is in exercise of a contract already existing.

Work on the new assignment has not yet started, it was said, although requests for bids on materials to be used, have been issued.

The war department did not announce the date on which delivery of either group of planes is to be expected.

The orders were the third of a group announced since congress voted $400,000,000 for approximately 4200 additional army planes last June, the dispatches stated.

Union 7/29/40

U.S. Asks Speed On Big Bombers

Consair to Rush Craft for Navy

Word that the navy department has requested Consolidated Aircraft Corp. to rush construction on a squadron of 30-ton four-engined long-range patrol bombers was received here yesterday from Washington.

The huge airboats will be the first squadron of their design to be delivered to the navy and if found satisfactory, will supplant the PBY twin-motored bombers in service with the fleet patrol wings. Six are to be delivered to Patrol Squadron 12 at North island this fall. They will be under command of Comdr. S. B. Cooke.

5000-MILE RANGE

The new offshore patrol bombers have a cruising range of 5000 miles, carrying a crew of nine and several tons of bombs. They have a speed in excess of 200 miles an hour and are rated as the fastest aircraft of their type in the world.

The first four-motored plane built for the navy by Consair was completed and tested last year. For a time it was employed by Rear Adm. Arthur B. Cook, commander of scouting forces aircraft, as his aerial flagship. In recent months it has been used by Patrol Squadron 12 in the training of pilots and crews.

49,494 STUDY FLYING

The United Press reported from Washington the civil aeronautics board announced that on June 30 there were 49,494 students enrolled in various phases of its pilot training program designed to produce 50,000 civilian pilots by next June 30.

The board said 32,000 students are in ground schools and that 17,494 more were taking courses in the civilian pilot training program. In addition 1000 civilian instructors are taking courses to refresh their flight experiences.

The CAB said that almost 16,000 student pilots will have completed both ground and flight training by September.

Sept 16th 1940-

avy Welcome

Here 2 Days After Flight From Hawaii

Will Inspect Bases

SECY. FRANK KNOX

BULLETIN

Secy. of the Navy Knox arrived in San Diego at 10:30 a.m. today, landing in the harbor after an overnight flight from Hawaii in the Consolidated four-motored bomber flagship of Rear Adm. A. B. Cook.

Col. Frank Knox, secretary of the navy, was expected to arrive at San Diego soon after 10 a.m. today by plane from Honolulu for a two-day stay, during which time he will inspect local naval establishments, confer with boat builders on plans for constructing high-speed small craft for the navy, and be feted at a city-chamber of commerce dinner at 7 p.m. today at the Hotel del Coronado.

Knox, who flew from San Francisco to Honolulu Sept. 6, made the flight aboard the four-motored Consolidated-built bomber flagplane of Rear Adm. Arthur B. Cook, commander of aircraft scouting force. The plane took off from Honolulu at 7:01 p.m. yesterday for San Diego.

With the secretary were Cook, Capt. M. L. Deyo, Knox's aid; John F. O'Keefe, his personal secretary; Col. W. F. Donovan, World war officer with the A.E.F. "Fighting 69th" regiment, and Lt. Thomas E. Gillespie, of San Diego, pilot. Second pilot was Ens. John A. Ferguson, U. S. N. R., of Coronado.

From the Naval Air station Knox is to go to the destroyer base and naval hospital. Other places to be inspected are the Marine corps base, Camp Elliott, naval training station and Consolidated Aircraft Corp.

When Knox left Hawaii, he was quoted by The United Press as saying he found Hawaiian bases, both army and navy, "in very good shape."

Reservations for the civic dinner to be given the secretary will be taken at the chamber of commerce up to noon today. From San Diego, Knox is to go to San Pedro and thence to Washington, D. C. Knox, appointed secretary of the navy June 20 by President Roosevelt, was a "Rough Rider" of Spanish-American war days and a close friend of the late "Teddy" Roosevelt.

Knox was born Jan. 1, 1874. At the age of 11, in Grand Rapids, Mich., he earned $1.25 a week delivering a morning paper. An afternoon paper route brought him another dollar.

He quit school at the age of 15 to take a job as shipping clerk's helper at $5 a week, and at 19 had risen to a salesman for a wholesale book and stationery firm at $15 a week. In the panic of 1893, Knox lost his job. He returned to school and went on to college.

In the Spanish-American war, Knox, through a friend, met Lt. Col. Theodore Roosevelt and asked for a chance to join the denim-clad, hard-riding crowd of cowboys, plainsmen and college athletes who made up the "Rough Riders." In the advance upon Santiago and the famous storming of San Juan hill, Knox lost a strand of hair when a bullet clipped through his hat.

Throughout the Cuban campaign, Knox had been building the newspaper career that carried him upward through the years as owner and publisher of some of the most famous progressive papers in the United States. His experiences with the "Rough Riders" were read avidly by the hometown folks of Grand Rapids, where they appeared under the caption, "Pictures of Life with the Cowboys and Swells."

The first paper Knox owned was a weekly paper published at Sault Ste. Marie. He backed Col. Roosevelt for the Bull Moose ticket in 1912. Disappointed when Roosevelt lost, Knox began the groundwork of a paper at Manchester, N. H., which prospered under his direction.

Slackers Blasted

In World war days Knox blasted slackers and those who sought to escape the draft. He enlisted as a private in the First New Hampshire infantry after he was turned down for duty in the officers' training camp because the camp quota was filled. In France he was a major and saw action at many points of action.

Knox tok over operation of the Chicago Daily News in 1931. He became Republican candidate for the vice presidency in June, 1936.

As secretary of the navy, Knox succeeded Charles Edison, who resigned to enter politics in New Jersey. Just before he was nominated secretary of the navy, he outlined a six-point defense program for the United States, as follows:

1—Increased help for Great Britain through the sale of planes and munitions.

2—Control of the Atlantic for the United States, either through cooperation with Britain or the building of the world's largest fleet.

3—United States protection of the entire western hemisphere.

4—Development of plane and submarine bases from the Arctic to the Antarctic.

5—Formation of the world's most powerful air fleet and development of the world's greatest aviation production capacity.

6—Compulsory military training.

CONSAIR SETS 50-HOUR WEEK; AWARD COMBAT PLANE ORDER

(Continued from Page 1)

manufacturers. Other major contracts are reported to be in preliminary stages.

A commission spokesman said that William Knudsen, defense production chief, would try to "sell" the manufacturers on his view that they need not hesitate now to undertake necessary plant expansions. Knudsen expressed confidence last week that the industry could attain an annual production rate of 25,000 military planes by July 1, 1942.

EXPANSION DELAYED

Manufacturers have been reported to be hanging back until congress approves proposed legislation allowing them, for tax purposes, to write off plant expansions within five years' time. Their argument has been that, otherwise, a sudden cessation of the defense emergency might catch them with a heavy load of unamortized expansion debts.

Attending the meeting yesterday were Knudsen, his deputy commissioner, John D. Biggers; Dr. George J. Meade, head of Knudsen's aeronautical section, and representatives of the Lockheed, Boeing, Martin, Consolidated, North American and Douglas aircraft firms.

The army was reported reliably to be scaling down pending orders to the present level of production capacity in the belief that plant expansions needed for larger orders might be delayed indefinitely.

REPORTS ASKED

There was a growing conviction in army and industry circles that congress might wait until after the November election to enact the defense tax policy change.

After five hours' discussion, the industry representatives agreed to report back individually on their ability to expand production capacity and their views on the tax-amortization problem.

Considerable floor space is being added to the aircraft industry, but with money provided by British government orders. Without the British-bought expansions, the industry now has capaciy for roughly 10,000 military planes a year.

The new combat plane contracts reported by the commission yesterday will be divided as follows: Consolidated Aircraft Corp., San Diego, $16,361,342; Boeing Aircraft Co., Seattle, $31,871,349; Boeing Airplane Co., Wichita, $2,041,947; and the 'Staerman division of Boeing Airplane at Wichita, $5,713,389. Aircraft and engine contracts cleared between June 6 and July 17, the commission said, totaled nearly $85,000,000, some of which have been awarded.

Union 7/31/40

Consair Plans 50-Hour Week

Big Combat Plane Contract Awarded

Consolidated Aircraft Corp. pointed to a new high speed in production yesterday with a 50-hour five-day week starting Monday.

Indicating pressure on the giant San Diego plant and its 8400 employes was the announcement of a $16,316,342 combat plane contract awarded to Consolidated yesterday, The Associated Press reported from Washington, D. C.

ON 6-DAY SCHEDULE

Currently, the plant is under a six-day, 48-hour week.

The five-day, 50-hour week will be worked in two shifts instead of three as at present. Under labor union agreement, the firm will pay time and one half for overtime above 40 hours' work each week. The plant will be closed Saturdays and Sundays.

At Washington, the new contract awaited signature of Consolidated representatives as defense commission representatives sought an agreement from six major plane manufacturers to proceed with pending army-navy contracts without waiting for congressional action on defense tax policy.

ENGINES ORDERED

At least $55,988,027 in new military aircraft awards, in addition to some engine contracts, were reported by the commission to have been cleared between June 6 and July 17, but not yet signed by the

---

Aircraft News 8/22/40

So. Cal. Plane Firm Gets Big Govt. Order

WASHINGTON.—The War Department announced the award of contracts for $15,899,642 worth of training and bombing airplanes.

Most of the contracts—$14,861,342 worth—are with the Consolidated Aircraft Corp., San Diego, for 56 four-engined bombing planes.

The remaining $1,038,300 worth of contracts will provide 100 training planes to the Fairchild Engine and Aircraft Corp., Hagerstown, Md.

Secretary Henry L. Stimson recently told a Congressional committee that the department had been able to sign contracts for only 33 out of 4000 planes provided in a $400,000,000 appropriation for 1941.

Flight - 8/1/40

Transatlantic Deliveries

THE Canadian paper *Commercial Aviation*, in its June number, draws attention to what must be always at the back of our Air Ministry's mind as an alternative method of delivery to shipping from America to England—that is, flying the Atlantic.

"And while Blitzkrieg and counter-Blitzkrieg eat into both Germany's and Britain's supply of 'planes, the Empire is holding an ace in the hole which may be used before the summer is out—mass transatlantic flight deliveries.

"Any doubt as to the possibilities of such deliveries may be dispelled now that Britain has occupied Iceland. The lonely [but it has a population of 100,000.—ED.] Arctic island can now be used as a refuelling base by the British, although all five bomber types now in production for the Allies in the United States are capable of flying from Newfoundland to Ireland non-stop."

Being able to land and refuel at Iceland is some help, but it does not shorten the distance by any very great fraction. It reduces the 2,000-odd miles between Botwood and Foynes by about 300, at the expense of increasing the total distance to England. The five types spoken about are given as the Consolidated 28-5 flying boat, the Douglas DB-7 attack bomber, the Douglas B-20, also given as an attack bomber (or should this be the B-23?), the Lockheed Hudson and the Martin 167W. (The Martin ordered by France had the model number 167F.) All the types mentioned could not fly the Atlantic with standard tankage, but they could be specially tanked up for the occasion.

We agree with what is said on the subject of the greatest difficulty. "Biggest problem the Allies will face in the high-speed transatlantic shipment will be the securing of pilots with adequate experience. American pilots may be hired as 'ferrymen' similar to the many who have been hired as instructors under the Empire Air Training Plan. Their work would violate no American law."

Flight - 7/23/40

Ferrying Across the Atlantic

CAPN. A. S. WILCOCKSON, who is in charge of the Atlantic Division of the Airways Corporation, is to supervise arrangements which are being made to fly American bombers and flying-boats for the R.A.F. across the Atlantic. With Capn. D. C. Bennett and Mr. Ian Ross of the Airways Corporation, and Wing Commander Griffiths Powell, Capn. Wilcockson arrived in Canada last week. The Airways Corporation pilots have been lent to the Ministry of Aircraft Production for the scheme.

The first delivery flight of bombers is expected to be made this month. Reports from America suggest that American pilots may help in this ferry work and that fees of £250 to "several thousand dollars" may be offered to them for each trip. Another suggestion is that the crews should be flown back to Canada in British long-range bombers, which would naturally save time. The main difficulty in ferrying across the Atlantic in any great numbers is the lack of trained Atlantic crews.

Canadian crews are to be trained and it is believed that flights may be continued during the Winter whenever the weather is suitable. The types to be flown across are said to include the Lockheed bombers and Consolidated flying-boats.

Dr. Archbold's Consolidated Model 28 flying-boat "Guba" is reported to have been bought by the Ministry of Aircraft Production and may be used over the Atlantic. It has a range of more than 3,000 miles with nearly a ton of payload. Thus it should be able to fly the Atlantic from the U.S.A. with mails and urgent freight and return with crews which had ferried bombers across.

An interesting point is likely to be raised over the position of Ireland should a bomber be forced to land there during its crossing. Presumably it and its crew would have to be interned.

THE TIMES

PRINTING HOUSE SQUARE
LONDON, E.C.4
Telephone: Central 2000

SEP 12 1940

CITY OFFICE—15, George Street, E.C.4
Telephone: Mansion House 4702 & 1378

PARIS OFFICE—8, Rue Halévy (Opéra), Paris, 9e

NEW YORK OFFICE—280, Broadway

POSTAL SUBSCRIPTION RATES

Inland — **£3 18s.** per annum and pro rata
Foreign — **£4 11s.** „ „ „ „ „

The Times is independent, not only of political parties but of any other newspaper whatever. It gives more news and features than any other paper and the extent and authority of its news service are unrivalled. *The Times* has the highest circulation ever attained by a twopenny daily paper.

Kittyhawk in 1903. The Wright Brothers entertained no thoughts of war. The aeroplane was, in fact, flown for the first time over the North American Continent, where not a single fortress or defence barrier separates the subjects of the King in Canada from the republican citizens of the United States. Civil aviation was to narrow the frontiers of the world. Citizens were to travel from one country to another speedily and without inconvenience. Ambitious young men adopted the career of civil air pilots. They were in Brussels at one hour and at Cologne or Prague at another. Between the civil air pilots of Europe there developed a friendliness and understanding which seemed to foreshadow a new Europe in which the people lived in harmony with each other. Undoubtedly civil aviation was one of the principal agencies for peace, but it was not powerful enough to exorcise the spectre of war in the air.

Progress Before the War

Less than two months after the signing of the Munich Agreement Sir Kingsley Wood told the House of Commons that Imperial Airways and British Airways were to be merged in a statutory Corporation. The period between November, 1938, and September, 1939, was hectic but marked by substantial gains to civil aviation. It presented, for one thing, the panorama of British aircraft crossing Europe to Warsaw and Budapest and flying over many countries, British and other, on their way to Durban, Sydney, and Hongkong. Last August, when the clouds of war were gathering over Poland, the flying-boat Caribou made the inaugural flight of the British North Atlantic air mail service between Great Britain, Eire, Newfoundland, Canada, and the United States. The flying-boat Aotearoa left Southampton Water on her delivery flight to New Zealand. A new air service was begun between Great Britain, Norway, Sweden, and Finland. British civil aircraft were carrying His Majesty's mails to some 40 countries. The penny-halfpenny "all-up" air mail was strengthening the bonds of trade and friendship between the various parts of the Empire. The demand for passenger accommodation was increasing. Civil aviation had, in fact, become a commonplace of life.

These gains, however, were wrested at a time of particular strain. Munich had become a landmark in war preparedness. We had to meet a potential foe whose supremacy in the air was as yet unchallenged. The Air Ministry necessarily obtained a priority in deliveries. Recruiting for the Royal Air Force became more insistent. Aircraft, spare parts, and pilots for civil aviation were harder to come by.

Services Suspended

The outbreak of war brought necessary limitations in service. At first all the Continental services, except the new one to Helsinki, were suspended. The "all-up" air mail charges disappeared. But the companies, having placed their aircraft at the disposal of the Air Ministry, assumed two major and important duties. The first was to keep open the air communications between Great Britain and the countries of the British Empire. The second was to fulfil special charter duties for the Air Ministry.

Navigational difficulties were immediately increased. Meteorological services were restricted. Ships were silenced and unable to give weather reports. Many restrictions were imposed throughout the war zone. Aircraft designed for flying at great heights were henceforth compelled to keep below the clouds. Night flying in the war zone was forbidden,

---

Tribune 7/24/40

NO JOBS, WARNING TO UNSKILLED BY AIRCRAFT PLANTS

With a federal-state program for the training of thousands for naional defense taking form rapidly, a double-barreled warning was issued today to unskilled workers against a "job stampede" to California's major defense industry — aircraft manufacturing, The International News Service reported from San Francisco. Consolidated Aircraft Corp., San Diego, is among the firms listed where announcement has been made that unskilled men can not get work.

"The aircraft industry, which is centered in Southern California, is continuing to add new employes from all parts of the state," reported the Aircraft Information Bureau, of San Francisco.

"But these employes are all skilled craftsmen, trained in such trades as aluminum and alloy welding, precision machine work, loft work, jig making, etc.

"We are advised by leading aircraft plants—Consolidated, Douglas, Lockheed, North American, Northrop and Vultee—that it is utterly useless for men without proper training to seek jobs there."

This was supported by the San Francisco office of the state department of employment which in the past year has placed more than 100 skilled workers from the bay area in aircraft jobs.

Consolidated a/c

SEP 12 1940

Romeike & Curtice Ltd

Telephone
CENTRAL 2781
(2 Lines.)

R&C

35. Shoe Lane.
LONDON.
E.C.4.

EXTRACT FROM

DAILY MIRROR
Geraldine Hse, Rolls Bldgs, Fetter Lane, E.C.4.

12-8-40

Date

THE PRICE the British Purchas Commission paid for the fl boat Guba, owned by Mr. R Archbold, is believed to be £50,0
Mr. Archbold said he presu Guba would be used for ferryi across the Atlantic.

Consolidated a/c

SEP 12 1940

Romeike & Curtice Ltd

Telephone
CENTRAL 2781
(2 Lines.)

R&C

35. Shoe Lane.
LONDON.
E.C.4.

EXTRACT FROM

FOUNDRY TRADE JOURNAL,
49, Wellington Street, Strand, W.C.2.

AUG 1940

THE MINISTRY OF AIRCRAFT PRODUCTION has purchased a large privately-owned seaplane in New York in which 3½-ton cargoes of aluminium will be transported from the United States to Great Britain twice a week.

---

air Consolidated a/c

SEP 12 1940

Romeike & Curtice Ltd

Telephone
CENTRAL 2781
(2 Lines.)

R&C

35. Shoe Lane.
LONDON.
E.C.4.

EXTRACT FROM

SCOTTISH DAILY EXPRESS
196, Albion Street, Glasgow

12 AUG 1940

Britain buys "Atlantic ferry"

£50,000 flying boat

NEW YORK, Sunday.—The price the British Purchasing Commission paid for the flying-boat Guba, owned by Mr Richard Archbold, is believed to be £50,000. The plane is a replica of the American Navy's "Flying Fortress."

Mr Archbold said he presumed the Guba would be used for ferrying metals across the Atlantic.

The "flying laboratory" in which Mr Howard Hughes, the millionaire film producer, made a record round-the-world dash two years ago, arrived here last night for shipment to Britain. It has also been bought by the British Purchasing Commission.—A.P.

UNION 8/23

Consair to Build 8-Acre Addition

Test piles for an $800,000 addition to Consolidated Aircraft Corp.'s plant were being driven yesterday as plans for the building which, factory officials said, will be rushed to completion, were approved at the city planning commission's office.

Floor space in the new structure, according to Harry Haelsig, asistant city planning engineer, will cover 8 1-3 acres to make the building the largest, in this respect, in San Diego.

The addition, he said, will be 200 feet wide and 1500 feet long. The roof will be of the saw-tooth type with its highest elevations 41 feet from the ground.

At the factory, executives were guarded in their statements, but said that work "will be started as soon as possible and will be rushed to completion." Asked whether the building will be used exclusively to construct land planes, they said it will be used "to fill orders for both the army and navy." The structure is to be of the steel-frame type.

---

2 British Fliers Expected Here On 'Ferry' Duty

Union 8/6/40

Organizing a transatlantic system for delivering bombers from west coast aircraft plants to Britain, two British Royal Air force pilots were in Los Angeles yesterday and were expected to visit San Diego.

The pilots, Capt. Donald C. T. Bennett, transatlantic flier, and Capt. R. H. Page, left New York Sunday by plane, The Associated Press reported.

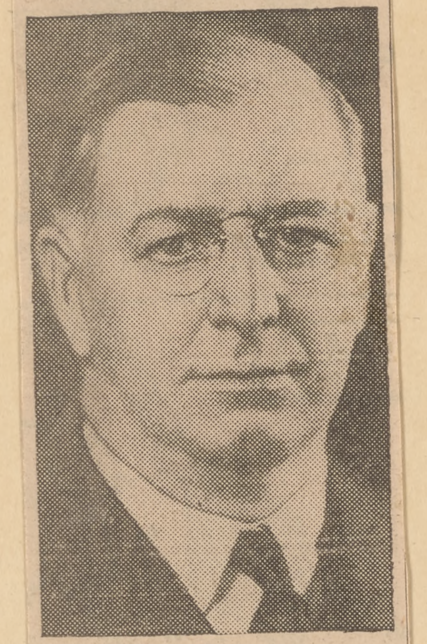
Informed that the pilots were in southern California, a Consolidated Aircraft Corp. official indicated that the San Diego firm "knew of a plan to fly ships to Britain."

At Lockheed Aircraft plant, Los Angeles, the pilots said they would be in southern California for 10 days.

The two, employed by the British Imperial airways as civil pilots, were assigned to the British aircraft production ministry to develop a transatlantic plane-ferrying system. They said American neutrality laws prohibited American pilots from participating in such a service and that they were "only in the market for Canadian pilots."

Union 9/14/40

Plans Inspection



COL. FRANK KNOX
. . . navy secretary, will fly from Honolulu to San Diego.

* * *

Navy Secretary To Fly Here

Knox Due Sept. 16 After Hawaii Tour

Col. Frank Knox, secretary of the navy, will visit San Diego Sept. 16.

In the first long overwater flight ever made by a navy secretary, Col. Knox will leave San Francisco Thursday aboard the flagplane of Rear Adm. Arthur B. Cook, commander of the scouting force aircraft and the navy's fleet patrol wings. He will leave Hawaii for San Diego in the San Diego-built 4-motored bomber Sept. 15.

Accompanying Col. Knox on the 10,000-mile inspection trip will be Adm. Cook, Col. William J. Donovan, who recently completed a special tour of duty in England for the navy department; Capt. M. L. Deyo, aid, and John O'Keefe, special assistant.

TO BOARD CARRIER

Col. Knox will leave Manchester, N. H., his summer home, tomorrow for California, The Associated Press reported yesterday. His plane will take off from San Francisco bay for Honolulu Thursday afternoon, arriving at Pearl Harbor Friday morning.

After an inspection of Pearl Harbor naval base, one of the most strongly fortified in the world, Col. Knox will board the aircraft carrier Enterprise, temporary flagship of Adm. J. O. Richardson, U. S. fleet commander, for five days' manuvers at sea with the fleet. The Enterprise will sail from Pearl Harbor Sept. 9 and return Sept. 14.

The navy's chief executive will leave Pearl Harbor the afternoon of Sept. 15, arriving here the following morning. He is scheduled to inspect naval activities at Long Beach and San Pedro Sept. 17, leaving the same day by plane for Washington.

FOUR-MOTORED PLANE

The four-motored plane in which the navy's chief executive will fly to the crossroads of the Pacific and return was delivered to the navy by Consolidated Aircraft Corp. last year. For the last several months it has been used at North Island in training personnel in airboat flying. It has a speed in excess of 150 miles an hour and is equipped for flying at high altitudes.

The course followed by Pan American Airways clippers will be flown by Col. Knox' plane in the flight from San Francisco to Hawaii. From Honolulu to San Diego the route will be that traversed by navy patrol wing bombers.

Tribune 8/17/40

Award Contract For 56 Bombers

Consolidated Aircraft Corp., of San Diego, has been awarded a contract for $14,861,342 for the purchase of 56 four-engine bombing planes, by the war department, it was announced today from Washington in dispatches of The Associated Press.

This is one of two contracts awarded, the other going to the Fairchild Engine & Airplane Corp., of Hagerstown, Md., for $1,038,000 for 100 training planes.

According to officials of the local concern, the order signed by war department officials today is in exercise of a contract already existing.

Work on the new assignment has not yet started, it was said, although requests for bids on materials to be used, have been issued.

The war department did not announce the date on which delivery of either group of planes is to be expected.

The orders were the third of a group announced since congress voted $400,000,000 for approximately 4200 additional army planes last June, the dispatches stated.

Union 7/29/40

U.S. Asks Speed On Big Bombers

Consair to Rush Craft for Navy

Word that the navy department has requested Consolidated Aircraft Corp. to rush construction on a squadron of 30-ton four-engined long-range patrol bombers was received here yesterday from Washington.

The huge airboats will be the first squadron of their design to be delivered to the navy and if found satisfactory, will supplant the PBY twin-motored bombers in service with the fleet patrol wings. Six are to be delivered to Patrol Squadron 12 at North island this fall. They will be under command of Comdr. S. B. Cooke.

5000-MILE RANGE

The new offshore patrol bombers have a cruising range of 5000 miles, carrying a crew of nine and several tons of bombs. They have a speed in excess of 200 miles an hour and are rated as the fastest aircraft of their type in the world.

The first four-motored plane built for the navy by Consair was completed and tested last year. For a time it was employed by Rear Adm. Arthur B. Cook, commander of scouting forces aircraft, as his aerial flagship. In recent months it has been used by Patrol Squadron 12 in the training of pilots and crews.

49,494 STUDY FLYING

The United Press reported from Washington the civil aeronautics board announced that on June 30 there were 49,494 students enrolled in various phases of its pilot training program designed to produce 50,000 civilian pilots by next June 30.

The board said 32,000 students are in ground schools and that 17,494 more were taking courses in the civilian pilot training program. In addition 1000 civilian instructors are taking courses to refresh their flight experiences.

The CAB said that almost 16,000 student pilots will have completed both ground and flight training by September.

Sept 16th 1940.

avy Welcome

Here 2 Days After Flight From Hawaii

Will Inspect Bases

SECY. FRANK KNOX

BULLETIN

Secy. of the Navy Knox arrived in San Diego at 10:30 a.m. today, landing in the harbor after an overnight flight from Hawaii in the Consolidated four-motored bomber flagship of Rear Adm. A. B. Cook.

Col. Frank Knox, secretary of the navy, was expected to arrive at San Diego soon after 10 a.m. today by plane from Honolulu for a two-day stay, during which time he will inspect local naval establishments, confer with boat builders on plans for constructing high-speed small craft for the navy, and be feted at a city-chamber of commerce dinner at 7 p.m. today at the Hotel del Coronado.

Knox, who flew from San Francisco to Honolulu Sept. 6, made the flight aboard the four-motored Consolidated-built bomber flagplane of Rear Adm. Arthur B. Cook, commander of aircraft scouting force. The plane took off from Honolulu at 7:01 p.m. yesterday for San Diego.

With the secretary were Cook, Capt. M. L. Deyo, Knox's aid; John F. O'Keefe, his personal secretary; Col. W. F. Donovan, World war officer with the A.E.F. "Fighting 69th" regiment, and Lt. Thomas E. Gillespie, of San Diego, pilot. Second pilot was Ens. John A. Ferguson, U. S. N. R., of Coronado.

From the Naval Air station Knox is to go to the destroyer base and naval hospital. Other places to be inspected are the Marine corps base, Camp Elliott, naval training station and Consolidated Aircraft Corp.

When Knox left Hawaii, he was quoted by The United Press as saying he found Hawaiian bases, both army and navy, "in very good shape."

Reservations for the civic dinner to be given the secretary will be taken at the chamber of commerce up to noon today. From San Diego, Knox is to go to San Pedro and thence to Washington, D. C. Knox, appointed secretary of the navy June 20 by President Roosevelt, was a "Rough Rider" of Spanish-American war days and a close friend of the late "Teddy" Roosevelt.

Knox was born Jan. 1, 1874. At the age of 11, in Grand Rapids, Mich., he earned $1.25 a week delivering a morning paper. An afternoon paper route brought him another dollar.

He quit school at the age of 15 to take a job as shipping clerk's helper at $5 a week, and at 19 had risen to a salesman for a wholesale book and stationery firm at $15 a week. In the panic of 1893, Knox lost his job. He returned to school and went on to college.

In the Spanish-American war, Knox, through a friend, met Lt. Col. Theodore Roosevelt and asked for a chance to join the denim-clad, hard-riding crowd of cowboys, plainsmen and college athletes who made up the "Rough Riders." In the advance upon Santiago and the famous storming of San Juan hill, Knox lost a strand of hair when a bullet clipped through his hat.

Throughout the Cuban campaign, Knox had been building the newspaper career that carried him upward through the years as owner and publisher of some of the most famous progressive papers in the United States. His experiences with the "Rough Riders" were read avidly by the hometown folks of Grand Rapids, where they appeared under the caption, "Pictures of Life with the Cowboys and Swells."

The first paper Knox owned was a weekly paper published at Sault Ste. Marie. He backed Col. Roosevelt for the Bull Moose ticket in 1912. Disappointed when Roosevelt lost, Knox began the groundwork of a paper at Manchester, N. H., which prospered under his direction.

Slackers Blasted

In World war days Knox blasted slackers and those who sought to escape the draft. He enlisted as a private in the First New Hampshire infantry after he was turned down for duty in the officers' training camp because the camp quota was filled. In France he was a major and saw action at many points of action.

Knox tok over operation of the Chicago Daily News in 1931. He became Republican candidate for the vice presidency in June, 1936.

As secretary of the navy, Knox succeeded Charles Edison, who resigned to enter politics in New Jersey. Just before he was nominated secretary of the navy, he outlined a six-point defense program for the United States, as follows:

1—Increased help for Great Britain through the sale of planes and munitions.

2—Control of the Atlantic for the United States, either through cooperation with Britain or the building of the world's largest fleet.

3—United States protection of the entire western hemisphere.

4—Development of plane and submarine bases from the Arctic to the Antarctic.

5—Formation of the world's most powerful air fleet and development of the world's greatest aviation production capacity.

6—Compulsory military training.

CONSAIR SETS 50-HOUR WEEK; AWARD COMBAT PLANE ORDER

(Continued from Page 1)

manufacturers. Other major contracts are reported to be in preliminary stages.

A commission spokesman said that William Knudsen, defense production chief, would try to "sell" the manufacturers on his view that they need not hesitate now to undertake necessary plant expansions. Knudsen expressed confidence last week that the industry could attain an annual production rate of 25,000 military planes by July 1, 1942.

EXPANSION DELAYED

Manufacturers have been reported to be hanging back until congress approves proposed legislation allowing them, for tax purposes, to write off plant expansions within five years' time. Their argument has been that, otherwise, a sudden cessation of the defense emergency might catch them with a heavy load of unamortized expansion debts.

Attending the meeting yesterday were Knudsen, his deputy commissioner, John D. Biggers; Dr. George J. Meade, head of Knudsen's aeronautical section, and representatives of the Lockheed, Boeing, Martin, Consolidated, North American and Douglas aircraft firms.

The army was reported reliably to be scaling down pending orders to the present level of production capacity in the belief that plant expansions needed for larger orders might be delayed indefinitely.

REPORTS ASKED

There was a growing conviction in army and industry circles that congress might wait until after the November election to enact the defense tax policy change.

After five hours' discussion, the industry representatives agreed to report back individually on their ability to expand production capacity and their views on the tax-amortization problem.

Considerable floor space is being added to the aircraft industry, but with money provided by British government orders. Without the British-bought expansions, the industry now has capaciy for roughly 10,000 military planes a year.

The new combat plane contracts reported by the commission yesterday will be divided as follows: Consolidated Aircraft Corp., San Diego, $16,361,342; Boeing Aircraft Co., Seattle, $31,871,349; Boeing Airplane Co., Wichita, $2,041,947; and the 'Staerman division of Boeing Airplane at Wichita, $5,713,389. Aircraft and engine contracts cleared between June 6 and July 17, the commission said, totaled nearly $85,000,000, some of which have been awarded.

Union 7/31/40

Consair Plans 50-Hour Week

Big Combat Plane Contract Awarded

Consolidated Aircraft Corp. pointed to a new high speed in production yesterday with a 50-hour five-day week starting Monday.

Indicating pressure on the giant San Diego plant and its 8400 employes was the announcement of a $16,316,342 combat plane contract awarded to Consolidated yesterday, The Associated Press reported from Washington, D. C.

ON 6-DAY SCHEDULE

Currently, the plant is under a six-day, 48-hour week.

The five-day, 50-hour week will be worked in two shifts instead of three as at present. Under labor union agreement, the firm will pay time and one half for overtime above 40 hours' work each week. The plant will be closed Saturdays and Sundays.

At Washington, the new contract awaited signature of Consolidated representatives as defense commission representatives sought an agreement from six major plane manufacturers to proceed with pending army-navy contracts without waiting for congressional action on defense tax policy.

ENGINES ORDERED

At least $55,988,027 in new military aircraft awards, in addition to some engine contracts, were reported by the commission to have been cleared between June 6 and July 17, but not yet signed by the

---

Aircraft News 8/22/40

So. Cal. Plane Firm Gets Big Govt. Order

WASHINGTON.—The War Department announced the award of contracts for $15,899,642 worth of training and bombing airplanes.

Most of the contracts—$14,861,342 worth—are with the Consolidated Aircraft Corp., San Diego, for 56 four-engined bombing planes.

The remaining $1,038,300 worth of contracts will provide 100 training planes to the Fairchild Engine and Aircraft Corp., Hagerstown, Md.

Secretary Henry L. Stimson recently told a Congressional committee that the department had been able to sign contracts for only 33 out of 4000 planes provided in a $400,000,000 appropriation for 1941.

J. Inventor Iakes 'Pancake' Plane Motor

By TED McKENNA

The U. S. air corps travels with gasoline engines but soon it may be soaring to new heights with "pancakes."

In San Diego a man has made a hobby of designing and building aircraft engines that may do away with the present type of aircraft motors.

J. L. (Bill) Weaver, Consolidated Aircraft Corp. inspector, has designed and built a radically new pancake type engine, which derives its name from its general flat appearance.

Eight years ago Weaver started as a hobby the creation of an engine of his own design, with the intention of trying to develop one with fewer parts and more power. He believes he has reached that goal with the present creation, which he calls his "masterpiece." All the work was done in his garage workshop.

HAS NOVEL FEATURES

The motor, now completed, gives one the impression of a Flash Gordon creation. It has many novel features, and if tests show the same promising performance as indicated by a single cylinder model, one may expect something new in weight-horsepower ratio. It is a geared, air-cooled, two-cycle, four-cylindered, horizontal opposed type. Two cylinders fire simultaneously from opposite ends of the crank shaft. Since the crank shaft is only five inches long, a more rigid construction is possible, and the firing order of the cylinders makes for what Weaver calls ideal performance in dynamic balance.

The engine weighs 115 pounds, and is designed to develop 100 horsepower at 3600 revolutions a minute at 30,000 feet. This is accomplished by the super-charging action of a cylinder superimposed on the firing cylinder. The construction of the mechanism that regulates this charging action can not be divulged at this time.

OIL SYSTEM SIMPLIFIED

Some of the features Weaver has incorporated in his "masterpiece" are cylinders that never wear out of round, a streamlined oiling system that requires neither oil pumps nor lines and permits the lubricant to remain clean and pure for the life of the motor, thus minimizing frequent overhaul and adjustments.

This type of power unit, Weaver said, with its compact flat shape, facilitates mounting directly into the wing section. This permits the wing itself to act as the engine cowling. Mounting of large present-day radial engines on the loading edge of wings has always given designers much trouble with reference to perfect streamlining. This is due to the interference with the smooth flow of air over the wing, which not only causes loss of lift but sets up a drag that acts much the same as a brake. This, coupled with the head resistance set up by the present design of motors, gives the pancake type many advantages.

MADE FOR LIGHT CRAFT

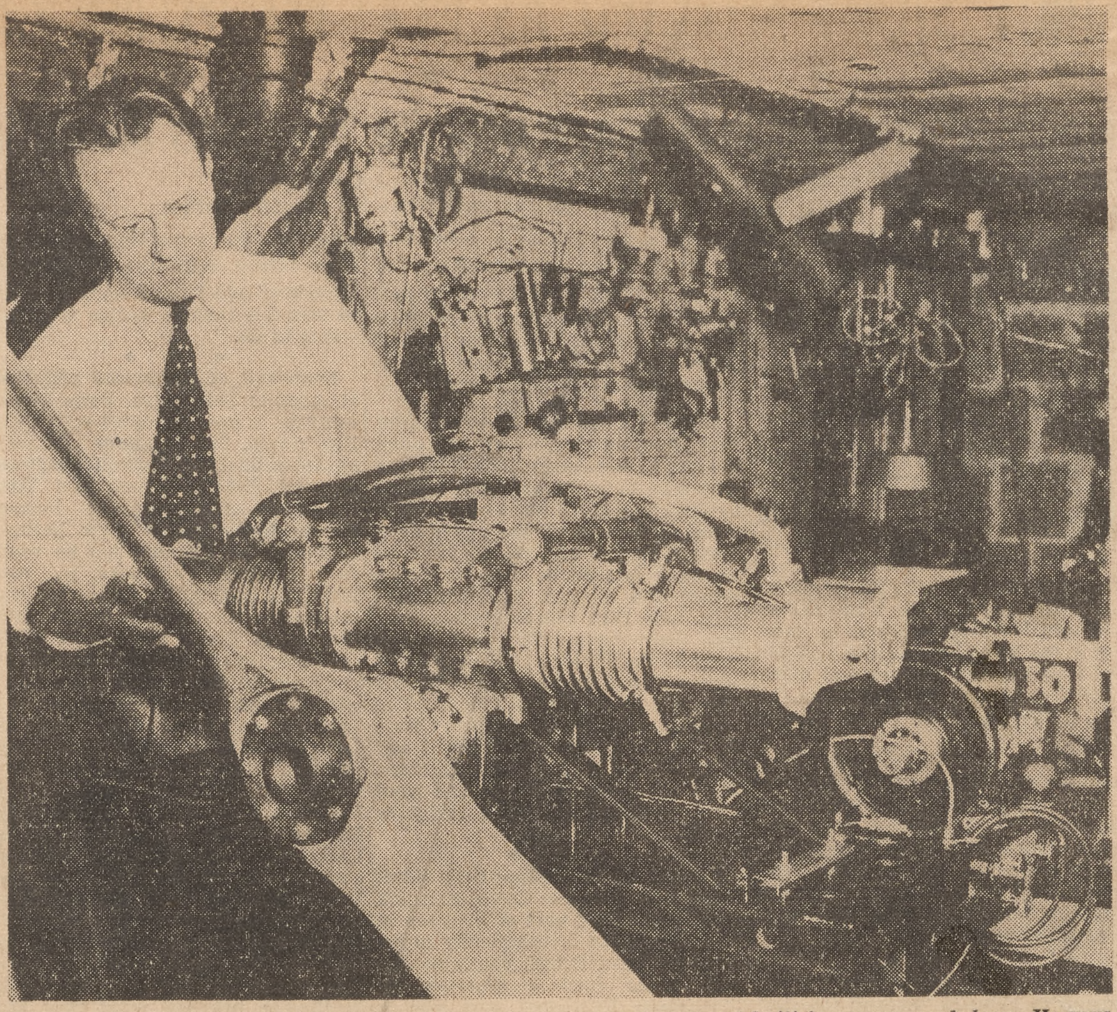
This four-cylinder model, Weaver said, would be ideal for light planes, but is so constructed that with the addition of more cylinders and an increase in the compression ratio it could be installed in large planes.

Weaver believes he has worked out the problem of dynamic balance, or vibration, which has always troubled engineers, to a smoothness that will give a plane the effect of continuous gliding.

By developing a new casting technique, Weaver has succeeded in binding two different metals to construct the cylinder. He claims that this technique and the elimination of many parts will make possible the manufacture of this engine for half the cost of the type now in use.

Union — 7/27/40

ENGINE MAY REVOLUTIONIZE AIRCRAFT CONSTRUCTION



J. L. Weaver, Consolidated Aircraft Corp. inspector, is shown with his "pancake" plane engine which he designed and built in garage workshop. He says it may replace present aircraft motor types.

Union — [illegible]

AIRCRAFT PLANT POLICE PUT ON THEIR NEW UNIFORMS

Resplendent new uniforms were provided for Consolidated aircraft plant police for the first time yesterday. The force was distinguished in the new togs that will keep them separate from workers. Maintaining watch on workmen and visitors in the plant, the men operate in a "cooperative manner."

Union — 8/10/40

Marine Base, Navy Station Curb Watering to Insure Home Supply

While city officials struggled to maintain water pressures in the Mission Hills-Loma Portal-Pt. Loma districts, Fred Rhodes, city manager, announced yesterday that Marine base and Naval Training station executives have agreed to order immediate discontinuance of all daytime irrigation at the two large reservations.

Meantime, Fred Pyle, city hydraulic engineer, said everything possible is being done to maintain water service and pressure, but made it clear that if curtailment of water use at the two government establishments doesn't aid materially, it probably will be necessary to place some restriction on irrigation by private consumers.

The condition became acute Wednesday, said Rhodes, when homes in some parts of Pt. Loma were without water for five hours. Yesterday, he said, there was no service interruption, although pressures were down.

Pyle described the Naval Training station and the Marine base as the two largest consumers in the lowlands between Mission Hills and Pt. Loma, and expressed belief that limiting of watering at the bases to between 10 p.m. and 6 a.m. will be a big help.

Back of the difficulty, said Rhodes, is a pressing need for improvements of the water distribution system. He and Pyle emphasized that there is an abundance of water, but that growth of the city has bounded ahead of water-main extensions and enlargements.

As explained by Pyle, water is piped to a reservoir on Chatsworth blvd. from the University Heights reservoir. Pumps then lift the water from the Chatsworth reservoir to a tank on Pt. Loma, which serves the higher places on that promontory. When consumption is heavy in Mission Hills and the flats below, insufficient water reaches the Chatsworth reservoir to make it possible to fill the Pt. Loma tank, which goes dry.

FUTURE RELIEF SEEN

Some relief—but not this summer—will be provided when the Upas st. pipe line is extended from

the people of San Diego agree this project is logically the next water development which should be undertaken," Marston said.

SAN VICENTE URGED

Heilbron emphasized that the "vision of San Diegans years ago in approving funds for construction of our present water facilities has led to the rapid growth and development enjoyed by our community. Without that vision," he said, "we would not have a city such as we have today."

"It is essential and absolutely necessary," he continued, "that we develop additional water facilities. The San Vicente project is the first logical step toward that development."

Frank Forward, chamber president, pledged aid of the chamber to steps taken toward winning a favorable decision on the proposed project.

Industry Draft Bill Halts Plant Expansion Of 'Vast' Scope by Consolidated Aircraft

N. Y. Times 9/3/40

By The Associated Press.

SAN DIEGO, Calif., Sept. 2—Major Reuben H. Fleet, president of the Consolidated Aircraft Corporation, said today that announcement of "vast future expansion was being withheld because of a Senate bill authorizing conscription of industry."

Speaking at the dedication of a $2,500,000 adidtion to the company's plant, he warned against nationalization of the aircraft industry, citing the failure in France.

He expressed confidence that the industry could supply the planes needed not only to protect America from attack but to carry the war to any attacking enemy.

The announcement which was being withheld because of the Senate measure, he stated, covered expansion "here or in Texas." He declined to discuss the type of expansion planned or the possible site in Texas.

"We planned announcement today of further extensive plant expansions," he declared, "but the bill recently passed by the Senate authorizing peacetime commandeering of industrial plants which may fail in any respect to please a high official of our government makes us hesitate, much as we have been striving with all our might as a private enterprise to do our bit.

"Nationalization of her aircraft industry by France was so disastrous that that country's production fell down terribly, and even though she frantically resorted to foreign help at exorbitant expense, she collapsed as a nation and probably never will recover.

"We hope our government will not make this mistake, which would be the beginning of labor regimentation, the emasculation of labor unions, which our President has stated cannot strike against the government, and the end in this country of free enterprise."

Decision to withhold announcement of the future expansion will not affect that part of an enlargement program now under way and for which contracts have been awarded, Major Fleet added.

UNION 8/23

U. S. Building New Air Giant

LOS ANGELES, Aug. 22 (A.P.)—Maj. Gen. Henry H. Arnold, chief of the army air corps, revealed today that a bomber nearing completion in the Douglas plant is not only the biggest plane ever built but that it will be able to fly from New York to Europe and back to Los Angeles non-stop.

The plane, which will be in the air this fall, said Lt. Col. C. E. Bradshaw, army air corps officer

Maj. Gen. Arnold and William S. Knudsen, chairman of the national defense advisory committee, are expected to arrive here at 9:30 this morning, continuing their inspection tour of aircraft factories in the southland. It is expected the party, which includes several ranking army officials, will visit Consolidated, Ryan and Solar plants.

in charge of its construction, is powered with four 2000-horsepower engines, the largest ever built.

Its wing spread is 212 feet and it is 112 feet long. Its tail assembly is larger than the ordinary commercial plane.

The plane will have a gasoline capacity of 11,000 gallons. It will carry bigger cannon than any airplane in the world, but Bradshaw said the exact armament details are secret. The plane will require a crew of 10.

The huge fighter has been under secret construction for four years.

Earlier today, Arnold displayed the world's fastest military airplane —the Lockheed interceptor—to William S. Knudsen, chairman of the national defense advisory committee, and told for the first time its performance figures.

Its speed, said Arnold, is 460 miles an hour at two-thirds throttle, but more than 500 m.p.h. "wide open." "The world's fastest," he added.

Its range is 1100 miles; rate of climb, 4000 feet per minute; armament, one rapid-fire cannon shooting a one-pound shell, and four machine guns.

Union 8/21/40

5 Plane Firms Spur Defense

'Build First, Talk Of Profits Later'

WASHINGTON, Aug. 20 (A.P.)—Presidents of five airplane manufacturing companies said in a statement tonight that they were "ready to build airplanes first and talk about profits afterward," and that in the last 10 weeks they had made large expenditures to prepare for increased production for national defense.

The statement was issued by Donald W. Douglas of the Douglas Aircraft Co., Robert E. Gross of the Lockheed Aircraft Co., P. G. Johnson of the Boeing Airplane Co., and R. W. Millar of Vultee Aircraft, Inc.

CONSAIR INCLUDED

"Later the name R. H. Fleet, president of Consolidated Aircraft Corp., was added to the statement."

"In the present national defense emergency, aircraft manufacturers have offered and will continue to give the government of the United States every resource and facility at their command," they said.

"In spite of many obstacles and lack of proper legislation, we have gone ahead with preparations for increasing our production to meet the current challenge to America and build up aerial defense.

ADD 21,000 EMPLOYES

"In the last 10 weeks members of the industry have actually purchased on their own responsibility more than $100,000,000 worth of materials for future use and have spent or contracted obligations for more than $50,000,000 in additional plant facilities, machinery and equipment, and have added to their payrolls 21,000 new employes.

"Certainly this is far from standing still."

DEFER PROFIT ISSUE TO SPEED DEFENSE

N. Y. Times

Five Aircraft Companies Give Pledge 'to Build Planes First,' Talk Rewards Later

✓

Special to THE NEW YORK TIMES.

WASHINGTON, Aug. 20—A joint statement, issued tonight by the heads of the Douglas, Lockheed, Consolidated, Boeing and Vultee aircraft companies, declared that the aircraft industry was "ready to build airplanes first and talk about profits afterward."

"In spite of many obstacles and lack of proper legislation, we have gone ahead with preparations for increasing our production to meet the current challenge to America and build up aerial defense so vital to our national security," they said. "In this we have had the help of the Army, the Navy, the National Defense Advisory Commission and many other branches of the government.

"In the last ten weeks members of the industry have actually purchased on their own responsibility more than $100,000,000 worth of materials for future use and have spent or contracted obligations for more than $50,000,000 in additional plant facilities, machinery and equipment, and have added to their payrolls 21,000 new employes.

"If additional time can be saved, some companies are prepared to build and finance emergency expansions themselves while in other cases where the amounts involved are extremely large we are prepared to recommend that the government build and own during the period of the present emergency sufficient additional plants immediately required for our national defense program, and that these manufacturers be given the task of operating these emergency plants under any fair and reasonable arrangement approved by the government and consistent with free American traditions and institutions and conducive to efficiency and economy."

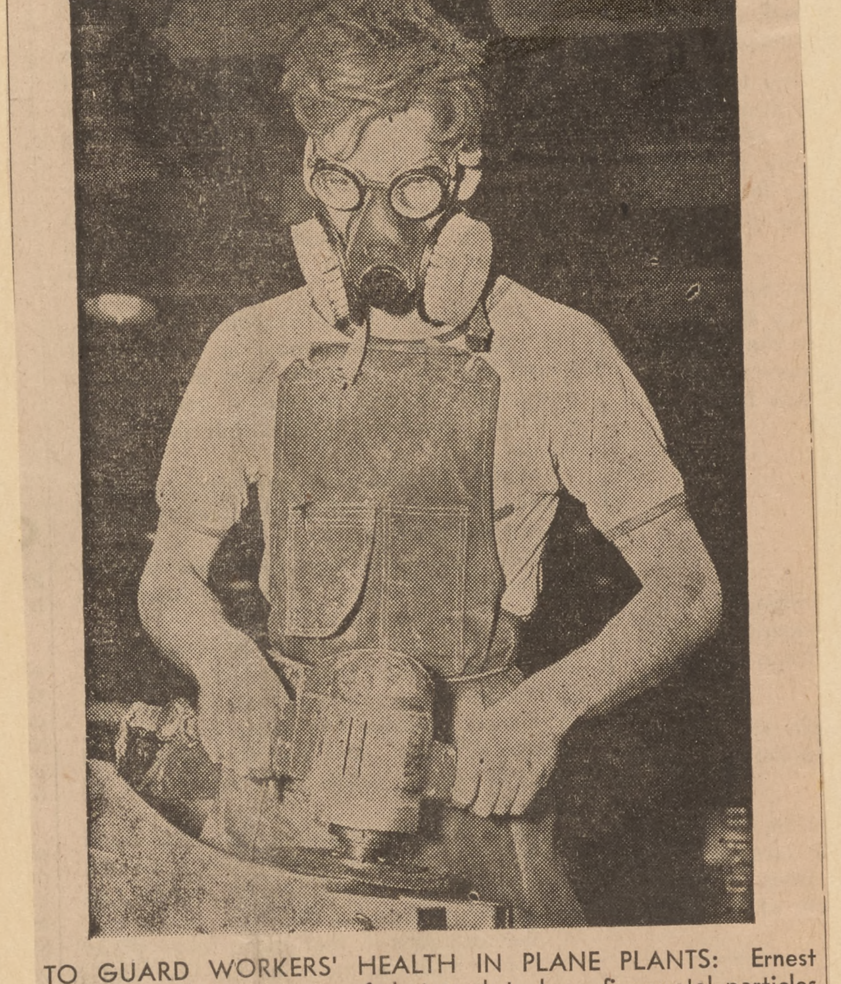
The statement was signed by Donald W. Douglas, president of the Douglas Aircraft Company; R. H. Fleet, president of the Consolidated Aircraft Corporation; Robert E. Gross, president of the Lockheed Aircraft Company; P. G. Johnson, president of the Boeing Airplane Company, and Richard Millar, president of Vultee Aircraft, Inc.

Jugoslav Ship Sunk Off Western Africa

BERLIN, Aug. 9 (A.P.) (via ra dio)—The German wireless re ported tonight from Belgrade tha the 4201-ton Jugoslav freighter Rac had been sunk by an unidentifie

was with her when she was firs interviewed by newsmen today, hac driven her to the airport when sh left New York Wednesday nigh but that it was not true, as the pub lished account stated, that they hac quarreled.

La Jolla Light — 8/16/40



TO GUARD WORKERS' HEALTH IN PLANE PLANTS: Ernest Norden wears a new type of dust mask to keep fine metal particles from entering his lungs while grinding metal drop-hammer dies, used for cutting plane parts, at the Consolidated Aircraft Corporation factory in San Diego.

Tribune-Sun 8/16/40

BIG CONTRACT TO CONSAIR

$14,861,342 For 56 U. S. Giant Bombers

Consolidated Aircraft Corp., of San Diego, has been awarded a contract for $14,861,342 for the purchase of 56 four-engine bombing planes, by the war department, it was announced today from Washington in dispatches of The Associated Press.

One of Two Orders

This is one of two contracts awarded, the other going to the Fairchild Engine & Airplane Corp., of Hagerstown, Md., for $1,038,000 for 100 training planes.

According to officials of the local concern, the order signed by war department officials today is in exercise of a contract already existing.

Work on the new assignment has not yet started, it was said, although requests for bids on materials to be used, have been issued.

The war department did not announce the date on which delivery of either group of planes is to be expected.

The orders were the third of a group announced since congress voted $400,000,000 for approximately 4200 additional army planes last June, the dispatches stated.

Industry Draft Bill Halts Plant Expansion Of 'Vast' Scope by Consolidated Aircraft

✓ N. Y. Times

By The Associated Press.

SAN DIEGO, Calif., Sept. 2—Major Reuben H. Fleet, president of the Consolidated Aircraft Corporation, said today that announcement of "vast future expansion was being withheld because of a Senate bill authorizing conscription of industry."

Speaking at the dedication of a $2,500,000 adidtion to the company's plant, he warned against nationalization of the aircraft industry, citing the failure in France.

He expressed confidence that the industry could supply the planes needed not only to protect America from attack but to carry the war to any attacking enemy.

The announcement which was being withheld because of the Senate measure, he stated, covered expansion "here or in Texas." He declined to discuss the type of expansion planned or the possible site in Texas.

"We planned announcement today of further extensive plant expansions," he declared, "but the bill recently passed by the Senate authorizing peacetime commandeering of industrial plants which may fail in any respect to please a high official of our government makes us hesitate, much as we have been striving with all our might as a private enterprise to do our bit.

"Nationalization of her aircraft industry by France was so disastrous that that country's production fell down terribly, and even though she frantically resorted to foreign help at exorbitant expense, she collapsed as a nation and probably never will recover.

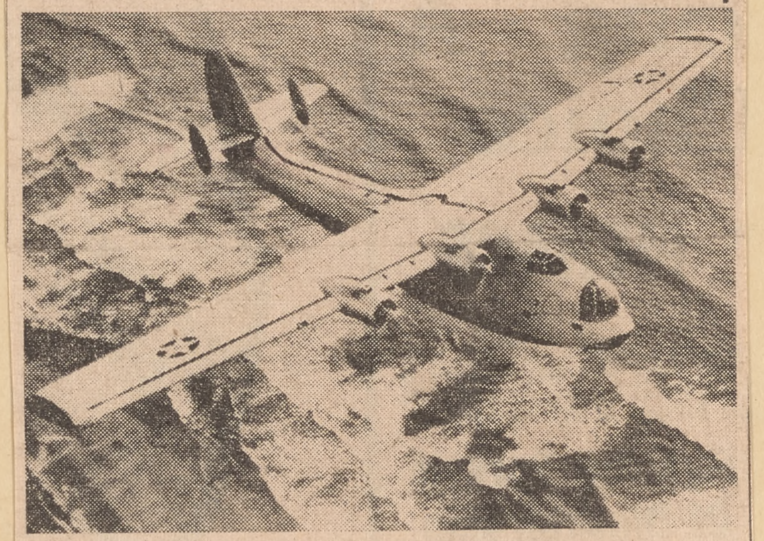
"We hope our government will not make this mistake, which would be the beginning of labor regimentation, the emasculation of labor unions, which our President has stated cannot strike against the government, and the end in this country of free enterprise."

Decision to withhold announcement of the future expansion will not affect that part of an enlargement program now under way and for which contracts have been awarded, Major Fleet added.

. JULY 19. 1940 LONDON, ENGLAND

VELY

Flying Boat From U.S.



FOUR-ENGINED FLYING BOATS from America, specially designed for long-range patrol work, are being used by the R.A.F.

CONSOLIDATED AIRCRAFT CORPORATION
SAN DIEGO, CALIFORNIA

MEMO

SEP 3 1940

Date 9/3/40

E. N. GOTT

To Major Fleet

L.A. "Times"
9/3/40

★ SEPTEM

Plant Draft Proposal Holds Up Expansion Plan

SEES MISTAKE—Maj. Reuben Fleet, head of Consolidated Aircraft at San Diego, scored wealth conscription measure yesterday at dedication of new addition to plant.

SAN DIEGO, Sept. 2.—Maj. Reuben H. Fleet, president of Consolidated Aircraft Corp., today denounced the Senate's "wealth conscription" legislation authorizing "peacetime commandeering of industrial plants" if the latter's operations fail to please any high government officials.

Announcement of "vast future expansion is being withheld because of the Senate measure," Maj. Fleet said. He said the announcement proposed to cover expansion "here or in Texas" but decined to amplify his statement as to the type of expansion planned or the possible site in Texas.

FRANCE'S MISTAKE

Speaking to thousands who attended dedication of Consolidated's new $2,500,000 plant expansion, he expressed hope that the United States government does not make the mistake of France, where "nationalization of the aircraft industry was so disastrous."

Maj. Fleet saw in the Senate bill "the beginning of labor regimentation, the emasculation of labor unions which our President has stated cannot strike against the government and the end in this country of free men and free enterprise."

FURTHER ADDITION

He disclosed Consolidated's new backlog as $132,000,000 and declared that only the industrial draft legislation made him hesitate to announce officially a contemplated $2,500,000 further addition to a factory which already is the largest within one fenced-in-area of the country.

The crowd heard Rear-Admiral Charles A. Blakely, 11th Naval District commandant, formally dedicate the plant addition. Other addresses were given by Brig. Gen. Frank D. Lackland, wing commander, March Field; Maj. Gen. W. P. Upshur, commander Fleet Marine Force, and Col. Peter H. Ottosen, commander, Ft. Rosecrans.

L.A. Examiner 9/4/40

CARL S. KELTY

Staff Financial Writer

Aircraft Leaders Doing Part in National Defense

CARL S. KELTY

Reaffirming declarations of the positive ability and strong desire on the part of the aircraft manufacturing industry to support and help speed the national defense program, Robert E. Gross, president of Lockheed Aircraft Corporation, yesterday emphasized unequivocally that the industry can undertake and accomplish the task. He remarked that this is the only organized activity that can accomplish the task and do it within a reasonable time. The statement of Mr. Gross was made in the course of comment on the result of Lockheed's operations during the first half of 1940, reported in another column. Since the beginning of the defense program Mr. Gross, in conjunction with other leaders of the aviation industry, has been outspoken in stating that the cause for national defense can best be furthered by "getting the facilities first and talking about the orders and profits later." He declared yesterday the recent acts of the National Defense Council was very constructive for the aircraft companies in devising and proposing programs to insure rapid delivery of existing and prospective orders for the U. S. Government.

* * *

How the Lockheed Corporation met the situation and went ahead to forestall delay when the actual signing of contracts for these orders was held up somewhat, was explained by Mr. Gross. The delay was occasioned, he observed, by uncertainty as to how the emergency plants involved were to be financed.

"Notwithstanding this, and with the conviction that this uncertainty would be presently clarified," Mr. Gross said," the Lockeed company went ahead with the vast expansion program necessary.

"We have purchased materials since early June totaling $12,000,000. Plant and buildings ordered and under construction for Lockheed and its subsidiary, Vega Airplane Company, exceed $6,000,000. Several thousand new employees have been added to the payroll bringing the total to over 12,000."

* * *

Mr. Gross pointed out the logic of this program has been borne out by a sequence of developments during the last 72 hours, since at the very moment of the issuance of its half-year report Lockheed was closing with the War Department one of the large orders which are so vital to defense.

The order, totaling approximately $30,000,000, was announced by Secretary Stimson in Washington and was for the latest Lockheed twin-engined interceptor fighters—ships of the type on which William Knudsen and Major General Henry Arnold put their stamp of approval when visiting the plant last week. The plane was characterized as the highest performer of its type in existence.

With its negotiations with the Government finished, its order signed and its personnel and plant already expanded, "Lockheed," said Mr. Gross, "will bend every ounce of its energy and strength to getting the job done."

* * *

That Lockheed is looking far ahead was evidenced by the statement made by Mr. Gross in his report to the stockholders that the company is conducting through the good offices of the California Institute of Technology novel courses designed to adapt large numbers of graduate engineers to the aircraft industry. Furthermore, the management is steadfastly adhering to its policy of keeping in the forefront of the commercial and nonmilitary aviation fields, in which interest continues to increase. In order to fortify its technical progress, Lockheed is building one of the largest and most modern private wind tunnels in this country.

* * *

Dedicating a $2,000,000 addition to the Consolidated Aircraft Corporation plant in San Diego which has just been completed and placed in operation, Major R. H. Fleet, president of the corporation, said yesterday he had hoped simultaneously to announce an additional expansion program to fit in with rearmament needs.

"The proposed Federal legislation permitting the Government to commandeer industrial plants makes us hesitate," Major Fleet said.

He expressed the view that the nationalization of the aircraft industry by France played a most important contributing role in the collapse of that country.

Major Fleet also announced acquisition by Consolidated Aircraft by purchase of the Hall Aluminum Corporation of Bristol, Conn., which will construct an aluminum plant at Dallas, Tex.

The Sun News-Pictorial

FULL REQUIREMENT

VICTORIA – AUSTRALIA

BIG ORDER MEETS AIR SCHEME AND HOME DEFENCE NEEDS

6/7/40

EXPLAINING the £2,032,000 aircraft order decided by War Cabinet, the Prime Minister (Mr. Menzies) said last night that the De Havilland Tiger Moth was the standard elementary training aircraft in use by the R.A.A.F. The additional 300 now being ordered would provide the full requirements of the Empire Air Scheme, as well as of Australia's home defence units.

THE design of the Wackett trainer is of composite wood and tubular steel construction, and as these materials can be readily obtained from local sources, production can be started without delay.

The machine will be provided with a 175 horse power Scareb engine to be obtained from the United States. Supplies of engines will be available in time to meet airframe production.

Mr. Menzies said the Empire flying boats, with which No. 11 Squadron was at present equipped would, on the advice of the air authorities, be replaced with the least possible delay by the purchase of seven P.B.Y.5 flying boats from the United States.

Guba Service Type

THESE machines, which are the most suitable type available at short notice, are produced by the Consolidated Aircraft Corporation of U.S.A. Similar types are at present giving satisfactory service with the Coastal Command of the R.A.F.

They are the service version of the Guba machine, which recently visited Australia and later flew over the Indian Ocean.

Use For New Wackett Trainer

THE new Wackett advanced trainer would be used for some of the work for which the Wirraways were originally intended, the Minister for Air (Mr. Fairbairn) said last night.

The Wirraways, in turn, would be employed for the advanced training which would have been done in the Fairey Battles, delivery of which had been delayed.

The Wackett machine, said Mr. Fairbairn, was designed as an advanced elementary trainer.

Wing Commander Wackett had also designed a twin-engined bomber, which could be made from the same materials as the Wirraway. If it proved successful there would be, on the completion of Wirraway orders, a switch over to the bomber so that there would be no cessation of work at the aircraft factory.

"There is no doubt about the suitability of the Guba type flying boats," added Mr. Fairbairn. "They are magnificent long range machines."

.D. Inventor ..akes 'Pancake' Plane Motor

By TED McKENNA

The U. S. air corps travels with gasoline engines but soon it may be soaring to new heights with "pancakes."

In San Diego a man has made a hobby of designing and building aircraft engines that may do away with the present type of aircraft motors.

J. L. (Bill) Weaver, Consolidated Aircraft Corp. inspector, has designed and built a radically new pancake type engine, which derives its name from its general flat appearance.

Eight years ago Weaver started as a hobby the creation of an engine of his own design, with the intention of trying to develop one with fewer parts and more power. He believes he has reached that goal with the present creation, which he calls his "masterpiece." All the work was done in his garage workshop.

HAS NOVEL FEATURES

The motor, now completed, gives one the impression of a Flash Gordon creation. It has many novel features, and if tests show the same promising performance as indicated by a single cylinder model, one may expect something new in weight-horsepower ratio. It is a geared, air-cooled, two-cycle, four-cylindered, horizontal opposed type. Two cylinders fire simultaneously from opposite ends of the crank shaft. Since the crank shaft is only five inches long, a more rigid construction is possible, and the firing order of the cylinders makes for what Weaver calls ideal performance in dynamic balance.

The engine weighs 115 pounds, and is designed to develop 100 horsepower at 3600 revolutions a minute at 30,000 feet. This is accomplished by the super-charging action of a cylinder superimposed on the firing cylinder. The construction of the mechanism that regulates this charging action can not be divulged at this time.

OIL SYSTEM SIMPLIFIED

Some of the features Weaver has incorporated in his "masterpiece" are cylinders that never wear out of round, a streamlined oiling system that requires neither oil pumps nor lines and permits the lubricant to remain clean and pure for the life of the motor, thus minimizing frequent overhaul and adjustments.

This type of power unit, Weaver said, with its compact flat shape, facilitates mounting directly into the wing section. This permits the wing itself to act as the engine cowling. Mounting of large present-day radial engines on the loading edge of wings has always given designers much trouble with reference to perfect streamlining. This is due to the interference with the smooth flow of air over the wing, which not only causes loss of lift but sets up a drag that acts much the same as a brake. This, coupled with the head resistance set up by the present design of motors, gives the pancake type many advantages.

MADE FOR LIGHT CRAFT

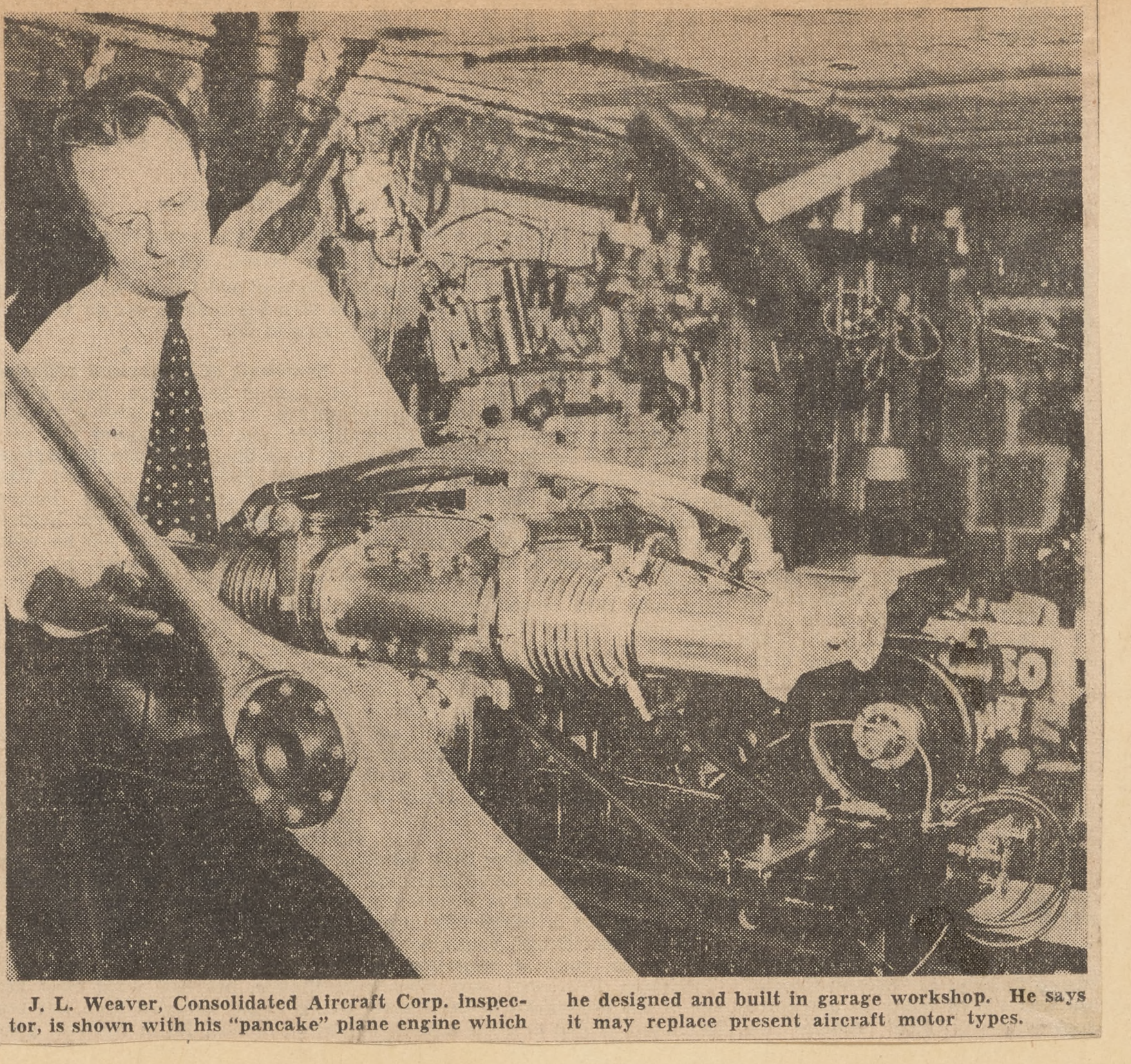
This four-cylinder model, Weaver said, would be ideal for light planes, but is so constructed that with the addition of more cylinders and an increase in the compression ratio it could be installed in large planes.

Weaver believes he has worked out the problem of dynamic balance, or vibration, which has always troubled engineers, to a smoothness that will give a plane the effect of continuous gliding.

By developing a new casting technique, Weaver has succeeded in binding two different metals to construct the cylinder. He claims that this technique and the elimination of many parts will make possible the manufacture of this engine for half the cost of the type now in use.

Union - 7/27/40

ENGINE MAY REVOLUTIONIZE AIRCRAFT CONSTRUCTION



J. L. Weaver, Consolidated Aircraft Corp. inspector, is shown with his "pancake" plane engine which he designed and built in garage workshop. He says it may replace present aircraft motor types.

UNION 8/23

U. S. Building New Air Giant

LOS ANGELES, Aug. 22 (A.P.)—Maj. Gen. Henry H. Arnold, chief of the army air corps, revealed today that a bomber nearing completion in the Douglas plant is not only the biggest plane ever built but that it will be able to fly from New York to Europe and back to Los Angeles non-stop.

The plane, which will be in the air this fall, said Lt. Col. C. E. Bradshaw, army air corps officer in charge of its construction, is powered with four 2000-horsepower engines, the largest ever built.

Maj. Gen. Arnold and William S. Knudsen, chairman of the national defense advisory committee, are expected to arrive here at 9:30 this morning, continuing their inspection tour of aircraft factories in the southland. It is expected the party, which includes several ranking army officials, will visit Consolidated, Ryan and Solar plants.

Its wing spread is 212 feet and it is 112 feet long. Its tail assembly is larger than the ordinary commercial plane.

The plane will have a gasoline capacity of 11,000 gallons. It will carry bigger cannon than any airplane in the world, but Bradshaw said the exact armament details are secret. The plane will require a crew of 10.

The huge fighter has been under secret construction for four years.

Earlier today, Arnold displayed the world's fastest military airplane—the Lockheed interceptor—to William S. Knudsen, chairman of the national defense advisory committee, and told for the first time its performance figures.

Its speed, said Arnold, is 460 miles an hour at two-thirds throttle, but more than 500 m.p.h. "wide open." "The world's fastest," he added.

Its range is 1100 miles; rate of climb, 4000 feet per minute; armament, one rapid-fire cannon shooting a one-pound shell, and four machine guns.

Union 8/21/40

5 Plane Firms Spur Defense

'Build First, Talk Of Profits Later'

WASHINGTON, Aug. 20 (A.P.)—Presidents of five airplane manufacturing companies said in a statement tonight that they were "ready to build airplanes first and talk about profits afterward," and that in the last 10 weeks they had made large expenditures to prepare for increased production for national defense.

The statement was issued by Donald W. Douglas of the Douglas Aircraft Co., Robert E. Gross of the Lockheed Aircraft Co., P. G. Johnson of the Boeing Airplane Co., and R. W. Millar of Vultee Aircraft, Inc.

CONSAIR INCLUDED

"Later the name R. H. Fleet, president of Consolidated Aircraft Corp., was added to the statement."

"In the present national defense emergency, aircraft manufacturers have offered and will continue to give the government of the United States every resource and facility at their command," they said.

"In spite of many obstacles and lack of proper legislation, we have gone ahead with preparations for increasing our production to meet the current challenge to America and build up aerial defense.

ADD 21,000 EMPLOYES

"In the last 10 weeks members of the industry have actually purchased on their own responsibility more than $100,000,000 worth of materials for future use and have spent or contracted obligations for more than $50,000,000 in additional plant facilities, machinery and equipment, and have added to their payrolls 21,000 new employes.

"Certainly this is far from standing still."

Union 8/24/40

AIRCRAFT PLANT POLICE PUT ON THEIR NEW UNIFORMS

Resplendent new uniforms were provided for Consolidated aircraft plant police for the first time yesterday. The force was distinguished in the new togs that will keep them separate from workers. Maintaining watch on workmen and visitors in the plant, the men operate in a "cooperative manner."

Union - 8/10/40

Marine Base, Navy Station Curb Watering to Insure Home Supply

While city officials struggled to maintain water pressures in the Mission Hills-Loma Portal-Pt. Loma districts, Fred Rhodes, city manager, announced yesterday that Marine base and Naval Training station executives have agreed to order immediate discontinuance of all daytime irrigation at the two large reservations.

Meantime, Fred Pyle, city hydraulic engineer, said everything possible is being done to maintain water service and pressure, but made it clear that if curtailment of water use at the two government establishments doesn't aid materially, it probably will be necessary to place some restriction on irrigation by private consumers.

The condition became acute Wednesday, said Rhodes, when homes in some parts of Pt. Loma were without water for five hours. Yesterday, he said, there was no service interruption, although pressures were down.

Pyle described the Naval Training station and the Marine base as the two largest consumers in the lowlands between Mission Hills and Pt. Loma, and expressed belief that limiting of watering at the bases to between 10 p.m. and 6 a.m. will be a big help.

Back of the difficulty, said Rhodes, is a pressing need for improvements of the water distribution system. He and Pyle emphasized that there is an abundance of water, but that growth of the city has bounded ahead of water-main extensions and enlargements.

As explained by Pyle, water is piped to a reservoir on Chatsworth blvd. from the University Heights reservoir. Pumps then lift the water from the Chatsworth reservoir to a tank on Pt. Loma, which serves the higher places on that promontory. When consumption is heavy in Mission Hills and the flats below, insufficient water reaches the Chatsworth reservoir to make it possible to fill the Pt. Loma tank, which goes dry.

FUTURE RELIEF SEEN

Some relief—but not this summer—will be provided when the Upas st. pipe line is extended from Fifth ave. to Pacific highway, said Pyle. The city council Tuesday will open bids for laying this pipe.

Six contractors, said Pyle, have taken out specifications which call for the trenching and placing of 6250 feet of 24-inch pipe within 130 days after the contract is signed. The job, excluding cost of the pipe, which the city has ordered, is expected to cost about $40,000, said the engineer.

Early this year, a 36-inch line was laid along Upas st. from Thirtieth st. to Fifth ave., and the new trunk is to be a continuation of the main, which cost $125,000.

BETTER THAN LAST YEAR

Some improvement in water pressures in the Mission Hills-Hillcrest district, as compared to last summer, has been provided since the first link of the Upas st. line was put in use, Pyle said. A year ago it was necessary to discontinue all daytime watering in Balboa park to help bolster pressures in Mission Hills.

On another front, chamber of commerce directors pointed to the accelerated national defense program as a contributing factor to inadequacy of the water distribution system in some parts of the city, and voiced accord with a proposal to invite government financial aid in remedying the "acute situation."

Maj. Edgar N. Gott, chamber director and vice president, Consolidated Aircraft Corp., said that "the tremendous increased acceleration of the national defense program in San Diego with its resultant increased demand for additional water merits consideration of the suggestion that federal assistance be sought." Gott emphasized that the increased defense activities embody vast improvements at the shore establishments here and in industries manufacturing vital defense materials such as aircraft.

PRESSURE DECREASED

"The Consolidated plant has seen an increase from 1100 employes a year ago to 8800 today with indications pointing to this number being increased to 15,000," Gott said.

After hearing a review of San Diego's water needs as explained by Fred Heilbron, city water commission chairman; Pyle, Ewart Goodwin, chamber water committee chairman, and Arthur Marston, business and civic leader, chamber directors were agreed that construction of San Vicente dam constitutes the next logical water development project.

Robert Lindsay, city treasurer, said that the city could vote a $3.000,000 bond issue and arrange for its retirement and payment of interest without necessitating a tax increase. He emphasized that money can be borrowed cheaply, one of the major factors favorable to approval of the issue. It has been estimated by financial leaders, Lindsay said, that a 3 percent interest rate for the bonds was a conservative estimate.

"The majority vote obtained for construction of the San Vicente dam at a previous election indicates that the people of San Diego agree this project is logically the next water development which should be undertaken," Marston said.

SAN VICENTE URGED

Heilbron emphasized that the "vision of San Diegans years ago in approving funds for construction of our present water facilities has led to the rapid growth and development enjoyed by our community. Without that vision," he said, "we would not have a city such as we have today."

"It is essential and absolutely necessary," he continued, "that we develop additional water facilities. The San Vicente project is the first logical step toward that development."

Frank Forward, chamber president, pledged aid of the chamber to steps taken toward winning a favorable decision on the proposed project.

DEFER PROFIT ISSUE TO SPEED DEFENSE

N.Y. Times

Five Aircraft Companies Give Pledge 'to Build Planes First,' Talk Rewards Later

✓

Special to THE NEW YORK TIMES.

WASHINGTON, Aug. 20—A joint statement, issued tonight by the heads of the Douglas, Lockheed, Consolidated, Boeing and Vultee aircraft companies, declared that the aircraft industry was "ready to build airplanes first and talk about profits afterward."

"In spite of many obstacles and lack of proper legislation, we have gone ahead with preparations for increasing our production to meet the current challenge to America and build up aerial defense so vital to our national security," they said. "In this we have had the help of the Army, the Navy, the National Defense Advisory Commission and many other branches of the government.

"In the last ten weeks members of the industry have actually purchased on their own responsibility more than $100,000,000 worth of materials for future use and have spent or contracted obligations for more than $50,000,000 in additional plant facilities, machinery and equipment, and have added to their payrolls 21,000 new employes.

"If additional time can be saved, some companies are prepared to build and finance emergency expansions themselves while in other cases where the amounts involved are extremely large we are prepared to recommend that the government build and own during the period of the present emergency sufficient additional plants immediately required for our national defense program, and that these manufacturers be given the task of operating these emergency plants under any fair and reasonable arrangement approved by the government and consistent with free American traditions and institutions and conducive to efficiency and economy."

The statement was signed by Donald W. Douglas, president of the Douglas Aircraft Company; R. H. Fleet, president of the Consolidated Aircraft Corporation; Robert E. Gross, president of the Lockheed Aircraft Company; P. G. Johnson, president of the Boeing Airplane Company, and Richard Millar, president of Vultee Aircraft, Inc.

Industry Draft Bill Halts Plant Expansion Of 'Vast' Scope by Consolidated Aircraft

N.Y. Times 9/3/40

By The Associated Press.

SAN DIEGO, Calif., Sept. 2—Major Reuben H. Fleet, president of the Consolidated Aircraft Corporation, said today that announcement of "vast future expansion was being withheld because of a Senate bill authorizing conscription of industry."

Speaking at the dedication of a $2,500,000 adidtion to the company's plant, he warned against nationalization of the aircraft industry, citing the failure in France.

He expressed confidence that the industry could supply the planes needed not only to protect America from attack but to carry the war to any attacking enemy.

The announcement which was being withheld because of the Senate measure, he stated, covered expansion "here or in Texas." He declined to discuss the type of expansion planned or the possible site in Texas.

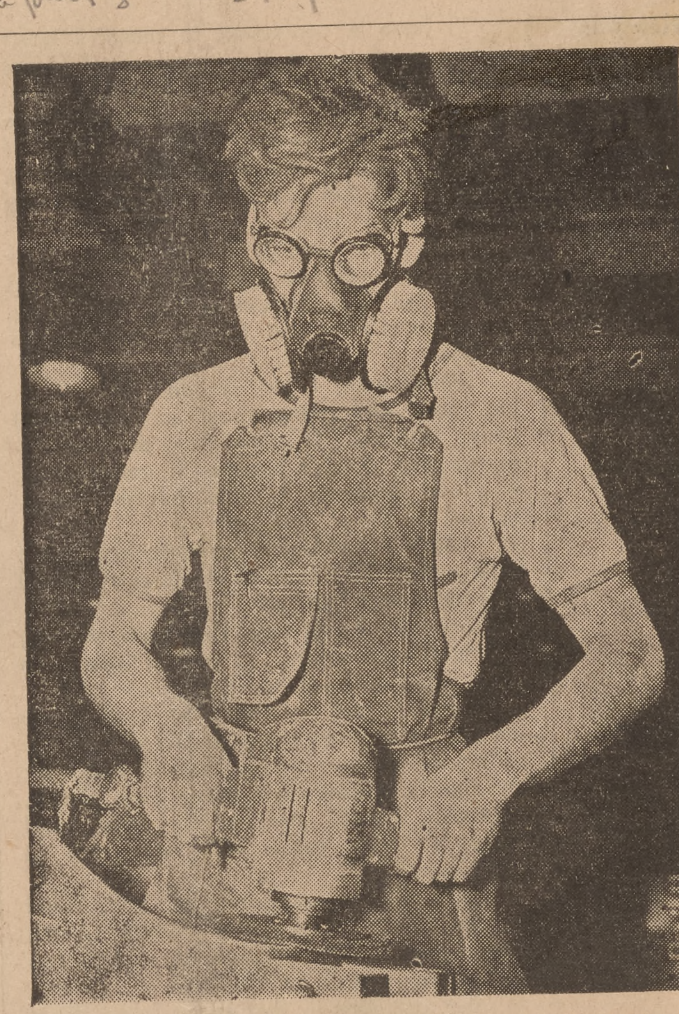
"We planned announcement today of further extensive plant expansions," he declared, "but the bill recently passed by the Senate authorizing peacetime commandeering of industrial plants which may fail in any respect to please a high official of our government makes us hesitate, much as we have been striving with all our might as a private enterprise to do our bit.

"Nationalization of her aircraft industry by France was so disastrous that that country's production fell down terribly, and even though she frantically resorted to foreign help at exorbitant expense, she collapsed as a nation and probably never will recover.

"We hope our government will not make this mistake, which would be the beginning of labor regimentation, the emasculation of labor unions, which our President has stated cannot strike against the government, and the end in this country of free enterprise."

Decision to withhold announcement of the future expansion will not affect that part of an enlargement program now under way and for which contracts have been awarded, Major Fleet added.

La Jolla Light - 8/16/40



TO GUARD WORKERS' HEALTH IN PLANE PLANTS: Ernest Norden wears a new type of dust mask to keep fine metal particles from entering his lungs while grinding metal drop-hammer dies, used for cutting plane parts, at the Consolidated Aircraft Corporation factory in San Diego.

Tribune-Sun 8/16/40

BIG CONTRACT TO CONSAIR

$14,861,342 For 56 U. S. Giant Bombers

Consolidated Aircraft Corp., of San Diego, has been awarded a contract for $14,861,342 for the purchase of 56 four-engine bombing planes, by the war department, it was announced today from Washington in dispatches of The Associated Press.

One of Two Orders

This is one of two contracts awarded, the other going to the Fairchild Engine & Airplane Corp., of Hagerstown, Md., for $1,038,000 for 100 training planes.

According to officials of the local concern, the order signed by war department officials today is in exercise of a contract already existing.

Work on the new assignment has not yet started, it was said, although requests for bids on materials to be used, have been issued.

The war department did not announce the date on which delivery of either group of planes is to be expected.

The orders were the third of a group announced since congress voted $400,000,000 for approximately 4200 additional army planes last June, the dispatches stated.

Industry Draft Bill Halts Plant Expansion Of 'Vast' Scope by Consolidated Aircraft

N.Y. Times

By The Associated Press.

SAN DIEGO, Calif., Sept. 2—Major Reuben H. Fleet, president of the Consolidated Aircraft Corporation, said today that announcement of "vast future expansion was being withheld because of a Senate bill authorizing conscription of industry."

Speaking at the dedication of a $2,500,000 adidtion to the company's plant, he warned against nationalization of the aircraft industry, citing the failure in France.

He expressed confidence that the industry could supply the planes needed not only to protect America from attack but to carry the war to any attacking enemy.

The announcement which was being withheld because of the Senate measure, he stated, covered expansion "here or in Texas." He declined to discuss the type of expansion planned or the possible site in Texas.

"We planned announcement today of further extensive plant expansions," he declared, "but the bill recently passed by the Senate authorizing peacetime commandeering of industrial plants which may fail in any respect to please a high official of our government makes us hesitate, much as we have been striving with all our might as a private enterprise to do our bit.

"Nationalization of her aircraft industry by France was so disastrous that that country's production fell down terribly, and even though she frantically resorted to foreign help at exorbitant expense, she collapsed as a nation and probably never will recover.

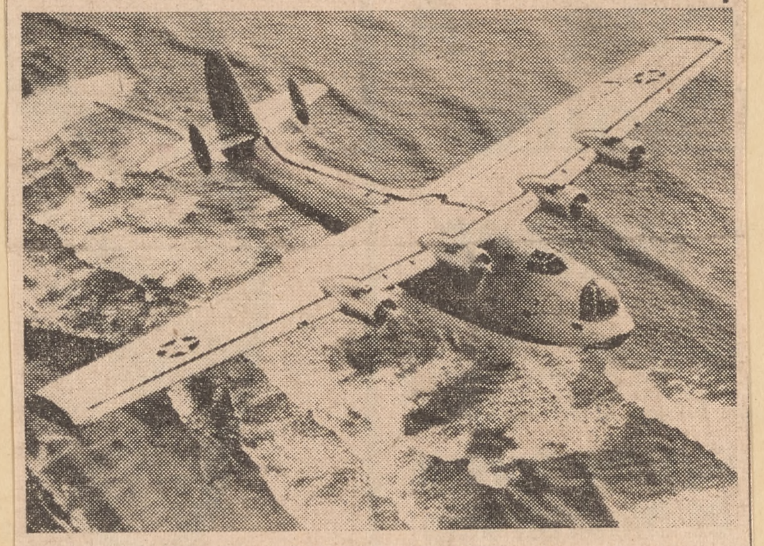
"We hope our government will not make this mistake, which would be the beginning of labor regimentation, the emasculation of labor unions, which our President has stated cannot strike against the government, and the end in this country of free enterprise."

Decision to withhold announcement of the future expansion will not affect that part of an enlargement program now under way and for which contracts have been awarded, Major Fleet added.

JULY 19, 1940 LONDON, ENGLAND

OVELY

Flying Boat From U.S.



FOUR-ENGINED FLYING BOATS from America, specially designed for long-range patrol work, are being used by the R.A.F.

CONSOLIDATED AIRCRAFT CORPORATION
SAN DIEGO, CALIFORNIA

SEP 3 1940

MEMO

Date 9/3/40

E. N. GOTT

To Major Fleet

L.A. "Times" 9/3/40

SEPTEM

Plant Draft Proposal Holds Up Expansion Plan

SEES MISTAKE—Maj. Reuben Fleet, head of Consolidated Aircraft at San Diego, scored wealth conscription measure yesterday at dedication of new addition to plant.

SAN DIEGO, Sept. 2.—Maj. Reuben H. Fleet, president of Consolidated Aircraft Corp., today denounced the Senate's "wealth conscription" legislation authorizing "peacetime commandeering of industrial plants" if the latter's operations fail to please any high government officials.

Announcement of "vast future expansion is being withheld because of the Senate measure," Maj. Fleet said. He said the announcement proposed to cover expansion "here or in Texas" but decined to amplify his statement as to the type of expansion planned or the possible site in Texas.

FRANCE'S MISTAKE

Speaking to thousands who attended dedication of Consolidated's new $2,500,000 plant expansion, he expressed hope that the United States government does not make the mistake of France, where "nationalization of the aircraft industry was so disastrous."

Maj. Fleet saw in the Senate bill "the beginning of labor regimentation, the emasculation of labor unions which our President has stated cannot strike against the government and the end in this country of free men and free enterprise."

FURTHER ADDITION

He disclosed Consolidated's new backlog as $132,000,000 and declared that only the industrial draft legislation made him hesitate to announce officially a contemplated $2,500,000 further addition to a factory which already is the largest within one fenced-in-area of the country.

The crowd heard Rear-Admiral Charles A. Blakely, 11th Naval District commandant, formally dedicate the plant addition. Other addresses were given by Brig. Gen. Frank D. Lackland, wing commander, March Field; Maj. Gen. W. P. Upshur, commander Fleet Marine Force, and Col. Peter H. Ottosen, commander, Ft. Rosecrans.

L.A. Examiner 9/4/40

CARL S. KELTY

Staff Financial Writer

Aircraft Leaders Doing Part in National Defense

CARL S. KELTY

Reaffirming declarations of the positive ability and strong desire on the part of the aircraft manufacturing industry to support and help speed the national defense program, Robert E. Gross, president of Lockheed Aircraft Corporation, yesterday emphasized unequivocally that the industry can undertake and accomplish the task. He remarked that this is the only organized activity that can accomplish the task and do it within a reasonable time. The statement of Mr. Gross was made in the course of comment on the result of Lockheed's operations during the first half of 1940, reported in another column. Since the beginning of the defense program Mr. Gross, in conjunction with other leaders of the aviation industry, has been outspoken in stating that the cause for national defense can best be furthered by "getting the facilities first and talking about the orders and profits later." He declared yesterday the recent acts of the National Defense Council was very constructive for the aircraft companies in devising and proposing programs to insure rapid delivery of existing and prospective orders for the U. S. Government.

* * *

How the Lockheed Corporation met the situation and went ahead to forestall delay when the actual signing of contracts for these orders was held up somewhat, was explained by Mr. Gross. The delay was occasioned, he observed, by uncertainty as to how the emergency plants involved were to be financed.

"Notwithstanding this, and with the conviction that this uncertainty would be presently clarified," Mr. Gross said," the Lockeed company went ahead with the vast expansion program necessary.

"We have purchased materials since early June totaling $12,000,000. Plant and buildings ordered and under construction for Lockheed and its subsidiary, Vega Airplane Company, exceed $6,000,000. Several thousand new employees have been added to the payroll bringing the total to over 12,000."

* * *

Mr. Gross pointed out the logic of this program has been borne out by a sequence of developments during the last 72 hours, since at the very moment of the issuance of its half-year report Lockheed was closing with the War Department one of the large orders which are so vital to defense.

The order, totaling approximately $30,000,000, was announced by Secretary Stimson in Washington and was for the latest Lockheed twin-engined interceptor fighters—ships of the type on which William Knudsen and Major General Henry Arnold put their stamp of approval when visiting the plant last week. The plane was characterized as the highest performer of its type in existence.

With its negotiations with the Government finished, its order signed and its personnel and plant already expanded, "Lockheed," said Mr. Gross, "will bend every ounce of its energy and strength to getting the job done."

* * *

That Lockheed is looking far ahead was evidenced by the statement made by Mr. Gross in his report to the stockholders that the company is conducting through the good offices of the California Institute of Technology novel courses designed to adapt large numbers of graduate engineers to the aircraft industry. Furthermore, the management is steadfastly adhering to its policy of keeping in the forefront of the commercial and nonmilitary aviation fields, in which interest continues to increase. In order to fortify its technical progress, Lockheed is building one of the largest and most modern private wind tunnels in this country.

* * *

Dedicating a $2,000,000 addition to the Consolidated Aircraft Corporation plant in San Diego which has just been completed and placed in operation, Major R. H. Fleet, president of the corporation, said yesterday he had hoped simultaneously to announce an additional expansion program to fit in with rearmament needs.

"The proposed Federal legislation permitting the Government to commandeer industrial plants makes us hesitate," Major Fleet said.

He expressed the view that the nationalization of the aircraft industry by France played a most important contributing role in the collapse of that country.

Major Fleet also announced acquisition by Consolidated Aircraft by purchase of the Hall Aluminum Corporation of Bristol, Conn., which will construct an aluminum plant at Dallas, Tex.

The Sun News-Pictorial

FULL REQUIREMENT

VICTORIA - AUSTRALIA

BIG ORDER MEETS AIR SCHEME AND HOME DEFENCE NEEDS

6/7/40

EXPLAINING the £2,032,000 aircraft order decided by War Cabinet, the Prime Minister (Mr. Menzies) said last night that the De Havilland Tiger Moth was the standard elementary training aircraft in use by the R.A.A.F. The additional 300 now being ordered would provide the full requirements of the Empire Air Scheme, as well as of Australia's home defence units.

THE design of the Wackett trainer is of composite wood and tubular steel construction, and as these materials can be readily obtained from local sources, production can be started without delay.

The machine will be provided with a 175 horse power Scareb engine to be obtained from the United States. Supplies of engines will be available in time to meet airframe production.

Mr. Menzies said the Empire flying boats, with which No. 11 Squadron was at present equipped would, on the advice of the air authorities, be replaced with the least possible delay by the purchase of seven P.B.Y.5 flying boats from the United States.

Guba Service Type

THESE machines, which are the most suitable type available at short notice, are produced by the Consolidated Aircraft Corporation of U.S.A. Similar types are at present giving satisfactory service with the Coastal Command of the R.A.F.

They are the service version of the Guba machine, which recently visited Australia and later flew over the Indian Ocean.

Use For New Wackett Trainer

THE new Wackett advanced trainer would be used for some of the work for which the Wirraways were originally intended, the Minister for Air (Mr. Fairbairn) said last night.

The Wirraways, in turn, would be employed for the advanced training which would have been done in the Fairey Battles, delivery of which had been delayed.

The Wackett machine, said Mr. Fairbairn, was designed as an advanced elementary trainer.

Wing Commander Wackett had also designed a twin-engined bomber, which could be made from the same materials as the Wirraway. If it proved successful there would be, on the completion of Wirraway orders, a switch over to the bomber so that there would be no cessation of work at the aircraft factory.

"There is no doubt about the suitability of the Guba type flying boats," added Mr. Fairbairn. "They are magnificent long range machines."

UNION
9/17

U. S. NAVAL CHIEF PUTS STRESS ON AIR POWER

COMDR. J. T. MATHEWS SECY. FRANK KNOX REAR ADM. C. A. BLAKELY
. . . trading destroyers for bases was "a good deal."

* * *

U. S. TO MAKE AMERICAN LAKE OF CARIBBEAN, ASSERTS KNOX

Roosevelt Destroyer Deal, S. D. Planes Praised by Secretary on Arrival

By JERRY MacMULLEN

"The best defense against aircraft is other aircraft, although anti-aircraft fire is important. When we get St. Lucia, Antigua and the rest, it will have made an American lake of the Caribbean—and God help any enemy warcraft that get in, for they'll never get out." Thus Secretary Frank Knox last evening enlarged upon his statement—"it was a good deal"—in referring to the trade of 50 over-age destroyers to England, in return for bases along the Atlantic and the Spanish Main; it was a deal, he says, which has left this country far stronger than before.

INTERVIEWED BY PRESS

Sandwiched in between a busy afternoon of inspections and a dinner given in his honor by the city and the chamber of commerce, the secretary, who arrived yesterday forenoon by plane from Hawaii, found time to grant an interview to press representatives, in which he touched on national defense in many phases, as well as upon the time of the return of the U. S. fleet to the mainland from the Hawaiian area.

"Now that the appropriations for the work have been made," he said, "I am putting every ounce of energy into speeding things up. My job is to drive—drive—drive. We have none too much time; we started late.

AHEAD OF SCHEDULE

"My six days with the fleet in Hawaii revealed to me that the navy is in excellent condition. There is no doubt but what we have the best fleet in the world, in striking power, in personnel and in ability of command. The air arm of the fleet is very, very capable; of course, they have not yet received their new planes, but these are coming. When they get them, the present ones will be used for instruction at Pensacola,

U. S. TO MAKE AMERICAN LAKE OF CARIBBEAN, ASSERTS KNOX

(Continued From Page 1)

San Diego and the new training bases.

"Every phase of the naval expansion work is ahead of schedule. This is true all over the United States; they're working three shifts of men on a 48-hour week, generally with around 40 hours' overtime where it is required in some "bottle-neck.'

"There is no 'bottle-neck' in the aircraft engine production. Just before I left, we let the contract for 17,000 aircraft engines. Of course, they won't be finished tomorrow; it's a two-year program."

Apparently attaching little importance to the "draft industry" provision of the Burke-Wadsworth military training bill, the secretary pointed out the fact that the government had the same power as far back as 1917.

"It's a valuable power to have," he said, "but I hope I never shall have to use it—and I probably never will. Thus far we have had nothing but the finest cooperation from industry."

SHIPS RETURNING

Secretary Knox revealed that the U. S. fleet, now in Hawaiian waters, will return to the California ports in three groups of around 30 ships each, and each group will remain here two weeks for shore-leave and for overhaul. The first group—led by Adm. James O. Richardson, commander-in-chief of the U. S. fleet—was to leave Hawaii yesterday, he said.

The navy's chief revealed that he is not presently interested in either the Nicaraguan canal proposal or the plan to cut a second ship channel through the Coronado strand.

"So far as a second canal is concerned," he said, "I am much more interested in a second set of locks for the Panama canal, and this project already is under way. The new locks will be half a mile or so from the present ones. It will take much less time, and cost far less, than to build a second complete canal.

"I know nothing of the proposal to cut through the Coronado strand, and there are other things in which we are far more interested. That can wait."

AIR ONLY PANAMA PERIL

The only possible vulnerability of the Panama canal is by an air attack, the secretary said. He pictured as hopeless the plight of any naval force so rash as to come within range of the canal defense guns, and pointed out that a land attack, through the impenetrable jungles along the Canal Zone, would be out of the question.

Taking issue with statements attributed to him elsewhere that he had reported this country to be negotiating for bases at Cocos and in the Galapagos archipelago, he made it clear that the thing is merely in the stage of discussion, and that this discussion is only of an intra-departmental nature. He added that the United States has had nothing but "the most enthusiasic cooperation" from the countries controlling these islands.

HOPE FOR ENGLAND

Turning to the European situation, the secretary said that he thinks the danger of a successful invasion of England grows less with each day—that England is holding her own, if not actually gaining.

"One thing to remember," he said, "is that they are fighting over England. If an English plane is crippled and the pilot bails out, he lands in England, and the first thing you know he's up in another plane. If a German pilot bails out he lands in England—and goes to a concentration camp. An offensive force always suffers more than a defensive, and German losses have been much greater than British. I think England has better than a 50-50 chance. The British are good fliers—and so

but we just climbed up until we were over it, and sailed on, above the clouds. It was the same way coming back. We were up above the clouds, in the light of a beautiful full moon, with nothing in sight below us but moon-lighted banks of clouds."

Today the secretary will visit the Consolidated plant, where the big planes are made. He also will inspect the marine corps base, where a review—open to the public—will be made at 10:20 a.m. At 11 a.m. he will visit the training station, and soon after noon will take off in a land plane for San Pedro. Tonight he will be in Los Angeles, and tomorrow morning will take off for the flight back to Washington, D.C. Yesterday, he visited the Naval Air station, the hospital, marine combat range, aircraft shops, new site for the carrier-based plane hangars, and the destroyer base.

MET BY COMMANDANT

The secretary and his party were met at the Naval Air station by Rear Adm. Charles A. Blakely, commandant of the 11th naval district, and Comdr. James T. Mathews (CES), district public works officer; they were accompanied by Frank Forward, president of the chamber of commerce, T. C. Macaulay, executive secretary, and Howard Worth, chairman of the chamber's army and navy committee.

Accompanying the secretary on his trip are Capt. M. L. Deyo, his aid; Col. W. F. Donovan and John F. O'Keefe, his personal secretary. Rear Adm. A. B. Cook, commanding the scouting force aircraft, flew here with him.

Col. Donovan, a former member of the famous "Fighting 69th" regiment in France, was welcomed to San Diego by two other former members of the organization — Arthur George, 1515 Second ave., and John Hilton, of the board of equalization. A third San Diegan from the same "outfit" is James O'Connor, music teacher.

At the invitation of George, former commander of Joyce Kilmer chapter of the Rainbow division association, Donovan last night attended the chapter's local meeting, in the American Legion building. The "Fighting 69th" was a unit of that division.

SERVED WITH T. R.

At the age of 11, in Grand Rapids, Knox began a newspaper career as a paper boy at $1.25 a week. He left school at 15 to become a shipping clerk's helper, and later got into "the big money" — $15 a week —as a wholesale book and stationery salesman. Losing his job in the 1893 panic, he went back to school and later to college.

During the Spanish-American war he effected a transfer from his regiment to Lt. Col. Theodore Roosevelt's famed "Rough Riders," and was near death in the assault on San Juan hill when a Spanish bullet passed through his hat. Later he was to be one of Roosevelt's supporters in the "Bull Moose" campaign of 1912.

Knox' first newspaper of his own —he had been working toward a newspaper career even while serving in '98—was a weekly printed in Sault Ste. Marie. Later he transferred his activities to Manchester, N. H. His paper was a leader in blasting at slackers and draft evaders—and when he was turned down by the officers' reserve corps because of filled quotas he enlisted in the First New Hampshire infantry as a private. In France he became a major.

OPERATED DAILY NEWS

He took over operation of the Chicago Daily News in 1931, and in 1936 was Republican candidate for the vice presidency. Upon the resignation of Charles Edison as secretary of the navy a few months ago he was named to take his place.

Keenly interested in the publishing business, he "turned the tables" on his interviewers by quizzing them on local business conditions. Before the interview, the correspondents had "pooled" their questions, which were presented to him in typewritten form to save time. He went down the list, answering the queries and expanding upon those which opened additional trains of thought. A spirit of friendly cooperation with his interviewers was obvious throughout the conference.

Union 7/3/40

MILLIONS VOTED FOR PLANES, BUT BUILDING STILL HELD UP

By W. W. CHAPLIN

NEW YORK, Aug. 2 (I.N.S.)—Congress has made money available and the aviation industry is ready to begin production to meet the defense goal of 25,000 army and navy planes by July 1, 1942, but to date work has not been begun on one single fighting plane of this new emergency air fleet program, because of a major impasse, a survey of official sources and aircraft factories disclosed tonight.

The national defense commission has "cleared" $84,000,000 worth of contracts for fighting planes—that is, approved terms and prices and specifications—but they have all had to be sent back to the war department for re-writing to provide manufacturers with adequate guarantees against financial loss.

ONLY 1 CONTRACT DELIVERED

So far the only contract in the present air program which has been delivered to a manufacturer, permitting immediate commencement of production, is one for $900,000 worth of training planes to be built by the Cessna Aircraft Corp., of Wichita, Kan.

The bottleneck apparently chiefly responsible for holding up expansion of the fighting air arms is amortization and profit allowance.

Manufacturers insist that as originally drawn and cleared by the defense commission, the contracts for mass plane production might force the aviation companies into "industrial suicide," and subject them to post-war bankruptcy.

Since the 25,000 plane program was decided on, congress has appropriated or authorized expenditure of $688,459,297 for plane production and pending legislation permits expenditure of another $1,522,000,000 for that purpose. The $688,297 has been ready to use for more than a month but still has not been forced through the bottleneck and hence there is virtually no actual construction under way on the fighting planes to be built.

FDR DENIES RED TAPE

Existing laws and regulations do not permit a type of contract which the maufacturers feel gives them a fair chance of coming out even.

President Roosevelt said at his press conference today that governmental red tape was not responsible for slowing up the program, but manufacturers reply that it has been halted and that the cure lies with the government and congress.

As the situation now stands the treasury allows 10 years for amortization of plant expansion and the legal profit to the manufacturer in excess of cost is 12 percent.

The plane makers object that if changing conditions abroad should reduce defense needs sharply in the near future, they would be left with great plants which were not needed for normal peacetime production and would have to be written off as almost total loss. They believe that a five year amortization period is the longest they can assume in justice to their stockholders.

The 12 percent profit limit now legally set is expected to be lifted and that feature of the program handled in the general excess profits bill now before congress.

But before committing themselves to contracts the plane men want to know what margin they are to be allowed and whether such items as expense of research and engineering, added taxes, interest on capital borrowed for expansion, and "human error" mistakes in manufacture can be included in the total cost figure to which the profit is added. If this is not allowed, they say, the "profit" might well turn out to be a loss.

Every manufacturer questioned in the present survey expressed full confidence of the industry's ability to produce the proposed 25,000 planes in the allotted time, but only asked that full assurance be given that the industry would be protected against destroying itself in its effort to build up the national defense.

WOULD KEEP PLANTS POSTED

Plane men said that in an effort to overcome hesitancy of manufacturers to enter contracts without full guarantees, the government had offered them "letters of intent," specifying the planned orders to be given each factory as the program develops.

These letters, however, would not be binding if congress should withhold future appropriations due to a slackening of the emergency.

There has been some friction, it was indicated, between the executive branch and administrative branches in charge of the air program and congress. One war department official suggested that if continued delay was caused by lack of satisfactory legislation, a "short cut" might be used.

This would consist of rewriting contracts as now being drawn to raise the unit price so that amortization could be speeded, but this would mean less planes for the money spent and boost the cost of the whole program.

WORKING WITH SINGLE AIM

In all sources of information covered in this survey it was stressed that all parties involved — the defense commission, congress and the manufacturers — were working toward the same objective—adequate national defense. Differences of opinion, however, as to the means to that end were said to be holding up the program to an extent which was threatening its successful completion by the proposed date.

Only this week the defense commission called officials of seven leading plane companies to Washington to thresh the matter out, and it was hoped that these conferences might result in early breaking of the bottleneck. The companies represented were Douglas, Boeing, Consolidated, Curtiss - Wright, Martin, North American and Lockheed.

Most of these companies already have, even without the signing of contracts, begun the purchase of large supplies of material on their own responsibility in order to be ready for immediate production with existing plant equipment as soon as contracts are finally signed.

Union – Wed – 9/18/40

Knox Winds Up Busy 26 Hours in S. D.; Meets Boat Builders, Reviews Marines

Naval Secretary Visits Consair Plant; Hops North

A busy 26 hours in San Diego was concluded yesterday by Secretary of the Navy Frank Knox, his visit winding up with a conference with southern California boat builders, a review at the marine corps base, a trip through the Consolidated Aircraft Corp. plant, and luncheon with the recruits at the Naval Training station.

The conference with the boat builders was held in the office of Rear Adm. Charles A. Blakely, commandant of the 11th Naval district, and fulfilled an appointment made by overseas telephone to Honolulu by Capt. Miller Freeman, U.S.N.R., Seattle publisher and senior naval reserve officer on the Pacific coast. Freeman, who publishes Pacific Motor Boat, Pacific Fisherman and other trade journals, was acting in behalf of the shipyards of the west coast, eager to cooperate with the navy in the building of small craft for naval use.

"We want to cooperate wholeheartedly with the navy in the defense program," said Freeman. "An increasing number of small vessels will be needed by the navy—small torpedo boats, dispatch tenders, and work boats for naval use. Hundreds—perhaps thousands—of these craft will be needed. We have the builders, the facilities, the technique to provide them. Many types in use throughout the country, and even by the forces of the nations now at war, originated on the west coast."

URGES NEW BUREAU

Freeman urged the creation of a new bureau in the navy department, solely for the handling of procurement and operation of small craft. Active in naval reserve work for many years, he organized the first reservists in the 13th naval district, in 1910. During the last war he was a lieutenant commander and worked first with small boat units in the navy, and then in training personnel.

Capt. Oakley J. Hall, head of the Star & Crescent industries here, was the spokesman for the boatbuilders yesterday. Others attending the meeting were George C. Campbell, Campbell Machine Co.; Joseph Fellows jr., Fellows & Stewart, San Pedro; John Rados, Harbor Boat Works, San Pedro, and Walton Hubbard jr., South coast Co., Newoprt harbor.

Secy. Knox expressed his appreciation of the desire of the boatbuilders to cooperate, and assured them that west coast yards would be given every consideration.

Following the meeting in the admiral's office, the secretary left for a brief trip through the Consolidated plant—where the big four-motored plane in which he flew to and from Honolulu was built.

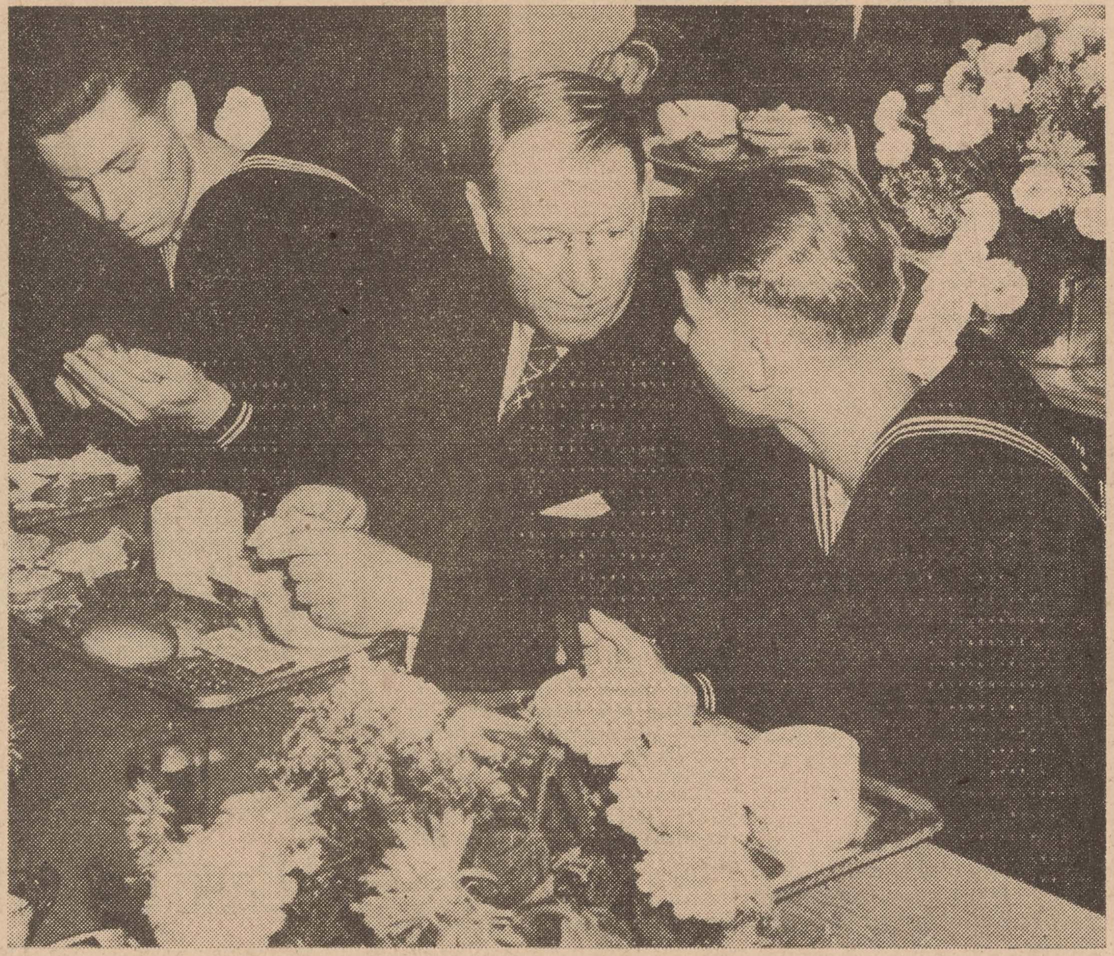
VISITS STATIONS

Proceeding to the marine corps base, Secy. Knox reviewed thousands of marching sea-soldiers and their equipment. The colorful review was open to the public and was attended by many.

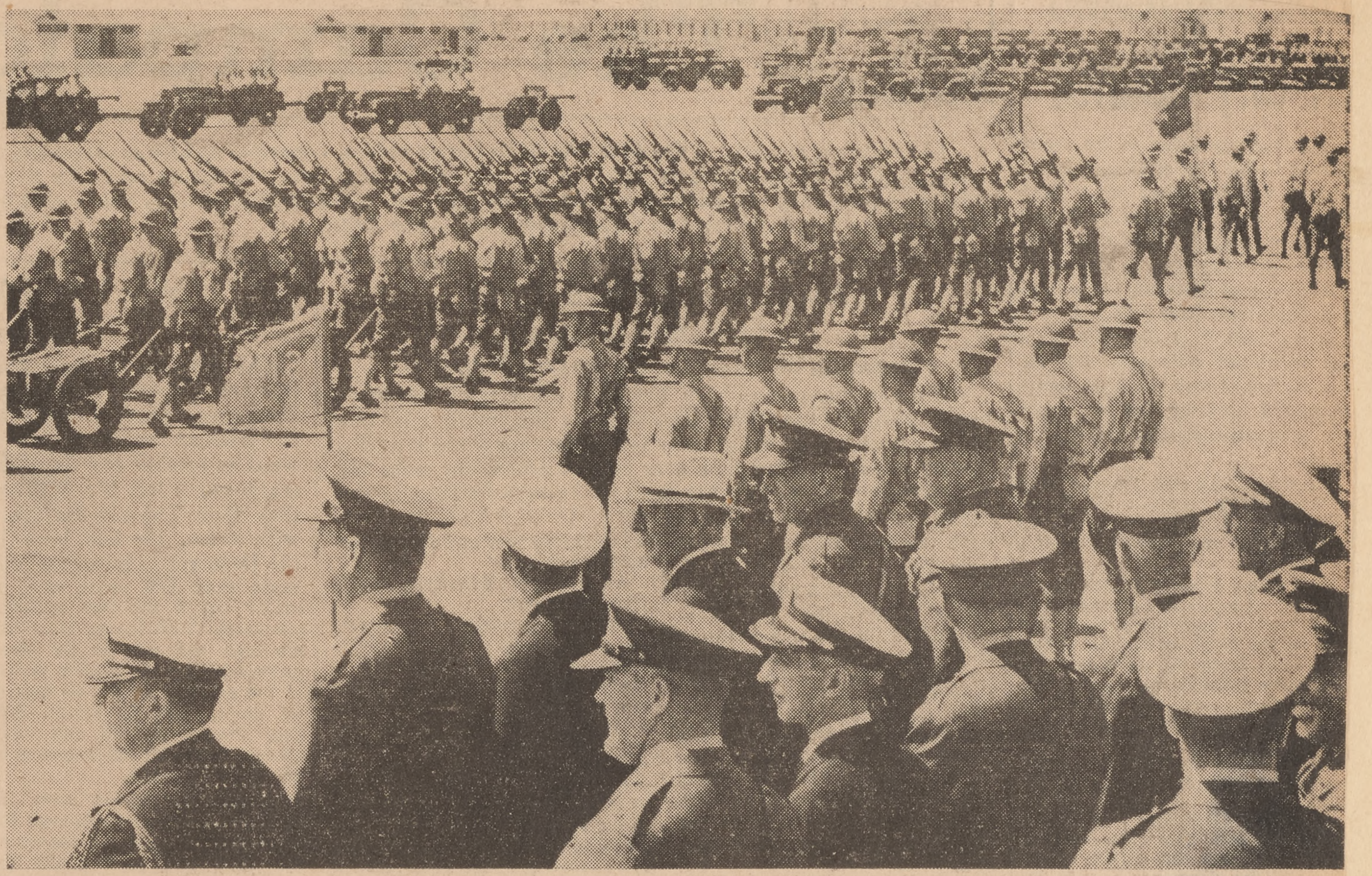
From the marine corps base, the secretary and his party went to the Naval Training station, where after a brief inspection he sat down in the mess-hall with 500 recruits, receiving their initial training as man-o-warsmen. An Illinois recruit sat at each side of the secretary during the meal—R. M. Mathias, 19, Bethany, Ill., and Jackson Carlson, 21, Westmont, Ill.

"One of them told me that he has gained 19 pounds, the other 23 pounds, since joining the navy," Knox said after the meal. "Both said that they joined the navy to get a career and to learn a trade. I think it's wonderful!"

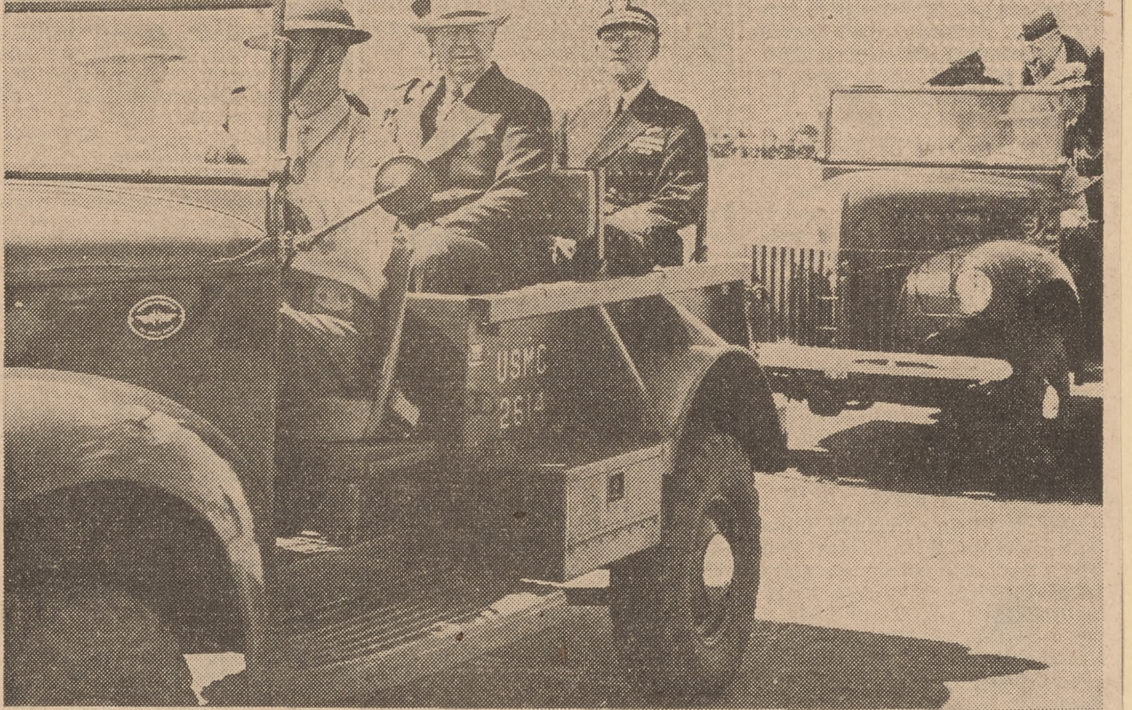
From the training station the secretary and his party went to Lindbergh field, where they took off in a low-winged landplane for San Pedro. Instead of flying directly up the coast, however, they swung inland to give the secretary an air view of the marines' plant at Cam Elliott, on Camp Kearny mesa. Th the plane headed north.



At the Naval Training station yesterday, Col. Knox dropped in at the mess hall to have lunch with 500 recruits. Sitting next to the navy secretary and exchanging views with him are (left) R. M. Mathias, 19, and Jackson Carlson, 21, both of Illinois. Knox said he enjoyed the conversation.

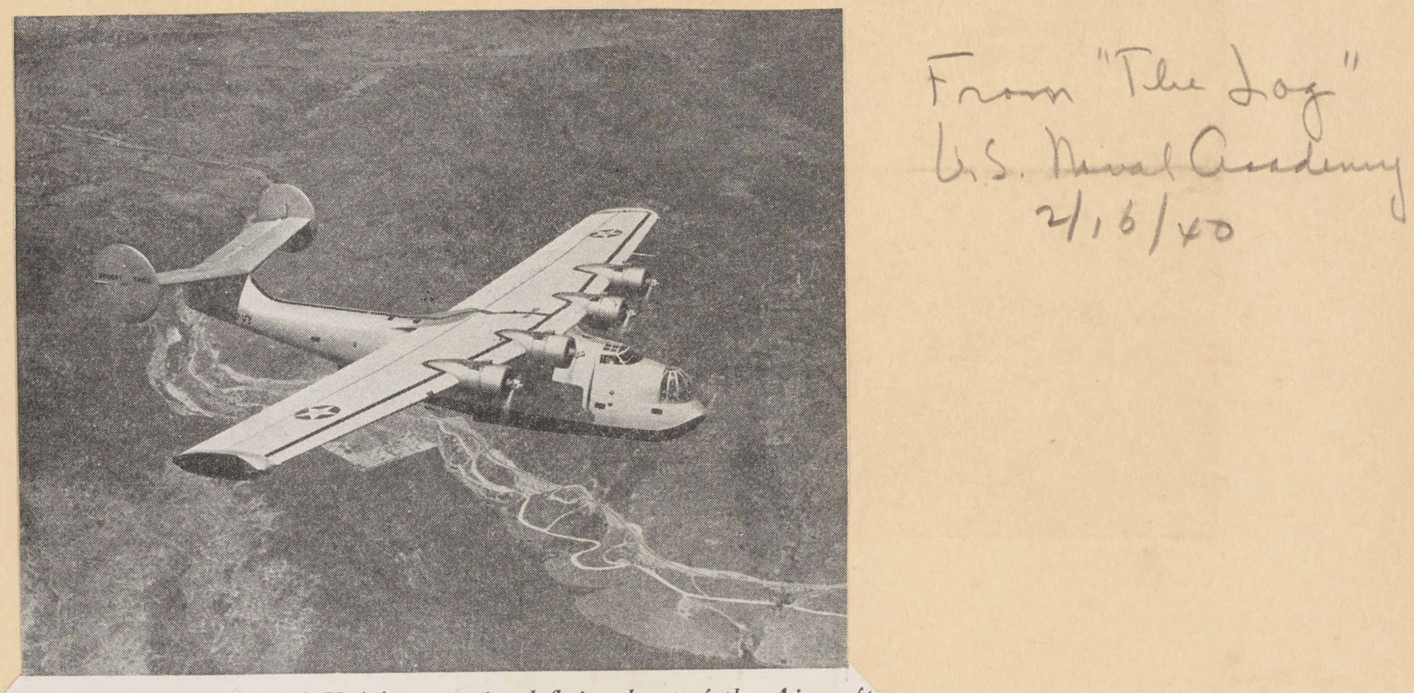


With naval and marine corps officers, Col. Knox (lower center) reviewed thousands of marching sea-soldiers at the marine base. Hundreds of civilians view the parade. From the marine base Knox and his party went to the Naval Training station.

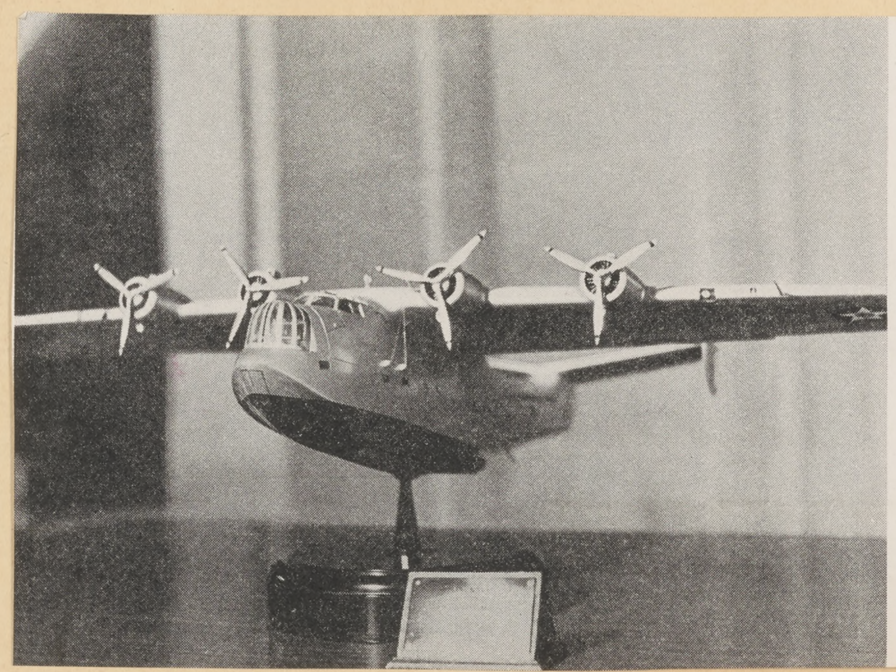


One of Col. Knox's "taxis" in his inspection of San Diego's part of national preparedness was this marine corps "auto." His inspection took in most of San Diego's waterfront, as well as aircraft plants.

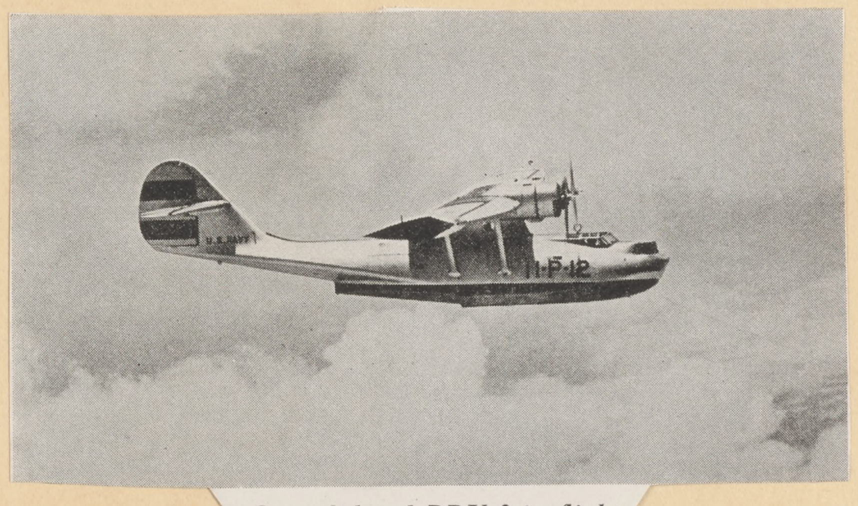
From "The Log"
U.S. Naval Academy
2/16/40



The Consolidated XPB2 Y-1 four engined flying boat of the Aircraft Scouting Force.



XPB2Y Newest Navy 4 engine flying boat six of which are now on order for the Navy Department. It houses a complete bridge, galley, and chart room; and will carry a crew of ten or twelve—including a Captain, Navigator, and three Pilots—with all supplies required for about a week's cruise. Two models similar to these are made up for each new type of plane that the Navy Department considers; one of these will be made available to the Naval Academy immediately upon completion in every case.



Consolidated PBY-2 in flight

UNION
9/17

U. S. NAVAL CHIEF PUTS STRESS ON AIR POWER

COMDR. J. T. MATHEWS SECY. FRANK KNOX REAR ADM. C. A. BLAKELY
. . . trading destroyers for bases was "a good deal."

* * *

U. S. TO MAKE AMERICAN LAKE OF CARIBBEAN, ASSERTS KNOX

Roosevelt Destroyer Deal, S. D. Planes Praised by Secretary on Arrival

By JERRY MacMULLEN

"The best defense against aircraft is other aircraft, although anti-aircraft fire is important. When we get St. Lucia, Antigua and the rest, it will have made an American lake of the Caribbean—and God help any enemy warcraft that get in, for they'll never get out." Thus Secretary Frank Knox last evening enlarged upon his statement—"it was a good deal"—in referring to the trade of 50 over-age destroyers to England, in return for bases along the Atlantic and the Spanish Main; it was a deal, he says, which has left this country far stronger than before.

INTERVIEWED BY PRESS

Sandwiched in between a busy afternoon of inspections and a dinner given in his honor by the city and the chamber of commerce, the secretary, who arrived yesterday forenoon by plane from Hawaii, found time to grant an interview to press representatives, in which he touched on national defense in many phases, as well as upon the time of the return of the U. S. fleet to the mainland from the Hawaiian area.

"Now that the appropriations for the work have been made," he said, "I am putting every ounce of energy into speeding things up. My job is to drive—drive—drive. We have none too much time; we started late.

AHEAD OF SCHEDULE

"My six days with the fleet in Hawaii revealed to me that the navy is in excellent condition. There is no doubt but what we have the best fleet in the world, in striking power, in personnel and in ability of command. The air arm of the fleet is very, very capable; of course, they have not yet received their new planes, but these are coming. When they get them, the present ones will be used for instruction at Pensacola,

---

U. S. TO MAKE AMERICAN LAKE OF CARIBBEAN, ASSERTS KNOX

(Continued From Page 1)

San Diego and the new training bases.

"Every phase of the naval expansion work is ahead of schedule. This is true all over the United States; they're working three shifts of men on a 48-hour week, generally with around 40 hours' overtime where it is required in some "bottle-neck.'

"There is no 'bottle-neck' in the aircraft engine production. Just before I left, we let the contract for 17,000 aircraft engines. Of course, they won't be finished tomorrow; it's a two-year program."

Apparently attaching little importance to the "draft industry" provision of the Burke-Wadsworth military training bill, the secretary pointed out the fact that the government had the same power as far back as 1917.

"It's a valuable power to have," he said, "but I hope I never shall have to use it—and I probably never will. Thus far we have had nothing but the finest cooperation from industry."

SHIPS RETURNING

Secretary Knox revealed that the U. S. fleet, now in Hawaiian waters, will return to the California ports in three groups of around 30 ships each, and each group will remain here two weeks for shore-leave and for overhaul. The first group—led by Adm. James O. Richardson, commander-in-chief of the U. S. fleet—was to leave Hawaii yesterday, he said.

The navy's chief revealed that he is not presently interested in either the Nicaraguan canal proposal or the plan to cut a second ship channel through the Coronado strand.

"So far as a second canal is concerned," he said, "I am much more interested in a second set of locks for the Panama canal, and this project already is under way. The new locks will be half a mile or so from the present ones. It will take much less time, and cost far less, than to build a second complete canal.

"I know nothing of the proposal to cut through the Coronado strand, and there are other things in which we are far more interested. That can wait."

AIR ONLY PANAMA PERIL

The only possible vulnerability of the Panama canal is by an air attack, the secretary said. He pictured as hopeless the plight of any naval force so rash as to come within range of the canal defense guns, and pointed out that a land attack, through the impenetrable jungles along the Canal Zone, would be out of the question.

Taking issue with statements attributed to him elsewhere that he had reported this country to be negotiating for bases at Cocos and in the Galapagos archipelago, he made it clear that the thing is merely in the stage of discussion, and that this discussion is only of an intra-departmental nature. He added that the United States has had nothing but "the most enthusiasic cooperation" from the countries controlling these islands.

HOPE FOR ENGLAND

Turning to the European situation, the secretary said that he thinks the danger of a successful invasion of England grows less with each day—that England is holding her own, if not actually gaining.

"One thing to remember," he said, "is that they are fighting over England. If an English plane is crippled and the pilot bails out, he lands in England, and the first thing you know he's up in another plane. If a German pilot bails out he lands in England—and goes to a concentration camp. An offensive force always suffers more than a defensive, and German losses have been much greater than British. I think England has better than a 50-50 chance. The British are good fliers—and so are the Germans. And the Germans are good soldiers; I know, for I fought against them, in France. Never make the mistake of underestimating their ability."

LIKES S. D. PLANES

"You might put in a boost for these planes you build here in San Diego," he said. "That plane in which I went to and from Honolulu, is a beauty. We made a record—14 hours and 15 minutes—for the flight out from San Francisco, and our trip back here was the first return flight to San Diego. From San Francisco we had a tail wind; coming home we had a head wind, and yet we made it in 15 hours and 30 minutes.

"We hit a storm on the way out, but we just climbed up until we were over it, and sailed on, above the clouds. It was the same way coming back. We were up above the clouds, in the light of a beautiful full moon, with nothing in sight below us but moon-lighted banks of clouds."

Today the secretary will visit the Consolidated plant, where the big planes are made. He also will inspect the marine corps base, where a review—open to the public—will be made at 10:20 a.m. At 11 a.m. he will visit the training station, [illegible] after noon will take off in a land plane for San Pedro. Tonight he will be in Los Angeles, and tomorrow morning will take off for the flight back to Washington, D.C. Yesterday, he visited the Naval Air station, the hospital, marine combat range, aircraft shops, new site for the carrier-based plane hangars, and the destroyer base.

MET BY COMMANDANT

The secretary and his party were met at the Naval Air station by Rear Adm. Charles A. Blakely, commandant of the 11th naval district, and Comdr. James T. Mathews (CES), district public works officer; they were accompanied by Frank Forward, president of the chamber of commerce, T. C. Macaulay, executive secretary, and Howard Worth, chairman of the chamber's army and navy committee.

Accompanying the secretary on his trip are Capt. M. L. Deyo, his aid; Col. W. F. Donovan and John F. O'Keefe, his personal secretary. Rear Adm. A. B. Cook, commanding the scouting force aircraft, flew here with him.

Col. Donovan, a former member of the famous "Fighting 69th" regiment in France, was welcomed to San Diego by two other former members of the organization — Arthur George, 1515 Second ave., and John Hilton, of the board of equalization. A third San Diegan from the same "outfit" is James O'Connor, music teacher.

At the invitation of George, former commander of Joyce Kilmer chapter of the Rainbow division association, Donovan last night attended the chapter's local meeting, in the American Legion building. The "Fighting 69th" was a unit of that division.

SERVED WITH T. R.

At the age of 11, in Grand Rapids, Knox began a newspaper career as a paper boy at $1.25 a week. He left school at 15 to become a shipping clerk's helper, and later got into "the big money" — $15 a week —as a wholesale book and stationery salesman. Losing his job in the 1893 panic, he went back to school and later to college.

During the Spanish-American war he effected a transfer from his regiment to Lt. Col. Theodore Roosevelt's famed "Rough Riders," and was near death in the assault on San Juan hill when a Spanish bullet passed through his hat. Later he was to be one of Roosevelt's supporters in the "Bull Moose" campaign of 1912.

Knox' first newspaper of his own —he had been working toward a newspaper career even while serving in '98—was a weekly printed in Sault Ste. Marie. Later he transferred his activities to Manchester, N. H. His paper was a leader in blasting at slackers and draft evaders—and when he was turned down by the officers' reserve corps because of filled quotas he enlisted in the First New Hampshire infantry as a private. In France he became a major.

OPERATED DAILY NEWS

He took over operation of the Chicago Daily News in 1931, and in 1936 was Republican candidate for the vice presidency. Upon the resignation of Charles Edison as secretary of the navy a few months ago he was named to take his place.

Keenly interested in the publishing business, he "turned the tables" on his interviewers by quizzing them on local business conditions. Before the interview, the correspondents had "pooled" their questions, which were presented to him in typewritten form to save time. He went down the list, answering the queries and expanding upon those which opened additional trains of thought. A spirit of friendly cooperation with his interviewers was obvious throughout the conference.

Union 7/3/40

MILLIONS VOTED FOR PLANES, BUT BUILDING STILL HELD UP

By W. W. CHAPLIN

NEW YORK, Aug. 2 (I.N.S.)—Congress has made money available and the aviation industry is ready to begin production to meet the defense goal of 25,000 army and navy planes by July 1, 1942, but to date work has not been begun on one single fighting plane of this new emergency air fleet program, because of a major impasse, a survey of official sources and aircraft factories disclosed tonight.

The national defense commission has "cleared" $84,000,000 worth of contracts for fighting planes—that is, approved terms and prices and specifications—but they have all had to be sent back to the war department for re-writing to provide manufacturers with adequate guarantees against financial loss.

ONLY 1 CONTRACT DELIVERED

So far the only contract in the present air program which has been delivered to a manufacturer, permitting immediate commencement of production, is one for $900,000 worth of training planes to be built by the Cessna Aircraft Corp., of Wichita, Kan.

The bottleneck apparently chiefly responsible for holding up expansion of the fighting air arms is amortization and profit allowance.

Manufacturers insist that as originally drawn and cleared by the defense commission, the contracts for mass plane production might force the aviation companies into "industrial suicide," and subject them to post-war bankruptcy.

Since the 25,000 plane program was decided on, congress has appropriated or authorized expenditure of $688,459,297 for plane production and pending legislation permits expenditure of another $1,522,000,000 for that purpose. The $688,297 has been ready to use for more than a month but still has not been forced through the bottleneck and hence there is virtually no actual construction under way on the fighting planes to be built.

FDR DENIES RED TAPE

Existing laws and regulations do not permit a type of contract which the maufacturers feel gives them a fair chance of coming out even.

President Roosevelt said at his press conference today that governmental red tape was not responsible for slowing up the program, but manufacturers reply that it has been halted and that the cure lies with the government and congress.

As the situation now stands the treasury allows 10 years for amortization of plant expansion and the legal profit to the manufacturer in excess of cost is 12 percent.

The plane makers object that if changing conditions abroad should reduce defense needs sharply in the near future, they would be left with great plants which were not needed for normal peacetime production and would have to be written off as almost total loss. They believe that a five year amortization period is the longest they can assume in justice to their stockholders.

The 12 percent profit limit now legally set is expected to be lifted and that feature of the program handled in the general excess profits bill now before congress.

But before committing themselves to contracts the plane men want to know what margin they are to be allowed and whether such items as expense of research and engineering, added taxes, interest on capital borrowed for expansion, and "human error" mistakes in manufacture can be included in the total cost figure to which the profit is added. If this is not allowed, they say, the "profit" might well turn out to be a loss.

Every manufacturer questioned in the present survey expressed full confidence of the industry's ability to produce the proposed 25,000 planes in the allotted time, but only asked that full assurance be given that the industry would be protected against destroying itself in its effort to build up the national defense.

WOULD KEEP PLANTS POSTED

Plane men said that in an effort to overcome hesitancy of manufacturers to enter contracts without full guarantees, the government had offered them "letters of intent," specifying the planned orders to be given each factory as the program develops.

These letters, however, would not be binding if congress should withhold future appropriations due to a slackening of the emergency.

There has been some friction, it was indicated, between the executive branch and administrative branches in charge of the air program and congress. One war department official suggested that if continued delay was caused by lack of satisfactory legislation, a "short cut" might be used.

This would consist of rewriting contracts as now being drawn to raise the unit price so that amortization could be speeded, but this would mean less planes for the money spent and boost the cost of the whole program.

WORKING WITH SINGLE AIM

In all sources of information covered in this survey it was stressed that all parties involved — the defense commission, congress and the manufacturers — were working toward the same objective—adequate national defense. Differences of opinion, however, as to the means to that end were said to be holding up the program to an extent which was threatening its successful completion by the proposed date.

Only this week the defense commission called officials of seven leading plane companies to Washington to thresh the matter out, and it was hoped that these conferences might result in early breaking of the bottleneck. The companies represented were Douglas, Boeing, Consolidated, Curtiss - Wright, Martin, North American and Lockheed.

Most of these companies already have, even without the signing of contracts, begun the purchase of large supplies of material on their own responsibility in order to be ready for immediate production with existing plant equipment as soon as contracts are finally signed.

Union - Wed - 9/18/40

Knox Winds Up Busy 26 Hours in S. D.; Meets Boat Builders, Reviews Marines

Naval Secretary Visits Consair Plant; Hops North

A busy 26 hours in San Diego was concluded yesterday by Secretary of the Navy Frank Knox, his visit winding up with a conference with southern California boat builders, a review at the marine corps base, a trip through the Consolidated Aircraft Corp. plant, and luncheon with the recruits at the Naval Training station.

The conference with the boat builders was held in the office of Rear Adm. Charles A. Blakely, commandant of the 11th Naval district, and fulfilled an appointment made by overseas telephone to Honolulu by Capt. Miller Freeman, U.S.N.R., Seattle publisher and senior naval reserve officer on the Pacific coast. Freeman, who publishes Pacific Motor Boat, Pacific Fisherman and other trade journals, was acting in behalf of the shipyards of the west coast, eager to cooperate with the navy in the building of small craft for naval use.

"We want to cooperate wholeheartedly with the navy in the defense program," said Freeman. "An increasing number of small vessels will be needed by the navy—small torpedo boats, dispatch tenders, and work boats for naval use. Hundreds—perhaps thousands—of these craft will be needed. We have the builders, the facilities, the technique to provide them. Many types in use throughout the country, and even by the forces of the nations now at war, originated on the west coast."

URGES NEW BUREAU

Freeman urged the creation of a new bureau in the navy department, solely for the handling of procurement and operation of small craft. Active in naval reserve work for many years, he organized the first reservists in the 13th naval district, in 1910. During the last war he was a lieutenant commander and worked first with small boat units in the navy, and then in training personnel.

Capt. Oakley J. Hall, head of the Star & Crescent industries here, was the spokesman for the boatbuilders yesterday. Others attending the meeting were George C. Campbell, Campbell Machine Co.; Joseph Fellows jr., Fellows & Stewart, San Pedro; John Rados, Harbor Boat Works, San Pedro, and Walton Hubbard jr., South coast Co., Newoprt harbor.

Secy. Knox expressed his appreciation of the desire of the boatbuilders to cooperate, and assured them that west coast yards would be given every consideration.

Following the meeting in the admiral's office, the secretary left for a brief trip through the Consolidated plant—where the big four-motored plane in which he flew to and from Honolulu was built.

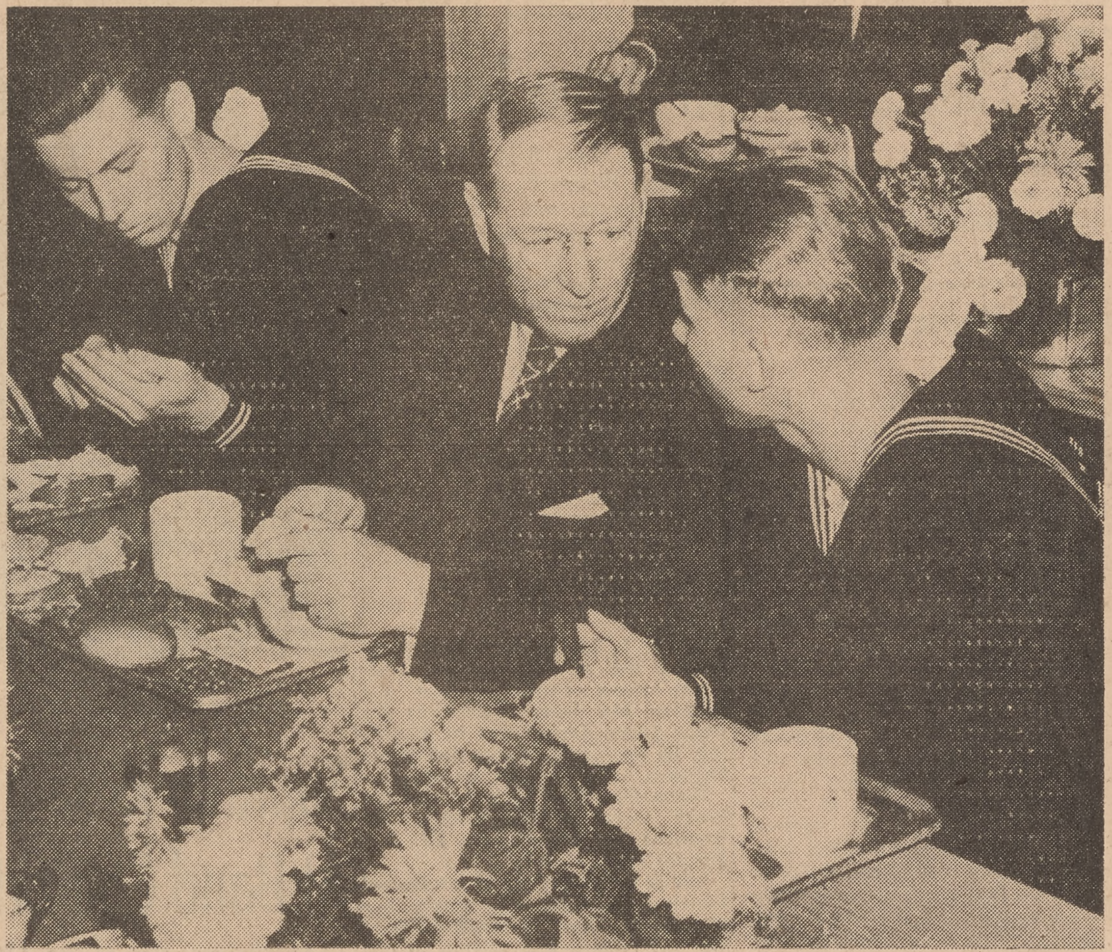
VISITS STATIONS

Proceeding to the marine corps base, Secy. Knox reviewed thousands of marching sea-soldiers and their equipment. The colorful review was open to the public and was attended by many.

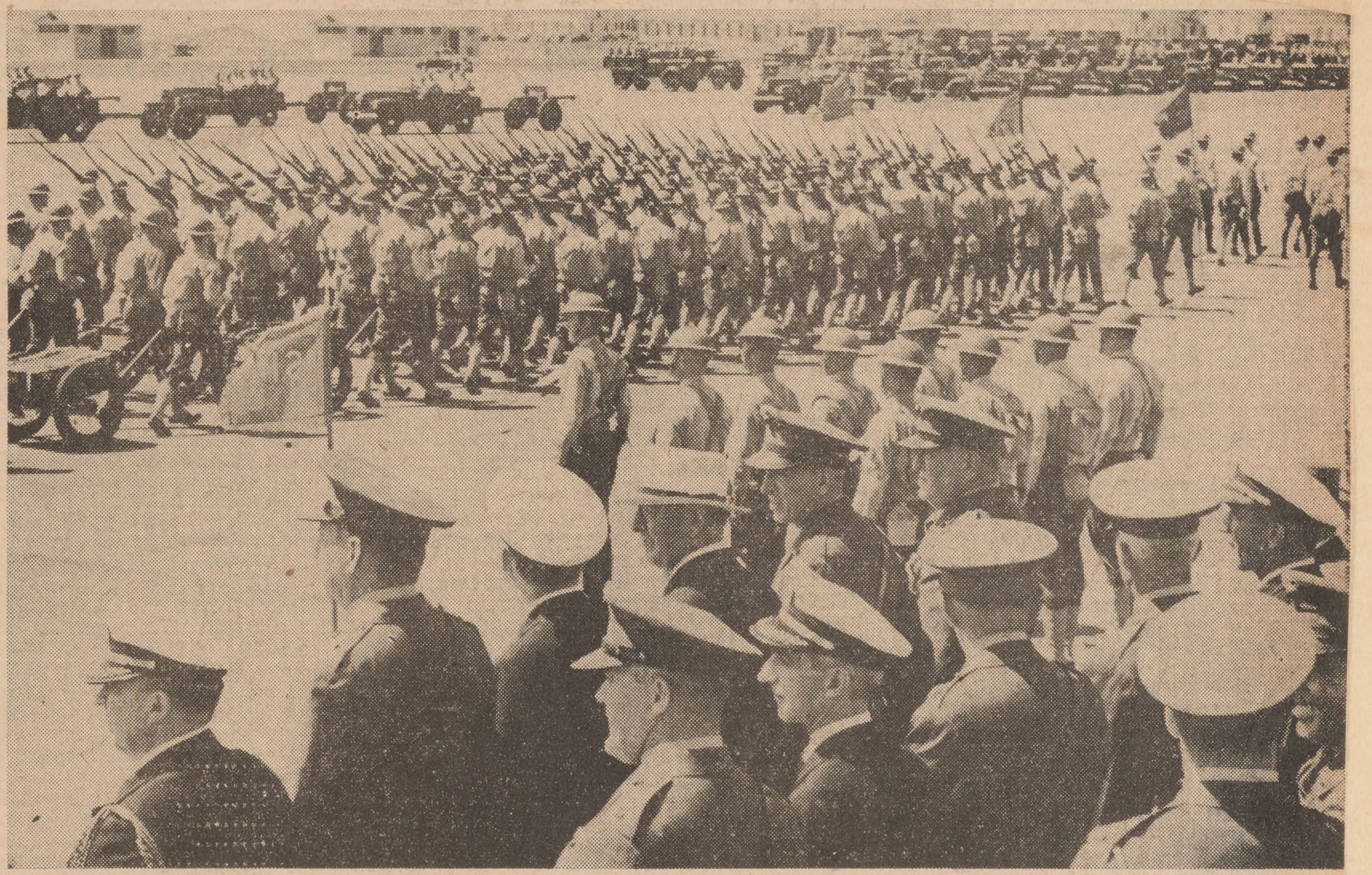
From the marine corps base, the secretary and his party went to the Naval Training station, where after a brief inspection he sat down in the mess-hall with 500 recruits, receiving their initial training as man-o-warsmen. An Illinois recruit sat at each side of the secretary during the meal—R. M. Mathias, 19, Bethany, Ill., and Jackson Carlson, 21, Westmont, Ill.

"One of them told me that he has gained 19 pounds, the other 23 pounds, since joining the navy," Knox said after the meal. "Both said that they joined the navy to get a career and to learn a trade. I think it's wonderful!"

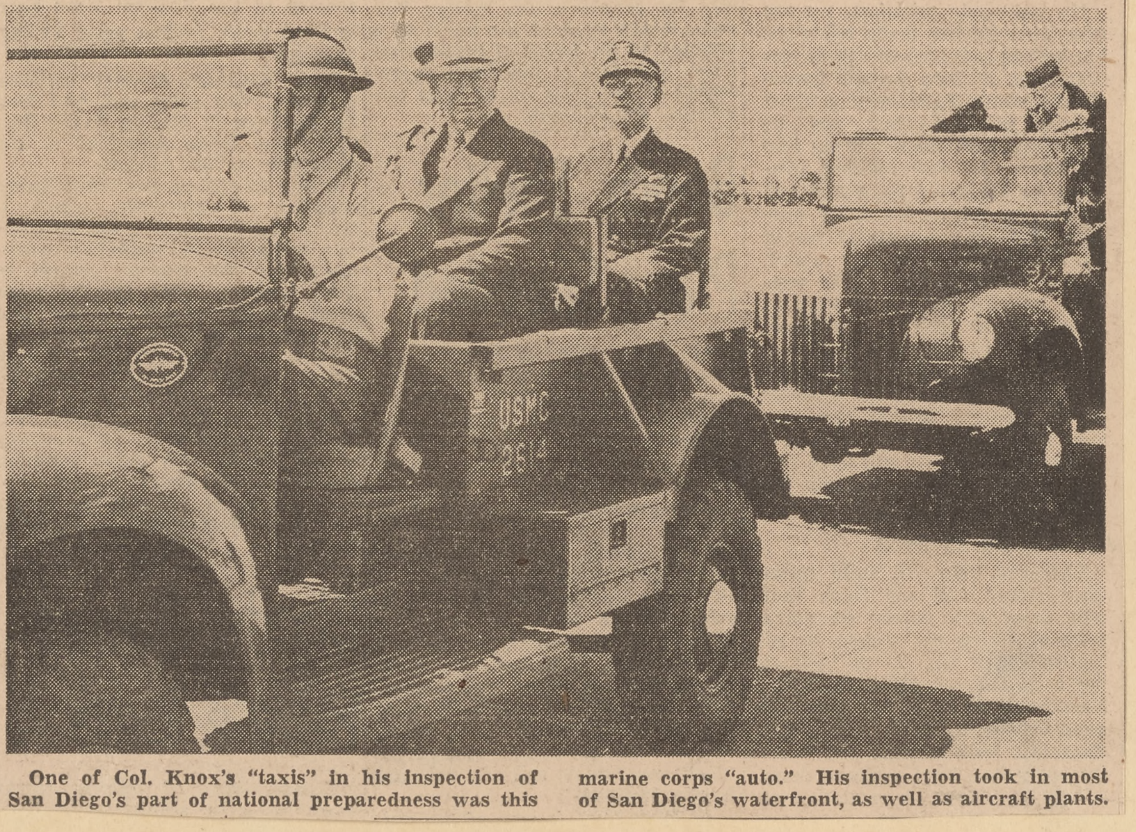
From the training station the secretary and his party went to Lindbergh field, where they took off in a low-winged landplane for San Pedro. Instead of flying directly up the coast, however, they swung inland to give the secretary an air view of the marines' plant at Cam Elliott, on Camp Kearny mesa. Th the plane headed north.



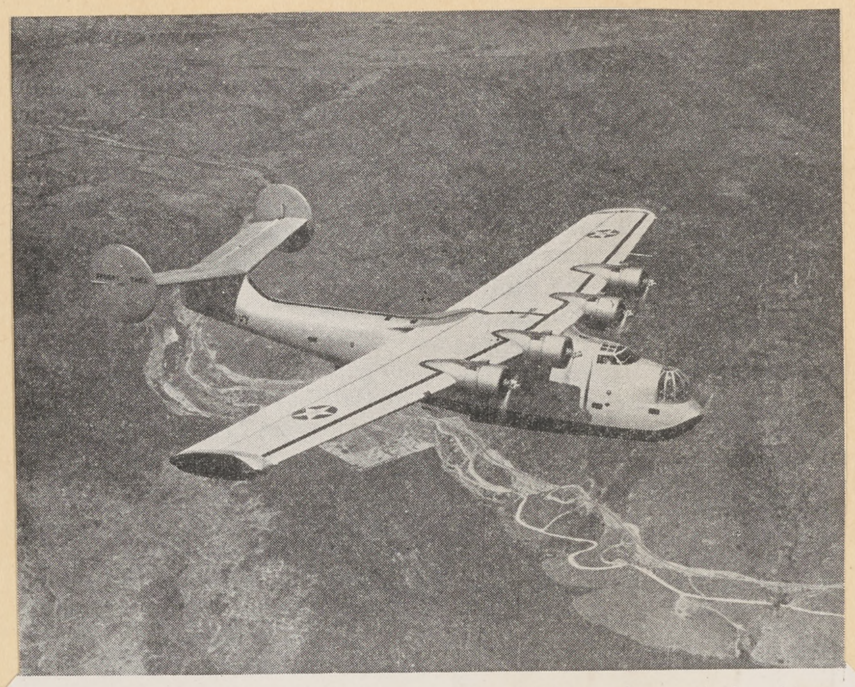
At the Naval Training station yesterday, Col. Knox dropped in at the mess hall to have lunch with 500 recruits. Sitting next to the navy secretary and exchanging views with him are (left) R. M. Mathias, 19, and Jackson Carlson, 21, both of Illinois. Knox said he enjoyed the conversation.



With naval and marine corps officers, Col. Knox (lower center) reviewed thousands of marching sea-soldiers at the marine base. Hundreds of civilians view the parade. From the marine base Knox and his party went to the Naval Training station.

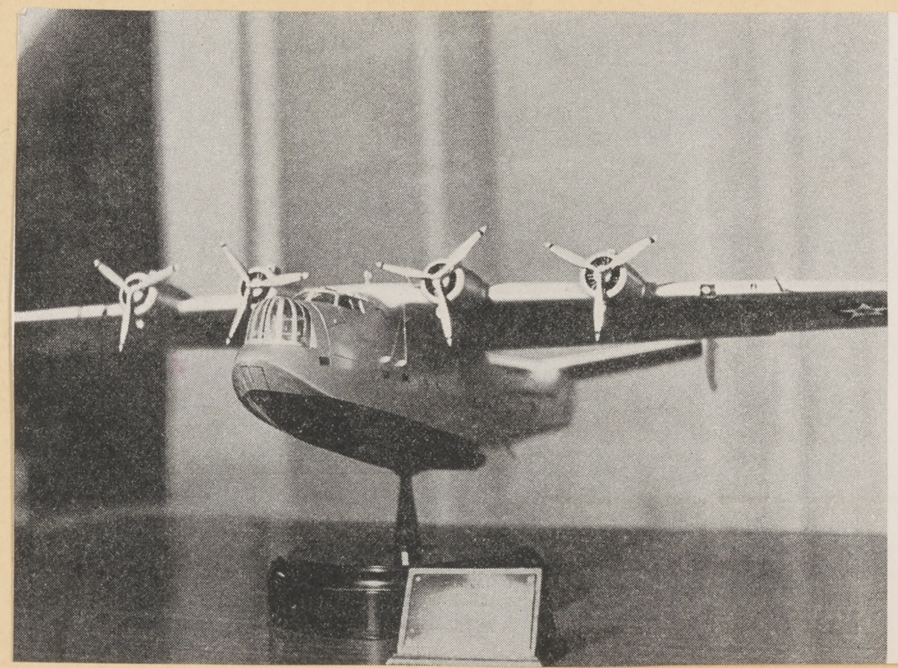


One of Col. Knox's "taxis" in his inspection of San Diego's part of national preparedness was this marine corps "auto." His inspection took in most of San Diego's waterfront, as well as aircraft plants.

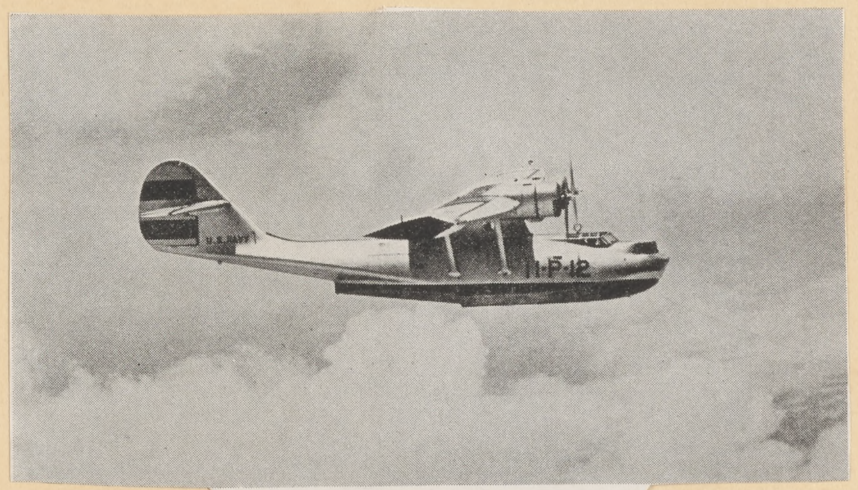


The Consolidated XPB2 Y-1 four engined flying boat of the Aircraft Scouting Force.

From "The Log"
U.S. Naval Academy
2/16/40



XPB2Y Newest Navy 4 engine flying boat six of which are now on order for the Navy Department. It houses a complete bridge, galley, and chart room; and will carry a crew of ten or twelve—including a Captain, Navigator, and three Pilots—with all supplies required for about a week's cruise. Two models similar to these are made up for each new type of plane that the Navy Department considers; one of these will be made available to the Naval Academy immediately upon completion in every case.



Consolidated PBY-2 in flight

CONSOLIDATED'S NEW PLANT DEDICATED AT SAN DIEGO

The huge new buildings of Consolidated Aircraft Corp., at San Diego, which have been constructed within the past few months and which virtually double the manufacturing facilities of the corporation, were officially dedicated Labor Day, September 2, with fitting ceremonies.

Major Reuben H .Fleet, president of Consolidated, diverged in his address to attack the new bill authorizing peace time conscription of plants.

Addresses were given by:

Brig. General Frank D. Lackland, U.S.A., Wing Commander, March Field.

Maj. General W. P. Upshur,U.S. M.C., Commanding Department of the Pacific, Fleet Marine Force and U. S. Marine Corps Base.

Col. Peter H. Ottosen, U. S. A., Commanding Fort Rosecrans.

Major R. H. Fleet, President, Consolidated Aircraft Corporation.

Rear Admiral Charles A. Blakely, U.S.N., Commandant, Eleventh Naval District, gave the dedicatory address of the day saying in part: "I hereby dedicate this new plant to work in national preparedness, to help maintain our rightful place as a mighty nation. And when this present emergency shall have passed, it may be dedicated in more glorious activity in supplying commerce with its products.

* * *

The tremendous expansion program currently being rushed to completion at Consolidated Aircraft Corporation, which is already by far the largest local manufacturing enterprise, will give San Diego the distinction of having the largest integrated covered and uncovered aircraft manufacturing plant in America. Consolidated's manufacturing space, exclusive of field, ramp and railroad sidings, now occupies over 1,910,000 square feet of area or an 87 percent increase over the previous figure, with an option on adjacent land equal to an added 50 percent of this area; plans are nearly completed for its possible use.

This expansion thus brings the local plant into full step with the President's recently announced national defense program, and helps to place San Diego in the forefront of the drive to produce the stated 50,000 plane output per year.

Already operating with a present backlog in excess of $70,000,000, contracts for additional work are being negotiated which, if accepted, will build this huge backlog for San Diego's concern to well over $100,000,000. Roughly one half of this sum will be expended locally, and this largely thru wages to employees, exerting a marked stimulus to local business of a purely beneficial nature, since the plant's operations do not draw upon the communitys' wealth, other than its climate. A distinct climatic advantage is the fact that approximately 30 percent of the manufacturing operations can be conducted out of doors, thus paying health dividends to the employees as well as convenience to the company.

Thoroly modern in contruction and planning, Consolidated's huge plant utilizes all the latest features of aircraft plant design. The plant now extends for half a mile along Pacific Highway, and the new final assembly building at the north end of the plant is more than a city block in size with its tremendous roof held high in the air with remarkably few supporting columns. This construction allows exceptional manufacturing freedom within. A three story structure, the size of an average three story office building of the business district, is housed under the roof of this final assembly building, and a dozen more such structures could be placed under its roof without crowding.

Sawtooth roof construction affords north lighting during the daylight hours. Adequate artificial lighting is provided for the night workers. The plant is now operating three shifts. It is not difficult to appraise the fact that the entire plant is streamlined for the most efficient production and the greatest convenience to the workmen in all necessary facilities provided; for all its huge buildings, and most of its equipment, are less than five years old today. This marks it as one of the newest and finest plants in all the world.

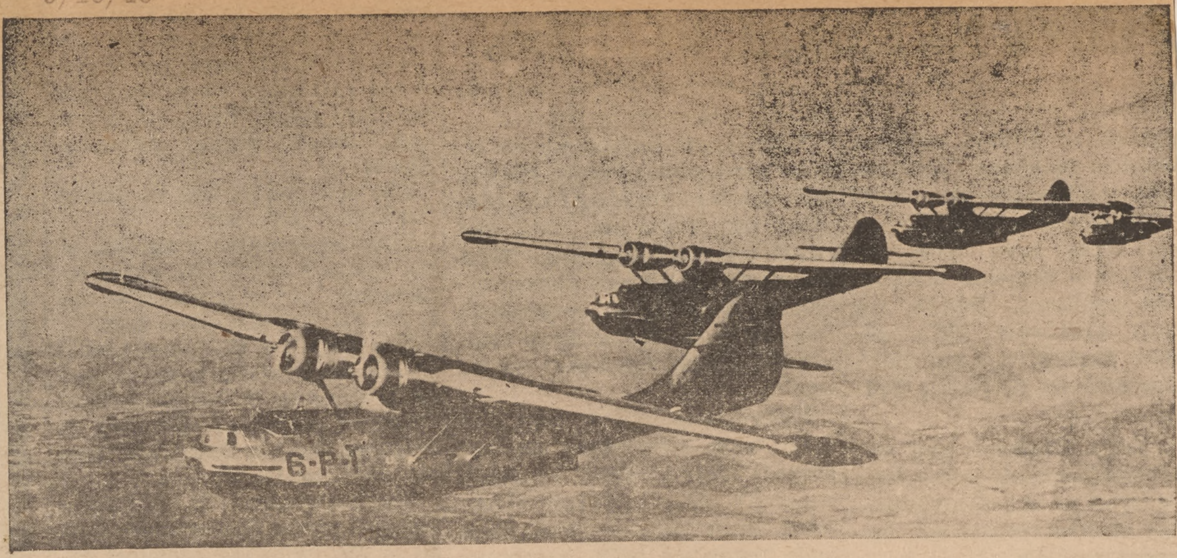
Rounding out its complement of equipment ,some of the finest machine tools available in the market today have, and will be installed as the program progresses. Lathes, automatic screw machines, shapers, millers, die sinkers, planers, punchpresses, hydraulic presses, drop hammers, power shears and brakes and smaller electric and pneumatic tools in almost unlimited number are included. These machines are being operated by men rapidly learning the newest time saving features of this splendid equipment.

At the present moment, approximately 750 of the more than 7,000 skilled aircraftsmen are engaged in tool designed production, and the making of patterns which supplement the machine tools with special equipment; providing jigs, patterns and templates, assembly fixtures and the multitude of special tools required to assist the workmen to produce the finest airplanes possible.

Consolidated's present position, and outlook for the future, bids fair to exert a marked influence on the growth of San Diego. Concluding a statement to the plant personnel on the recent advent of the Consolidated Aircraft Corporation's 17th birthday, President Major Reuben H. Fleet said "We have a good organization—equal to any in our industry—the best in our history. So in counting our blessings let us consider that we have a factory of our own, tailored for our business, in the city of our choice, with plenty of work on hand and in sight, and no mortgage on our premises or our future. In one sense I regret that we are too busy to celebrate."

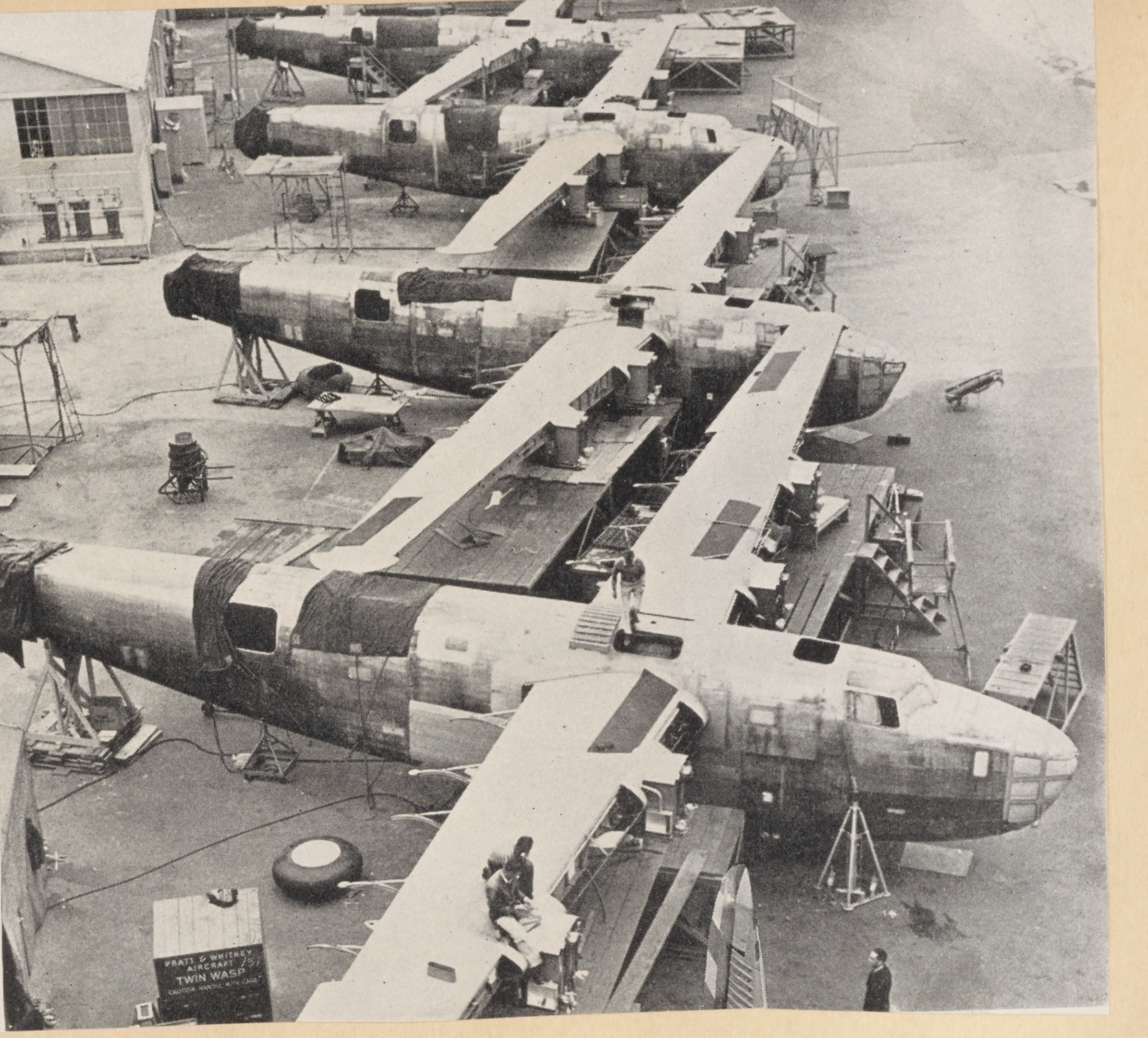
NAVY NEWS
9/15/40

U. S. NAVY PBY PATROL BOMBERS

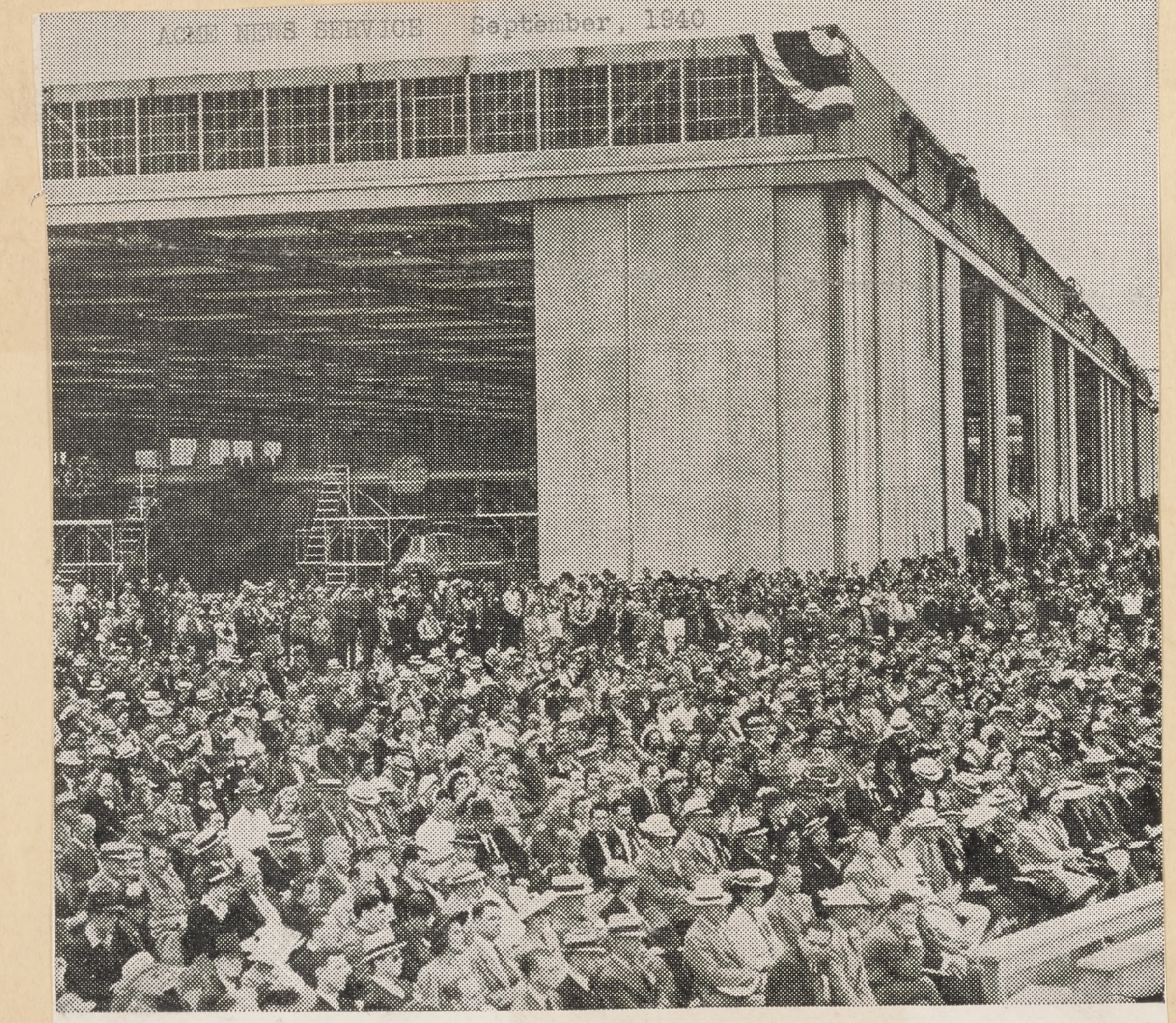


Consolidated Aircraft's contribution to national defense was the PBY patrol bomber, of which our Navy has many. New modifications of this type of ship are proving better and better.

Aviation Aug-40



ACME NEWS SERVICE September, 1940



ANOTHER STEP—Uncle Sam's extensive defense program took a marked step forward when large addition to Consolidated Aircraft plant at San Diego, Cal., was dedicated. Here's portion of throngs attending the ceremonies. Plant will help handle defense orders.

National Aircraft COUNSELLOR

VOLUME 1

MAJOR REUBEN FLEET

Major Fleet President of Consolidated Aircraft, in San Diego, is one of the best known and best liked executives in the aviation industry. He is shown here dedicating the new Consolidated plant, during which services he announced expansion plans which call for doubling present capacity.

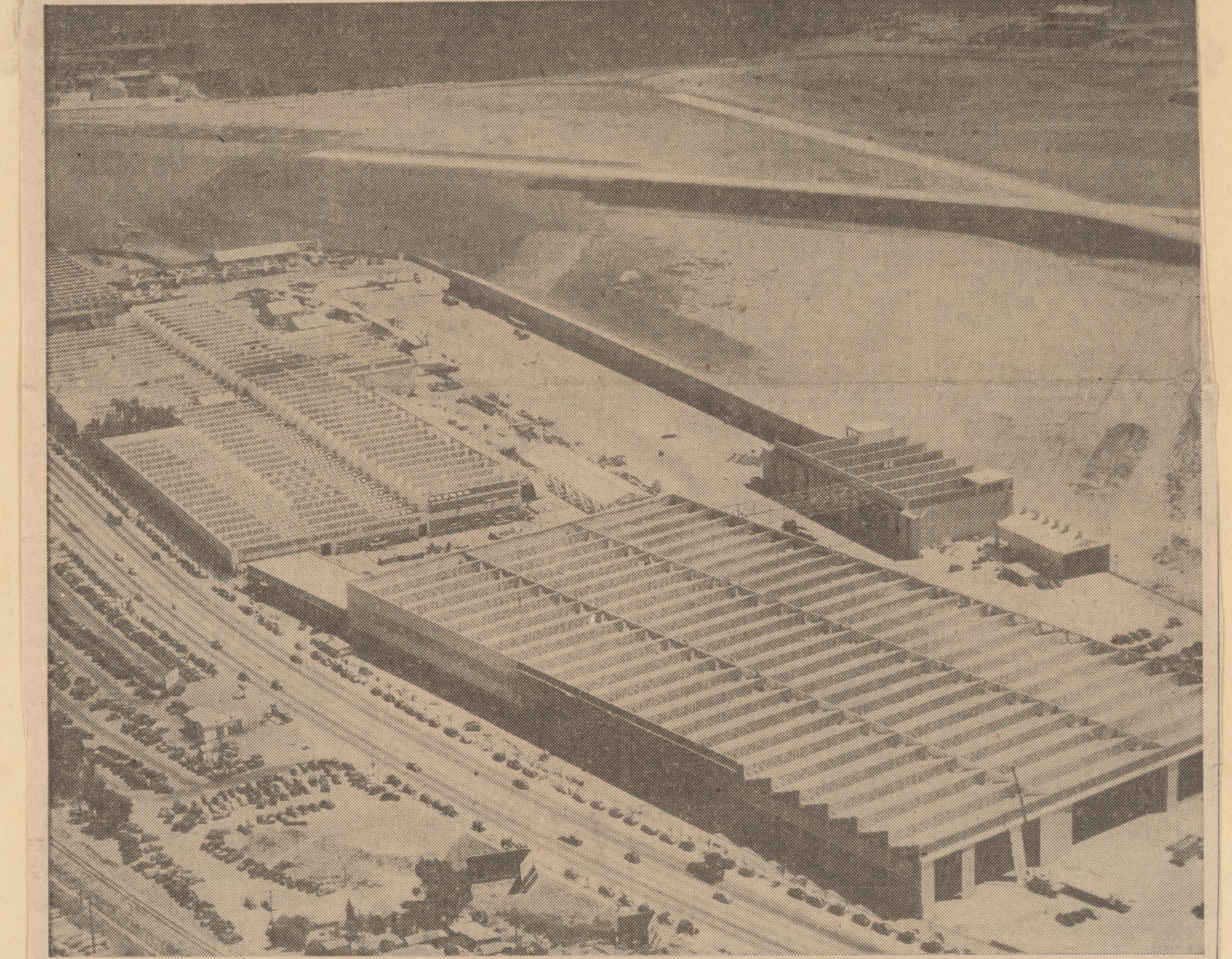
PACIFIC COAST EDITION, THE WALL STREET JOURNAL, WEDNESDAY, SEPTEMBER 4, 1940

UTHERLAND PAPER CO

$1,000

New Unit Makes Consair Biggest U. S. Integrated Plane Plant

Trib.--9/1/40



Air view of the Consolidated Aircraft Corp, plant, where dedication exercises will be held at 2 p. m. Monday for the new addition, shown in the right foreground. In back of the large final assembly building and connected to it by an outside monorail is the final finish building, adjoining which is the new boiler house.

Limit Crowd to Employes, Guests At Dedication Ceremonies Monday

Everything is in readiness at the Consolidated Aircraft Corp. plant for the dedication of the firm's new factory addition at 2 p.m. Monday, which makes Consolidated the largest integrated aircraft plant in America, officials of the firm reported today. The ceremonies will take place five years after the original dedication of the plant, which began operations here in September, 1935, after moving to San Diego from Buffalo, N. Y.

The dedication program, featured by a dedication address by Rear Adm. Charles A. Blakely, commandant 11th naval district, will be held out-doors at the northwest corner of the new addition. Because of national emergency restrictions, the new additions, which include a 360 by 720-foot final assembly building, connecting office building, final finish building, boiler house, storage shed and first-aid building, will not be open to visitors, although the doors will be open permitting views of the interiors.

Because of lack of room to accommodate all who might wish to attend the dedication program, only employes of the firm, accompanied by one guest each, will be admitted to the exercises. Before Blakely makes his address, addresses will be given by Brig. Gen. Frank D. Lackland, wing commander, March field; Brig. Gen. William P. Upshur, commanding the marine corps base here and the fleet marine force; Col. Peter H. Ottesen, commanding Ft. Rosecrans, and Maj. R. H. Fleet, Consair president.

The Consolidated orchestra and Consolidated Glee club will offer the following musical program: El Capitan (Sousa); Cossack Love Song (Kountz); Wake Up America (Borgens); Soloist Richard Holtsclaw; Star Spangled Banner; On Parade, from Sweethearts (Herbert); Will You Remember, from Maytime (Romberg); Smoke Gets in Your Eyes, from Roberta (Kern); I've Got My Eyes on You, from Broadway Melody of 1940 (Porter); Love's Own Sweet Song, from Sari (Kalman); Volga Boat Men (Folk Song); Sylvia (Speaks); Indepentia (Hall); God Bless America (Berlin), and National Emblem (Bagley).

In announcing that Consolidated which was founded in 1923, now is the largest integrated aircraft plant in the United States, officials of the firm said it has 1,910,000 square feet of covered and uncovered manufacturing space, and 954,440 square feet of contiguous airport land under option for further expansion. The original San Diego factory building five years ago had a usable floor area of 246,841 square feet, which was approximately 10,000 square feet more than was occupied by Consoldated in its Buffalo plant during 1933, the peak year for the company before it moved to San Diego.

Consoldiated now employs 9485 and has a backlog of army and navy planes orders of approximately $120.000,000. The Monday dedication program is but a "stepping stone" in the firm's expansion, Consair officals last week having taken out an $800,000 building permit for still another addition, which will be 200 feet wide, 1500 feet long and cover eight and one-third acres. It is to be located on the Lindbergh field side of the existing plant.

CONSOLIDATED DEDICATES BUILDINGS

9/12/40
aircraft news.

The huge new buildings of Consolidated which have been constructed within the past few months and which virtually double the manufacturing facilities of the corporation, were officially dedicated Labor Day, September 2, with fitting ceremonies. High ranking officers in the various branches of the United States armed forces, Consolidated and other aviation leaders, employees and their immediate guests attended.

In a surprise move, Major Reuben H. Fleet, president of Consolidated, diverged in his address to attack the new bill authorizing peace time conscription of plants, pointing out that Consolidated had planned to announce further expansion at the dedication ceremonies, but hesitated to expand even in the light of the fact that all the organization's might as a private enterprise is behind the preparedness being stressed through aviation manufacture.

Devoting a greater portion of his address to this measure, he stated in part, "We had planned announcement today of further extensive plant expansion, but the bill recently passed by the Senate authorizing peacetime commandeering of industrial plants which may fail in any respect to please a high official of our Government, makes us hesitate, much as we have been striving with all our might as a private enterprise to do our bit. Nationalization of her aircraft industry by France was so disastrous, that that country's production fell down terribly, and even though she frantically resorted to foreign help at exorbitant expense, she collapsed as a nation and probably never will recover. We hope our Government will not make this mistake, which would be the beginning of labor regimentation, the emasculation of labor unions which our President has stated cannot strike against the Government, and the end in this country of free men and free enterprise."

In the colorful affair marking the dedication, Edgar N. Gott, Consolidated vice president, was master of ceremonies, several distinguished guests made brief addresses, and congratulatory messages poured in. Addresses were given by:

Brig. General Frank D. Lackland, U.S.A., Wing Commander, March Field.

Maj. General W. P. Uphur, U.S. M.C., Commanding Department of the Pacific, Fleet Marine Force and U. S. Marine Corps Base.

Col. Peter H. Ottosen, U.S.A., Commanding Fort Rosecrans.

Major R. H. Fleet, President, Consolidated Aircraft Corporation.

Rear Admiral Charles A. Blakely, U.S.N., Commandant, Eleventh Naval District.

The dedicatory address of the day was given by Rear Admiral Blakely who said in part: "I hereby dedicate this new plant to work in national preparedness, to help maintain our rightful place as a mighty nation. And when this present emergency shall have passed, it may be dedicated in more glorious activity in supplying commerce with its products. I congratulate Major Fleet and his associates on this fine plant and bring the best wishes of the whole navy. I declare this new addition and plant to be open."

This was followed by a military salute and the raising of the National flag as the orchestra played the "Star Spangled Banner."

CONS. AIRCRAFT PLANS DELAYED

Wall St. Journal- 9/4/40

Further Expansion Held Up by Congressional Effort to Conscript Plants

SAN DIEGO—Dedicating a $2,000,000 addition to plant just completed and put into operation, Major R. H. Fleet, president of Consolidated Aircraft Corp., said yesterday that he had hoped at this time to announce an additional expansion program to fit in with rearmament needs, but now was unable to do so because "the proposed federal legislation permitting the Government to commandeer industrial plants makes us hesitate. He expressed the hope that the Government would not make the mistake of beginning the regimentation of labor and emasculation of labor unions, maintaining also that the nationalization of the aircraft industry by France played a most important contributing role in the collapse of that country.

Major Fleet also announced the acquisition, by purchase, of Hall Aluminum Corp. of Bristol, Conn., which will erect a plant at Dallas, Texas.

Having just completed its $2,000,000 expansion program started earlier this year, Consolidated Aircraft has had in mind an additional expansion of facilities at its single plant at San Diego, now the largest integrated unit in this country, calling for expenditure of another $2,500,000. At the moment, this plan apparently is undecided, awaiting outcome of the present discussions for a rider to legislation permitting governmental acquisition of plants which do not cooperate with the war program. It is also indicated that Consolidated has dropped discussions for a plant to be located at Dallas, Texas.

In this connection, Major Fleet said:

"We had planned announcement of further extensive plant expansion, but the bill recently passed by the Senate authorizing peacetime commandeering of industrial plants which may fail in any respect to please a high official of our Government, makes us hesitate, much as we have been striving with all our might as a private enterprise to do our bit. Nationalization of her aircraft industry by France was so disastrous that her production fell down terribly.

"Even though France resorted to foreign help at exorbitant expense, she collapsed as a nation and probably will never recover. We hope our Government will not make that mistake, which would be the beginning of labor regimentation, emasculation of labor unions, which our President has stated cannot strike against the Government, and the end in this country of free men and free enterprise."

With a current backlog of $132,000,000 and constantly increasing personnel, Consolidated Aircraft is now employing 9,600, and by the end of this year expects to be employing 15,000, Major Fleet said.

S

Sells

Union--Tues. 9/3/40

Maj. Fleet Raps Commandeering Of Air Industry

$2,500,000 Consair Unit Is Dedicated By Adm. Blakely

Consolidated Aircraft's new $2,500,000 addition was dedicated yesterday by Rear Adm. Charles A. Blakely, but in a surprise speech, Maj. Reuben H. Fleet, Consair head, told 5000 persons that announcement of vast future expansion was being withheld because of a senate bill authorizing conscription of industry.

Maj. Fleet hit at nationalization of the aircraft industry, citing the failure in France, but expressed confidence that the aviation industry would be able not only to protect American from attack but carry the war to any enemy attacking this country.

VIEWS TOLD

"We had planned announcement today of further extensive plant expansion," said Maj. Fleet, "but the bill recently passed by the senate authorizing peacetime commandeering of industrial plants which may fail in any respect to please a high official of our government, makes us hesitate, much as we have been striving with all our might as a private enterprise to do our bit.

"Nationalization of her aircraft industry by France was so disastrous that that country's production fell down terribly, and even though she frantically resorted to foreign help at exorbitant expense, she collapsed as a nation and probably never will recover. We hope our government will not make this mistake, which would be the beginning of labor regimentation, the emasculation of labor unions which our President has stated cannot strike against the government, and the end in this country of free enterprise."

PRESENT PROGRAM

Decision to withhold announcement of the future expansion will not affect that part of an enlargement program now under way and for which contracts have been let, Maj. Fleet told reporters. This phase of the expansion program, he estimated, will cost $2,500,000 and result in construction of a new building as large as the one dedicated yesterday as well as another structure 1500 feet long. These buildings will bridge the "no man's land" between the existing plant and the marine base, he said. He added that the announcement which was withheld because of the senate bill covered expansion "here or in Texas."

A picture of Consair's rise was given in Fleet's talk.

"Five years ago Consolidated Aircraft Corp. began work in San Diego, the city of our choice, with 300 workers and a plant of 200,000

MAJ. FLEET RAPS PEACETIME COMMANDEERING OF AIR PLANTS

(Continued from Page 1)

square feet," he said. "Today we have 9600 men and 867,000 square feet. By Christmas we shall have 15,000 men and 1,500,000 square feet, having let contracts to take up the 'no man's land' between here and the Marine base.

"We came here with $6,000,000 of business. Today our backlog is $132,000,000. In this plant we have manufactured twice as many airplanes of over 100-foot wing span as have ever been made elsewhere in this country."

AIR POWER VALUE

Referring to the value of air power, he said:

"A year ago Great Britain and France declared war on Germany. Since then, Germany has conquered Poland, Norway, Holland, Denmark, Luxembourg, Belgium and France and now is conducting a strong wor of aggression against England. These results could not have been attained without superior air power. Navies and armies are impotent without adequate air power.

"Part of the new technique developed in this war has been instant concentration of air attack on landing fields. Herein we find the necessity for the possession of flying boats, as they are not grounded by such tactics because water cannot be destroyed by bombs.

"During the next few years our aviation industry will manufacture aircraft capable of protecting America from foreign attack and of carrying a war to the heart of any enemy fighting us. The air power represented by thes aircraft will enable America safely to enter into a world peace pact, capable of enforcement because of the air power represented by these aircraft bows to no obstacle within its range—a continent or an ocean in a day. To preserve world peace, such power must exist; it does not police territory, it need not often be employed; its superiority at home should be sufficient to guarantee against aggression.

"And meanwhile aircraft will continue in peacetime to spread goodwill by enabling peoples to get together quickly and thus to know each other better. With each one realizing his individual responsibility, may those who toil here help to bring air supremacy, and therefore, safety to our beloved country."

DEDICATORY ADDRESS

The dedicatory address by Adm. Blakely, 11th Naval district commandant, followed talks by Maj. Gen. William P. Upshur, U.S.M.C., commanding the marine department of the Pacific, the fleet marine force and the marine base here; Brig. Gen. Frank D. Lackland, U.S.A., wing commander at March field, and Col. Peter H. Ottosen, U.S.A., commanding Ft. Rosecrans.

"For many years Consolidated has built planes for the navy and army and they have been well pleased," Adm. Blakely said. "But it is only in comparatively recent times that the airplane has become indispensable in commerce, transportation and the national defense. And the end is not yet."

The admiral recalled the prophecy of Tennyson's verse 98 years ago when the poet spoke of "airy navies battling in the blue."

"Consolidated planes have played a major role in training navy pilots. I think with pride of my connection with P.B.Y.'s in mass flights to Panama, Alaska, the Caribbean and Newport, R. I., without a casualty. (The flights were made while the admiral headed the scouting force aircraft.)

VISION PRAISED

"The vision and courage of Maj. Fleet in developing this industry in San Diego is appreciated by all. They have brought great benefits to commerce and the nation has been given an efficient and dependable product for our armed forces.

"I hereby dedicate this new plant to work in national preparedness, to help maintain our rightful place as a mighty nation. And when this present emergency shall have passed, it may be dedicated in more glorious activity in supplying commerce with its products. I congratulate Maj. Fleet and his associates on this fine plant and bring the best wishes of the whole navy. I now declare this new addition and plant to be open."

As he spoke, a saluting battery boomed and the national flag rose as the Consolidated orchestra played "The Star-Spangled Banner."

Maj. E. N. Gott of Consolidated acted as master of ceremonies. The first speaker was Brig. Gen. Lackland, who said he had "served and worked with Maj. Fleet in the World war and the years following, "when he flew in Fleet-made ships. He brought a message from Maj. Gen. H. H. Arnold, chief of the army air corps.

"I want to present congratulations on the wonderful addition and express continuing confidence that you will take part in the expansion of the air corps under the national defense program," he said. "I wish I could convey to your minds the same confidence we of the air corps have in the products of the corporation and its ability to meet the needs of expansion in the air."

FURTHER CONSTRUCTION

Maj. Gen. Upshur said he was eager to see the time when the marine base and Consolidated would be brought together by further construction at the aircraft plant. This would end, he said, the present "separation of two good neighbors."

"It is an inspiration," he went on, "to realize we have a great airplane plant here, with extensions planned. It is important for us to have them at this time."

"I hope that plants like this will produce planes that a great many of us can own," said Col. Ottosen after extending his congratulations. "After this emergency is over, it over, it will not seem as impossible for us to own planes as it seemed for us to own automobiles after the World war."

Letters from army and navy officers, as well as from aircraft manufacturers were read, by Gott.

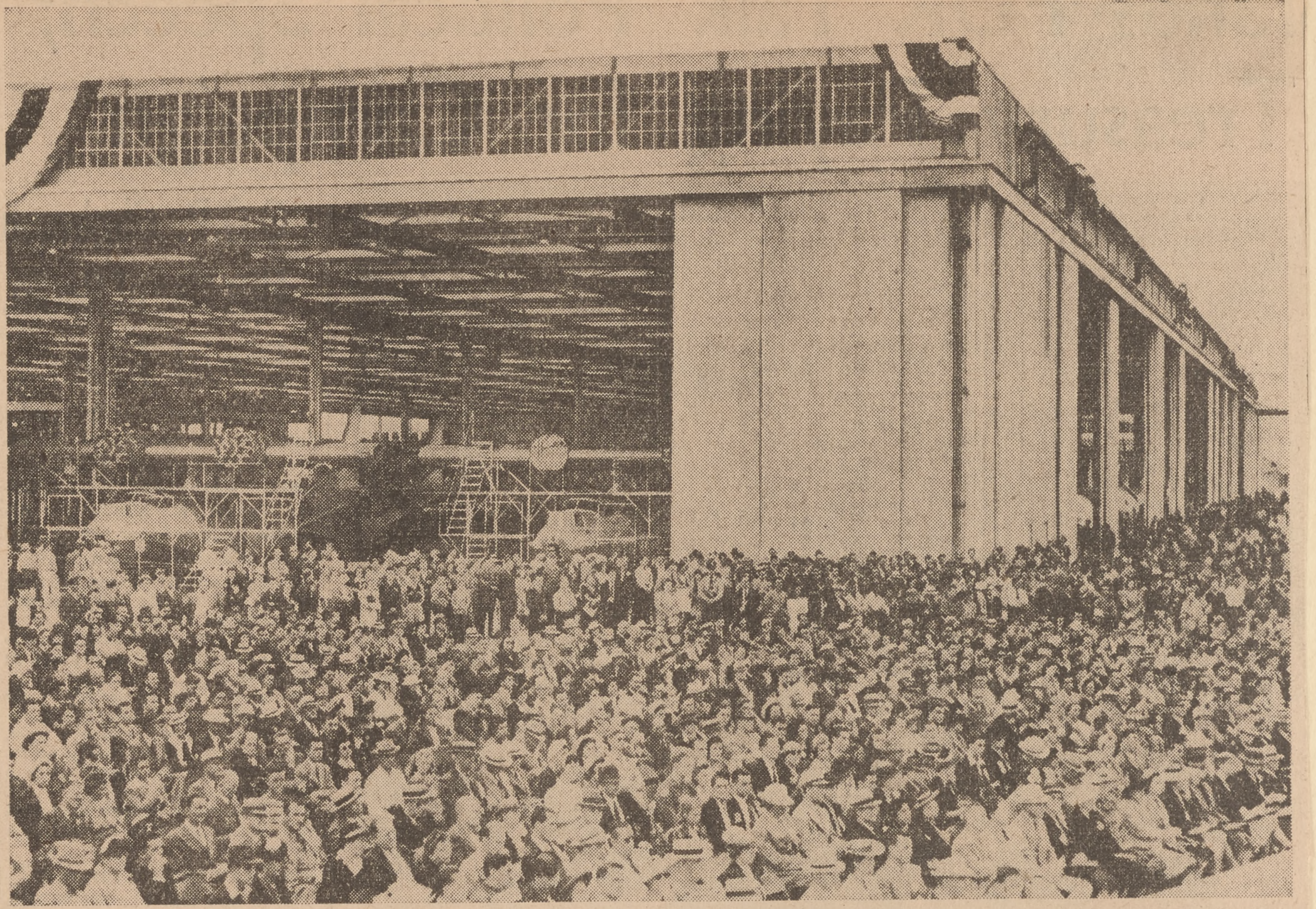
MUSIC PROGRAM

The musical side of the dedication featured the introduction of a new song, "Wake Up America," written by Edward Borgens of the Consolidated orchestra, with words by Mrs. Dorothy Fleet, wife of Maj. Fleet.

The addition which was dedicated was filled with Consolidated planes in various stages of construction, but because of existing restrictions there was no touring of the plant by the 5000 who attended the exercises.

Maj. Fleet estimated the cost of the addition at $2,500,000 including its equipment, other local additions for which contracts have been let will cost $2,500,000 without machinery, he added.

ADM. BLAKELY DEDICATES $2,500,000 ADDITION TO CONSOLIDATED PLANT



Dedicated to the defense of the United States and the commercial air development to follow the emergency was the $2,500,000 plant addition at Consolidated Aircraft Corp. yesterday. The view shows a corner of the addition and some of the 5000 persons who attended.

MAJ. R. H. FLEET
"Peacetime commandeering . . . the end of free men and free enterprise."

ADM. CHARLES A. BLAKELY
". . . I dedicate it to preparedness."

COL. PETER OTTOSEN
. . . many may own planes.

Union--9/13/40

Consolidated Maps Expansion Swelling Employes to 35,000

Details of a huge expansion program which will increase Consolidated Aircraft Corp.'s current backlog of $132,000,000 to $300,000,000 and swell the number of employes from 14,500 to more than 35,000, were outlined to army engineers at a meeting in the harbor commission office yesterday by Maj. Reuben H. Fleet. Consolidated president.

Fleet said several thousand new homes and new barracks will have to be built here to accommodate employes to be added to the aircraft plant at a rate in excess of 500 a week. The barracks, he explained, will be for single men. He astounded even the army engineers by the comprehensive scope of the new construction program. He said he was opposed to building plant No. 2 in Texas, a program which had been advocated by Louis Johnson when he was assistant secretary of war.

The meeting was called by Col. Edwin C. Kelton, district army engineer, to hear protests relative to modification of existing pier and bulkhead lines at Roseville, North Island, Lindbergh field and the south bay.

Fleet said Consair's expansion plans made it imperative to construct a new 1500-foot assembly building and seaplane ramp on the westerly end of the municipal airport.

Glenn Rick, city planning engineer, voiced the only protest relative to a fill at Lindbergh field which might interfere with Harbor

---

CONSAIR MAPS EXPANSION PROVIDING FOR 35,000 JOBS

(Continued From Page 1)

dr., but after hearing Maj. Fleet, expressed the belief the city planning commission may withdraw its objections. Because of emergency conditions, Col. Kelton said the final report of the planning commission must be in his hands within a week.

Joe Brennan, port director, said the harbor department was in full accord with Maj. Fleet and opposed to the protests lodged by Rick.

"There is much more at stake than a view of the bay from Harbor dr.," Brennan said.

This was amply borne out by Maj. Fleet's subsequent testimony. He advised the army engineers that Consair will do five times the amount of business in the next two years than it has accomplished in the last 16 years. Three eight-hour shifts are contemplated at the aircraft factory to supplant the current two 10-hour shifts.

He pointed out that valuable time would be wasted by continuing the resent policy of hauling huge new mbers from the final assembly uilding across the airport to the coast guard air base ramp.

"It has developed we must now deliver at least seven of these big ships a day and we simply cannot afford to take the time to haul and re-haul these ships across the flying field," Fleet said. "It is imperative we have our own ramp."

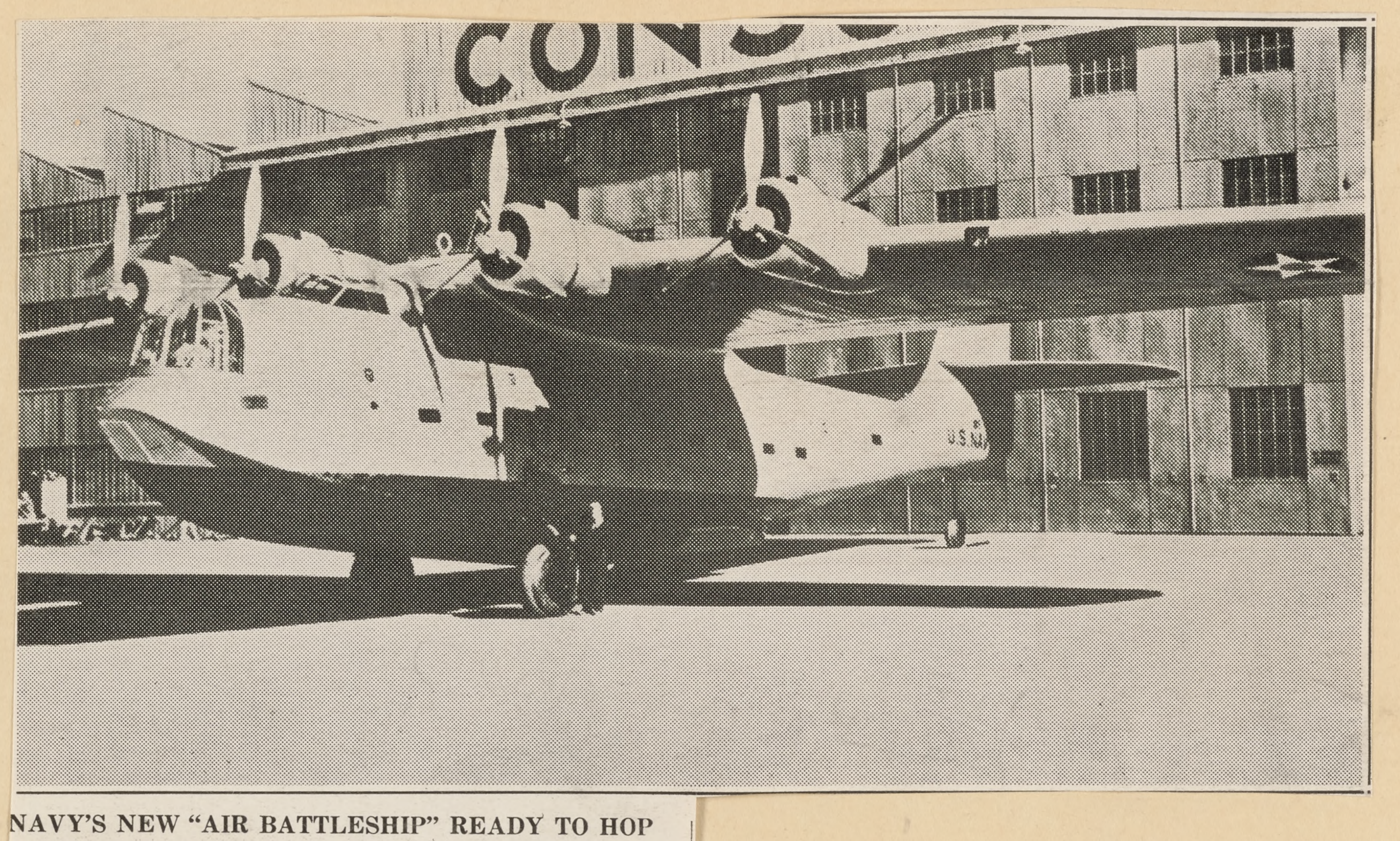
Fleet further revealed Consair has virtually reached an agreement with the navy department for construction of 6000 single units for married Consair employes and barracks capable of housing at least 6000 single men. He said the company also is to have two tenders to assist in handling the navy bombers during their test flights in the bay.

Fleet said "the country is in a very precarious position and the time has come when we have to take government aircraft contracts whether we want to or not."

Lt. Comdr. H. A. Bolles, 11th Naval district assistant public works officer, told Col. Kelton that Rear Adm. Charles A. Blakely had no objections to any of the proposed harbor line changes.

A delegation of Roseville residents said the navy was responsible for clogging up water mains in the vicinity of their homes following the dredging and reclamation of Area M in the area between Roseville and the Naval Training station. Col. Kelton pointed out the hearing was confined to protests based solely on navigation interests and advised the protestants to notify the district commandant of their grievances.

The army engineers intimated protests for filling in the bayside of Harbor dr. between the coast guard air base and the marine base probably will be overruled in view of the national defense problems outlined by Maj. Fleet. Final decision, however, will be made by the war department soon, as Col. Kelton said, "The matter is very pressing, and contracts are about to be let for dredging in this area."



NAVY'S NEW "AIR BATTLESHIP" READY TO HOP—Heralding advent of new fleet of super-dreadnaughts of the air, this first of what is expected to prove most powerful aircraft of its type, makes camera debut outside hangar at San Diego as it was groomed for initial flight. The ship will undergo exhaustive tests before passing into Naval air fleet.

ACME NEWS SERVICE September, 1940

aircraft news.

HALL AIRCRAFT NOW PART OF CONSOLIDATED

9/26/40

All physical assets, as well as the name and good will of the Hall Aluminum Aircraft Corporation of Bristol, Penn., have been merged through purchase with Consolidated Aircraft Corporation. Thus tersely may be stated the fact that Hall Aluminum Corporation is now a part of Consolidated Aircraft Corporation.

Some 32 key men of this eastern Consolidated organization and all patent rights, material and equipment of the former company have been acquired through the purchase.

Hall Aluminum Aircraft Corporation had its beginning in Charles Ward Hall, Inc., in 1916. Since that time and until the formation of Hall Aluminum Aircraft Corporation, Inc., in 1927, Charles Ward Hall, president and sole stockholder, had been continuously engaged in research in the use of aluminum alloys in connection with the design and construction of aircraft. Hall applied for and was granted numerous basic patents relating to this field.

Along with the airplanes built, there were developed a complete line of draw bench shapes and other parts of strong aluminum alloys which were perfected and continuously produced and sold since 1923 to various airplane manufacturers.

In 1927 Hall Aluminum Aircraft Corp. was incorporated through the purchase from the late Charles Ward Hall of all assets belonging to Charles Ward Hall, Inc. The new company until its acquisition by Consolidated Aircraft Corp. has been engaged in the design and manufacture of aircraft, particularly flying boats and seaplanes, aircraft parts and sections, and in overhaul and repair work.

Clinging rather tenaciously to the naval side of aviation construction, Hall Aluminum Aircraft has produced principally seaplanes and flying boats, pioneering in many phases of the work and particularly in all-metal construction. In 1920 metal wings were constructed for HS-3 flying boats. In 1924, there were built in conjunction with the Curtiss Aeroplane and Motor Co., two U. S. Navy F4C-1 fighter airplanes, the first all-metal aircraft used by the U. S. Navy. Other airplanes built included the C-333, XFH-1, XPH-1, PH-1s, FH-2s, PH-3s and ZPH2H-1 a four-engne long range patrol or bomber boat with four liquid cooled engines. In 1933 it made the longest non-stop flight up to that time by the Navy from Norfolk, Va., to Coco Solo in the Canal Zone.

The company also made the twin float monoplane torpedo bomber, the XPTBH-2. Throughout this period and to the present time the corporation produced and supplied parts and standardized aircraft sections to all principal manufacturers and producers in the United States and Canada. Besides supplying the U. S. Navy with many of its aircraft the company has also supplied the coast guard with numerous craft.

Bu lle's
88
PRESS CLIPPING BUREAU
NEW YORK

N.Y.C., HERALD-TRIBUNE
SEPTEMBER 20, 1940

Aircraft Plant Complains On $300,000,000 Order

Consolidated Head Says U. S. Is Using Pressure

SAN DIEGO, Calif., Sept. 19 (UP).—Maj. Reuben H. Fleet, president of Consolidated Aircraft Corporation, complained today that his concern has been virtually compelled to accept Navy and Army aircraft orders and may be required to fill defense contracts for $300,000,000 in the next two years.

He said that Consolidated, whose Army and Navy business had swelled the company's backlog to $134,000,000, "certainly" has not sought the orders since "under pending profits tax legislation we may be restricted to a net profit of 2¼ per cent—a risky margin."

Maj. Fleet's statement came at a hearing before Col. Edwin C. Kelton, United States Army district engineer from Los Angeles, in which Consolidated sought an allotment of bayfront land on which to construct a hangar for servicing flying boats.

The aircraft executive, head of the company which manufactures the Navy's long range patrol bombers, criticized what he termed government pressure on industry. He said Consolidated had been asked to build a second plant somewhere in Texas, an operation which he said would split up his organization.

---

onsolidated 'Forced' Into U. S. Contracts

(By United Press)

SAN DIEGO, Sept. 18.—Major Reuben H. Fleet, president of Consolidated Aircraft Corp., today declared that his firm, which he said might be required to fill $300,000,000 in government contracts in the next two years, had literally been compelled to take the army and navy business.

Referring to navy and army business which now provides Consolidated with a backlog of $134,000,000, Fleet said "We certainly haven't sought it, as under pending profits tax legislation we may be restricted to a net profit of 2¼ per cent—a risky margin."

The head of the company, which manufactures the famous PBY long-range patrol bombers for the navy, made the statement at a hearing before Col. Edwin C. Kelton, U. S. army district engineer from Los Angeles.

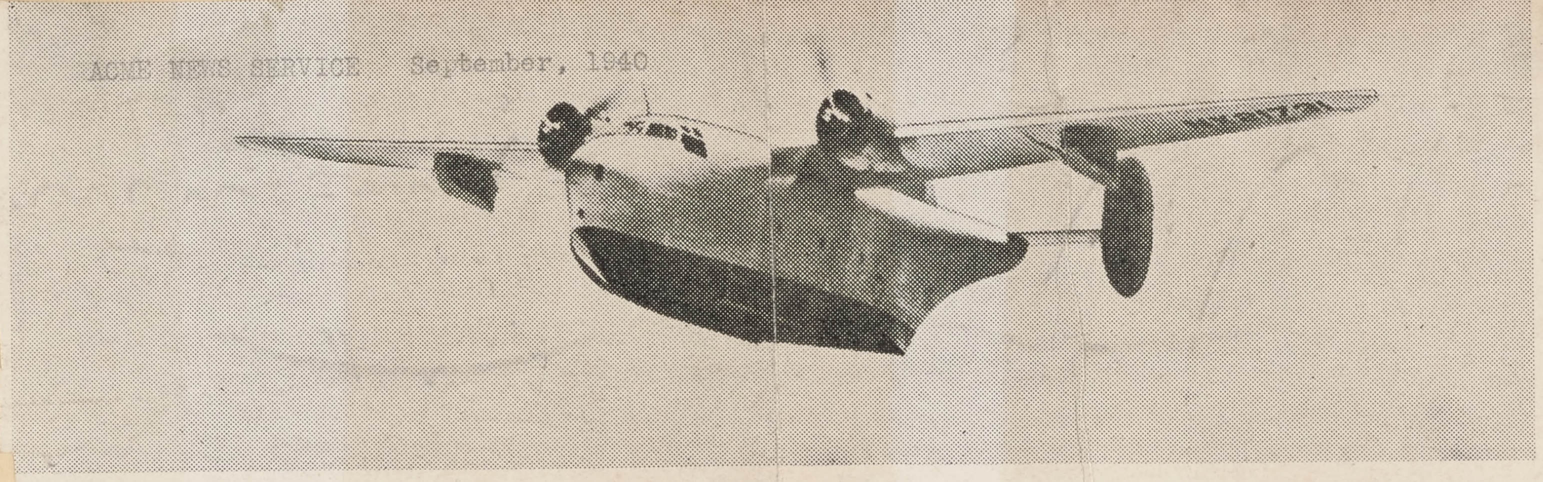
Fleet appeared at the hearing to present his company's appeal for speed in allotting them sufficient bayfront land on which to construct a hangar in which flying boats for the navy could be serviced. The land, according to Fleet, would be created by the government harbor dredging program.

Fleet explained that waterfront hangar space was necessary to provide cover for workmen who frequently have to spend several days servicing the large flying boats.

Fleet said in connection with the proposed service hangar it would be necessary to bring workmen here that would increase San Diego's population by nearly 125,000. This would necessitate construction of 6,000 housing units and vocational training facilities, he said.

The executive, who recently said he hesitated to announce any further plant expansion because of a "bill recently passed by the senate authorizing peacetime commandeering of industrial plants which may fail in any respect to please a high official of our government," revealed today Consolidated has been urged by the war department to build a second plant "somewhere in Texas."

Fleet said he was "resisting" this "pressure" because he felt a plant in Texas would split up his organization and thus create new difficulties.


ACME NEWS SERVICE September, 1940

NEW 25-TON FLYING BOAT TRIES ITS WINGS ON WEST COAST. CAN ACCOMMODATE FIFTY TWO—Pictured on West Coast in trial flight is the new 52-passenger Consolidated Aircraft long range flying boat boasting two 18-cylinder Wright Duplex-Cyclone ingines, largest and most powerful air-cooled engines in the world. Cruising radius is 10,000 miles.

REGIONAL NEWS SERVICE

9/30

Planes "Star" In War Games

SAN FRANCISCO, Jan. .... (RNS)—The value of aircraft to the national defense was being graphically demonstrated to Northern and Central California this week (Jan. 15-20) as the Army, Navy, Air Corps and National Guard staged the most extensive war games the Pacific Coast has ever witnessed.

The drone of plane motors across California skies also brought into sharp focus the importance of the aircraft industry to the state. For nearly 50 per cent of all the floor space devoted to aircraft manufacture in the United States is in California and thousands of men are employed in those factories producing planes for Uncle Sam's fighting services.

Many of these California-built planes were participating in this week's maneuvers.

The war games brought into action 10,000 troops of the Army's Third Division, 700 National Guardsmen, 50 warships of the Fleet and the bombers, pursuit ships and reconnaissance planes of the Pacific Wing of the General Headquarters Air Force.

Centering in the Monterey area, the war games consisted of an attack on the coast by a "black" force and defense measures by a "blue" force, surrounded by all the strategy and secrecy of real warfare.

Several hundred civilians were given an opportunity to participate, as the Aircraft Warning Service, composed of public utility and railroad employes, amateur radio operators, Federal and State foresters, lighthouse tenders and Coast Guardsmen throughout Northern and Central California, "spotted" the movements of "hostile" aircraft and flashed reports to "defense" headquarters in San Francisco.

Sunnyvale Air Lab Gets New Boosts

SAN FRANCISCO, Jan. .... (RNS)—A presidential request that Congress appropriate $4,200,000 for development of the Sunnyvale aeronautical research station and acquisition of 100 acres for a site for the station brought that $10,000,000 Northern California project two steps nearer reality this week.

California's rapidly expanding aircraft industry will work in close cooperation with the government researchers at Sunnyvale, translating their discoveries into increased safety and sturdiness for commercial and military planes.

Californians receive $46,000,000 a year in wages from the state's aircraft industry.

LUCE'S PRESS CLIPPING BUREAU
157 CHAMBERS STREET, NEW YORK

CLIPPING FROM
NEW YORK TIMES
Circ. D. 474,277 S. 788,997

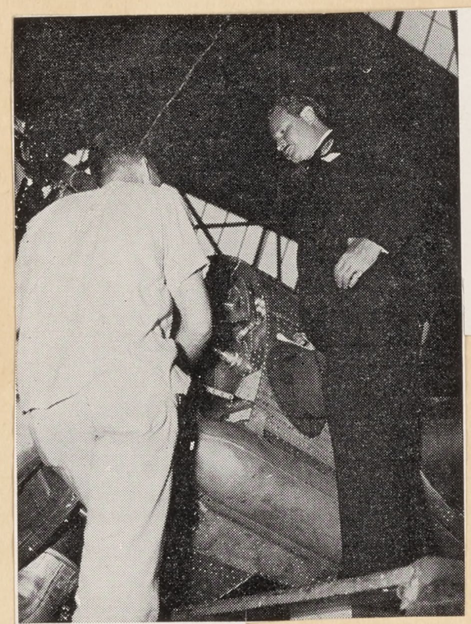
SEP 27 1940

deliver the commencement

Consolidated Aircraft Expands

Consolidated Aircraft Corporation has purchased and merged into its organization all physical assets as well as the patent rights, material and equipment, name and good-will of the Hall-Aluminum Aircraft Corporation of Bristol, Pa., and has absorbed thirty-two key men of the Hall-Aluminum company.

Fire Record


SEPTEMBER . . . 1940

Douglas Airview

INGOLD OF CONSOLIDATED

Visiting executive from Consolidated Aircraft was William Forbes Ingold, shown in picture at left studying construction of engine nacelle in a Douglas transport. Stewart Simon, left, Dept. 85, explained some of its intricacies.

Consolidated Air Gets Order From Australian Government

Wall St. Journal 9/18/40

MELBOURNE—After a meeting of the Australian war cabinet, Prime Minister Menzies announced yesterday the decision of the Australian government to purchase 11 more PBY flying boats from Consolidated Aircraft Corp. in the United States. Delivery is expected before the end of the year. The cost, including spares, will be £1,000,000.

Mr. Menzies added that seven similar boats have already been ordered from America and fulfillment of the latest order would permit formation of a second squadron.

The new machines, which are deemed very suitable for long range reconnaissance work in Australian waters, would be used in place of Sunderland flying boats ordered in England last year and later handed over to the British government.

LOS ANGELES—The order from the Australian government for 11 additional PBY patrol bomber flying boats given to Consolidated Aircraft Corp. of San Diego will involve slightly above $2,500,000, increasing the company's backlog to close to $135,000,000.

In addition to orders from the United States Navy for this well seasoned type of flying boat in use by the Navy for several years, Consolidated's backlog now includes a substantial order for this type from Great Britain. Consolidated, now getting in the swing of mass production on larger type craft, is producing PBY flying boats for both the United States Navy and Great Britain and huge four-engined flying fortress type bombers for the United States Army Air Corps.

Consolidated very recently completed another phase of its expansion program at a cost of $2,000,000 and is understood to have in contemplation expenditure of an additional $2,500,000 at its San Diego plant. Plans for a branch plant at Dallas, Texas, under discussion for a time are understood to have been dropped and the company will apparently concentrate production at its one plant at the tip of Southern California.

Vast Warplane Contract Won

L.A.TIMES 9/21

Consolidated Aircraft Receives $85,800,000 Order From Army

SAN DIEGO, Sept. 20. (Exclusive)—Skyrocketing its backlog of unfilled orders to more than $220,000,000, Consolidated Aircraft Corp. today received an $85,800,000 contract for an unspecified number of giant four-motored Army bombers.

The planes, described by Army Air Corps officers in recent test flights here as an advancement on the "flying fortress" type, generate 5000 horsepower and can fly 3000 miles with a four-ton bomb load. They said they are capable of a 300-mile-per-hour speed.

Maj. E. N. Gott, vice-president of the company, today said the exact number of planes in the Army order or the time they must be delivered is confidential. He disclosed that 10,800 men are now employed in the plant, with several hundred men being added weekly.

Pacific Coast

Edition - Wall St. Journal 9/25/40

Consolidated Aircraft Corp.

Formal acquisition of all physical assets as well as the name and good will of Hall Aluminum Aircraft Corp. of Bristol, Va., was announced yesterday by Consolidated Aircraft Corp. Hall Aluminum, acquired by outright purchase, is now an integral part of Consolidated Aircraft. Purchase price was not divulged.

Hall Aluminum Aircraft Corp. began as Charles Ward Hall, Inc., in 1916. Until the formation of Hall Aluminum Aircraft Corp. in 1927 Charles Ward Hall, president and sole stockholder, was continuously engaged in research in the use of aluminum alloys in connection with the design and construction of aircraft. Mr. Hall controlled numerous basic patents relating to the aircraft field.

There was developed a complete line of draw bench shapes and other parts of strong aluminum alloys which were perfected and sold to various airplane manufacturers. Hall Aluminum has also been engaged in the design and manufacture of aircraft, particularly flying boats and seaplanes, aircraft parts and sections and also in overhaul and repair work.

AIRPLANE CONTRACTS

Wall St. Journal 9/17/40

War Department Clears Another $116,842,227 Awards; Coast Firms Included

Dow Jones News Service

WASHINGTON—The War Department announced yesterday that contracts for airplanes totaling $116,842,227 have been cleared by the National Defense Advisory Commission and awarded by the department to five manufacturing concerns.

A summary of contracts awarded to the industry follows:

Glenn L. Martin Co., Baltimore, bombers and spare parts, $14,269,646.

Boeing Airplane Co., Stearman Aircraft Division, Wichita, Kan., training planes and spare parts, $6,934,096.

Boeing Aircraft Co., Seattle, bombers and spare parts, $59,762,850.

Lockheed Aircraft Corp., Burbank, Calif., pursuit planes and spare parts, $15,646,451.

Douglas Airplane Co., Santa Monica, Calif., transport airplanes and spare parts, $20,229,184.

LOS ANGELES—With allocation of yesterday's large plane orders, Southern California producers now have $677,000,000 of business on their books, practically all military for account of the United States defense program and those of Great Britain. Of the total, the amount of commercial work, although at record levels, is probably less than $50,000,000.

All Southern California plants are taking on help as fast as adequate type of men can be obtained. Present employment is probably close to 60,000, and probably will reach 100,000 by next spring.

Backlogs of the major Southern California plants, including yesterday's awards, are approximately as follows: Consolidated Aircraft, $132,000,000; Vultee, $80,000,000; Vega, $32,000,000; Lockheed, $183,000,000; Douglas, $160,000,000, and North American, $90,000,000.

First Bombers From Consair This Month

Tribune 9/6/40

The first of 200 patrol bombers, being built by Consolidated Aircraft Corp. for the United States navy, will be delivered this month, The Associated Press reported today from Washington, D. C., in a dispatch stating that delivery of fighting, scouting and bombing planes to the navy will reach a rate of more than 100 a month by early next year, according to an official statement.

Consolidated deliveries will increase to 22 a month by January and to 40 in October, 1941.

The 100-a-month rate includes only combat-type planes for which formal contracts have been signed. It does not include those which may be contracted for later, nor training, experimental and utility planes.

Delivery Rates Revealed

Delivery dates, hitherto withheld as naval secrets, were disclosed in a navy schedule inserted in the congressional record by Rep. Vinson (D-Ga), chairman of the house naval committee. In the same table, the navy discloses it has reached agreements, pending contracts, with manufacturers for 2617 additional fighting, scouting and bombing planes and 27,000 propellers.

The propellers were intended for both army and navy use during the 1941 and 1942 fiscal years and 70-odd bombers among the planes also were for the army. With the new agreements, the navy had 3648 fighting, patrolling and bombing planes on order, plus large numbers of training and other craft.

S. D. Number Progresses

Considering only the planes contracted for formally, Vinson's statement showed the following delivery rates for undelivered ships:

From 1940 fiscal year funds: 77 Grumman fighters—2 in September, subsequent deliveries depending on receipt of engines; 100 Vought-Sikorsky observation scouting planes —3 in October, 22 in November, 24 in December, 34 in January, 38 in February, 37 in March, 1941; 200 Consolidated patrol bombers—1 in September, the rate rising to 22 in January and then to 40 in October, 1941; 87 Douglas scout-bombers—17 in November, then 21 a month; 57 Vought-Sikorsky scout bombers—1 in September, 4 in November, 13 in December and then 15 a month.

From 1941 fiscal year funds: 234 Grumman fighters—1 in December, 81 additional by August, 1941, 80 additional by November, and 81 additional by February, 1942.

S. D. Plane Plants To Build New Units

9/11/40

Expansion of two plane factories and construction of a two-story 60-room apartment were called for in three building permits aggregating $74,500 that were issued by the inspection department at Civic Center yesterday.

Largest permit was for $30,000 and was obtained by Consolidated Aircraft Corp. for an office building. Plant engineers, the factory manager and test pilots will have quarters in the structure, said C. A. VanDusen, vice president of the corporation.

Ryan Aeronautical Co. took out a $20,000 permit for a steel addition to its hangar on Pacific highway. The third large permit was issued to B. E. Harmer for a $24,500 frame and stucco apartment at 4265-79 Euclid ave.

AUSTRALIA PURCHASES 11 FLYING BOATS

aircraft news. 9/19/40

MELBOURNE — The Australian government yesterday announced its decision to purchase 11 flying boats in the United States at a cost of $3,500,000 for delivery before the year-end.

Seven previously ordered flying boats will be stationed at Australia's new seaplane base at Rathmines, N.S.W., and will provide two squadrons with reserve for long range coastal reconnaisance.

These planes will replace 20 Sunderland flying boats ordered in the United Kingdom, and now turned over to the Royal Air Force. The order was placed with Consolidated Aircraft Corp. of San Diego.

The order from the Australian government for 11 additional PBY patrol bomber flyng boats received by Consolidated Aircraft Corp. of San Diego yesterday, totaling $3,500,000, boosts the company's current backlog to approximately $135,500,000.

In addition to orders from the United States Navy for this well-seasoned type of flying boat in use by the Navy for several years, Consolidated's backlog now includes a substantial order for this type from Great Britain.

Consolidated, now getting into the swing of mass production on larger type craft, is producing PBY flying boats for both the United States Navy and Great Britain and huge four-engined fortress type bomber for the United States Army Air Corps.

The company very recently completed another phase of its expansion program at a cost of $2,000,000 and is understood to have in contemplation expenditure of an additional $2,500,000 at its San Diego plant.

Plans for a branch plant at Dallas, Texas., under discussion for a time are understood to have been dropped and the company will apparently concentrate production at its one plant at San Diego.

S.D. AIR PLANTS' BACKLOGS TOP COUNTY'S ASSESSED VALUATION

Union --9/23/40

With announcement by the war department yesterday that Ryan Aeronautical Co. had received a $5,355,087 contract for new planes, the backlog of San Diego's two major aviation firms has soared far above the total assessed valuation of the entire county, including its eight incorporated cities. The total assessed valuation of the county, including the eight incorporated cities of San Diego, National City, Chula Vista, Coronado, La Mesa, El Cajon, Escondido and Oceanside, is $221,461,643, of which $149,932,440 is listed for the city of San Diego.

Ryan's backlog, with the new order, is $10,200,000. Consolidated Aircraft's backlog is reported as $221,300,000, or a total for the two firms of $231,500,000.

The number, types and delivery dates on the new Ryan order were not specified in the war department's announcement yesterday, The Associated Press reported. It was believed that many of them would be the Ryan S-T primary training planes.

Both aircraft companies are engaged in vast expansion programs to handle the great number of planes they will build for the defense of America. Their payrolls are jumping weekly as hundreds of employes are added every seven days to handle the orders on hand.

Acquires Patents

Consolidated Aircraft Corp. yesterday announced completion of the merger, through purchase, of the Hall - Aluminum Aircraft Corp., Bristol, Pa.

Consolidated officials said 32 key men of the eastern plane plant had joined the San Diego organization, and that all patent rights, material and equipment of the former company had been acquired through the purchase.

The Hall-Aluminum company had its beginning in Charles Ward Hall, Inc., in 1916. The Hall-Aluminum Aircraft Corp. was formed in 1927. The new company engaged in the design and manufacture of aircraft, particularly flying boats and seaplanes, aircraft parts and sections, and in overhaul and repair work.

The original company had engaged principally in research in the use of aluminum alloys in connection with the design and construction of aircraft. Numerous basic patents relating to this field were acquired by Consolidated through the merger.

Union 9/15/40

Consair Seeks Water St. Cut To Highway

Maj. Fleet Offers $20,000 to Cover Condemnation Cost

Condemnation by the city of a strip of property west of Pacific highway and between Bean and Harasthy sts., to permit Water st. to merge into Pacific highway just south of Harasthy st. instead of at Bean st., has been proposed by Maj. R. H. Fleet, Consolidated Aircraft Corp. president, in a letter just received by the city planning commission.

By doing this, said Glenn Rick, city planning engineer, the big plane plant could erect its proposed new final assembly building, which is to go up north of its present factory, closer to Pacific highway and more in line with the existing structure.

AFFECTS EFFICIENCY

The planning engineer said that this building alignment is important to efficient operation of the plant, and that Maj. Fleet, in his letter, said that if the city would condemn the property required for the new Water st. connection, the corporation "will contribute $20,000 of the expense, unless the total award is less than that amount, in which event our contribution would be limited to the total amount of the award."

Rick explained that part of Water st. is open south from Witherby st. The extension, as it appears on the map, would continue on tidelands to a junction with Pacific highway. If the private property described by Maj. Fleet were obtained by the city for street purposes, Consolidated then could move its proposed new assembly building forward on the tideland strip now set aside for Water st.

WILL DRESS UP WALLS

"If Water st. is not cut through, our building will not face on a highway, and the exterior walls will be finished in corrugated galvanized iron," Maj. Fleet wrote. "However, if the street is located as shown (on a map that accompanied the letter), we will finish the east elevation fronting on Water st. and the north elevation fronting on Harasthy st. in stucco, similar to our present buildings fronting on Pacific highway.

"This will entail an additional expenditure of $10,000, which expenditure we are willing to make in the interest of beautification of the city."

That the $20,000 offer to cover the condemnation award should be ample was indicated in Maj. Fleet's letter, in which he disclosed that "we recently purchased the entire froontage between Vine and Bean sts. on the east side of Pacific highway for $15,000."

SPEEDY APPROVAL SEEN

Development of Water st. is part of a comprehensive plan to relieve traffic congestion at Bancroft ave. and Pacific highway. With that in mind, Rick insisted when the aircraft corporation's original lease was drafted, that sufficient tidelands be excluded to permit Water st. to be merged with Pacific highway at Bean st. In view of Maj. Fleet's offer to pay up to $20,000 of a condemnation award, the planning engineer said he would favor the new proposal.

To speed consideration of the suggestion, Rick said he has advised Consolidated officials to withdraw the letter, which was addressed to the planning commission, and to resubmit it to the city council so that body, if it desired, immediately could order an appraisal made. This could be done Tuesday, said Rick whereas the planning commission, which could not authorize an appraisal, does not meet until Sept. 24, when its nly action would be to refer the letter to the council for consideration the following week.

Clash Looms; U. S. May Get Singapore Base

HONG KONG, Sept. 21 (Saturday) (A.P.) — The British-owned newspaper China Mail reported today that "since yesterday morning" Japanese warships have moved into Tonking bay "as a persuasive gesture" to back up Japanese negotiations for military rights in French Indo-China.

WASHINGTON, Sept. 20 (I.N.S.)—Authoritative Chinese quarters said tonight their government may attempt a fusion with Indo-China's native masses should the French authorities there allow Japanese troops to cross the territory under orders of the Vichy government.

Secy. of State Hull told his press conference meantime that his talks with British and Australian envoys have covered the question of basing the United States fleet at Singapore, closer by 2000 miles to Japan than the present Hawaiian base.

RICHARDSON CALLED BACK

Linked also to the administration's efforts to maintain the Pacific status quo was a navy announcement that the fleet commander-in-chief, Adm. James O. Richardson, on arrival of the first three sections of the battle force for overhaul at San Pedro, Calif., will come on to Washington.

Here, officials said, the admiral will hold his seconnd conference in recent months with President Roosevelt and the navy high command on the Pacific situation. He leaves Honolulu Monday on the battleship New Mexico.

HONGKONG, Sept. 21 (Saturday) (A.P.) — Chinese press reports — unconfirmed elsewhere — declared today that an understanding had been reached for Chinese-French military collaboration in the event Japan invades Indo-China.

These reports said the French would allow Chinese troops to enter Indo-China to oppose any Japanese invaders.

Hull, in confirming reports that he had mentioned Singapore to Lord Lothian, British ambassador, and Richard Casey, Australian minister, emphasized that the talks as yet have not reached the status of negotiations calling for decisions.

A decision entailing the fleet's transfer to Britain's Far Eastern "Gibraltar"—a base separated by three weeks' steaming time from the Panama canal and the Atlantic —presumably would require Richardson's advice and depend in part upon the course of the battle of Britain.

HONG KONG, Sept. 21 (Saturday) (A.P.) — Highly connected Japanese quarters here said today Japan was prepared to take action aiming at the seizure of all French Indo-China if France declined to permit the passage of an unrestricted number of Japanese troops through the French colony.

Competent quarters here expressed doubt the fleet would move to Singapore and until an invasion attempt demonstrated the British fleet's ability to hold the

(Continued on Page A, Col. 4)

Dutch Treat

A 300-year-old Holland candy box is among exhibits at public library. Page 6-A.

* * *

State college "frosh" get their annual medicine. Page 2-A.

* * *

UNION - 9-21-40

HARBOR DRIVE, CONSAIR LAND PROJECTS MOVE STEP NEARER

Plan Board Drafts Recommendation To Council for Use of U. S. Defense Funds

Ten to 15 giant seaplanes soon will be produced by Consolidated Aircraft Corp. daily, the city planning commission was informed at a special meeting yesterday which was marked by the drafting of a recommendation to the city council that it immediately authorize an application for national defense fund for Harbor dr. construction Other highlights of the meeting included:

1—Decision by the commission not to protest against modification of pier and bulkhead lines to permit a 500x2500-foot land fill on the bay side of Harbor dr. between the coast guard air station and the Marine base.

CLIPPER BASE MOVE SEEN

2—Forecast that the transpacific clipper ship base eventually will be moved from San Francisco to San Diego "where there are no bridges and no fog."

3—Expression of belief by Joe Brennan, port director, that defense funds can be obtained to build Harbor dr. as a military road connecting the Destroyer base, Navy pier, 11th Naval district headquarters, the coast guard air station, the Marine base, Naval Training station and the Ft. Rosecrans reservation.

4—Report by William Maloney, Consair plant engineer, that the factory is expanding so rapidly that he sometimes wonders whether he is in "the general building contracting business or the aircraft industry," and disclosure by him that because of inadequate city sewage facilities, the plane corporation is installing its own outfall and ejector pumps at a cost of $27,500.

PIER HEARING DELAYED

The meeting was called after Col. Edwin C. Kelton, Los Angeles, district army engineer, continued for a week a hearing he opened here Wednesday on modification of the pier and bulkhead lines. This delay was granted to give the planning commission an opportunity to study the plan.

In the discussion yesterday, Maloney emphasized Consair's need for additional land. He said that seaplane ramps are imperative, and that a site is needed on the water's edge in which seaplanes can be overhauled. He pointed to the inadequacy of the existing ramp at the south end of the field and which also is used by the coast guard, and said new facilities are needed at the north end of Lindbergh field and away from airport plane traffic congestion.

"You're talking about a 300,000,000 business," said Brennan, in urging the commission to indorse the fill. He said that every available

(Continued on Page A, Col. 8)

* * *

Consair Wins 85-Million Order

Backlog Climbs To $217,800,000

Bringing its total backlog for government warplanes to $217,800,000, Consolidated Aircraft Corp. yesterday received an $85,800,000 contract from the war department for an undisclosed number of four-motored bombers, The Associated Press reported from Washington, D. C.

The previous backlog was $132,000,000.

In a talk before U. S. army engineers in the harbor commission office Wednesday, Maj. Reuben H. Fleet, Consolidated president, said the Lindbergh field plant will have a backlog of $300,000,000 soon, intimating that additional contracts are forthcoming from the war and navy departments.

Delivery dates for the new bombers were not specified.

Consolidated authorities reported new workers are being employed at the rate of 500 a week and that this will be stepped up as new buildings are completed under the company's huge expansion program. Present plans call for a working force of 35,000 men, virtually triple the present number of employes.

R. A. F. Batters German Canals

LONDON, Sept. 21 (Saturday) (I. N.S.)—Crippling destruction dealt by British bombers to Germany's intricate web of canals, railways and roads was followed early today with a prolonged aerial barrage that sent many tons of explosive and incendiary steel crashing into the Nazi battlements across the English channel.

Hour upon hour through the night and into the morning, relays of Royal Air force squadrons vaulted over the narrow waters to deliver their cargoes. They centered their fury mainly on the docks of Calais, the nearest of the Nazi-held invasion springboards to England, and on the long-range German guns planted around near-by Cap Gris Nez.

HEAR HEAVY BLASTS

Watchers on the Dover chalk cliffs, 22 miles opposite Calais, reported they saw and heard the heaviest explosions that have yet rocked the other side of the channel. Violence of the repeated R.A.F. thrusts was attested to by the fact that German anti-aircraft guns erupted not hundreds but thousands of tracer shells that streaked the dark sky like a giant fireworks display.

The waterways and transport lines of Germany—nerve system of Adolf Hitler's war machine—shared with the Nazi invasion bases and inland centers in the gradual paralysis the British bombers sought to spread with their unceasing attacks

Navy Bars Cameras From Ships in Hawaii

HONOLULU, Sept. 20 (A.P.) — The United States navy is increasing its precautions against espionage. Officers and enlisted men, it was learned today, have been forbidden to take cameras aboard ships.

Sale of camera supplies in the ships' service stores also has been stopped.

The man she was engaged to married another girl, but Brooke found happines the end of a love maze modern as tomorrow. It's

OVER

S. D. Air Plants Get 'Speed Up' Army Orders

Union--Wed. 9/11/40

WASHINGTON, Sept. 10 (I.N.S.) —The war department announced tonight it had sent "speed up" letters to 21 manufacturers calling for $1,251,000,000 worth of armaments, including 14,394 planes, for national defense.

Among the firms receiving letters was the Ford Motor Co. of Detroit, which will manufacture plane motors under the air defense program.

SEEK 14,394 PLANES

Acting under the five-billion-dollar defense deficiency appropriation bill signed by President Roosevelt yesterday, the war department letters, approved by the national defense commission, authorizes the manufacturers to go ahead with the program without delay while contractual details are being worked out.

The 14,394 planes ordered, at an estimated cost of $817,000,000, provides for every type of army craft, from trainers to fast pursuit ships, medium and heavy bombers.

Earlier in the day the department announced a specific contract with the Bell Aircraft Corp. of Buffalo for 120 fast pursuit planes, at a cost of $4,962,220. These pursuit ships were said to have shown a speed of more than 400 miles an hour in recent army tests.

SILENT ON NUMBERS

In the "speed up" letters tonight, specific numbers of planes, engines or parts to be produced by each company was not specified. The engine program, however, calls for 28,282 plane motors, at a cost of $377,000,000, while $57,000,000 worth of propellors and blades are provided for in the program.

The letters were sent to the following companies:

For planes: Boeing Aircraft Co., Seattle; Consolidated Aircraft Corp., San Diego; Glenn L. Martin Co., Baltimore; North American Aviation, Inglewood; Douglas Aircraft, Santa Monica; Lockheed Aircraft Corp., Burbank; Bell Aircraft Corp., Buffalo; Curtiss plane division, Curtiss Wright Corp., Buffalo; Curtiss Wright Corp., St. Louis plane division, Robertson, Mo.; Republic Aviation Corp., Farmingdale, L. I.; Beech Aircraft Corp., Wichita, Kan.; Vultee Aircraft, Inc., Downey; Fairchild Aircraft, Hagerstown, Md.; Ryan Aeronautical, San Diego; Stearman Aircraft division, Boeing Airplane Co., Wichita, Kan.

ORDER ENGINES

For engines: Ford Motor Co., Dearborn, Mich.; Continental Motors, Muskegon, Mich.; Lycoming division, Aviation Manufacturing corp., Williamsport, Pa.; Allison engineering division, General Motors Corp., Indianapolis, and Wright Aeronautical Corp., Patterson, N. J.

For propellors and blades: Curtiss propellor division, Curtiss Wright Corp., Clifton, N. J.

Lindbergh Field Expansion to Start

Aircraft news 9/19/40

SAN DIEGO—A $1,400,000 improvement program started last Monday to make Lindbergh Field, the municipal airport, suitable for test flights of giant, four-engined Army bombers Consolidated Aircraft Corp. is building for the United States and Great Britain.

Runways will be lengthened, acres of ground reclaimed in bay dredging will be graded and oiled, and sewer and lighting systems will be installed with funds largely provided by the Federal government.

9/25/40

The Keyhole

BILLY SILVER .... **Editor**
A. L. SILVER .... **Business Manager**
OFFICE AND EDITORIAL ROOMS
642 F Avenue **National City, Calif.**
Phone National 36
Advertising rates on application. Subscription $2:50 per year by U. S. Mail. All bills payable to the Keyhole Publishing Company.

MAJOR RUBEN FLEET, SAN DIEGO'S SANTA CLAUS!

The city of San Diego with its citizens in entirety, owe much to Major Ruben Fleet, president of the Consolidated Aircraft corporation who, in plain language, has completely saved San Diego from falling into the hands of old man poverty!

Perhaps there are many people who are not aware of the fact that the good major had been corralled by "Hogtown" Los Angeles when he first invaded the Pacific coast after leaving his home, the city of Buffalo, New York behind him to seek appropriate climatic conditions that would warrant his powerful aircraft corporation to manufacture airplanes which would be flown immediately upon completion. That could not be accomplished at the Major's home in Buffalo on account of the winter season. But, in California the production of planes could be done the year around.

So, when Major Fleet arrived on this coast and of course, landing in Los Angeles first, he and his associates reconnoitered the Los Angeles vicinities. They were accompanied by a Los Angeles "dragnet" composed of the high-powered chamber of commerce "goodwill ambassadors" who stuck to the Major and his party at the same time making all sorts of overtures to the distinguished eastern visitors.

But, Major Fleet had heard of the San Diego unexcelled climate and after thanking the "Hogtown' Los Angeles gentlemen informed them that he wished to make a survey of San Diego also before making up his mind to select Los Angeles for his airplane site. How the Major ever escaped the clutches of our northern leeches is more than we can ever explain!

However, Major Fleet arrived in San Diego and here he met another Major. That other Major was Macauley, business manager of the San Diego chamber of commerce and executive secretary. Major Macauley lost no time in bringing into the picture Joe Brennan, director of port.

Between Macauley and Brennan's "sales talk,' Major Fleet was convinced in less time than it takes to tell it, that San Diego was the spot he set out to get and the Consolidated Aircraft corporation selected the tideland sites along Pacific boulevard and immediately erected its magnificent factory which makes it the largest now in the United States.

Last Monday another addition was completed and dedicated in the presence of several thousand San Diegans who paid tribute to Major Ruben Fleet and his corporation. Admiral Chas. A. Blakely, commandant of the 11th Naval District was given the honor of the dedication. Admiral Blakely's eulogy to Major Fleet in behalf of the entire navy department, was loudly applauded and San Diegans felt that a great man had come to their city to save them from poverty and to enlighten every home here. This "life saver" made it possible to save the day after the fleet had departed for the Hawaiian Islands with that enormous payroll which has been San Diego's greatest source of revenue.

More than 9,600 men are now employed by the Consolidated Aircraft corporation, and according to the statement made by Major Fleet at the dedicatory ceremonies last Monday, there will be several thousand more men employed by December of this year, which means a larger payroll, supreme happiness and greater prosperity for San Diego and its surrounding territory.

Yes, Major Fleet is San Diego's Santa Claus!

AVIATION ENGINEERING

At the West Coast Meetings of the Institute of Aeronautical Sciences

By

Charles F. McReynolds

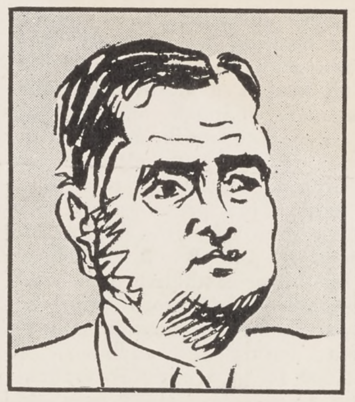
West Coast Editor, AVIATION

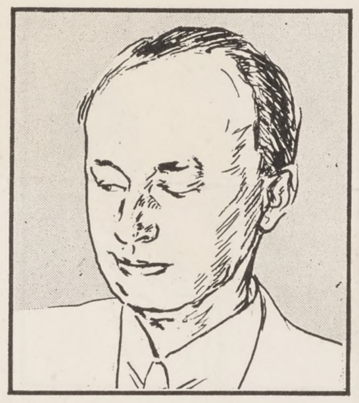
The Second Annual Summer Meeting of the Institute of the Aeronautical Sciences certainly brought to light a great many advanced ideas which will doubtless have a profound influence on any future war effort that might involve America. If the papers presented there did not startle audiences with revolutionary new ideas, they certainly did present a variety of new ways for doing the same old things. In fact, so militarily significant were some of the ideas that our massive Army Intelligence Service clamped down on at least one paper, refusing permission for presentation of a discussion of the characteristics of rocket motor propulsion, by F. J. Malina.

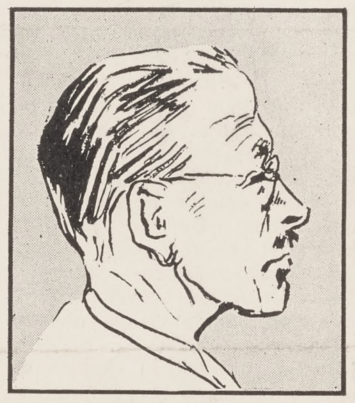
This meeting of the Institute of the Aeronautical Sciences was among the best yet staged by that commendable organization. Papers were of a uniformly high quality of profundity and the audiences were commendably large and "open-mouthed". Paraphrasing our own American phrase maker, "they may not all have understood all that they heard all of the time but some of them understood some of what they heard some of the time."

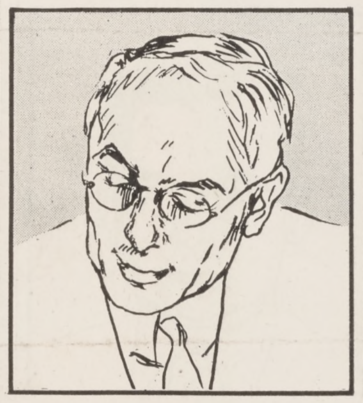
Attendance at the meetings was led by such men as Dr. Von Karman, Dr. Millikan, Dr. Klein, Dr. Klemperer, Hall Hibbard, Richard Palmer, and many others of the American aviation industry's scientific and engineering greats. Papers presented during the three days, extending from June 24th through June 26th, greatly extended the industry's knowledge of such subjects as airplane cabin pressurizing, vibration and flutter phenomena, radio shielding and bonding problems, recording of flight test data, characteristics of engine combustion, etc. For convenience the papers were grouped into five sessions under the five general headings: structures, vibration and flutter, instrumentation, high altitude flying, and aerodynamics.

V. H. Pavlecka, Northrop Aircraft, Inc., served as chairman for the opening session on structures. A paper prepared by W. L. Howaland and Carl Beed, Lockheed Aircraft Corp., was presented by Carl Beed. The authors called attention to present requirements which demand aircraft with wings so thin as to be invisible when seen from the front, yet thick enough to carry fuel tanks, supercharging equipment, retracting gear, etc. Since these items must not be hampered by structural members, the wing structure is reduced to a series of load carrying holes. The fuselage design problem is somewhat simpler, requiring only that the fuselage be large on the inside and small on the outside, and capable of pressurization. This paper then presented the results of pressurized cabin structure tests which have been conducted by Lockheed Aircraft Corp. in preparation for construction of the new four-engined Lockheed transport, "Excalibur", and other high-flying Lockheeds. The audience was reminded that the world's first full-scale pressurized plane was the special Lockheed transport built for the U. S. Army Air Corps about three years ago, which made many notable high altitude flights. In conducting pressurizing tests Lockheed engineers worked with a cabin section specially mounted to permit application of structural loads with and without pressure. A complete set of tests was first made without fuselage cutouts, which was followed by an extensive investigation of structural requirements imposed by various types of cutouts. An electrical strain gauge of Baldwin-Southwark type was used for stress measurements. One of the major structural problems of the pressurized cabin is the "quilting" effect by which the pressure tends to bulge the thin sheet covering between the support frame. Interestingly enough, while the longitudinal stiffeners bulge outward, the unsupported skin itself bulges inward slightly at about the center point of each panel. It was also found that the fuselage structure was stronger for some conditions of loading while pressurized. Discussion following the paper revealed that spot welded portions of the section tested were smoother and more rigid under test. A weight saving was also achieved through elimination of the sealing compound necessary with riveting.


C. S. DRAPER


E. P. WHEATON


CLARK B. MILLIKAN


A. D. TUTTLE

Symposium on Structures

A symposium on Stability of Aircraft Structures was presented by Alfred S. Niles, Stanford University; Louis G. Dunn, California Institute of Technology; N. J. Hoff, Stanford University; John C. Silliman, Pacific Railway Equipment Co.; and J. L. Frederick, California Institute of Technology.

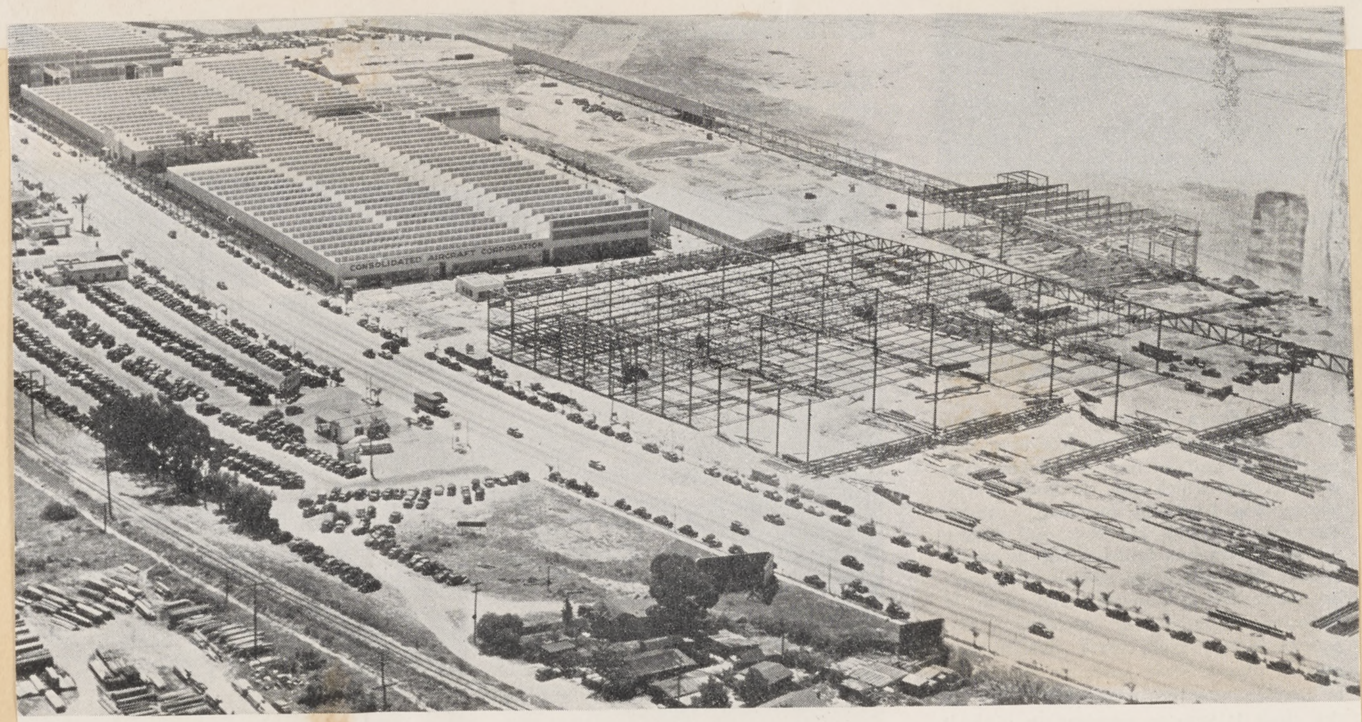
J. R. Goldstein served as chairman for the Monday evening meeting, devoted to "Vibration and Flutter". A paper on the "Effects of Propeller Slipstream and Tail Position on the Vibration Characteristics of the Lockheed 'Lodestar'," by R. L. Thoren and C. L. Johnson, Lockheed Aircraft Corp., was presented by R. L. Thoren. It was encouraging to learn of the exhaustive program of flight testing conducted on this model in order to eliminate all vestiges of vibration. Instrumentation was explained in detail although about equally accurate results were said to have been obtained by the observations of a recorder sitting on a wooden stool in the lavatory compartment. During the discussion period it was suggested that flutter research might be made less expensively by means of powered wind tunnel models. Dr. Clark Millikan, of Cal.-Tech., suggested that the results might be adversely affected by the proximity of the tunnel walls, a factor difficult to evaluate in connection with tests of this character.

Engine Propeller Systems

"Coupled Oscillations of Aircraft Engine-Propeller Systems" was presented by M. A. Biot, Columbia University, in an interesting mathematical method of analyzing such vibrations.

E. P. Wheaton, Douglas Aircraft Company, presented a paper dealing with "Flutter: A Diagnosis, Its Prevention and Cure", by Jean Wylie, and Wheaton. This study was based on a series of tests involving artificial excitation of the wing structure. Elliott Mock questioned the conclusion that flutter frequency would be reduced

over


The new Consolidated plant is typical of what will take place all over the country, here is a new extension going up.

AVIATION
August, 1940

AVIATION - August 1940

SEP 18

Charles F. McReynolds
9121 Dalton Ave., L.A.

Union 9/15/40

Consair Seeks Water St. Cut To Highway

Maj. Fleet Offers $20,000 to Cover Condemnation Cost

Condemnation by the city of a strip of property west of Pacific highway and between Bean and Harasthy sts., to permit Water st. to merge into Pacific highway just south of Harasthy st. instead of at Bean st., has been proposed by Maj. R. H. Fleet, Consolidated Aircraft Corp. president, in a letter just received by the city planning commission.

By doing this, said Glenn Rick, city planning engineer, the big plane plant could erect its proposed new final assembly building, which is to go up north of its present factory, closer to Pacific highway and more in line with the existing structure.

AFFECTS EFFICIENCY

The planning engineer said that this building alignment is important to efficient operation of the plant, and that Maj. Fleet, in his letter, said that if the city would condemn the property required for the new Water st. connection, the corporation "will contribute $20,000 of the expense, unless the total award is less than that amount, in which event our contribution would be limited to the total amount of the award."

Rick explained that part of Water st. is open south from Witherby st. The extension, as it appears on the map, would continue on tidelands to a junction with Pacific highway. If the private property described by Maj. Fleet were obtained by the city for street purposes, Consolidated then could move its proposed new assembly building forward on the tideland strip now set aside for Water st.

WILL DRESS UP WALLS

"If Water st. is not cut through, our building will not face on a highway, and the exterior walls will be finished in corrugated galvanized iron," Maj. Fleet wrote. "However, if the street is located as shown (on a map that accompanied the letter), we will finish the east elevation fronting on Water st. and the north elevation fronting on Harasthy st. in stucco, similar to our present buildings fronting on Pacific highway.

"This will entail an additional expenditure of $10,000, which expenditure we are willing to make in the interest of beautification of the city."

That the $20,000 offer to cover the condemnation award should be ample was indicated in Maj. Fleet's letter, in which he disclosed that "we recently purchased the entire froontage between Vine and Bean sts. on the east side of Pacific highway for $15,000."

SPEEDY APPROVAL SEEN

Development of Water st. is part of a comprehensive plan to relieve traffic congestion at Bancroft ave. and Pacific highway. With that in mind, Rick insisted when the aircraft corporation's original lease was drafted, that sufficient tidelands be excluded to permit Water st. to be merged with Pacific highway at Bean st. In view of Maj. Fleet's offer to pay up to $20,000 of a condemnation award, the planning engineer said he would favor the new proposal.

To speed consideration of the suggestion, Rick said he has advised Consolidated officials to withdraw the letter, which was addressed to the planning commission, and to resubmit it to the city council so that body, if it desired, immediately could order an appraisal made. This could be done Tuesday, said Rick whereas the planning commission, which could not authorize an appraisal, does not meet until Sept. 24, when its nly action would be to refer the letter to the council for consideration the following week.

Clash Looms; U. S. May Get Singapore Base

HONG KONG, Sept. 21 (Saturday) (A.P.) — The British-owned newspaper China Mail reported today that "since yesterday morning" Japanese warships have moved into Tonking bay "as a persuasive gesture" to back up Japanese negotiations for military rights in French Indo-China.

WASHINGTON, Sept. 20 (I.N.S.)—Authoritative Chinese quarters said tonight their government may attempt a fusion with Indo-China's native masses should the French authorities there allow Japanese troops to cross the territory under orders of the Vichy government.

Secy. of State Hull told his press conference meantime that his talks with British and Australian envoys have covered the question of basing the United States fleet at Singapore, closer by 2000 miles to Japan than the present Hawaiian base.

RICHARDSON CALLED BACK

Linked also to the administration's efforts to maintain the Pacific status quo was a navy announcement that the fleet commander-in-chief, Adm. James O. Richardson, on arrival of the first three sections of the battle force for overhaul at San Pedro, Calif., will come on to Washington.

Here, officials said, the admiral will hold his seconnd conference in recent months with President Roosevelt and the navy high command on the Pacific situation. He leaves Honolulu Monday on the battleship New Mexico.

Hull, in confirming reports that he had mentioned Singapore to Lord Lothian, British ambassador, and Richard Casey, Australian minister, emphasized that the talks as yet have not reached the status of negotiations calling for decisions.

A decision entailing the fleet's transfer to Britain's Far Eastern "Gibraltar"—a base separated by three weeks' steaming time from the Panama canal and the Atlantic—presumably would require Richardson's advice and depend in part upon the course of the battle of Britain.

Competent quarters here expressed doubt the fleet would move to Singapore and until an invasion attempt demonstrated the British fleet's ability to hold the

(Continued on Page A, Col. 4)

HONGKONG, Sept. 21 (Saturday) (A.P.) — Chinese press reports — unconfirmed elsewhere — declared today that an understanding had been reached for Chinese-French military collaboration in the event Japan invades Indo-China.

These reports said the French would allow Chinese troops to enter Indo-China to oppose any Japanese invaders.

HONG KONG, Sept. 21 (Saturday) (A.P.) — Highly connected Japanese quarters here said today Japan was prepared to take action aiming at the seizure of all French Indo-China if France declined to permit the passage of an unrestricted number of Japanese troops through the French colony.

Dutch Treat

A 300-year-old Holland candy box is among exhibits at public library. Page 6-A.

* * *

State college "frosh" get their annual medicine. Page 2-A.

* * *

UNION - 9-21-40

HARBOR DRIVE, CONSAIR LAND PROJECTS MOVE STEP NEARER

Plan Board Drafts Recommendation To Council for Use of U. S. Defense Funds

Ten to 15 giant seaplanes soon will be produced by Consolidated Aircraft Corp. daily, the city planning commission was informed at a special meeting yesterday which was marked by the drafting of a recommendation to the city council that it immediately authorize an application for national defense fund for Harbor dr. construction. Other highlights of the meeting included:

1—Decision by the commission not to protest against modification of pier and bulkhead lines to permit a 500x2500-foot land fill on the bay side of Harbor dr. between the coast guard air station and the Marine base.

CLIPPER BASE MOVE SEEN

2—Forecast that the transpacific clipper ship base eventually will be moved from San Francisco to San Diego "where there are no bridges and no fog."

3—Expression of belief by Joe Brennan, port director, that defense funds can be obtained to build Harbor dr. as a military road connecting the Destroyer base, Navy pier, 11th Naval district headquarters, the coast guard air station, the Marine base, Naval Training station and the Ft. Rosecrans reservation.

4—Report by William Maloney, Consair plant engineer, that the factory is expanding so rapidly that he sometimes wonders whether he is in "the general building contracting business or the aircraft industry," and disclosure by him that because of inadequate city sewage facilities, the plane corporation is installing its own outfall and ejector pumps at a cost of $27,500.

PIER HEARING DELAYED

The meeting was called after Col. Edwin C. Kelton, Los Angeles, district army engineer, continued for a week a hearing he opened here Wednesday on modification of the pier and bulkhead lines. This delay was granted to give the planning commission an opportunity to study the plan.

In the discussion yesterday, Maloney emphasized Consair's need for additional land. He said that seaplane ramps are imperative, and that a site is needed on the water's edge in which seaplanes can be overhauled. He pointed to the inadequacy of the existing ramp at the south end of the field and which also is used by the coast guard, and said new facilities are needed at the north end of Lindbergh field and away from airport plane traffic congestion.

"You're talking about a 300,000,000 business," said Brennan, in urging the commission to indorse the fill. He said that every available

(Continued on Page A, Col. 8)

* * *

Consair Wins 85-Million Order

Backlog Climbs To $217,800,000

Bringing its total backlog for government warplanes to $217,800,000, Consolidated Aircraft Corp. yesterday received an $85,800,000 contract from the war department for an undisclosed number of four-motored bombers, The Associated Press reported from Washington, D. C.

The previous backlog was $132,000,000.

In a talk before U. S. army engineers in the harbor commission office Wednesday, Maj. Reuben H. Fleet, Consolidated president, said the Lindbergh field plant will have a backlog of $300,000,000 soon, intimating that additional contracts are forthcoming from the war and navy departments.

Delivery dates for the new bombers were not specified.

Consolidated authorities reported new workers are being employed at the rate of 500 a week and that this will be stepped up as new buildings are completed under the company's huge expansion program. Present plans call for a working force of 35,000 men, virtually triple the present number of employes.

R. A. F. Batters German Canals

LONDON, Sept. 21 (Saturday) (I. N.S.)—Crippling destruction dealt by British bombers to Germany's intricate web of canals, railways and roads was followed early today with a prolonged aerial barrage that sent many tons of explosive and incendiary steel crashing into the Nazi battlements across the English channel.

Hour upon hour through the night and into the morning, relays of Royal Air force squadrons vaulted over the narrow waters to deliver their cargoes. They centered their fury mainly on the docks of Calais, the nearest of the Nazi-held invasion springboards to England, and on the long-range German guns planted around near-by Cap Gris Nez.

HEAR HEAVY BLASTS

Watchers on the Dover chalk cliffs, 22 miles opposite Calais, reported they saw and heard the heaviest explosions that have yet rocked the other side of the channel. Violence of the repeated R.A.F. thrusts was attested to by the fact that German anti-aircraft guns erupted not hundreds but thousands of tracer shells that streaked the dark sky like a giant fireworks display.

The waterways and transport lines of Germany—nerve system of Adolf Hitler's war machine—shared with the Nazi invasion bases and inland centers in the gradual paralysis the British bombers sought to spread with their unceasing attacks

Navy Bars Cameras From Ships in Hawaii

HONOLULU, Sept. 20 (A.P.)—The United States navy is increasing its precautions against espionage. Officers and enlisted men, it was learned today, have been forbidden to take cameras aboard ships.

Sale of camera supplies in the ships' service stores also has been stopped.

OVER

The man she was engaged to married another girl, but Brooke found happines the end of a love maze modern as tomorrow. It's

---

S. D. Air Plants Get 'Speed Up' Army Orders

Union--Wed. 9/11/40

WASHINGTON, Sept. 10 (I.N.S.)—The war department announced tonight it had sent "speed up" letters to 21 manufacturers calling for $1,251,000,000 worth of armaments, including 14,394 planes, for national defense.

Among the firms receiving letters was the Ford Motor Co. of Detroit, which will manufacture plane motors under the air defense program.

SEEK 14,394 PLANES

Acting under the five-billion-dollar defense deficiency appropriation bill signed by President Roosevelt yesterday, the war department letters, approved by the national defense commission, authorizes the manufacturers to go ahead with the program without delay while contractual details are being worked out.

The 14,394 planes ordered, at an estimated cost of $817,000,000, provides for every type of army craft, from trainers to fast pursuit ships, medium and heavy bombers.

Earlier in the day the department announced a specific contract with the Bell Aircraft Corp. of Buffalo for 120 fast pursuit planes, at a cost of $4,962,220. These pursuit ships were said to have shown a speed of more than 400 miles an hour in recent army tests.

SILENT ON NUMBERS

In the "speed up" letters tonight, specific numbers of planes, engines or parts to be produced by each company was not specified. The engine program, however, calls for 28,282 plane motors, at a cost of $377,000,000, while $57,000,000 worth of propellors and blades are provided for in the program.

The letters were sent to the following companies:

For planes: Boeing Aircraft Co., Seattle; Consolidated Aircraft Corp., San Diego; Glenn L. Martin Co., Baltimore; North American Aviation, Inglewood; Douglas Aircraft, Santa Monica; Lockheed Aircraft Corp., Burbank; Bell Aircraft Corp., Buffalo; Curtiss plane division, Curtiss Wright Corp., Buffalo; Curtiss Wright Corp., St. Louis plane division, Robertson, Mo.; Republic Aviation Corp., Farmingdale, L. I.; Beech Aircraft Corp., Wichita, Kan.; Vultee Aircraft, Inc., Downey; Fairchild Aircraft, Hagerstown, Md.; Ryan Aeronautical, San Diego; Stearman Aircraft division, Boeing Airplane Co., Wichita, Kan.

ORDER ENGINES

For engines: Ford Motor Co., Dearborn, Mich.; Continental Motors, Muskegon, Mich.; Lycoming division, Aviation Manufacturing corp., Williamsport, Pa.; Allison engineering division, General Motors Corp., Indianapolis, and Wright Aeronautical Corp., Patterson, N. J.

For propellors and blades: Curtiss propellor division, Curtiss Wright Corp., Clifton, N. J.

Lindbergh Field Expansion to Start

aircraft news 9/19/40

SAN DIEGO—A $1,400,000 improvement program started last Monday to make Lindbergh Field, the municipal airport, suitable for test flights of giant, four-engined Army bombers Consolidated Aircraft Corp. is building for the United States and Great Britain.

Runways will be lengthened, acres of ground reclaimed in bay dredging will be graded and oiled, and sewer and lighting systems will be installed with funds largely provided by the Federal government.

9/25/40

The Keyhole

BILLY SILVER .... Editor
A. L. SILVER .... Business Manager
OFFICE AND EDITORIAL ROOMS
642 F Avenue National City, Calif.
Phone National 36
Advertising rates on application. Subscription $2:50 per year by U. S. Mail.
All bills payable to the Keyhole Publishing Company.

MAJOR RUBEN FLEET, SAN DIEGO'S SANTA CLAUS!

The city of San Diego with its citizens in entirety, owe much to Major Ruben Fleet, president of the Consolidated Aircraft corporation who, in plain language, has completely saved San Diego from falling into the hands of old man poverty!

Perhaps there are many people who are not aware of the fact that the good major had been corralled by "Hogtown" Los Angeles when he first invaded the Pacific coast after leaving his home, the city of Buffalo, New York behind him to seek appropriate climatic conditions that would warrant his powerful aircraft corporation to manufacture airplanes which would be flown immediately upon completion. That could not be accomplished at the Major's home in Buffalo on account of the winter season. But, in California the production of planes could be done the year around.

So, when Major Fleet arrived on this coast and of course, landing in Los Angeles first, he and his associates reconnoitered the Los Angeles vicinities. They were accompanied by a Los Angeles "dragnet" composed of the high-powered chamber of commerce "goodwill ambassadors" who stuck to the Major and his party at the same time making all sorts of overtures to the distinguished eastern visitors.

But, Major Fleet had heard of the San Diego unexcelled climate and after thanking the "Hogtown' Los Angeles gentlemen informed them that he wished to make a survey of San Diego also before making up his mind to select Los Angeles for his airplane site. How the Major ever escaped the clutches of our northern leeches is more than we can ever explain!

However, Major Fleet arrived in San Diego and here he met another Major. That other Major was Macauley, business manager of the San Diego chamber of commerce and executive secretary. Major Macauley lost no time in bringing into the picture Joe Brennan, director of port.

Between Macauley and Brennan's "sales talk,' Major Fleet was convinced in less time than it takes to tell it, that San Diego was the spot he set out to get and the Consolidated Aircraft corporation selected the tideland sites along Pacific boulevard and immediately erected its magnificent factory which makes it the largest now in the United States.

Last Monday another addition was completed and dedicated in the presence of several thousand San Diegans who paid tribute to Major Ruben Fleet and his corporation. Admiral Chas. A. Blakely, commandant of the 11th Naval District was given the honor of the dedication. Admiral Blakely's eulogy to Major Fleet in behalf of the entire navy department, was loudly applauded and San Diegans felt that a great man had come to their city to save them from poverty and to enlighten every home here. This "life saver" made it possible to save the day after the fleet had departed for the Hawaiian Islands with that enormous payroll which has been San Diego's greatest source of revenue.

More than 9,600 men are now employed by the Consolidated Aircraft corporation, and according to the statement made by Major Fleet at the dedicatory ceremonies last Monday, there will be several thousand more men employed by December of this year, which means a larger payroll, supreme happiness and greater prosperity for San Diego and its surrounding territory.

Yes, Major Fleet is San Diego's Santa Claus!

Pacific Coast Edition
THE WALL STREET JOURNAL

DOW-JONES
ELECTRIC PAGE NEWS PRINTERS

623 CENTRAL BUILDING
LOS ANGELES
PHONE TRINITY 0881

Press Clipping
FROM
ALBERT F. COUDERC

SEP 19 1940

FEDERAL PLANE ORDERS LISTED

planes. The 1941 fiscal year appropriation provided funds or contract authorization for approximately 3,000 planes for the Navy, and the supplemental defense appropriation for 4,028.

A recapitulation of awards made by the War Department indicates that since June the Army has placed orders for aircraft, exclusive of engines, armament and certain instruments, with a value of close to $400,000,000. The exact number of airplanes the Army will obtain as a result of these orders has not been divulged, and no information has been furnished as to the number of ships ordered by the Army for the Navy's account. Because of the difference in technical requirements, it is assumed that the combat ships ordered by the Army are all for its own use, but it is understood that some of the cargo and training planes were ordered for the Navy's account.

Army Contracts Listed

The following is a list of aircraft contracts awarded by the Army since June 1 of this year:

Manufacturer	Type	Quantity	Value
Cessna,	twin-engined advanced trainers	33	$900,378
Cessca,	twin-engined advanced trainers	33	$900,378
No American,	single-eng advanced trainers	637	11,335,631
Consolidated,	four-engine heavy bombers	56	14,831,342
Stearman,	primary trainers	300	2,041,947
Beech,	advanced trainers	67	3,410,746
Fairchild,	primary trainers	100	1,038,300
Stinson,	short-range observation	6	‡
Beech,	transports	20	*
Ryan,	primary trainers	100	2,074,234
Beech,	advanced trainers	150	4,847,217
Vultee,	basic trainers	500	7,488,782
Boeing,	four-engined heavy bombers	277	70,449,955
Lockheed,	twin-engined pursuits	410	30,278,788
Platt-Lepate,	rotating-wing autogyro	1	‡
Bell,	single-engined pursuits	120	4,962,220
Republic,	single-engined pursuits	†1,000	56,499,924
Bell,	single-engined pursuits	540	19,688,287
Curtiss,	trainers	450	4,221,069
Curtiss,	transports	46	12,410,116
Martin,	twin-engined bombers	‡	14,269,646
Stearman,	trainers	‡	6,934,096
Boeing,	four-engined heavy bombers	‡	59,762,850
Lockheed,	twin-engined pursuits	‡	15,646,451
Douglas,	transports	‡	20,229,184
Beech,	trainers	‡	13,115,138

† Estimated. ‡ Not released. * Included in the $4,847,217 for advanced trainers.

List of Navy Orders

Figures released by the Navy showed that up to and including September 3 it had awarded contracts for airplanes and engines, out of its $226,088,562 appropriation for the fiscal year 1941, with an aggregate value of $44,720,634. Out of its 1940 fiscal year appropriation of $89,419,000, the Navy had awarded contracts for airplanes and engines with a value of $38,551,966. Since that date, only two new contracts have been announced as awarded by the Navy. One was to Curtiss-Wright for scout observation

Continued on Second Page, Column 2

FEDERAL PLANE ORDERS LISTED

Continued from First Page

ships with a value of $11,476,633, and the other presumably for scout-bombers with a value of $9,602,384 to Douglas Aircraft.

The following is a break-down of the airplanes reported by the Navy as on order but undelivered as of September 3:

Model	Type	Manufacturer	Quantity
F2A-2,	single seater fighter;	Brewster	43
F4FS,	single seater fighter;	Grumman	320
JRB-1,	utility transport;	Beech	5
JRF-1,	utility transport;	Grumman	10
N3N-3,	primary trainer;	Navy aircraft factory	562
NP-1,	primary trainer;	Spartan	201
NR-1,	primary trainer;	Ryan	100
N2S-1,	primary trainer;	Stearman	600
OS2U-1,	observation scout;	Vought-Sikorsky	42
OS2U-2,	observation scout;	Vought-Sikorsky	158
PBM-1,	two-engined patrol bomber;	Martin	20
PBY-5,	two-engined patrol bomber;	Consolidated	200
PB2Y-2,	four-engined patrol bomber,	Consolidated	2
R3D-2,	transport;	Douglas	4
R5C-1,	transport;	Lockheed	1
SBDS,	scout-bomber;	Douglas	137
SBN-1,	scout-bomber;	Navy aircraft factory	30
SB2U-3,	scout bomber;	Vought-Sikorsky	57
SNJ-2,	advanced trainer;	North American	25
X15F-1,	two-engined fighter (experimental);	Grumman	1
XFL-1,	land fighter (experimental);	Bell	1
XF4U-1,	experimental fighter;	Vought-Sikorsky	1
XN5N-1,	experimental trainer;	naval aircraft	1
XPBB-1,	experimental patrol bomber;	Boeing	1
XPB2M,	experimental patrol bomber;	Martin	1
XPBM2,	experimental 4-eng. patent bomber;	Martin	1
XSB2A1,	experimental scout bomber;	Brewster	1
XSB2C-1,	experimental scout bomber;	Curtiss	1
XTBF-1,	experimental torpedo bomber;	Grumman	2
XTBU-1,	experimental torp. bomber;	Vought-Sikorsky	1

Prospective Orders

In addition to the planes shown as on order and undelivered on September 3, the Navy had agreements preparatory to contracts for the following ships:

Type	Manufacturer	Quantity
Observation-scouts;	Vought-Sikorsky	1,006
Scout-bombers;	Brewster	411
Fighters;	Brewster	108
Fighters;	Grumman	254
Torpedo-bombers;	Grumman	286
Utility transports;	Grumman	144
Scout bombers;	Douglas	252
Scout observation;	Curtiss	300
Advanced trainers;	Curtiss	150

To date the Navy has made no announcement indicating that actual contracts for any of the above airplanes have been awarded. It is quite possible, however, that the orders announced as placed by the War Department with Douglas and Curtiss last Saturday may have included some planes for the Navy.

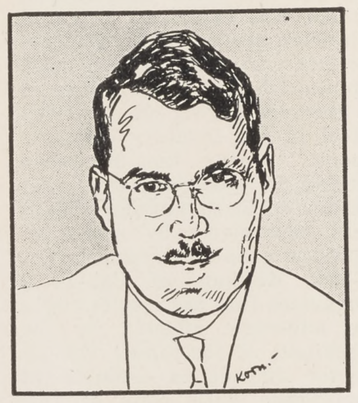
A total of 29 of the planes on order September 3 were scheduled for delivery this month, while 47 are scheduled for October, to increase to 112 in November and 187 in December. These scheduled deliveries do not take into consideration deliveries against orders placed prior to 1940, but still unfilled, which includes the order for 20 patrol bombers against which Martin is just starting deliveries.

---

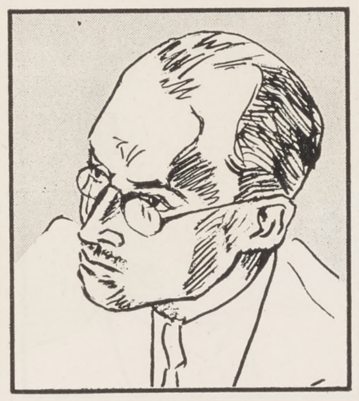
due to re the wing. Wheaton thought that reduction of frequency was a normal phenomenon up to the point of skin wrinkling. "A Graphical Solution of Flutter Instability", by W. B. Bergen and Lee Arnold, The Glenn L. Martin Co., was presented by Bergen. Representing a long step towards elimination of flutter, this paper presented a set of graphs and mathematical curves which were designed to help the engineer arrive in a few minutes at computations that once required weeks of mathematical gymnastics. The long period of intensive vibration study conducted by Martin engineers was outlined.

New Test Recorder

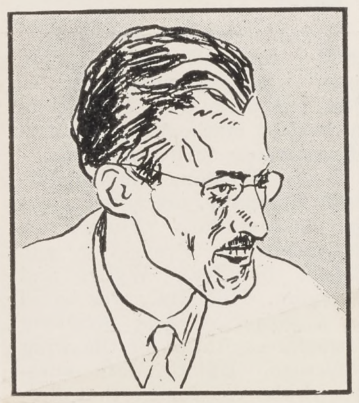
Tuesday's session on Instrumentation was presided over by Dr. E. E. Sechler, of California Institute of Technology. "The General Use of a Magnetic Steel Tape Recorder in Airplane Testing", by James B. Darragh, Jr., Lockheed Aircraft Corp. was well received. This interesting device, the first ever built, has numerous advantages. Using eight recording magnets and 1800 feet of steel tape driven by a variable speed magnet, it is possible to record various electrical impulses, including those from a microphone. Thus the instrument records the voice as well as the results reported by various instruments. Separate magnets are used, on the ground only, for erasing the tape. A continuous recording for as long as 16 hours may be made. Recordings are permanent until erased. Time reference points are marked on the tape by periodic short circuiting of the current. The device is especially adaptable to noise, vibration, and flutter recording, but may be used to record data from any number of flight instruments up to sixteen, simultaneously. Or as many as sixteen different observers may record data simultaneously by using separate microphones. On single-seater planes the device may be mounted with convenient remote controls so that the pilot can dictate a full account of observations at the same time that instrument, noise, stress, and vibration recordings are being made automatically. In the event of a fatal crash the record on the steel tape would be preserved except in event of a fire hot enough to destroy the magnetism of the tape. In commenting on this remarkable development, Dr. Klein pointed out that photographic recording of flight data had not proved entirely satisfactory, due to time element to get films developed, and record and assemble data, etc., but that he preferred direct visual readings wherever possible. Darragh thought the choice might be a matter of opinion but pointed to the ver



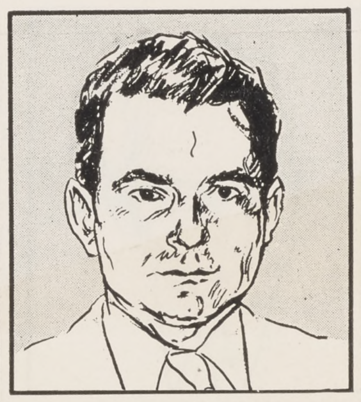
J. B. DARRAGH JR.



WM. WHEATLEY



N. B. MOORE



FRED FOULON

tromagne instrument. Dr. Klein admitted that pointer instrument readings are hard to make accurately.

"The Application of an Electromagnetic Indicator to Internal Combustion Engine Problems", prepared by C. S. Draper, J. H. Lancor, and Leighton Davis, of Massachusetts Inst. of Technology, was presented by C. S. Draper.

Pointing out that future engine refinements must come through exact and painstaking research into the exact nature of engine operation, Draper outlined the years of work that have gone into development of the recording instrument he and his associates have perfected. This instrument has proved far superior to any previously used recording device for obtaining indicator cards on the pressure cycle of high speed internal combustion engines.

Russell G. Robinson, of the N.A.C.A., presented a slow motion study of internal combustion. Motion pictures taken at a speed of 40,000 frames per second were shown. This is made possible by an ultra high speed camera developed at the N.A.C.A. laboratories during the past year by Cearcy D. Miller.

High Altitude Flying

Hall L. Hibbard, Lockheed Aircraft Corporation, served as chairman of the Tuesday evening session on High Altitude Flying. The highlight of the entire meeting was probably the demonstration given during that session of the high altitude pressure chamber of the new oxygen face mask, both developed in the high altitude research laboratory of the Mayo Clinic. This presentation was made jointly by Drs. Walter M. Boothby and W. R. Lovelace. The latter established a new decompression record when he was taken to an altitude equivalent, within the chamber, of 40,000 ft. in 9 minutes, returning to sea level in 2 min. 45 secs. Prior to making this demonstration Dr. Lovelace took oxygen through the Mayo face mask for forty minutes, and also used the mask throughout the test. This eliminates nitrogen from the blood system and prevents formation of bubbles in the blood during the test. It is these blood bubbles which are the chief danger to high altitude pilots. Formed through boiling of the blood due to reduced pressure, such blood bubbles will cause reduced vision, paralysis, double vision, unconsciousness, or even death. Dr. Boothby remarked that this country needs a large number of decompression chambers in altitu have less than a dozen such chambers now in service, Germany is known to be using hundreds of them.

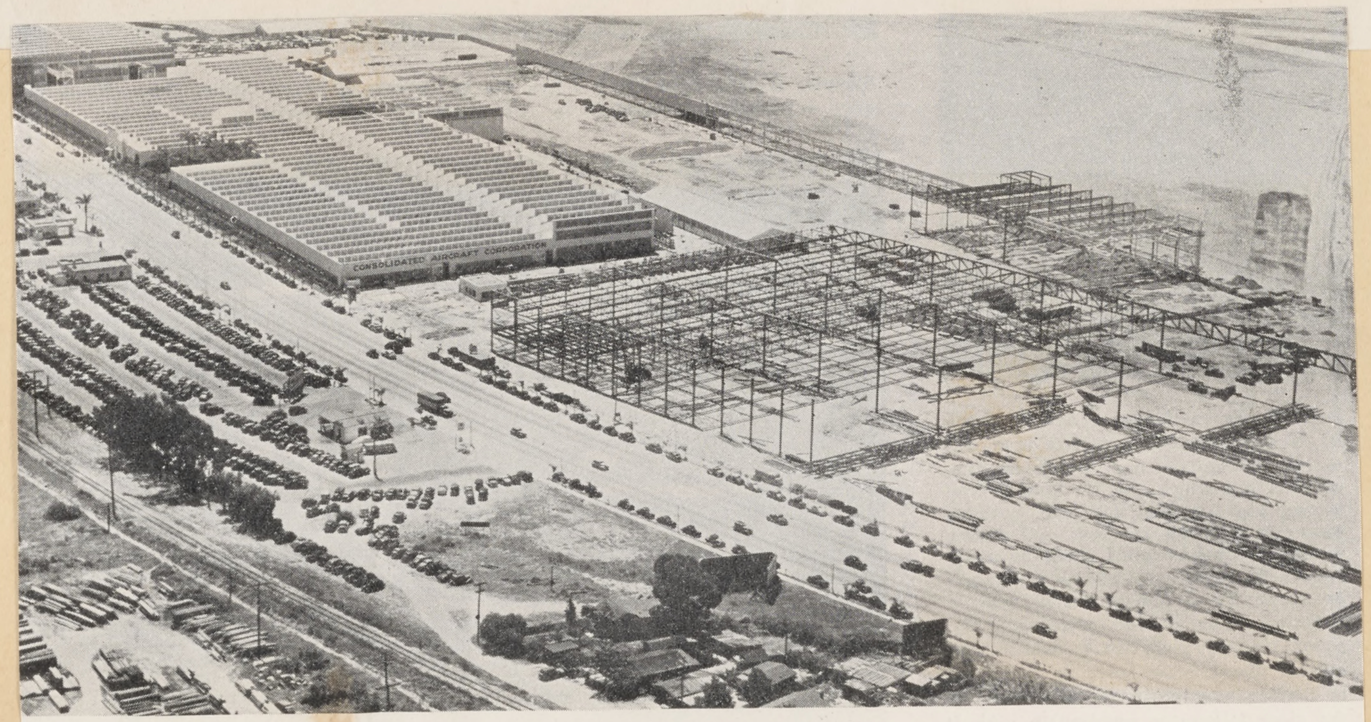
Wednesday's concluding session, on Aerodynamics, was led by Dr. Clark B. Millikan, of California Institute of Technology. A paper titled, "Performance Dictates Design" by Ralph H. Upson, Wayne University, was read by Harold Luskin. The mathematics of this paper was pretty imposing and is probably a real contribution to engineering, but it was too deep for this observer. Major conclusion seemed to be that optimum performance could be reached with an aspect ratio of about 21 to 1. In any case the formula developed by Upson does permit easy examination of various design factors to determine influence on overall efficiency of their variations. Dr. Millikan, in discussing the paper, pointed out that all engineering is as much an art as a science, and that there is a point beyond which complex formulae cannot be carried from an engineering standpoint.

"Experiments on Drop Impingement" by W. H. Hunter, The B. F. Goodrich Co., outlined a program of research on icing. The speaker told his perspiring audience that ice hazards are neither seasonally nor geographically restricted. Smoothness of the wing surface is very important as, under icing conditions, a large volume of water is passing back along the wing very close to the boundary layer. Results of ice formation research are making possible a much greater percentage of flight completions to destination.

Propeller Design

"Some Recent Developments in Propeller Blade Design" was discussed by Louis H. Enos, Curtiss-Wright Propeller Division, Curtiss-Wright Corp. Enos forecast six-bladed propellers for the near future, of dual rotation type with three blades turning in each direction. He demonstrated why the hollow steel blade holds the greatest promise for propeller weight reductions. Steel blades also have superior resistance to abrasion. Propeller blade shank cuffs were described in some detail, their major advantage being improved engine cooling, but little hope was suggested for an early increase in propeller efficiency.

"Range at Constant Speed", was presented by its author, Norton B. Moores, St. Louis Airplane Division, Curtiss-Wright Corp. This paper provided a mathematical short cut method for determination of maximum range.



The new Consolidated plant is typical of what will take place all over the country, here is a new extension going up.

AVIATION
August, 1940

Union 9/15/40

Consair Seeks Water St. Cut To Highway

Maj. Fleet Offers $20,000 to Cover Condemnation Cost

Condemnation by the city of a strip of property west of Pacific highway and between Bean and Harasthy sts., to permit Water st. to merge into Pacific highway just south of Harasthy st. instead of at Bean st., has been proposed by Maj. R. H. Fleet, Consolidated Aircraft Corp. president, in a letter just received by the city planning commission.

By doing this, said Glenn Rick, city planning engineer, the big plane plant could erect its proposed new final assembly building, which is to go up north of its present factory, closer to Pacific highway and more in line with the existing structure.

AFFECTS EFFICIENCY

The planning engineer said that this building alignment is important to efficient operation of the plant, and that Maj. Fleet, in his letter, said that if the city would condemn the property required for the new Water st. connection, the corporation "will contribute $20,000 of the expense, unless the total award is less than that amount, in which event our contribution would be limited to the total amount of the award."

Rick explained that part of Water st. is open south from Witherby st. The extension, as it appears on the map, would continue on tidelands to a junction with Pacific highway. If the private property described by Maj. Fleet were obtained by the city for street purposes, Consolidated then could move its proposed new assembly building forward on the tideland strip now set aside for Water st.

WILL DRESS UP WALLS

"If Water st. is not cut through, our building will not face on a highway, and the exterior walls will be finished in corrugated galvanized iron," Maj. Fleet wrote. "However, if the street is located as shown (on a map that accompanied the letter), we will finish the east elevation fronting on Water st. and the north elevation fronting on Harasthy st. in stucco, similar to our present buildings fronting on Pacific highway.

"This will entail an additional expenditure of $10,000, which expenditure we are willing to make in the interest of beautification of the city."

That the $20,000 offer to cover the condemnation award should be ample was indicated in Maj. Fleet's letter, in which he disclosed that "we recently purchased the entire froontage between Vine and Bean sts. on the east side of Pacific highway for $15,000."

SPEEDY APPROVAL SEEN

Development of Water st. is part of a comprehensive plan to relieve traffic congestion at Bancroft ave. and Pacific highway. With that in mind, Rick insisted when the aircraft corporation's original lease was drafted, that sufficient tidelands be excluded to permit Water st. to be merged with Pacific highway at Bean st. In view of Maj. Fleet's offer to pay up to $20,000 of a condemnation award, the planning engineer said he would favor the new proposal.

To speed consideration of the suggestion, Rick said he has advised Consolidated officials to withdraw the letter, which was addressed to the planning commission, and to resubmit it to the city council so that body, if it desired, immediately could order an appraisal made. This could be done Tuesday, said Rick whereas the planning commission, which could not authorize an appraisal, does not meet until Sept. 24, when its nly action would be to refer the letter to the council for consideration the following week.

Clash Looms; U. S. May Get Singapore Base

HONG KONG, Sept. 21 (Saturday) (A.P.) — The British-owned newspaper China Mail reported today that "since yesterday morning" Japanese warships have moved into Tonking bay "as a persuasive gesture" to back up Japanese negotiations for military rights in French Indo-China.

WASHINGTON, Sept. 20 (I.N.S.)—Authoritative Chinese quarters said tonight their government may attempt a fusion with Indo-China's native masses should the French authorities there allow Japanese troops to cross the territory under orders of the Vichy government.

Secy. of State Hull told his press conference meantime that his talks with British and Australian envoys have covered the question of basing the United States fleet at Singapore, closer by 2000 miles to Japan than the present Hawaiian base.

RICHARDSON CALLED BACK

Linked also to the administration's efforts to maintain the Pacific status quo was a navy announcement that the fleet commander-in-chief, Adm. James O. Richardson, on arrival of the first three sections of the battle force for overhaul at San Pedro, Calif., will come on to Washington.

Here, officials said, the admiral will hold his seconnd conference in recent months with President Roosevelt and the navy high command on the Pacific situation. He leaves Honolulu Monday on the battleship New Mexico.

HONGKONG, Sept. 21 (Saturday) (A.P.) — Chinese press reports — unconfirmed elsewhere — declared today that an understanding had been reached for Chinese-French military collaboration in the event Japan invades Indo-China.

These reports said the French would allow Chinese troops to enter Indo-China to oppose any Japanese invaders.

Hull, in confirming reports that he had mentioned Singapore to Lord Lothian, British ambassador, and Richard Casey, Australian minister, emphasized that the talks as yet have not reached the status of negotiations calling for decisions.

A decision entailing the fleet's transfer to Britain's Far Eastern "Gibraltar"—a base separated by three weeks' steaming time from the Panama canal and the Atlantic —presumably would require Richardson's advice and depend in part upon the course of the battle of Britain.

HONG KONG, Sept. 21 (Saturday) (A.P.) — Highly connected Japanese quarters here said today Japan was prepared to take action aiming at the seizure of all French Indo-China if France declined to permit the passage of an unrestricted number of Japanese troops through the French colony.

Competent quarters here expressed doubt the fleet would move to Singapore and until an invasion attempt demonstrated the British fleet's ability to hold the

(Continued on Page A, Col. 4)

Dutch Treat

A 300-year-old Holland candy box is among exhibits at public library. Page 6-A.

* * *

State college "frosh" get their annual medicine. Page 2-A.

* * *

UNION - 9-21-40

HARBOR DRIVE, CONSAIR LAND PROJECTS MOVE STEP NEARER

Plan Board Drafts Recommendation To Council for Use of U. S. Defense Funds

Ten to 15 giant seaplanes soon will be produced by Consolidated Aircraft Corp. daily, the city planning commission was informed at a special meeting yesterday which was marked by the drafting of a recommendation to the city council that it immediately authorize an application for national defense fund for Harbor dr. construction Other highlights of the meeting included:

1—Decision by the commission not to protest against modification of pier and bulkhead lines to permit a 500x2500-foot land fill on the bay side of Harbor dr. between the coast guard air station and the Marine base.

CLIPPER BASE MOVE SEEN

2—Forecast that the transpacific clipper ship base eventually will be moved from San Francisco to San Diego "where there are no bridges and no fog."

3—Expression of belief by Joe Brennan, port director, that defense funds can be obtained to build Harbor dr. as a military road connecting the Destroyer base, Navy pier, 11th Naval district headquarters, the coast guard air station, the Marine base, Naval Training station and the Ft. Rosecrans reservation.

4—Report by William Maloney, Consair plant engineer, that the factory is expanding so rapidly that he sometimes wonders whether he is in "the general building contracting business or the aircraft industry," and disclosure by him that because of inadequate city sewage facilities, the plane corporation is installing its own outfall and ejector pumps at a cost of $27,500.

PIER HEARING DELAYED

The meeting was called after Col. Edwin C. Kelton, Los Angeles, district army engineer, continued for a week a hearing he opened here Wednesday on modification of the pier and bulkhead lines. This delay was granted to give the planning commission an opportunity to study the plan.

In the discussion yesterday, Maloney emphasized Consair's need for additional land. He said that seaplane ramps are imperative, and that a site is needed on the water's edge in which seaplanes can be overhauled. He pointed to the inadequacy of the existing ramp at the south end of the field and which also is used by the coast guard, and said new facilities are needed at the north end of Lindbergh field and away from airport plane traffic congestion.

"You're talking about a 300,000,000 business," said Brennan, in urging the commission to indorse the fill. He said that every available

(Continued on Page A, Col. 8)

* * *

Consair Wins 85-Million Order

Backlog Climbs To $217,800,000

Bringing its total backlog for government warplanes to $217,800,000, Consolidated Aircraft Corp. yesterday received an $85,800,000 contract from the war department for an undisclosed number of four-motored bombers, The Associated Press reported from Washington, D. C.

The previous backlog was $132,000,000.

In a talk before U. S. army engineers in the harbor commission office Wednesday, Maj. Reuben H. Fleet, Consolidated president, said the Lindbergh field plant will have a backlog of $300,000,000 soon, intimating that additional contracts are forthcoming from the war and navy departments.

Delivery dates for the new bombers were not specified.

Consolidated authorities reported new workers are being employed at the rate of 500 a week and that this will be stepped up as new buildings are completed under the company's huge expansion program. Present plans call for a working force of 35,000 men, virtually triple the present number of employes.

R. A. F. Batters German Canals

LONDON, Sept. 21 (Saturday) (I.N.S.)—Crippling destruction dealt by British bombers to Germany's intricate web of canals, railways and roads was followed early today with a prolonged aerial barrage that sent many tons of explosive and incendiary steel crashing into the Nazi battlements across the English channel.

Hour upon hour through the night and into the morning, relays of Royal Air force squadrons vaulted over the narrow waters to deliver their cargoes. They centered their fury mainly on the docks of Calais, the nearest of the Nazi-held invasion springboards to England, and on the long-range German guns planted around near-by Cap Gris Nez.

HEAR HEAVY BLASTS

Watchers on the Dover chalk cliffs, 22 miles opposite Calais, reported they saw and heard the heaviest explosions that have yet rocked the other side of the channel. Violence of the repeated R.A.F. thrusts was attested to by the fact that German anti-aircraft guns erupted not hundreds but thousands of tracer shells that streaked the dark sky like a giant fireworks display.

The waterways and transport lines of Germany—nerve system of Adolf Hitler's war machine—shared with the Nazi invasion bases and inland centers in the gradual paralysis the British bombers sought to spread with their unceasing attacks

Navy Bars Cameras From Ships in Hawaii

HONOLULU, Sept. 20 (A.P.) — The United States navy is increasing its precautions against espionage. Officers and enlisted men, it was learned today, have been forbidden to take cameras aboard ships.

Sale of camera supplies in the ships' service stores also has been stopped.

The man she was engaged to married another girl, [illegible] Brooke found happines [illegible] the end of a love maze modern as tomorrow. It's

OVER

S. D. Air Plants Get 'Speed Up' Army Orders

Union--Wed. 9/11/40

WASHINGTON, Sept. 10 (I.N.S.) —The war department announced tonight it had sent "speed up" letters to 21 manufacturers calling for $1,251,000,000 worth of armaments, including 14,394 planes, for national defense.

Among the firms receiving letters was the Ford Motor Co. of Detroit, which will manufacture plane motors under the air defense program.

SEEK 14,394 PLANES

Acting under the five-billion-dollar defense deficiency appropriation bill signed by President Roosevelt yesterday, the war department letters, approved by the national defense commission, authorizes the manufacturers to go ahead with the program without delay while contractual details are being worked out.

The 14,394 planes ordered, at an estimated cost of $817,000,000, provides for every type of army craft, from trainers to fast pursuit ships, medium and heavy bombers.

Earlier in the day the department announced a specific contract with the Bell Aircraft Corp. of Buffalo for 120 fast pursuit planes, at a cost of $4,962,220. These pursuit ships were said to have shown a speed of more than 400 miles an hour in recent army tests.

SILENT ON NUMBERS

In the "speed up" letters tonight, specific numbers of planes, engines or parts to be produced by each company was not specified. The engine program, however, calls for 28,282 plane motors, at a cost of $377,000,000, while $57,000,000 worth of propellors and blades are provided for in the program.

The letters were sent to the following companies:

For planes: Boeing Aircraft Co., Seattle; Consolidated Aircraft Corp., San Diego; Glenn L. Martin Co., Baltimore; North American Aviation, Inglewood; Douglas Aircraft, Santa Monica; Lockheed Aircraft Corp., Burbank; Bell Aircraft Corp., Buffalo; Curtiss plane division, Curtiss Wright Corp., Buffalo; Curtiss Wright Corp., St. Louis plane division, Robertson, Mo.; Republic Aviation Corp., Farmingdale, L. I.; Beech Aircraft Corp., Wichita, Kan.; Vultee Aircraft, Inc., Downey; Fairchild Aircraft, Hagerstown, Md.; Ryan Aeronautical, San Diego; Stearman Aircraft division, Boeing Airplane Co., Wichita, Kan.

ORDER ENGINES

For engines: Ford Motor Co., Dearborn, Mich.; Continental Motors, Muskegon, Mich.; Lycoming division, Aviation Manufacturing corp., Williamsport, Pa.; Allison engineering division, General Motors Corp., Indianapolis, and Wright Aeronautical Corp., Patterson, N. J.

For propellors and blades: Curtiss propellor division, Curtiss Wright Corp., Clifton, N. J.

Lindbergh Field Expansion to Start

Aircraft News 9/19/40

SAN DIEGO—A $1,400,000 improvement program started last Monday to make Lindbergh Field, the municipal airport, suitable for test flights of giant, four-engined Army bombers Consolidated Aircraft Corp. is building for the United States and Great Britain.

Runways will be lengthened, acres of ground reclaimed in bay dredging will be graded and oiled, and sewer and lighting systems will be installed with funds largely provided by the Federal government.

9/25/40

The Keyhole

BILLY SILVER .... **Editor**
A. L. SILVER .... **Business Manager**
OFFICE AND EDITORIAL ROOMS
642 F Avenue **National City, Calif.**
Phone National 36
Advertising rates on application. Subscription $2:50 per year by U. S. Mail. All bills payable to the Keyhole Publishing Company.

MAJOR RUBEN FLEET, SAN DIEGO'S SANTA CLAUS!

The city of San Diego with its citizens in entirety, owe much to Major Ruben Fleet, president of the Consolidated Aircraft corporation who, in plain language, has completely saved San Diego from falling into the hands of old man poverty!

Perhaps there are many people who are not aware of the fact that the good major had been corralled by "Hogtown" Los Angeles when he first invaded the Pacific coast after leaving his home, the city of Buffalo, New York behind him to seek appropriate climatic conditions that would warrant his powerful aircraft corporation to manufacture airplanes which would be flown immediately upon completion. That could not be accomplished at the Major's home in Buffalo on account of the winter season. But, in California the production of planes could be done the year around.

So, when Major Fleet arrived on this coast and of course, landing in Los Angeles first, he and his associates reconnoitered the Los Angeles vicinities. They were accompanied by a Los Angeles "dragnet" composed of the high-powered chamber of commerce "goodwill ambassadors" who stuck to the Major and his party at the same time making all sorts of overtures to the distinguished eastern visitors.

But, Major Fleet had heard of the San Diego unexcelled climate and after thanking the "Hogtown' Los Angeles gentlemen informed them that he wished to make a survey of San Diego also before making up his mind to select Los Angeles for his airplane site. How the Major ever escaped the clutches of our northern leeches is more than we can ever explain!

However, Major Fleet arrived in San Diego and here he met another Major. That other Major was Macauley, business manager of the San Diego chamber of commerce and executive secretary. Major Macauley lost no time in bringing into the picture Joe Brennan, director of port.

Between Macauley and Brennan's "sales talk,' Major Fleet was convinced in less time than it takes to tell it, that San Diego was the spot he set out to get and the Consolidated Aircraft corporation selected the tideland sites along Pacific boulevard and immediately erected its magnificent factory which makes it the largest now in the United States.

Last Monday another addition was completed and dedicated in the presence of several thousand San Diegans who paid tribute to Major Ruben Fleet and his corporation. Admiral Chas. A. Blakely, commandant of the 11th Naval District was given the honor of the dedication. Admiral Blakely's eulogy to Major Fleet in behalf of the entire navy department, was loudly applauded and San Diegans felt that a great man had come to their city to save them from poverty and to enlighten every home here. This "life saver" made it possible to save the day after the fleet had departed for the Hawaiian Islands with that enormous payroll which has been San Diego's greatest source of revenue.

More than 9,600 men are now employed by the Consolidated Aircraft corporation, and according to the statement made by Major Fleet at the dedicatory ceremonies last Monday, there will be several thousand more men employed by December of this year, which means a larger payroll, supreme happiness and greater prosperity for San Diego and its surrounding territory.

Yes, Major Fleet is San Diego's Santa Claus!

Pacific Coast Edition
THE WALL STREET JOURNAL

DOW-JONES
ELECTRIC PAGE NEWS PRINTERS

623 CENTRAL BUILDING
LOS ANGELES
PHONE TRINITY 0881

Press Clipping
FROM
ALBERT F. COUDERC

SEP 19 1940

FEDERAL PLANE ORDERS LISTED

Army and Navy Have Awarded Contracts for 12,500; to Buy 17,000 More

Dow Jones News Service

NEW YORK—The War Department and the Navy together have on order at the present time close to 12,500 airplanes, approximately 8,700 of which have been ordered since June 1. Orders for almost 17,000 additional ships are to be placed under appropriations already voted by Congress.

An accurate break-down of orders placed by the two services cannot be made due to the fact that for the sake of greater efficiency in manufacture, and therefore prompt deliveries, they apparently are ordering planes as well as engines for each other.

Available information indicates that as of July 1 the Army had roughly 2,700 ships on order. Since that date, a total of approximately 6,850 planes have been ordered out of the 1941 fiscal year appropriation and the $5,000,000,000 supplemental defense appropriation. The former provided funds or contract authorizations for 4,247 planes and the latter for 14,394.

Navy Orders

The Navy is estimated to have had in the neighborhood of 1,100 planes on order at mid-year, and since that time has placed orders for about 1,850 planes. In addition, it has made agreements preparatory to contracts for 2,911 planes. The 1941 fiscal year appropriation provided funds or contract authorization for approximately 3,000 planes for the Navy, and the supplemental defense appropriation for 4,028.

A recapitulation of awards made by the War Department indicates that since June the Army has placed orders for aircraft, exclusive of engines, armament and certain instruments, with a value of close to $400,000,000. The exact number of airplanes the Army will obtain as a result of these orders has not been divulged, and no information has been furnished as to the number of ships ordered by the Army for the Navy's account. Because of the difference in technical requirements, it is assumed that the combat ships ordered by the Army are all for its own use, but it is understood that some of the cargo and training planes were ordered for the Navy's account.

Army Contracts Listed

The following is a list of aircraft contracts awarded by the Army since June 1 of this year:

Manufacturer Type	Quantity	Value
Cessna, twin-engined advanced trainers...	33	$900,378
Cessca, twin-engined advanced trainers....	33	$900,378
No American, single-eng advanced trainers.	637	11,335,631
Consolidated, four-engine heavy bombers...	56	14,831,342
Stearman, primary trainers	300	2,041,947
Beech, advanced trainers	67	3,410,746
Fairchild, primary trainers	100	1,038,300
Stinson, short-range observation..........	6	‡.......
Beech, transports	20	*.......
Ryan, primary trainers	100	2,074,234
Beech, advanced trainers	150	4,847,217
Vultee, basic trainers	500	7,488,782
Boeing, four-engined heavy bombers.....	277	70,449,955
Lockheed, twin-engined pursuits	410	30,278,788
Platt-Lepate, rotating-wing autogyro.....	1	‡.......
Bell, single-engined pursuits	120	4,962,220
Republic, single-engined pursuits	†1,000	56,499,924

FEDERAL PLANE ORDERS LISTED

Continued from First Page

ships with a value of $11,476,633, and the other presumably for scout-bombers with a value of $9,602,384 to Douglas Aircraft.

The following is a break-down of the airplanes reported by the Navy as on order but undelivered as of September 3:

Model	Type	Manufacturer	Quantity
F2A-2,	single seater fighter;	Brewster................	43
F4FS,	single seater fighter;	Grumman................	320
JRB-1,	utility transport;	Beech	5
JRF-1,	utility transport;	Grumman	10
N3N-3,	primary trainer;	Navy aircraft factory.......	562
NP-1,	primary trainer;	Spartan	201
NR-1,	primary trainer;	Ryan	100
N2S-1,	primary trainer;	Stearman	600
OS2U-1,	observation scout;	Vought-Sikorsky.........	42
OS2U-2,	observation scout;	Vought-Sikorsky.........	158
PBM-1,	two-engined patrol bomber;	Martin..........	20
PBY-5,	two-engined patrol bomber;	Consolidated.....	200
PB2Y-2,	four-engined patrol bomber,	Consolidated.....	2
R3D-2,	transport;	Douglas	4
R5C-1,	transport;	Lockheed	1
SBDS,	scout-bomber;	Douglas	137
SBN-1,	scout-bomber;	Navy aircraft factory.........	30
SB2U-3,	scout bomber;	Vought-Sikorsky.............	57
SNJ-2,	advanced trainer;	North American...........	25
X15F-1,	two-engined fighter (experimental);	Grumman.	1
XFL-1,	land fighter (experimental);	Bell...........	1
XF4U-1,	experimental fighter;	Vought-Sikorsky.......	1
XN5N-1,	experimental trainer;	naval aircraft.........	1
XPBB-1,	experimental patrol bomber;	Boeing.........	1
XPB2M,	experimental patrol bomber;	Martin.........	1
XPBM2,	experimental 4-eng. patent bomber;	Martin..	1
XSB2A1,	experimental scout bomber;	Brewster........	1
XSB2C-1,	experimental scout bomber;	Curtiss.........	1
XTBF-1,	experimental torpedo bomber;	Grumman.....	2
XTBU-1,	experimental torp. bomber;	Vought-Sikorsky.	1

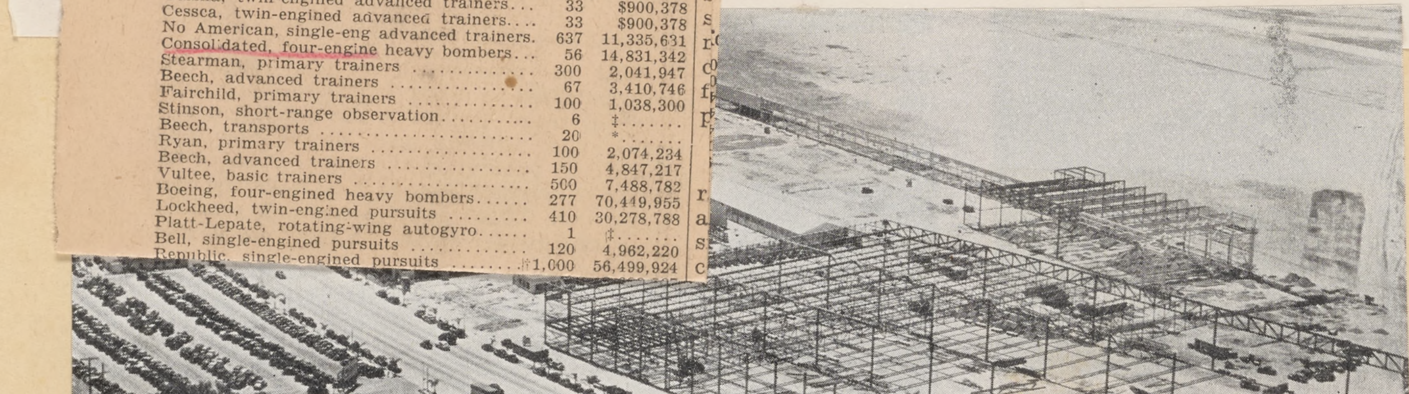
Prospective Orders

In addition to the planes shown as on order and undelivered on September 3, the Navy had agreements preparatory to contracts for the following ships:

Type	Manufacturer	Quantity
Observation-scouts;	Vought-Sikorsky	1,006
Scout-bombers;	Brewster	411
Fighters;	Brewster	108
Fighters;	Grumman	254
Torpedo-bombers;	Grumman	286
Utility transports;	Grumman	144
Scout bombers;	Douglas	252
Scout observation;	Curtiss	300
Advanced trainers;	Curtiss	150

To date the Navy has made no announcement indicating that actual contracts for any of the above airplanes have been awarded. It is quite possible, however, that the orders announced as placed by the War Department with Douglas and Curtiss last Saturday may have included some planes for the Navy.

A total of 29 of the planes on order September 3 were scheduled for delivery this month, while 47 are scheduled for October, to increase to 112 in November and 187 in December. These scheduled deliveries do not take into consideration deliveries against orders placed prior to 1940, but still unfilled, which includes the order for 20 patrol bombers against which Martin is just starting deliveries.



The new Consolidated plant is typical of what will take place all over the country, here is a new extension going up.

---

due to re... the wing. Wheaton thought that reduction of frequency was a normal phenomenon up to the point of skin wrinkling. "A Graphical Solution of Flutter Instability", by W. B. Bergen and Lee Arnold, The Glenn L. Martin Co., was presented by Bergen. Representing a long step towards elimination of flutter, this paper presented a set of graphs and mathematical curves which were designed to help the engineer arrive in a few minutes at computations that once required weeks of mathematical gymnastics. The long period of intensive vibration study conducted by Martin engineers was outlined.

New Test Recorder

Tuesday's session on Instrumentation was presided over by Dr. E. E. Sechler, of California Institute of Technology. "The General Use of a Magnetic Steel Tape Recorder in Airplane Testing", by James B. Darragh, Jr., Lockheed Aircraft Corp. was well received. This interesting device, the first ever built, has numerous advantages. Using eight recording magnets and 1800 feet of steel tape driven by a variable speed magnet, it is possible to record various electrical impulses, including those from a microphone. Thus the instrument records the voice as well as the results reported by various instruments. Separate magnets are used, on the ground only, for erasing the tape. A continuous recording for as long as 16 hours may be made. Recordings are permanent until erased. Time reference points are marked on the tape by periodic short circuiting of the current. The device is especially adaptable to noise, vibration, and flutter recording, but may be used to record data from any number of flight instruments up to sixteen, simultaneously. Or as many as sixteen different observers may record data simultaneously by using separate microphones. On single-seater planes the device may be mounted with convenient remote controls so that the pilot can dictate a full account of observations at the same time that instrument, noise, stress, and vibration recordings are being made automatically. In the event of a fatal crash the record on the steel tape would be preserved except in event of a fire hot enough to destroy the magnetism of the tape. In commenting on this remarkable development, Dr. Klein pointed out that photographic recording of flight data had not proved entirely satisfactory, due to time element to get films developed, and record and assemble data, etc., but that he preferred direct visual readings wherever possible. Darragh thought the choice might be a matter of opinion but pointed to the ver... ctromagn... instrument. Dr. Klein admitted that pointer instrument readings are hard to make accurately.

"The Application of an Electromagnetic Indicator to Internal Combustion Engine Problems", prepared by C. S. Draper, J. H. Lancor, and Leighton Davis, of Massachusetts Inst. of Technology, was presented by C. S. Draper.

Pointing out that future engine refinements must come through exact and painstaking research into the exact nature of engine operation, Draper outlined the years of work that have gone into development of the recording instrument he and his associates have perfected. This instrument has proved far superior to any previously used recording device for obtaining indicator cards on the pressure cycle of high speed internal combustion engines.

Russell G. Robinson, of the N.A.C.A., presented a slow motion study of internal combustion. Motion pictures taken at a speed of 40,000 frames per second were shown. This is made possible by an ultra high speed camera developed at the N.A.C.A. laboratories during the past year by Cearcy D. Miller.

High Altitude Flying

Hall L. Hibbard, Lockheed Aircraft Corporation, served as chairman of the Tuesday evening session on High Altitude Flying. The highlight of the entire meeting was probably the demonstration given during that session of the high altitude pressure chamber of the new oxygen face mask, both developed in the high altitude research laboratory of the Mayo Clinic. This presentation was made jointly by Drs. Walter M. Boothby and W. R. Lovelace. The latter established a new decompression record when he was taken to an altitude equivalent, within the chamber, of 40,000 ft. in 9 minutes, returning to sea level in 2 min. 45 secs. Prior to making this demonstration Dr. Lovelace took oxygen through the Mayo face mask for forty minutes, and also used the mask throughout the test. This eliminates nitrogen from the blood system and prevents formation of bubbles in the blood during the test. It is these blood bubbles which are the chief danger to high altitude pilots. Formed through boiling of the blood due to reduced pressure, such blood bubbles will cause reduced vision, paralysis, double vision, unconsciousness, or even death. Dr. Boothby remarked that this country needs a large number of decompression chambers in ... have less than a dozen such chambers now in service, Germany is known to be using hundreds of them.

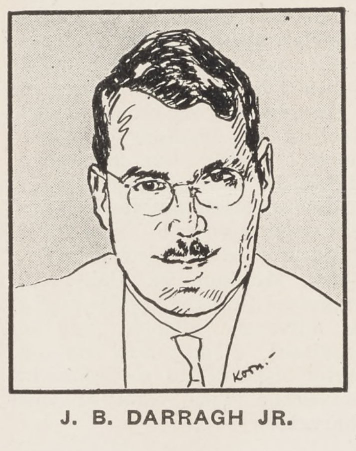
Wednesday's concluding session, on Aerodynamics, was led by Dr. Clark B. Millikan, of California Institute of Technology. A paper titled, "Performance Dictates Design" by Ralph H. Upson, Wayne University, was read by Harold Luskin. The mathematics of this paper was pretty imposing and is probably a real contribution to engineering, but it was too deep for this observer. Major conclusion seemed to be that optimum performance could be reached with an aspect ratio of about 21 to 1. In any case the formula developed by Upson does permit easy examination of various design factors to determine influence on overall efficiency of their variations. Dr. Millikan, in discussing the paper, pointed out that all engineering is as much an art as a science, and that there is a point beyond which complex formulae cannot be carried from an engineering standpoint.

"Experiments on Drop Impingement" by W. H. Hunter, The B. F. Goodrich Co., outlined a program of research on icing. The speaker told his perspiring audience that ice hazards are neither seasonally nor geographically restricted. Smoothness of the wing surface is very important as, under icing conditions, a large volume of water is passing back along the wing very close to the boundary layer. Results of ice formation research are making possible a much greater percentage of flight completions to destination.

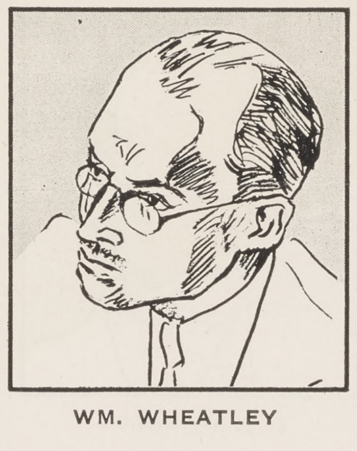
Propeller Design

"Some Recent Developments in Propeller Blade Design" was discussed by Louis H. Enos, Curtiss-Wright Propeller Division, Curtiss-Wright Corp. Enos forecast six-bladed propellers for the near future, of dual rotation type with three blades turning in each direction. He demonstrated why the hollow steel blade holds the greatest promise for propeller weight reductions. Steel blades also have superior resistance to abrasion. Propeller blade shank cuffs were described in some detail, their major advantage being improved engine cooling, but little hope was suggested for an early increase in propeller efficiency.

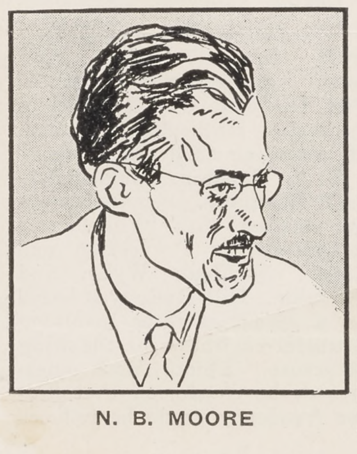
"Range at Constant Speed", was presented by its author, Norton B. Moores, St. Louis Airplane Division, Curtiss-Wright Corp. This paper provided a mathematical short cut method for determination of maximum range.



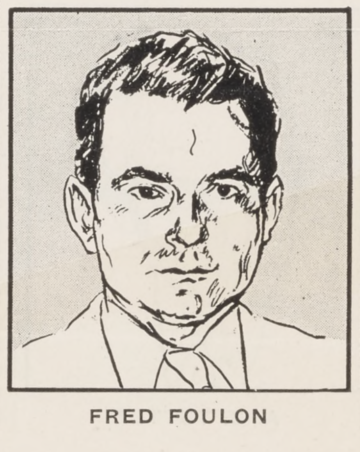
J. B. DARRAGH JR.



WM. WHEATLEY



N. B. MOORE



FRED FOULON

Union 9/15/40

Consair Seeks Water St. Cut To Highway

Maj. Fleet Offers $20,000 to Cover Condemnation Cost

Condemnation by the city of a strip of property west of Pacific highway and between Bean and Harasthy sts., to permit Water st. to merge into Pacific highway just south of Harasthy st. instead of at Bean st., has been proposed by Maj. R. H. Fleet, Consolidated Aircraft Corp. president, in a letter just received by the city planning commission.

By doing this, said Glenn Rick, city planning engineer, the big plane plant could erect its proposed new final assembly building, which is to go up north of its present factory, closer to Pacific highway and more in line with the existing structure.

AFFECTS EFFICIENCY

The planning engineer said that this building alignment is important to efficient operation of the plant, and that Maj. Fleet, in his letter, said that if the city would condemn the property required for the new Water st. connection, the corporation "will contribute $20,000 of the expense, unless the total award is less than that amount, in which event our contribution would be limited to the total amount of the award."

Rick explained that part of Water st. is open south from Witherby st. The extension, as it appears on the map, would continue on tidelands to a junction with Pacific highway. If the private property described by Maj. Fleet were obtained by the city for street purposes, Consolidated then could move its proposed new assembly building forward on the tideland strip now set aside for Water st.

WILL DRESS UP WALLS

"If Water st. is not cut through, our building will not face on a highway, and the exterior walls will be finished in corrugated galvanized iron," Maj. Fleet wrote. "However, if the street is located as shown (on a map that accompanied the letter), we will finish the east elevation fronting on Water st. and the north elevation fronting on Harasthy st. in stucco, similar to our present buildings fronting on Pacific highway.

"This will entail an additional expenditure of $10,000, which expenditure we are willing to make in the interest of beautification of the city."

That the $20,000 offer to cover the condemnation award should be ample was indicated in Maj. Fleet's letter, in which he disclosed that "we recently purchased the entire froontage between Vine and Bean sts. on the east side of Pacific highway for $15,000."

SPEEDY APPROVAL SEEN

Development of Water st. is part of a comprehensive plan to relieve traffic congestion at Bancroft ave. and Pacific highway. With that in mind, Rick insisted when the aircraft corporation's original lease was drafted, that sufficient tidelands be excluded to permit Water st. to be merged with Pacific highway at Bean st. In view of Maj. Fleet's offer to pay up to $20,000 of a condemnation award, the planning engineer said he would favor the new proposal.

To speed consideration of the suggestion, Rick said he has advised Consolidated officials to withdraw the letter, which was addressed to the planning commission, and to resubmit it to the city council so that body, if it desired, immediately could order an appraisal made. This could be done Tuesday, said Rick whereas the planning commission, which could not authorize an appraisal, does not meet until Sept. 24, when its nly action would be to refer the letter to the council for consideration the following week.

UNION - 9-21-40

Clash Looms; U. S. May Get Singapore Base

HONG KONG, Sept. 21 (Saturday) (A.P.) — The British-owned newspaper China Mail reported today that "since yesterday morning" Japanese warships have moved into Tonking bay "as a persuasive gesture" to back up Japanese negotiations for military rights in French Indo-China.

WASHINGTON, Sept. 20 (I.N.S.)—Authoritative Chinese quarters said tonight their government may attempt a fusion with Indo-China's native masses should the French authorities there allow Japanese troops to cross the territory under orders of the Vichy government.

Secy. of State Hull told his press conference meantime that his talks with British and Australian envoys have covered the question of basing the United States fleet at Singapore, closer by 2000 miles to Japan than the present Hawaiian base.

RICHARDSON CALLED BACK

Linked also to the administration's efforts to maintain the Pacific status quo was a navy announcement that the fleet commander-in-chief, Adm. James O. Richardson, on arrival of the first three sections of the battle force for overhaul at San Pedro, Calif., will come on to Washington.

Here, officials said, the admiral will hold his seconnd conference in recent months with President Roosevelt and the navy high command on the Pacific situation. He leaves Honolulu Monday on the battleship New Mexico.

HONGKONG, Sept. 21 (Saturday) (A.P.) — Chinese press reports — unconfirmed elsewhere — declared today that an understanding had been reached for Chinese-French military collaboration in the event Japan invades Indo-China.

These reports said the French would allow Chinese troops to enter Indo-China to oppose any Japanese invaders.

Hull, in confirming reports that he had mentioned Singapore to Lord Lothian, British ambassador, and Richard Casey, Australian minister, emphasized that the talks as yet have not reached the status of negotiations calling for decisions.

A decision entailing the fleet's transfer to Britain's Far Eastern "Gibraltar"—a base separated by three weeks' steaming time from the Panama canal and the Atlantic—presumably would require Richardson's advice and depend in part upon the course of the battle of Britain.

HONG KONG, Sept. 21 (Saturday) (A.P.) — Highly connected Japanese quarters here said today Japan was prepared to take action aiming at the seizure of all French Indo-China if France declined to permit the passage of an unrestricted number of Japanese troops through the French colony.

Competent quarters here expressed doubt the fleet would move to Singapore and until an invasion attempt demonstrated the British fleet's ability to hold the

(Continued on Page A, Col. 4)

HARBOR DRIVE, CONSAIR LAND PROJECTS MOVE STEP NEARER

Plan Board Drafts Recommendation To Council for Use of U. S. Defense Funds

Ten to 15 giant seaplanes soon will be produced by Consolidated Aircraft Corp. daily, the city planning commission was informed at a special meeting yesterday which was marked by the drafting of a recommendation to the city council that it immediately authorize an application for national defense fund for Harbor dr. construction Other highlights of the meeting included:

1—Decision by the commission not to protest against modification of pier and bulkhead lines to permit a 500x2500-foot land fill on the bay side of Harbor dr. between the coast guard air station and the Marine base.

CLIPPER BASE MOVE SEEN

2—Forecast that the transpacific clipper ship base eventually will be moved from San Francisco to San Diego "where there are no bridges and no fog."

3—Expression of belief by Joe Brennan, port director, that defense funds can be obtained to build Harbor dr. as a military road connecting the Destroyer base, Navy pier, 11th Naval district headquarters, the coast guard air station, the Marine base, Naval Training station and the Ft. Rosecrans reservation.

4—Report by William Maloney, Consair plant engineer, that the factory is expanding so rapidly that he sometimes wonders whether he is in "the general building contracting business or the aircraft industry," and disclosure by him that because of inadequate city sewage facilities, the plane corporation is installing its own outfall and ejector pumps at a cost of $27,500.

PIER HEARING DELAYED

The meeting was called after Col. Edwin C. Kelton, Los Angeles, district army engineer, continued for a week a hearing he opened here Wednesday on modification of the pier and bulkhead lines. This delay was granted to give the planning commission an opportunity to study the plan.

In the discussion yesterday, Maloney emphasized Consair's need for additional land. He said that seaplane ramps are imperative, and that a site is needed on the water's edge in which seaplanes can be overhauled. He pointed to the inadequacy of the existing ramp at the south end of the field and which also is used by the coast guard, and said new facilities are needed at the north end of Lindbergh field and away from airport plane traffic congestion.

"You're talking about a 300,000,000 business," said Brennan, in urging the commission to indorse the fill. He said that every available

(Continued on Page A, Col. 8)

* * *

Consair Wins 85-Million Order

Backlog Climbs To $217,800,000

Bringing its total backlog for government warplanes to $217,800,000, Consolidated Aircraft Corp. yesterday received an $85,800,000 contract from the war department for an undisclosed number of four-motored bombers, The Associated Press reported from Washington, D. C.

The previous backlog was $132,000,000.

In a talk before U. S. army engineers in the harbor commission office Wednesday, Maj. Reuben H. Fleet, Consolidated president, said the Lindbergh field plant will have a backlog of $300,000,000 soon, intimating that additional contracts are forthcoming from the war and navy departments.

Delivery dates for the new bombers were not specified.

Consolidated authorities reported new workers are being employed at the rate of 500 a week and that this will be stepped up as new buildings are completed under the company's huge expansion program. Present plans call for a working force of 35,000 men, virtually triple the present number of employes.

R. A. F. Batters German Canals

LONDON, Sept. 21 (Saturday) (I. N.S.)—Crippling destruction dealt by British bombers to Germany's intricate web of canals, railways and roads was followed early today with a prolonged aerial barrage that sent many tons of explosive and incendiary steel crashing into the Nazi battlements across the English channel.

Hour upon hour through the night and into the morning, relays of Royal Air force squadrons vaulted over the narrow waters to deliver their cargoes. They centered their fury mainly on the docks of Calais, the nearest of the Nazi-held invasion springboards to England, and on the long-range German guns planted around near-by Cap Gris Nez.

HEAR HEAVY BLASTS

Watchers on the Dover chalk cliffs, 22 miles opposite Calais, reported they saw and heard the heaviest explosions that have yet rocked the other side of the channel. Violence of the repeated R.A.F. thrusts was attested to by the fact that German anti-aircraft guns erupted not hundreds but thousands of tracer shells that streaked the dark sky like a giant fireworks display.

The waterways and transport lines of Germany—nerve system of Adolf Hitler's war machine—shared with the Nazi invasion bases and inland centers in the gradual paralysis the British bombers sought to spread with their unceasing attacks.

Navy Bars Cameras From Ships in Hawaii

HONOLULU, Sept. 20 (A.P.)—The United States navy is increasing its precautions against espionage. Officers and enlisted men, it was learned today, have been forbidden to take cameras aboard ships.

Sale of camera supplies in the ships' service stores also has been stopped.

OVER

Dutch Treat

A 300-year-old Holland candy box is among exhibits at public library. Page 6-A.

* * *

State college "frosh" get their annual medicine. Page 2-A.

* * *

The man she was engaged to married another girl, but Brooke found happiness the end of a love maze modern as tomorrow. It's

---

S. D. Air Plants Get 'Speed Up' Army Orders

Union--Wed. 9/11/40

WASHINGTON, Sept. 10 (I.N.S.)—The war department announced tonight it had sent "speed up" letters to 21 manufacturers calling for $1,251,000,000 worth of armaments, including 14,394 planes, for national defense.

Among the firms receiving letters was the Ford Motor Co. of Detroit, which will manufacture plane motors under the air defense program.

SEEK 14,394 PLANES

Acting under the five-billion-dollar defense deficiency appropriation bill signed by President Roosevelt yesterday, the war department letters, approved by the national defense commission, authorizes the manufacturers to go ahead with the program without delay while contractual details are being worked out.

The 14,394 planes ordered, at an estimated cost of $817,000,000, provides for every type of army craft, from trainers to fast pursuit ships, medium and heavy bombers.

Earlier in the day the department announced a specific contract with the Bell Aircraft Corp. of Buffalo for 120 fast pursuit planes, at a cost of $4,962,220. These pursuit ships were said to have shown a speed of more than 400 miles an hour in recent army tests.

SILENT ON NUMBERS

In the "speed up" letters tonight, specific numbers of planes, engines or parts to be produced by each company was not specified. The engine program, however, calls for 28,282 plane motors, at a cost of $377,000,000, while $57,000,000 worth of propellors and blades are provided for in the program.

The letters were sent to the following companies:

For planes: Boeing Aircraft Co., Seattle; Consolidated Aircraft Corp., San Diego; Glenn L. Martin Co., Baltimore; North American Aviation, Inglewood; Douglas Aircraft, Santa Monica; Lockheed Aircraft Corp., Burbank; Bell Aircraft Corp., Buffalo; Curtiss plane division, Curtiss Wright Corp., Buffalo; Curtiss Wright Corp., St. Louis plane division, Robertson, Mo.; Republic Aviation Corp., Farmingdale, L. I.; Beech Aircraft Corp., Wichita, Kan.; Vultee Aircraft, Inc., Downey; Fairchild Aircraft, Hagerstown, Md.; Ryan Aeronautical, San Diego; Stearman Aircraft division, Boeing Airplane Co., Wichita, Kan.

ORDER ENGINES

For engines: Ford Motor Co., Dearborn, Mich.; Continental Motors, Muskegon, Mich.; Lycoming division, Aviation Manufacturing corp., Williamsport, Pa.; Allison engineering division, General Motors Corp., Indianapolis, and Wright Aeronautical Corp., Patterson, N. J.

For propellors and blades: Curtiss propellor division, Curtiss Wright Corp., Clifton, N. J.

Lindbergh Field Expansion to Start

aircraft news 9/19/40

SAN DIEGO—A $1,400,000 improvement program started last Monday to make Lindbergh Field, the municipal airport, suitable for test flights of giant, four-engined Army bombers Consolidated Aircraft Corp. is building for the United States and Great Britain.

Runways will be lengthened, acres of ground reclaimed in bay dredging will be graded and oiled, and sewer and lighting systems will be installed with funds largely provided by the Federal government.

9/25/40

The Keyhole

BILLY SILVER .... **Editor**
A. L. SILVER .... **Business Manager**
OFFICE AND EDITORIAL ROOMS
642 F Avenue **National City, Calif.**
Phone National 36
Advertising rates on application. Subscription $2:50 per year by U. S. Mail.
All bills payable to the Keyhole Publishing Company.

MAJOR RUBEN FLEET, SAN DIEGO'S SANTA CLAUS!

The city of San Diego with its citizens in entirety, owe much to Major Ruben Fleet, president of the Consolidated Aircraft corporation who, in plain language, has completely saved San Diego from falling into the hands of old man poverty!

Perhaps there are many people who are not aware of the fact that the good major had been corralled by "Hogtown" Los Angeles when he first invaded the Pacific coast after leaving his home, the city of Buffalo, New York behind him to seek appropriate climatic conditions that would warrant his powerful aircraft corporation to manufacture airplanes which would be flown immediately upon completion. That could not be accomplished at the Major's home in Buffalo on account of the winter season. But, in California the production of planes could be done the year around.

So, when Major Fleet arrived on this coast and of course, landing in Los Angeles first, he and his associates reconnoitered the Los Angeles vicinities. They were accompanied by a Los Angeles "dragnet" composed of the high-powered chamber of commerce "goodwill ambassadors" who stuck to the Major and his party at the same time making all sorts of overtures to the distinguished eastern visitors.

But, Major Fleet had heard of the San Diego unexcelled climate and after thanking the "Hogtown' Los Angeles gentlemen informed them that he wished to make a survey of San Diego also before making up his mind to select Los Angeles for his airplane site. How the Major ever escaped the clutches of our northern leeches is more than we can ever explain!

However, Major Fleet arrived in San Diego and here he met another Major. That other Major was Macauley, business manager of the San Diego chamber of commerce and executive secretary. Major Macauley lost no time in bringing into the picture Joe Brennan, director of port.

Between Macauley and Brennan's "sales talk,' Major Fleet was convinced in less time than it takes to tell it, that San Diego was the spot he set out to get and the Consolidated Aircraft corporation selected the tideland sites along Pacific boulevard and immediately erected its magnificent factory which makes it the largest now in the United States.

Last Monday another addition was completed and dedicated in the presence of several thousand San Diegans who paid tribute to Major Ruben Fleet and his corporation. Admiral Chas. A. Blakely, commandant of the 11th Naval District was given the honor of the dedication. Admiral Blakely's eulogy to Major Fleet in behalf of the entire navy department, was loudly applauded and San Diegans felt that a great man had come to their city to save them from poverty and to enlighten every home here. This "life saver" made it possible to save the day after the fleet had departed for the Hawaiian Islands with that enormous payroll which has been San Diego's greatest source of revenue.

More than 9,600 men are now employed by the Consolidated Aircraft corporation, and according to the statement made by Major Fleet at the dedicatory ceremonies last Monday, there will be several thousand more men employed by December of this year, which means a larger payroll, supreme happiness and greater prosperity for San Diego and its surrounding territory.

Yes, Major Fleet is San Diego's Santa Claus!

Pacific Coast Edition
THE WALL STREET JOURNAL

DOW-JONES
ELECTRIC PAGE NEWS PRINTERS

623 CENTRAL BUILDING
LOS ANGELES
PHONE TRINITY 0881

Press Clipping
FROM
ALBERT F. COUDERC

SEP 19 1940

FEDERAL PLANE ORDERS LISTED

planes. The 1941 fiscal year appropriation provided funds or contract authorization for approximately 3,000 planes for the Navy, and the supplemental defense appropriation for 4,028.

A recapitulation of awards made by the War Department indicates that since June the Army has placed orders for aircraft, exclusive of engines, armament and certain instruments, with a value of close to $400,000,000. The exact number of airplanes the Army will obtain as a result of these orders has not been divulged, and no information has been furnished as to the number of ships ordered by the Army for the Navy's account. Because of the difference in technical requirements, it is assumed that the combat ships ordered by the Army are all for its own use, but it is understood that some of the cargo and training planes were ordered for the Navy's account.

Army Contracts Listed

The following is a list of aircraft contracts awarded by the Army since June 1 of this year:

Manufacturer Type	Quantity	Value
Cessna, twin-engined advanced trainers...	33	$900,378
Cessca, twin-engined advanced trainers....	33	$900,378
No American, single-eng advanced trainers.	637	11,335,631
Consolidated, four-engine heavy bombers...	56	14,831,342
Stearman, primary trainers	300	2,041,947
Beech, advanced trainers	67	3,410,746
Fairchild, primary trainers	100	1,038,300
Stinson, short-range observation..........	6	‡.......
Beech, transports	20	*.......
Ryan, primary trainers	100	2,074,234
Beech, advanced trainers	150	4,847,217
Vultee, basic trainers	500	7,488,782
Boeing, four-engined heavy bombers......	277	70,449,955
Lockheed, twin-engined pursuits	410	30,278,788
Platt-Lepate, rotating-wing autogyro.....	1	‡.......
Bell, single-engined pursuits	120	4,962,220
Republic, single-engined pursuits	†1,000	56,499,924
Bell, single-engined pursuits	540	19,688,287
Curtiss, trainers	450	4,221,069
Curtiss, transports	46	12,410,116
Martin, twin-engined bombers	‡..	14,269,646
Stearman, trainers	‡..	6,934,096
Boeing, four-engined heavy bombers......	‡..	59,762,850
Lockheed, twin-engined pursuits	‡..	15,646,451
Douglas, transports	‡..	20,229,184
Beech, trainers	‡..	13,115,138

† Estimated. ‡ Not released. * Included in the $4,847,217 for advanced trainers.

List of Navy Orders

Figures released by the Navy showed that up to and including September 3 it had awarded contracts for airplanes and engines, out of its $226,088,562 appropriation for the fiscal year 1941, with an aggregate value of $44,720,634. Out of its 1940 fiscal year appropriation of $89,419,000, the Navy had awarded contracts for airplanes and engines with a value of $38,551,966. Since that date, only two new contracts have been announced as awarded by the Navy. One was to Curtiss-Wright for scout observation

Continued on Second Page, Column 2

FEDERAL PLANE ORDERS LISTED

Continued from First Page

ships with a value of $11,476,633, and the other presumably for scout-bombers with a value of $9,602,384 to Douglas Aircraft.

The following is a break-down of the airplanes reported by the Navy as on order but undelivered as of September 3:

Model Type Manufacturer	Quantity
F2A-2, single seater fighter; Brewster................	43
F4FS, single seater fighter; Grumman................	320
JRB-1, utility transport; Beech	5
JRF-1, utility transport; Grumman	10
N3N-3, primary trainer; Navy aircraft factory.......	562
NP-1, primary trainer; Spartan	201
NR-1, primary trainer; Ryan	100
N2S-1, primary trainer; Stearman	600
OS2U-1, observation scout; Vought-Sikorsky.........	42
OS2U-2, observation scout; Vought-Sikorsky.........	158
PBM-1, two-engined patrol bomber; Martin...........	20
PBY-5, two-engined patrol bomber; Consolidated......	200
PB2Y-2, four-engined patrol bomber, Consolidated.....	2
R3D-2, transport; Douglas	4
R5C-1, transport; Lockheed	1
SBDS, scout-bomber; Douglas	137
SBN-1, scout-bomber; Navy aircraft factory..........	30
SB2U-3, scout bomber; Vought-Sikorsky...............	57
SNJ-2, advanced trainer; North American............	25
X15F-1, two-engined fighter (experimental); Grumman.	1
XFL-1, land fighter (experimental); Bell............	1
XF4U-1, experimental fighter; Vought-Sikorsky.......	1
XN5N-1, experimental trainer; naval aircraft.........	1
XPBB-1, experimental patrol bomber; Boeing.........	1
XPB2M, experimental patrol bomber; Martin..........	1
XPBM2, experimental 4-eng. patent bomber; Martin..	1
XSB2A1, experimental scout bomber; Brewster........	1
XSB2C-1, experimental scout bomber; Curtiss.........	1
XTBF-1, experimental torpedo bomber; Grumman.....	2
XTBU-1, experimental torp. bomber; Vought-Sikorsky.	1

Prospective Orders

In addition to the planes shown as on order and undelivered on September 3, the Navy had agreements preparatory to contracts for the following ships:

Type Manufacturer	Quantity
Observation-scouts; Vought-Sikorsky	1,006
Scout-bombers; Brewster	411
Fighters; Brewster	108
Fighters; Grumman	254
Torpedo-bombers; Grumman	286
Utility transports; Grumman	144
Scout bombers; Douglas	252
Scout observation; Curtiss	300
Advanced trainers; Curtiss	150

To date the Navy has made no announcement indicating that actual contracts for any of the above airplanes have been awarded. It is quite possible, however, that the orders announced as placed by the War Department with Douglas and Curtiss last Saturday may have included some planes for the Navy.

A total of 29 of the planes on order September 3 were scheduled for delivery this month, while 47 are scheduled for October, to increase to 112 in November and 187 in December. These scheduled deliveries do not take into consideration deliveries against orders placed prior to 1940, but still unfilled, which includes the order for 20 patrol bombers against which Martin is just starting deliveries.

---

due to [illegible] the wing. Wheaton thought that reduction of frequency was a normal phenomenon up to the point of skin wrinkling. "A Graphical Solution of Flutter Instability", by W. B. Bergen and Lee Arnold, The Glenn L. Martin Co., was presented by Bergen. Representing a long step towards elimination of flutter, this paper presented a set of graphs and mathematical curves which were designed to help the engineer arrive in a few minutes at computations that once required weeks of mathematical gymnastics. The long period of intensive vibration study conducted by Martin engineers was outlined.

New Test Recorder

Tuesday's session on Instrumentation was presided over by Dr. E. E. Sechler, of California Institute of Technology. "The General Use of a Magnetic Steel Tape Recorder in Airplane Testing", by James B. Darragh, Jr., Lockheed Aircraft Corp. was well received. This interesting device, the first ever built, has numerous advantages. Using eight recording magnets and 1800 feet of steel tape driven by a variable speed magnet, it is possible to record various electrical impulses, including those from a microphone. Thus the instrument records the voice as well as the results reported by various instruments. Separate magnets are used, on the ground only, for erasing the tape. A continuous recording for as long as 16 hours may be made. Recordings are permanent until erased. Time reference points are marked on the tape by periodic short circuiting of the current. The device is especially adaptable to noise, vibration, and flutter recording, but may be used to record data from any number of flight instruments up to sixteen, simultaneously. Or as many as sixteen different observers may record data simultaneously by using separate microphones. On single-seater planes the device may be mounted with convenient remote controls so that the pilot can dictate a full account of observations at the same time that instrument, noise, stress, and vibration recordings are being made automatically. In the event of a fatal crash the record on the steel tape would be preserved except in event of a fire hot enough to destroy the magnetism of the tape. In commenting on this remarkable development, Dr. Klein pointed out that photographic recording of flight data had not proved entirely satisfactory, due to time element to get films developed, and record and assemble data, etc., but that he preferred direct visual readings wherever possible. Darragh thought the choice might be a matter of opinion but pointed to the ver[illegible]tromagn[illegible] instrument. Dr. Klein admitted that pointer instrument readings are hard to make accurately.

"The Application of an Electromagnetic Indicator to Internal Combustion Engine Problems", prepared by C. S. Draper, J. H. Lancor, and Leighton Davis, of Massachusetts Inst. of Technology, was presented by C. S. Draper.

Pointing out that future engine refinements must come through exact and painstaking research into the exact nature of engine operation, Draper outlined the years of work that have gone into development of the recording instrument he and his associates have perfected. This instrument has proved far superior to any previously used recording device for obtaining indicator cards on the pressure cycle of high speed internal combustion engines.

Russell G. Robinson, of the N.A.C.A., presented a slow motion study of internal combustion. Motion pictures taken at a speed of 40,000 frames per second were shown. This is made possible by an ultra high speed camera developed at the N.A.C.A. laboratories during the past year by Cearcy D. Miller.

High Altitude Flying

Hall L. Hibbard, Lockheed Aircraft Corporation, served as chairman of the Tuesday evening session on High Altitude Flying. The highlight of the entire meeting was probably the demonstration given during that session of the high altitude pressure chamber of the new oxygen face mask, both developed in the high altitude research laboratory of the Mayo Clinic. This presentation was made jointly by Drs. Walter M. Boothby and W. R. Lovelace. The latter established a new decompression record when he was taken to an altitude equivalent, within the chamber, of 40,000 ft. in 9 minutes, returning to sea level in 2 min. 45 secs. Prior to making this demonstration Dr. Lovelace took oxygen through the Mayo face mask for forty minutes, and also used the mask throughout the test. This eliminates nitrogen from the blood system and prevents formation of bubbles in the blood during the test. It is these blood bubbles which are the chief danger to high altitude pilots. Formed through boiling of the blood due to reduced pressure, such blood bubbles will cause reduced vision, paralysis, double vision, unconsciousness, or even death. Dr. Boothby remarked that this country needs a large number of decompression chambers in [illegible] have less than a dozen such chambers now in service, Germany is known to be using hundreds of them.

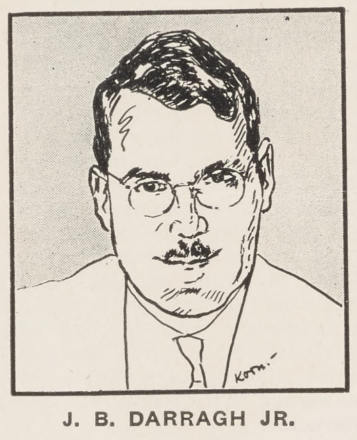
Wednesday's concluding session, on Aerodynamics, was led by Dr. Clark B. Millikan, of California Institute of Technology. A paper titled, "Performance Dictates Design" by Ralph H. Upson, Wayne University, was read by Harold Luskin. The mathematics of this paper was pretty imposing and is probably a real contribution to engineering, but it was too deep for this observer. Major conclusion seemed to be that optimum performance could be reached with an aspect ratio of about 21 to 1. In any case the formula developed by Upson does permit easy examination of various design factors to determine influence on overall efficiency of their variations. Dr. Millikan, in discussing the paper, pointed out that all engineering is as much an art as a science, and that there is a point beyond which complex formulae cannot be carried from an engineering standpoint.

"Experiments on Drop Impingement" by W. H. Hunter, The B. F. Goodrich Co., outlined a program of research on icing. The speaker told his perspiring audience that ice hazards are neither seasonally nor geographically restricted. Smoothness of the wing surface is very important as, under icing conditions, a large volume of water is passing back along the wing very close to the boundary layer. Results of ice formation research are making possible a much greater percentage of flight completions to destination.

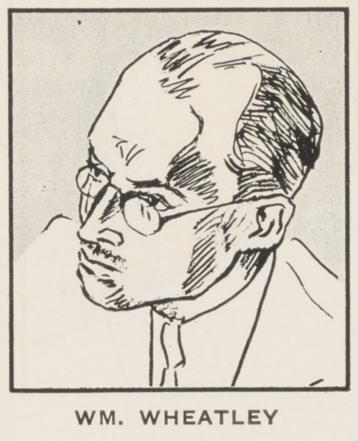
Propeller Design

"Some Recent Developments in Propeller Blade Design" was discussed by Louis H. Enos, Curtiss-Wright Propeller Division, Curtiss-Wright Corp. Enos forecast six-bladed propellers for the near future, of dual rotation type with three blades turning in each direction. He demonstrated why the hollow steel blade holds the greatest promise for propeller weight reductions. Steel blades also have superior resistance to abrasion. Propeller blade shank cuffs were described in some detail, their major advantage being improved engine cooling, but little hope was suggested for an early increase in propeller efficiency.

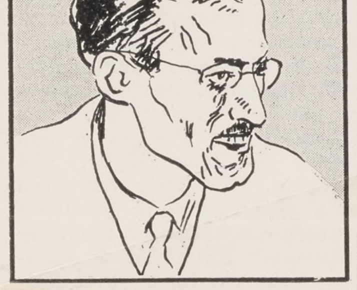
"Range at Constant Speed", was presented by its author, Norton B. Moores, St. Louis Airplane Division, Curtiss-Wright Corp. This paper provided a mathematical short cut method for determination of maximum range.



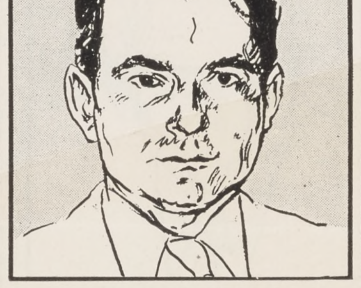
J. B. DARRAGH JR.



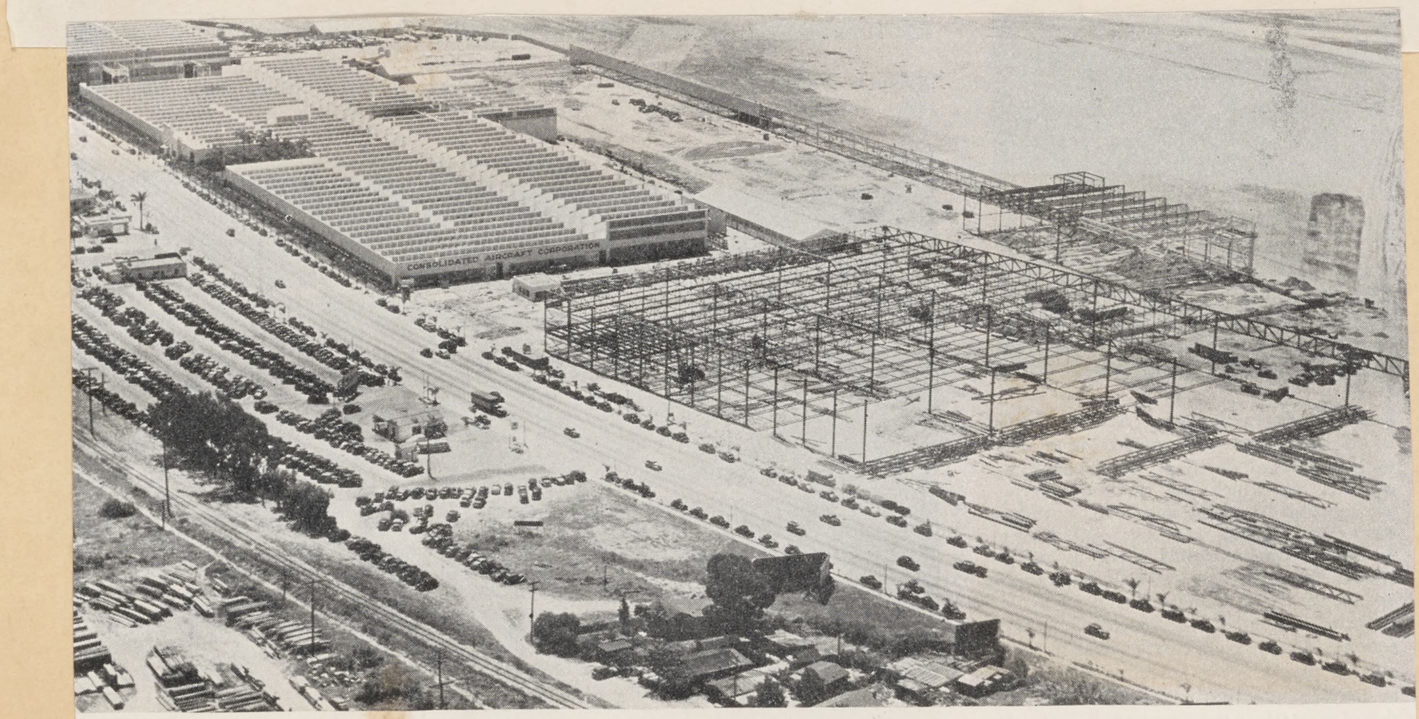
WM. WHEATLEY



N. B. MOORE



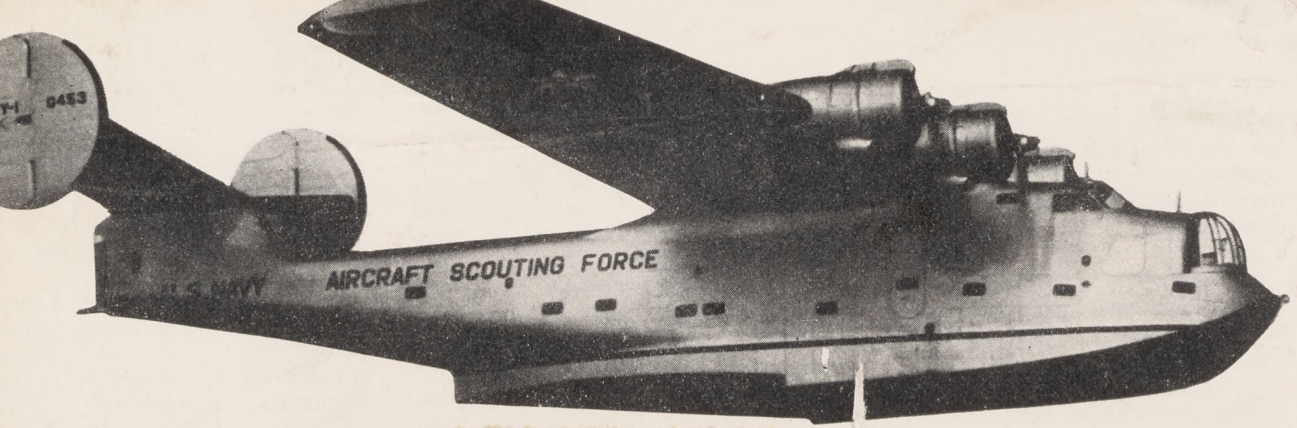
FRED FOULON



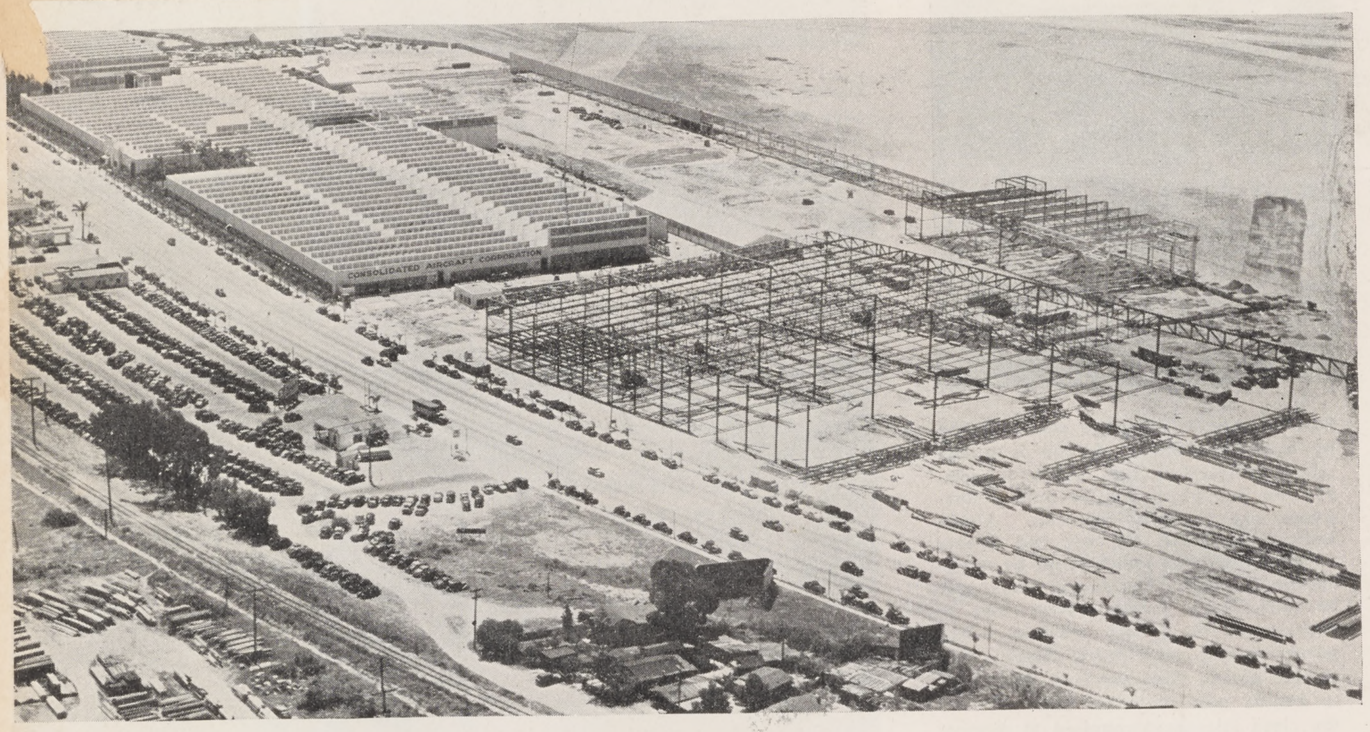
The new Consolidated plant is typical of what will take place all over the country, here is a new extension going up.

AVIATION
August, 1940

"Aviation" August, 1940



Upper left: giant Consolidated patrol bomber. Upper right: Grumman fighter. Lower right: Students being instructed in handling small seaplanes at Pensacola (Harris & Ewing). Official photographs U. S. Navy.



The new Consolidated plant is typical of what will take place all over the country, here is a new extension going up.

AVIATION
August, 1940
47

Aviation - Sept., 1940

A $1,400,000 improvement program is now under way on Lindberg field, San Diego, Calif. Runways are being lengthened, graded and surfaced in preparation for test flights of the four-engined bombers being built by Consolidated Aircraft Corp.

Aviation - Sept. 1940

Backlogs of the primary plane producers are more than keeping pace with accelerated deliveries. The following table gives the latest approximate unfilled orders of fourteen companies.

Aviation Corp	$5,000,000
Bell	22,000,000
Boeing	47,000,000
Brewster	44,000,000
Consolidated	97,000,000
Curtiss-Wright	200,000,000
Douglas	140,000,000
Grumman	9,000,000
Lockheed	140,000,000
Martin	110,000,000
North American	84,000,000
Republic	15,000,000
United	200,000,000
Vultee	15,000,000

Aviation - Sept. 1940

Consolidated Completed

Dedication ceremonies were held September 2nd, for the new Consolidated Aircraft Corp. factory building which virtually doubles the size of the San Diego factory. Completed at a cost of more than $2,000,000, the new building is more than 300 ft. wide and 700 ft. long. With other construction this brings total Consolidated floor space to about 2,000,000 sq.ft., said to be the largest integrated aircraft factory in America. Employment currently totals about 10,000; with 12,000 scheduled to be on the payroll by December, and 18,000 at the peak activity of the present plant.

Aviation - Sept. 1940

West Coast News

Aircraft Parts Manufacturing Association has been formed in Los Angeles, Calif., for the purpose of collecting, analyzing, and distributing information of interest to its members, particularly relating to problems arising through the enactment of new legislation affecting subcontractors and aircraft parts suppliers. Membership includes California companies engaged in manufacturing or processing parts, accessories, or products used in the aircraft industry. Jack Frost, former secretary to

Major R. H. Fleet, Consolidated Aircraft Corp., is serving as executive secretary of the new association.

Aviation - Sept 1940

Consolidated Aircraft has practically completed its $2,000,000 building program and probably will deliver planes valued somewhere between $10,000,000 and $15,000,000 in the final six months of 1940, as against $408,000 in the first half. The new facilities should enable an output of close to $40,000,000 annually. Yet there is a possibility of some further plant expansion in the coming months.

Aviation - Sept. 1940

Consolidated Expands

Editor's Note: the following summary of Consolidated's readiness to do its part in the national defense movement was received too late to be published last month with the statements of other manufacturers.

"Consolidated Aircraft Corp.'s position relative to the President's recently announced national defense program calling for 50,000 plane output per year, is one of timely alignment. Our present expansion program by which our factory is being doubled, was already under way before the announcement. Completed, this expansion will give us 1,910,000 sq.ft. of covered and uncovered manufacturing space, making it, I believe, the largest integrated aircraft manufacturing plant in America, and we have an option on additional land adjacent, equal to 50 percent of this area, with plans practically complete for its possible improvement. We have a factory of our own, a good organization—equal to any in our industry—the best in our history, and no mortgage on our premises or our future."—Maj. Reuben H. Fleet, president and manager, Consolidated Aircraft Corp.

Major Fleet

Aviation - Sept. 1940

Unfilled orders of the primary plane producers are steadily rising and are now well over twice the $600,000,000 estimated aggregate backlog at the beginning of the year. Contracts in negotiation under the defense program will increase the grand total by another $400,000,000. For example, the Army Air Corps is understood to be negotiating a large engine order with Curtiss-Wright which would boost the latter's unfilled orders to better than $400,000,000. As it is, Curtiss-Wright's $248,000,000 backlog is slightly in excess of total shipments by all aircraft makers in 1939. The following table gives the latest approximate unfilled orders of fifteen primary companies.

Allison	$40,000,000
Aviation Corp.	12,000,000
Bell	22,000,000
Boeing	90,000,000
Brewster	45,000,000
Consolidated	110,000,000
Curtiss-Wright	248,000,000
Douglas	140,000,000
Grumman	9,000,000
Lockheed	170,000,000
Martin	110,000,000
North American	95,000,000
Republic	12,000,000
United	212,000,000
Vultee	30,000,000
	$1,345,000,000

Aviation - September 1940

SPEAKING at the official dedication of Consolidated Aircraft's huge new buildings (San Diego, Cal.) on Labor Day, Major Reuben H. Fleet, company president (l.) took occasion to condemn peace-time conscription of plane plants as a deterrent to further expansion. Edgar N. Gott acted as master of ceremonies, and Rear Admiral Charles Blakely (r.) dedicated the plant to preparedness.

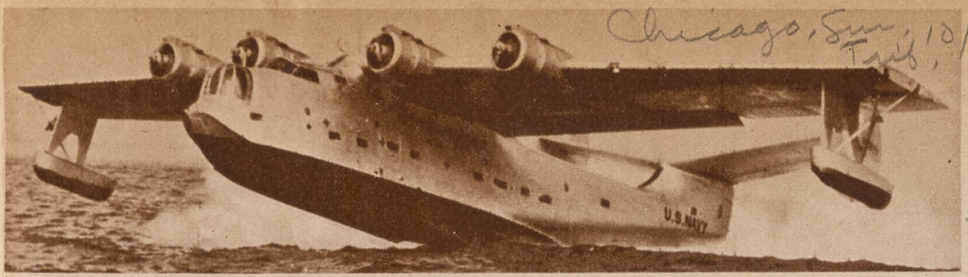
Aviation - September 1940

THIS NEW BUILDING doubled the capacity of Consolidated Aircraft in San Diego. At left is view of final assembly building, into which two football fields would fit comfortably.

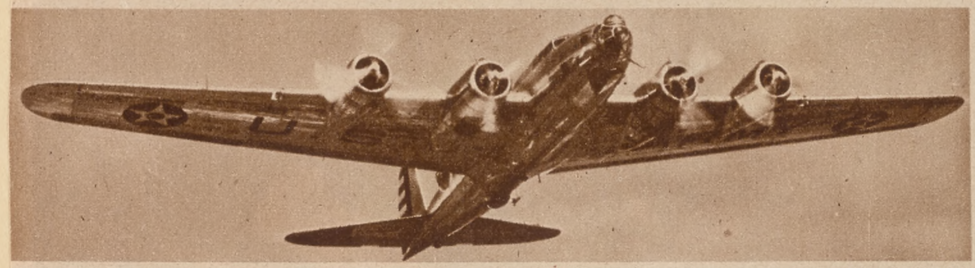
Chicago, Sun. Trib. 10/6/40

AMERICAN WINGS

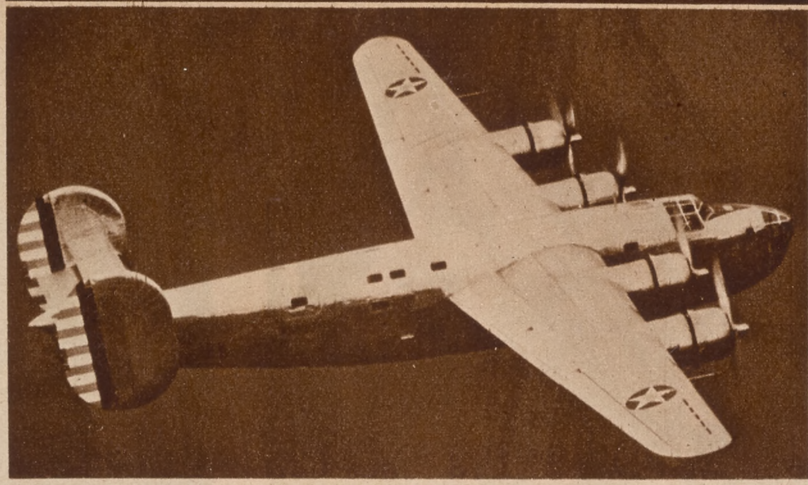
BOMBARDMENT



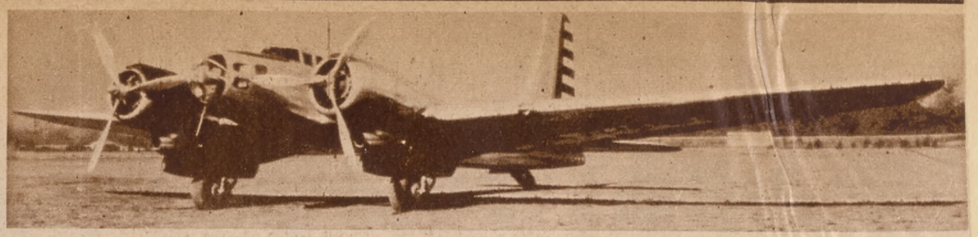
A LONG RANGE NAVY PATROL BOMBER, the PB2Y-1, which carries four tons of bombs for 5,000 miles at 240 m. p. h. Span, 135 ft.; four engines, 1,250 h. p. 14 cylinder two row radials.



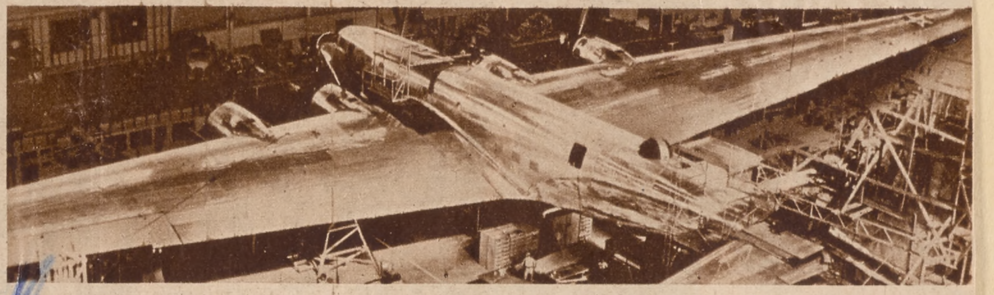
THE BOEING FLYING FORTRESS B-17. Span, 105 ft.; speed, 280 m. p. h. at 25,000 ft.; range, 3,000 mi.; four engines, 1,200 h. p.



THE FIRST TRICYCLE LANDING GEAR BOMBER, the army's B-24 (a Consolidated). Span, 110 ft.; speed, 300 m. p. h.; range 3,000 mi.; four engines, 1,500 h. p. two row radials; carries four tons of bombs.

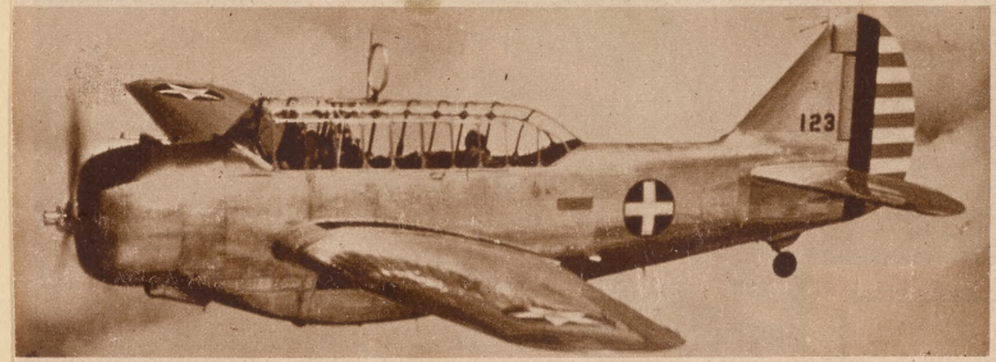


A MEDIUM BOMBER, the army's Douglas B-24. Span, 92 ft.; speed, 260 m. p. h.; range, 3,500 mi.; two engines, 14 cylinder 1,500 h. p.

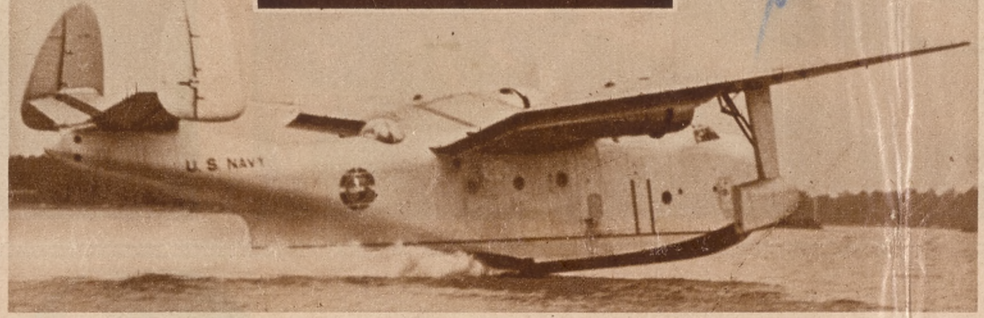


THE BIGGEST MILITARY PLANE IN THE WORLD, the Douglas B-19, now in the final assembly stage. Span, 250 ft.; designed speed, 220 m. p. h.; designed range, 6,000 miles with six tons of bombs and crew of 12; four engines, 2,000 h. p. 18 cylinder two row radials.

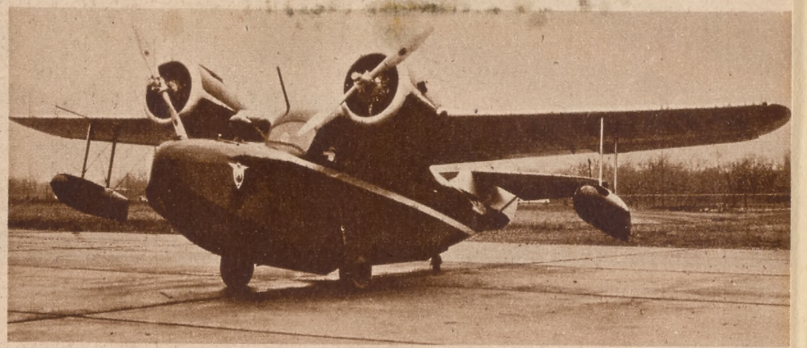
OBSERVATION—RECONNAISSANCE



THE LATEST AND BEST of the army's single-motored observation planes, the North American O-47. Span, 46 ft.; speed, 240 m. p. h.; range, 1,000 mi.; engine, 1,000 h. p.; crew, three.

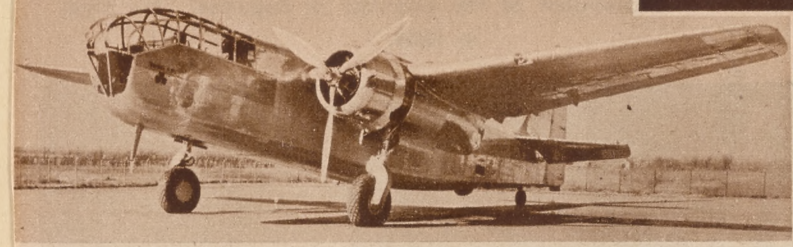


A NEW NAVY PATROL BOMBER, a Martin. Span, 118 ft.; reported speed, 250 m. p. h.; range, nearly 4,000 mi.; two engines, 1,400 h. p.

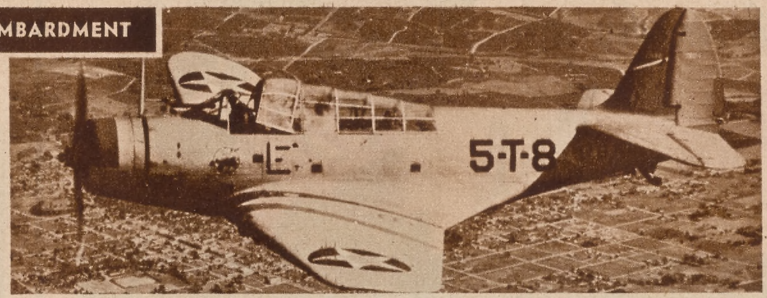


A RECONNAISSANCE PLANE, the amphibian Grumman G-21, used by army, navy, and coast guard. Span, 49 ft.; speed, 201 m. p. h.; range, 1,000 mi.; two engines, 450 h. p.

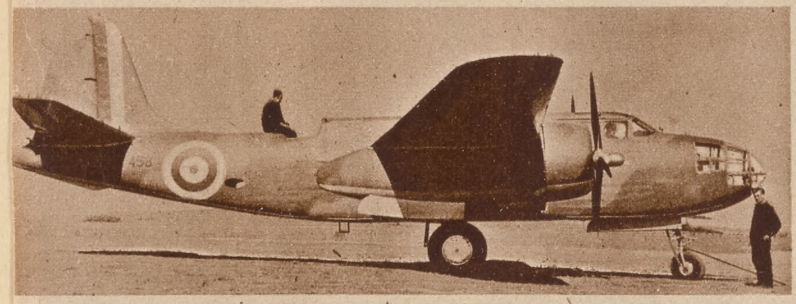
ATTACK - BOMBARDMENT



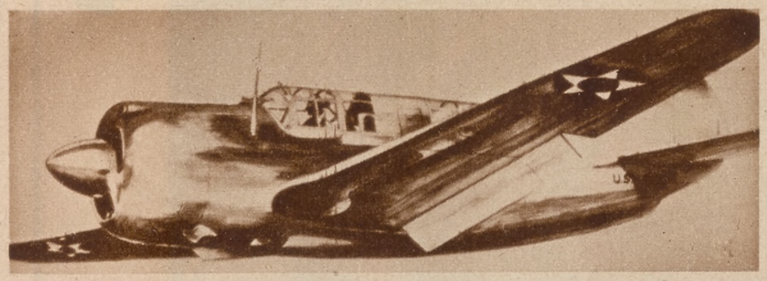
A STEARMAN ATTACK BOMBER ordered in quantity by the army. Span, 65 ft.; speed, just under 300 m. p. h.; two engines, 1,400 h. p.



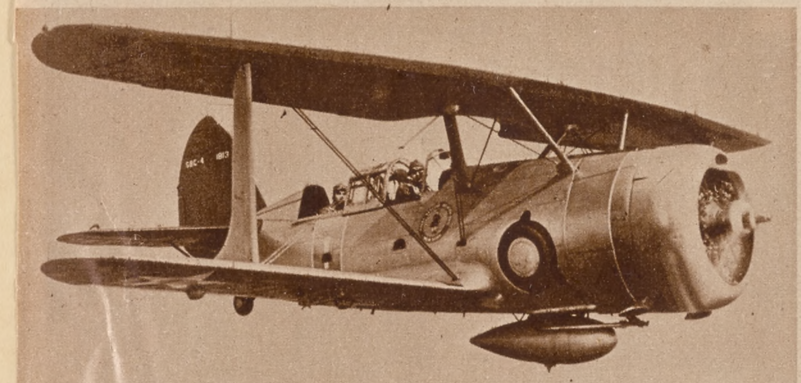
A DOUGLAS FOLDING-WING TORPEDO BOMBER for operation off aircraft carriers. Span, approximately 45 ft.; speed, 225 m. p. h.; range, 1,200 mi. Carries 400 pounds of bombs and 1,600 pound torpedo; fitted with arresting gear for landings.



ONE OF THE FASTEST and most heavily armed of new army attack bombers. Span, 61 ft.; estimated speed, 380 m. p. h.; two engines, 1,800 h. p.

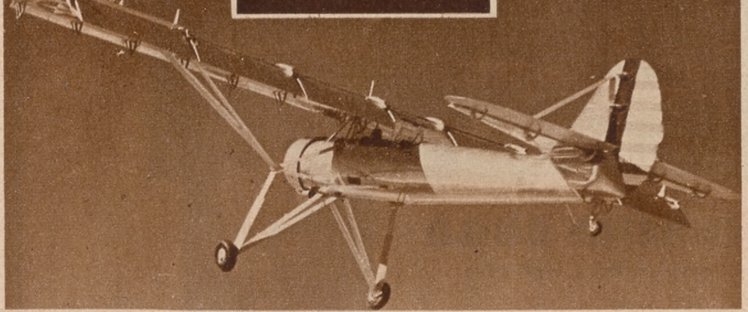


ONE OF THE NAVY'S NEWEST ATTACK BOMBERS, a Curtiss-Wright. Span, 42 ft.; speed, 320 m. p. h.; range, 1,400 mi. (all estimates); engine, 1,700 h. p.



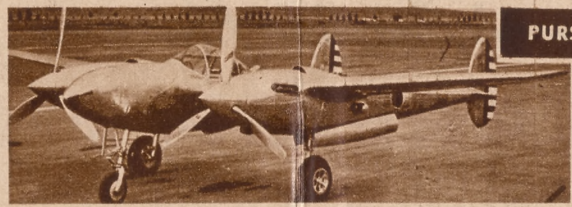
THE CURTISS SBC-4 DIVE BOMBER, one of the last of the navy's biplanes. Span, 34 ft.; speed, 240 m. p. h.; engine, 840 h. p.

ARTILLERY SPOTTER

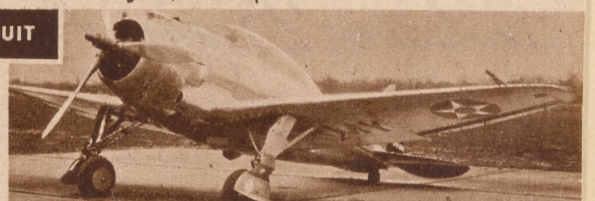


THE YO-51, a Ryan Dragonfly artillery spotter and communications plane. Fitted with full automatic slots and Fowler type area-increasing flaps, it is able to climb or land almost vertically. Span, 50 ft.; engine, 450 h. p.

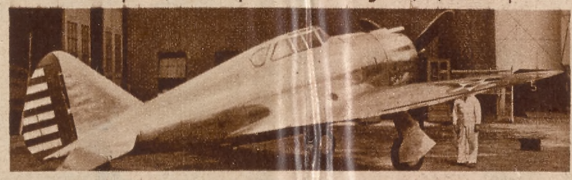
PURSUIT



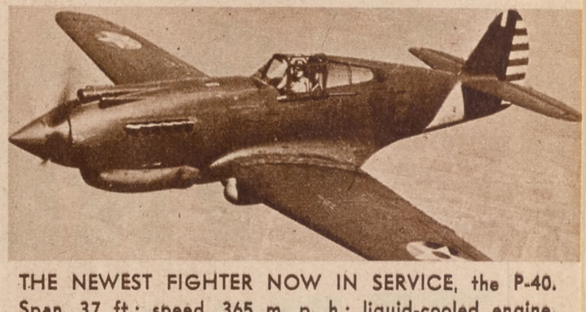
THE ARMY'S FIRST 400 M. P. H. FIGHTER the Lockheed P-38. Two 37 mm. cannon, four machine guns; tricycle landing gear; twin tail; span, 52 ft.; top speed, 404 m. p. h.; two liquid-cooled engines, 1,090 h. p.



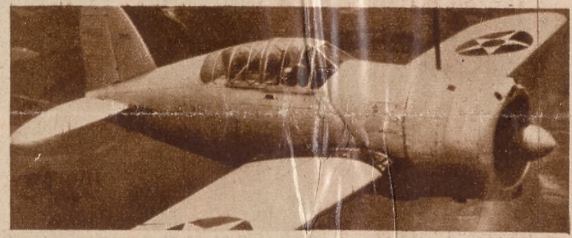
THE REPUBLIC P-41 PURSUITER—Estimates: Span, 40 ft.; speed, 360 m. p. h.; range, more than 2,000 mi. Engine, 1,500 h. p.



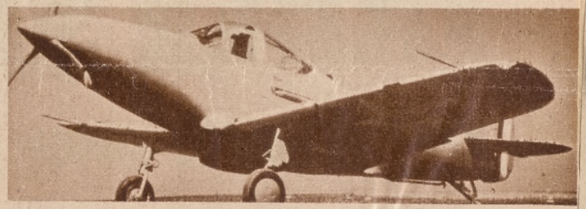
A HIGH SPEED, HIGH ALTITUDE FIGHTER, the Republic P-43. Built for combat above 30,000 ft.; span, 40 ft.; speed, 365 m. p. h. at 22,000 ft.; estimated range, 2,000 mi.; engine, 1,700 h. p.



THE NEWEST FIGHTER NOW IN SERVICE, the P-40. Span, 37 ft.; speed, 365 m. p. h.; liquid-cooled engine, 1,000 h. p.



THE NAVY'S BREWSTER SINGLE SEATER FIGHTER—Span, 36 ft.; speed, 345 m. p. h.; engine, 1,200 h. p. Britain has ordered several hundred of these; some have been delvered.



THE NEWEST and perhaps the fastest navy fighter, the Bell XFL-1. Span, 35 ft.; liquid cooled engine, 980 h. p. (takeoff).

Consair Shifts Hours to Clear Traffic Tie-Up

S.D. Union 10/13-40

Night Workers To Report Hour Later at Plant

Consair's huge gong sounded, indicating the hour of 5:30 and end of the working period for the day shift. Approximately 7000 men laid down their tools and started for the huge parking lot opposite the plant where their autos were parked—only to meet another 7000 workers, parking their cars and entering the plant to begin night shift duties at 6.

That's the situation which daily has been producing the worst traffic congestion in San Diego's history. Pacific highway, on which the Consolidated Aircraft Corp. plant faces, is the city's main entrance from the north. Hundreds of autos, adding to the thousands of aircraft workers' cars, tie up traffic for blocks in both directions.

SHIFT WILL START LATER

And that's the reason why Consair officials announced yesterday that beginning tomorrow evening the night shift will go on duty at 7 instead of 6 and work an hour longer. The day shift will continue to end at 5:30. The 90 minutes intervening will give time for the day crew to leave and the traffic crush it causes to end before the thousands of night workers drive up.

Recommended by the city traffic commission on report of a special committee, the change is expected to prevent overlapping and congestion of pedestrians and vehicles. It has been found necessary in recent weeks to assign five police officers for an hour each day to handle Pacific highway traffic near the Consolidated plant with other officers at the intersections of the highway with Laurel and Sassafras sts. and when one was available, at Pacific and Juniper.

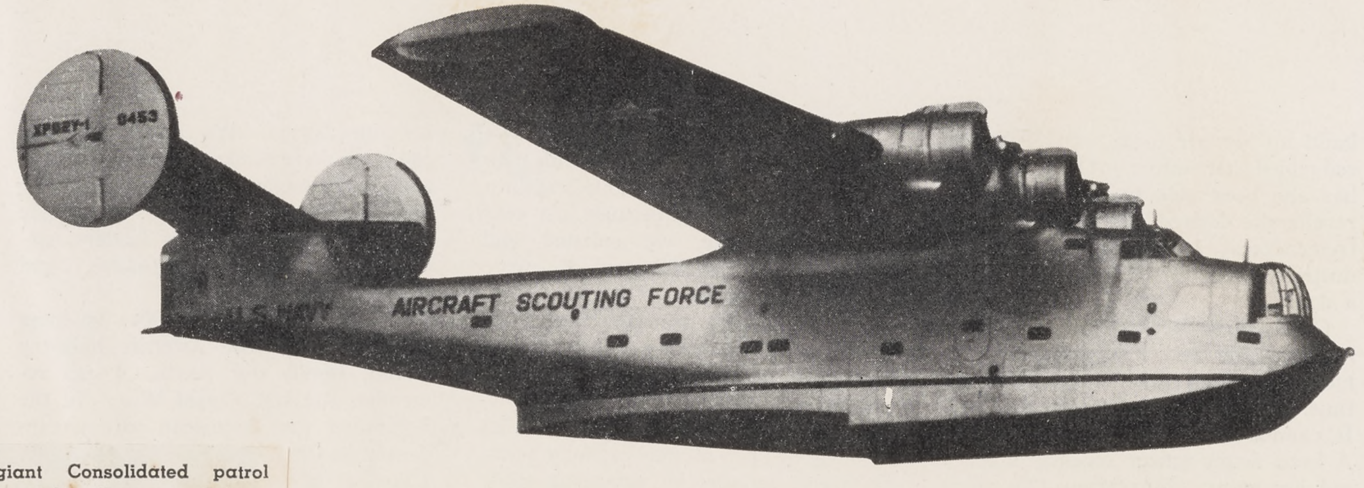
FIRM AGREES TO CHANGE

"We have agreed to the change of hours in an effort to improve conditions for our employes and the San Diego public," Consair officials said in announcing the change. "It will entail some extra expense but we cheerfuly will stand it if it will relieve the situation."

The traffic commission also has recommended erection of three overpasses and the city council will act this week on that recommendation. One of these overpasses would be located 75 feet south of the south gate; one 50 feet south of the present gate at the north end of the main building and the third at the south side of the Bean st. connection.

Erection of these overpasses will entail extra expense on the aircraft concern for guards and watchmen but corporation officials are willing to meet that cost.

Aviation 1940



Upper left: giant Consolidated patrol bomber. Upper right: Grumman fighter. Lower right: Students being instructed in handling small seaplanes at Pensacola (Harris & Ewing). Official photographs U. S. Navy.

S. D. Plane Orders Total 244 Million

Oct 10-40 Union

San Diego's three major aircraft plants, Consolidated, Ryan and Solar, yesterday reported a total backlog of $244,000,000 and a total payroll of 14,108 men and women.

Officials of Consolidated Aircraft Corp. said the backlog of the big municipal airport plant up to last night totaled $231,000,000. The number of employes was placed at 12,000 with several hundred being added each week.

Ryan Aeronautical Corp. has a backlog of $11,000,000 with 1480 employes and Solar Aircraft Co. a $3,000,000 backlog and 628 employes.

All three companies are expanding their plants.

Defense Speaker

Union 10/25/40

EDGAR N. GOTT

. . . vice president, Consolidated Aircraft Corp., will speak on "Aircraft for Defense" at the Masonic luncheon club meeting this noon in U. S. Grant hotel. Hi Dillin is program chairman.

Union - 10/15/40

CONSAIR STANDARDIZATION SPEEDS U. S., BRITISH PLANES

WASHINGTON, Oct. 14 (I.N.S.)—Standardization of U. S. military equipment to conform with British needs has been placed in the hands of a new committee created by President Roosevelt, Treasury Secretary Morgenthau disclosed late today.

Besides Morgenthau, the committee is composed of War Secretary Stimson, Navy Secretary Knox and the national defense production commissioner, William S. Knudsen.

LONDON EXPERTS ON WAY

Broad duties of the group will include fundamental aid to Great Britain through further speeding of armament production and, especially, by long-range standardization of American artillery and aircraft to fit into the British war machine. The plan will be speeded, Morgenthau announced, by the early arrival in this country of 10 British experts, who will advise on the standardizing measures.

A system of making British and American fighting equipment uniform already has been started, Morgenthau said, in the case of the Curtiss plane plant at Buffalo, N. Y., where daily six P-40 pursuit planes leave the assembly line, destined for both U. S. and British air forces.

BUILDING TWO TYPES

Parallel uniformity is to be initiated in production of the Consolidated Aircraft plant at San Diego, Calif., the secretary added, where flying boats are under construction for both the U. S. army and the British Royal navy, as well as four-engined bombers for the air forces of both nations.

At the Consolidated plant in San Diego four types of planes were being produced, two types of flying boats for the American and British navies and two types of bombers for the American and British armies. Now production has been placed on a basis of one type of flying boat and one type of bomber.

O. K. Brazil, Chile Bases

WASHINGTON, Oct. 14 (A.P.)—The day brought these defense developments:

Secy. Hull indicated that naval and air base facilities were involved in exchanges taking place with various South American countries on all phases of hemisphere defense. His comment followed reports that Brazil and Chile had agreed to lease bases to the United States.

President Roosevelt signed legislation providing for a $150,000,000 housing program for defense workers.

The house completed congressional action on a measure authorizing states to establish "home guards" to replace national guardsmen called to federal service.

SEEK 186,000 VEHICLES

The treasury sent to congress a request for reorganization of the coast guard reserve as a military group whose members would be available for active duty in a war or emergency.

Acquisition of 186,000 automotive vehicles—enough to equip a field force of 1,400,000 men—was disclosed by Robert P. Patterson, assistant secretary of war, as the goal of the army's motorization policy.

William S. Knudsen, director of production for the national defense council, declared in Detroit that "if we all get together and pull for it," no nation can rival the United States in arms production.

PLAN POWER PROJECT

Earlier, in a press conference, the former General Motors president said the defense production schedule calls for full equipment for an army of 1,200,000 and heavy equipment for an army of 800,000 by April 1, 1942.

The United States and Canada have agreed to start immediate engineering "investigations" on a major hydro-electric project in the St. Lawrence river in what the state department described as a plan to assure "adequate power supplies for defense industries.

Union 10/23/

BOARDING HOUSE BAN LIFTED IN EMERGENCY ORDINANCE

Prohibition against boarding houses in residential zones was lifted by the city council yesterday when it passed an emergency ordinance designed to provide additional housing facilities for the thousands of men who are coming here to engage in the rapidly expanding aircraft industry.

The action was taken over the vigorous objection of Glenn Rick, city planning engineer, who questioned legality and necessity of the measure, and who said it would "scuttle" zoning laws.

He said there are 58,000 residential units in the city, of which 46,000 are in zones in which boarding houses are permitted. Deed restrictions prevent 4000 of the remaining 12,000 units from being used as boarding houses, he reported, and argued that facilities are ample to care for the influx of aircraft workers in areas in which boarding houses are permitted.

CONSAIR PLANS CITED

Mayor P. J. Benbough reported that Consolidated Aircraft Corp., at whose behest the ordinance was prepared, plans to increase its force from 12,000 to 20,000 men, and that provision for housing and training aircraft workers must be made immediately if the huge plant is to obtain additional orders and is to be successful in its efforts to ward off requests that it establish another factory elsewhere.

"There will be complaints, and we are prepared for them," he said, "but we believe any difficulty that may arise from permitting boarding houses in residential zones can be adjusted. It is simply a question of whether San Diego is to aid or retard the national defense program, and I believe the people are willing to do their part."

Fear that the suspension "would jeopardize the entire plan under which the planning commission operates," was expressed by Fred B. Mitchell, realty board president, in a letter in which he reported the board is "in accord" with the council's "endeavor to meet the emergency needs for boarding and rooming houses. . . ."

As an alternative, the board suggested that the council grant individual requests for permission to operate such houses without conducting public hearings, charging a fee, or referring the applications to the planning commision. A similar procedure was urged by Rick, who asked that each case be considered on its merits.

H. B. Daniel, assistant city attorney, said the ordinance suspends, but does not repeal a zoning restriction and emphasized that every effort has been made to preserve "the integrity of zoning."

MAY EXTEND EMERGENCY

The ordinance provides that there is to be no relaxation of restrictions against rest homes, convalescent homes and homes for the ill and aged and was passed on motion by Councilman Addison Housh seconded by Councilman Louis Weggenman.

Under it, boarding house operators must register with the city clerk and agree not to continue to use their premises as boarding houses after the ordinance is repealed. The initial period of the housing-shortage emergency has been set at six months, but Benbough made it clear to protestants that it may be necessary to extend this period.

UNION - Oct. 24 '40

First Lodging House Listed

Loraine Burgess, 3605 Wawona dr., yesterday was the first person to register under the boarding-lodging house zoning moratorium ordinance passed by the city council Tuesday, Fred Sick, city clerk, reported.

The emergency measure lifts for six months the ban against boarding-lodging houses in residential zones, and is designed to relieve a housing shortage caused by steadily increasing employment at Consolidated Aircraft Corp.

Burgess' property was described by Clark Foote, chief deputy city clerk, as being in the heart of the Pt. Loma single-family-dwelling residential unit, and was registered by the owner as available for boarding and lodging 30 persons.

The registration forms, which all boarding-lodging house operators must fill out if they propose to operate in districts zoned against such uses, are in triplicate. The city retains one copy, the registrant receives one, and the third copy is sent to Consolidated.

Union Oct 10-40

$1,500,000 Airport Development Is Proposed for Mission Bay

A broad plan for development of a $1,500,000 airport on Mission bay was suggested to the city council yesterday morning by Maj. Frank Seifert, U. S. army air corps, and in the afternoon Matthew Gleason, state park commission chairman, said he will confer Monday with the attorney general on steps necessary to speed acquisition by the city of a site for the field.

Dredging of Mission bay to a uniform depth and using the spoil to build up the airport, was recommended by Seifert, and Gleason described the plan as "the salvation of Mission bay," development of which has been blocked by lack of funds.

SITES NEEDED

A long-time resident of San Diego, Seifert is a former city councilman and a distinguished pilot who years ago over this city flew into the headlines by participating in the first midair refueling. For years a reserve officer, he said he had been ordered back to active duty Oct. 1, and that he will leave tomorrow for Washington, D. C., where he will be in the office of the assistant secretary of war. However, he appeared yesterday before the council in the role of a private citizen, and asked that it be understood that his remarks carried no official weight.

Tracing briefly the rapid strides being made in aviation, he pointed to the limited facilities at Lindbergh field and to the indicated desire by several large plane manufacturers to move their plants here provided sites can be obtained.

He then said he long has felt that an ideal airport, with mile-long runways, could be developed on Mission bay marsh lands, and expressed the belief that national defense funds can be obtained.

Roughly, the improvement would be bounded on the north by the mean high-tide line; on the east by Pacific highway, and on the south by the now-abandoned La Jolla street car tracks. The western line would be west of the Causeway.

PLAN INDORSED

Major P. J. Benbough and councilmen quickly indorsed the plan, and Dayton Ault, city attorney; Walter Cooper, city manager, and Glen Rick, city planning engineer, were appointed to set it in motion.

Ault said that ownership of the more than 1000 acres involved is in the hands of the state, the city and about 80 individuals. Gleason, after a hurriedly called conference with Ault and H. B. Daniel, assistant city attorney, expressed belief that the park commission gladly will release control of land under its jurisdiction that is needed provided it legally can be accomplished.

It was suggested that a cooperative agreement might be worked out under which the state would give up the park lands in return for dredging Mission bay around which lies Mission Bay State park, and Gleason said he will lay this plan before the attorney general in San Francisco Monday. Then, he added, he will present the proposal to the park commission at its meeting Tuesday and Wednesday at Asilomar on the Monterey peninsula.

IDEAL AIRPORT

Basing his remarks on inspection trips he has made to plane factories since he returned to active duty, Seifert pictured for the council the huge planes of the future, and said that a Mission bay airport would be ideal for any planes now built or contemplated, as approaches would be unobstructed, and the planes could roar in over the field from any direction and at low altitudes.

"Fifty-five percent of the planes being built in the United States are being made in southern California," he said, and then told of the difficulty many southern California plants are having in expanding because of limited sites adjacent to airports.

He pointed to conditions at Lindbergh field, bounded by the coast guard air base, and the Ryan, Solar and Consolidated plants, and indicated that the time may come when this field should be used only by commercial airlines and by factory test pilots.

LOW COST SEEN

Fred Rhodes, public works director, described Seifert's plan as entirely feasible, and said that the cost of the proposed bay dredging would be low, as the water is shallow. This also was apparent from air photos Seifert used to illustrate his remarks.

The flier said that his $1,500,000 cost estimate was "a shot in the dark," and was subject to adjustment after an engineering survey. However, he said that should the figure be upped, the increase would not be an obstacle becouse of the millions of dollars that have been and will be made available for such vital national defense improvements.

NAVY NEWS

A permit for erection of a $700,000 final assembly building was granted Consolidated Aircraft Company at San Diego last week. The building will be 720 feet long and 360 feet wide. A duplicate building will be erected as soon s dredging and reclamation work nakes land available at Western nd of San Diego's airport.

10/15/40

COUNCIL RUSHES 5-POINT PLAN TO SPEED DEFENSE PROGRAM

S.D. "Tribune" - 10/17/40

San Diego's entire resources yesterday were marshaled behind the rapidly expanding national defense program. At a hurriedly called action-packed city council conference the way was cleared for training and housing thousands of aircraft workers, and obstacles that might delay a drafted municipal employe from entering the army when summoned.

Called by Major P. J. Benbough, the informal meeting was attended by Walter W. Cooper, city manager; Dayton Ault, city attorney; his assistant, H. B. Daniel, and by Councilmen Addison Housh, Fred Simpson and Herbert Fish. It was highlighted by:

1—Decision to pass an emergency ordinance declaring a six-month moratorium on certain zoning restrictions to permit San Diegans in any part of the city to turn their homes into boarding houses for employes of industries vital to national defense.

PARK BUILDINGS

2—Indorsement of a Consolidated Aircraft Corp., suggested plan to make park buildings available for national defense vocational training classes, and a pledge to approve any such occupancy permit on receipt of an application from the board of education.

3—Issuing of instructions to the city attorney to prepare a resolution in which the council formally and strongly will put itself on record as being behind all national defense measures, and in which the city will pledge itself to place facilities at its command at the disposal of the defense program.

4—A declaration that only in "exceptional and unusual" cases will a municipal worker of draft age be considered as indispensable, and will an affidavit be provided to this effect.

EMPLOYE LIST SOUGHT

5—Disclosure by Cooper that he has asked Russel T. Bailey, civil service personnel director, for the names and positions of the 401 city employes in the 21-to-35 age bracket who registered under the selective service act Wednesday, and an indication by the manager that not one of these men hold posts that readily could not be refilled, or a job that would lead to them being placed in deferred draft classifications if they so demanded.

Back of the meeting loomed a series of conferences between city officials and Consolidated executives, and the decisions reached yesterday were designed to bolster Consolidated's efforts to resist pressure from Washington to get the corporation to establish another plant elsewhere, and to make it possible, through provision of housing and training facilities, for Consolidated to get additional contracts that, it was reported unofficially, would total $80,000,000.

Accordingly, the council squared its shoulders against expected complaints from some residents in R-1 or single-family zones that will be opened to boarding houses and, after voicing the belief that it is the patriotic duty of every San Diegan to tolerate any inconvenience that may be caused by the emergency

(Continued on Page 2-A, Col. 5)

zoning moratorium, instructed the city attorney to draft the ordinance that will:

1—Lift the boarding house ban for six months.

2—Require all operators of such houses to register with the city clerk, giving their names, addresses, number of rooms to be rented, and proposed number of men to be accommodated.

3—Provide a form which the operators must sign, and in which they will agree to discontinue immediately the operation of a boarding house in violation of present zoning restrictions when the council lifts the moratorium and determines that there no longer is an emergency

---

Stays in London

LONDON, Oct. 17 (A.P.)—Britain's government is staying in London, informed parliamentary source disclosed today, and is not yet ready to order compulsory evacuation of the bomb-strafed capital.

The same sources, however, conveyed anew the government's desire that "the more people who can leave London without interfering with their business the better" and, in the house of commons, the minister of health disclosed an "ominous increase" in the wartime spread of cerebro-spinal fever.

Malcolm Macdonald, the minister, said gravely that this "should make us pause in contemplation of the coming winter."

No reason was given for the semi-official reiteration of the government's determination to stay in London, on this 41st day of unbroken air siege. The parliamentary correspondent of Reuter's, British news agency, merely quoted: "There is no question of the government leaving London. On the contrary, they intend to stay here."

He added: "There is no question of any compulsory evacuation at present."

The board of trade, which corresponds to the U. S. department

---

Union Oct. 31-40

S. D. Vocational School Places 2500 in Jobs

More than 50 men and women, representing the business, professional and industrial life of San Diego, met yesterday as members of a citizens' advisory committee on vocational education and heard a report on the immense strides made in the last year in vocational training as a part of the city school system. The meeting was held at the vocational school building on Market and State sts. with Jacob Weinberger, city board of education president, presiding.

More than 2500 who attended vocational school last year have been placed in permament jobs here, 1294 of them in national defense work, Will C. Crawford, school superintendent told the committee. The school is turning out 125 weekly who find immediate employment in the aircraft industries. Enlarged facilities and staff, made possible by recent federal appropriations, will enable the school to more than double that output soon, Crawford said.

Included in the committee personnel are clubwomen, teachers, aircraft company officials, civil service heads, naval officers, chamber of commerce executives, realtors, clearing house members, industrialists and business and professional men. Organized almost four years ago, the committee has aided school authorities in development of vocational training work.

MORE FUNDS SOUGHT

Recently given $300,000 in federal funds for enlargement of facilities, Crawford informed the committee that an additional $600,000 for equipment and $900,000 for buildings has been requested and probably will be granted. The board of education had placed $400,000 in its budget for this year for the school, the present building has been purchased and contract let for an addition. Rooms in the Spreckels building have been rented for use of the business division of the vocational school and buildings in the park are being made available.

Growth of the school is shown in a report compiled for the board of education. Enrollment in September, 1939, was 722 and in September of this year, 2494. Enrollment in trade and industrial classes increased from 1918 for the fiscal year ended June 30, 1939, 3859 for the following fiscal year. Fifty-three instructors were employed to teach 97 evening classes.

Apprentice training classes are conducted in carpentry, plumbing, painting, electricity and meat cutting. The business division has a total enrollment of 2561 after opening Sept. 15', 1939, with 95 students. During the year, 292 students were placed with business firms. Public service, including selling classes, had 1500 enrolled.

HANDICAPPED CHILDREN

Vocational rehabilitation bureau handled 305 cases of physically handicapped children and rehabilitated 68 of them. The junior placement service provided employment since July 1, 1939, for 5076 young men and women of whom the vocational school trained 2637, or more than one-half the number placed.

Others to address the meeting were J. G. Sullivan, director of vocational education; Sam F. Fick, assistant supervisor, trade and industrial training, University of California at Los Angeles; Dr. Paul E. Wedgewood for the medical society; Jack Wright of the federal committee; Maj. T. C. Macaulay, chamber of commerce; Maj. Edgar N. Gott and R. H. Waterbury, Consolidated Aircraft Corp.

Maj. Gott repeated a former announcement that his company hoped to have 30,000 workers employed by July 1, 1941, and that preference in employment would be given to San Diegans, trained at the vocational school.

City Leads U.S. In Defense Awards, Word

Tribune 10/29

President Roosevelt's approval of "immediate construction of housing projects in 63 vital defense areas" with $45,762,500 of defense funds was announced today by Charles F. Palmer, defense housing coordinator, who said largest of the 63 projects would be at San Diego, The Associated Press reports from Washington. The local project involves approximately $15,000,000.

Unit Cost Set at $3000

The San Diego program, said Palmer provides for construction of 2000 additional dwelling units, 750 dormitory rooms for single men and 1000 portable-type homes. He said the projects would not exceed a maximum of $3000 a unit.

Site for the new community here has not been announced, said Charles A. Sloan, construction engineer, United States public build-

(Continued on Page 4A, Col. 3)

15 Million Awarded For Defense Homes

CONTINUED FROM PAGE ONE

ing administration, resident engineer for the project. Indications are the community may be in the Camp Kearny area.

"Absorption" Forecast

Palmer emphasized the new housing "will be absorbed in the San Diego community pattern so that the normal life will not be disrupted." He said a housing emergency resulted here from the large navy, army and aircraft expansion, and declared the new project "will create dwellings equivalent to those in a town of 30,000 people."

In Addition to Navy Job

The new work is in addition to a $3,800,000 project for 1200 concrete housing units for navy families, 600 of which will adjoin the destroyer base and 600 the naval training station. Contract for the navy housing project was awarded Oct. 17 to the William Simpson Construction Co., of Los Angeles.

All Complete in Year

Palmer said the $45,762,500 of defense funds will provide 13,315 family dwelling units throughout the United States, contracts to be handled by John M. Carmody, federal works administrator.

Palmer estimated all the projects will be completed in four to 12 months. Congress has provided a total of $290,000,000 for defense housing construction, he said, and estimates indicate a total of $560,000,000 will be needed to complete the job.

The number of family units to be constructed at other places, The Associated Press reported, is as follows: Tucson, 150; Benicia, Calif., 50; Fresno, 150; San Rafael, 175; Stockton, 150; Sunnyvale, 150; Boise, 100; Albuquerque, 100; Houston, 200; San Angelo, Tex., 100; Ft. Huachuca, Ariz., 30; Riverside, 150; Denver, 50; Lowry field, Colo., 125; Ft. Sill, Okla., 150; Ft. Meade, S. D., 50; El Paso, 200; Ft. Clark, Tex., 50; San Antonio, 500; South Tacoma, 150; Spokane, 200; Oahu, T. H., 550; Ft. Ord, Calif., 550, and Ft. Lewis, Wash., 250.

$80,000,000 For Facilities In S. D., Word

SD Tribune 10/21/40

By DON SHORT

Yielding to pressure by federal government officials, the city council today voted to turn over to the school board the Ford building in Balboa park and such other structures as may be desired for vocational training of youths to be employed in the aircraft industry.

To meet federal demands, also, the council voted to suspend zoning restriction in order that temporary housing and boarding can accomodate thousands of youths who are to be employed in the aircraft industry in this city.

Council action followed conferences late yesterday between federal agents, aircraft officials and Mayor P. J. Benbough when the latter was informed that an additional $80,000,000 for San Diego depends on the city's ability to take care of thousands of employes. The $80,000,000 will be spent here for factory construction and for greater plane output, it was said.

The agents here gave Mayor Benbough an ultimatum that word of the city's ability to cope with the nation's defense plans would have to be made known today. Hence, Benbough called the councilmen to his office this morning when they met with Walter W. Cooper, city manager, to discuss effect of the

(Continued on Page 4A, Col. 3)

ultimatum given the mayor, he said, by officials direct from the office of William Knudsen, of the national defense council, who was said to have allocated $80,000,000 more funds to San Diego provided the conditions could be met.

Council O.K.'s Action

Benbough put the issue direct to the councilmen and each agreed to the program as outlined by the government agents, who want at once, as an emergency measure, accommodations for training 600 youths in lots; that is when one batch of 600 recruits complete training, another 600 will take their place. Correlated to the training the government agents put up to the council requirements for housing the youths until such a time as the Consolidated Aircraft Corp. is ready to erect housing for its employes, for which money is forthcoming from the federal government, said Benbough.

The schooling is to be directed by the school board under Will C. Crawford, school superintendent, who conferred this morning with Cooper. Under the national defense act, schooling of employes for the defense industry is to be directed by the national board of education, through which office the San Diego school board was chosen to conduct the vocational schools here. Crawford informed Cooper that no expense, whatever, would be attached to the city; that in case funds were needed to repair park buildings he would find the money necessary to meet the cost.

Crawford suggested use of the food and beverage building in the park for training aircraft classes. He said it could be utilized for educational classes and that instructions in machinery operation wou be conducted in the Ford build Immediate use of the Ford s ture was asked by the gover agents. Councilmen were in y Cooper that the main f een vacated by the natio nd was ready for turn ne school board.

Repairs Sugg

Repairs to the ro and beverage build ed by Benbough this would be ta school board. sidered and a park board park durin pation of ported th restrict the in we

---

in Chicago, Testimony for 25 Cents

CHICAGO, Oct. 17 (AP)—A United States senate subcommittee investigating charges of election frauds in Chicago today heard testimony that votes were purchased for a quarter and traded for drinks of liquor. Robert E. Baer, who identified himself as a volunteer canvasser, told Sens. Hill (D-Ala) and Reed (R-Kan) that he had seen "politicians" in the First ward take "carloads" of people to register and pay them 25 cents apiece. He said that he also had observed politicians near voting places on election day with "pockets full" of 25 and 50-cent pieces. Another witness, Duffy W. Taylor, a Negro, testified that "only the favored party can get in to buy the votes" of residents of flophouses (maintained by the state) in the 20th ward.

NO COVER CHARGE WHEN YOU EAT WORDS FROM BOOK

By ARTHUR ("BUGS") BAER

This week is the bargain basement of the calendar. Tuesday you had to register if you wanted to vote and yesterday you had to register if you wanted to fight. And one will probably decide whether you do the other.

The candidates followed my advice and are getting down to chromium plated tacks. That's all in politics even though calling a spade will dig to fence-

---

ADEQUATE WATER VITAL TO PLANE PLANTS, SAYS GOTT; VICENTE DAM, DISTRIBUTION SYSTEM EXPANSION BACKED

Union 10/15/40

By EDGAR N. GOTT

Vice President, Consolidated Aircraft Corp.

E. N. Gott

The aircraft industry in San Diego is definitely interested in the water propositions which will be presented to voters of the city at the election Nov. 5. Of immediate concern is the problem of assuring an adequate supply of water now and in the future, because nothing must be permitted to interfere with plant expansions and production under the national defense program.

Consolidated, Ryan and Solar plants require about 13,000,000 gallons a month. The demand for water will be stepped up materially when these plants swing into greater production.

One proposition to come before the voters will authorize extensions and enlargements of the water distribution system. I am informed that few major additions have been made to the system in about 25 years, despite the fact that the city's population has more than doubled in that period. The public will recall that due to inadequate transmission lines, low pressures and near-water shortages occurred this last summer and caused great inconvenience to many families.

Any possibility of a curtailment of water supply to the aircraft industry necessarily would be viewed with grave concern.

Along with population increases has come the greatest industrial expansion in San Diego's history. Consolidated now employs 11,500 and by next summer anticipates the possibility of about 30,000 on its payroll. This industrial expansion is so closely linked with the national defense program that in itself it makes it imperative that the city provide immediate enlargements to the water distributing system.

In a semi-arid region such as this, it is a wise precaution to conserve every gallon of water we can. San Vicente dam is San Diego's next great water development and conservation project. It will appear on the special city ballot as Proposition 2. It should likewise have the approval of the voters, especially in view of the fact that with our anticipated population increase the present water storage facilities will soon become inadequate.

Union 10/28/40

Hundreds of engineers and draftsmen work in the huge engineering department of Consolidated Aircraft Corp., designing, detailing and checking all steps necessary to build modern birds of metal.

s for Model 28 (U.S. Navy PBY) planes stand e final assembly line. They are criss-crossed with heavy paper and tape to protect them during final assembly operations at the San Diego plant.

Airports and Airpilots

~~Rochester Democrat & Chronicle - Oct 28 1940~~

~~Hutchinson Advertising Agency~~

By G. J. DUNKLEBERG

PRIVATE pilots who for years have been spending their own money for flight instruction and for flying time to maintain their licenses, are at last to get a break from the Government! Holders of private certificates who can pass the Commercial CPT physical examination and who have at least 175 hours of flying time logged may apply for a commercial refresher course.

This consists of intensive advance ground school training and, for those who pass the ground ~~school exa~~mination, a 25-hour commercial refresher flight course. Completion of this program will allow private pilots to secure commercial licenses. All qualified pilots who are interested are asked to communicate with Jim Wilmot at Rochester Municipal Airport as there is room for about 10 more applicants in the ground class.

* * *

MANAGER Howard Schaffer had a busy time last week keeping pheasant hunters off the Municipal Airport areas. The airport is forbidden territory to hunters, and judging from the number of birds on the field, the pheasants know it.

* * *

SHIP 'O THE WEEK is the Consolidated Aircraft Corporation's XB-24, a four-motor land bomber built by the makers of the famous Consolidated Patrol Bombers for the Navy. The XB-24 is a high-wing bomber, all-metal, and with a full cantilever type wing of high aspect ratio. Fowler-type wing flaps extend from aileron to center section.

Power is furnished four Pratt & Whitney 14-cylinder twin-row radials rated at 1200 h.p. each. Hamilton Standard props are of the 3-bladed hydromatic constant speed type and are 12-feet in diameter. The new bomber weighs 40,000 pounds and has a wing span of 110 feet. Tactical requirements are for a crew of from six to nine, depending upon the mission to be performed.

From preliminary examinations, this new Consolidated giant gives evidence of living up to the exceptional advancements in aerodynamic performance characteristics predicted for it. These include a speed of better than 300 miles an hour, a range of approximately 3,000 miles and a bomb-carrying capacity of approximately four tons.

* * *

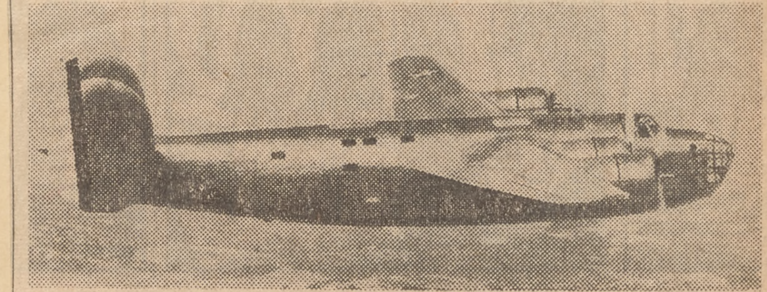
ANOTHER of the sleek new all-metal Luscombe Silvairs will be available at Rochester Municipal Airport shortly. Glen Wilkes, manager of the Rochester Flying School, has announced purchase of one of these popular ships from Jim Wilmot, Luscombe distributor.

* * *

A NEW kind of aircraft service for private plane owners and operators has been inaugurated at Rochester Municipal Airport. Charlie LaBar and Charlie Knab have established a plane service that is unique in that they do their work at night. Repairs and servicing done in the small hours have the ship "on the line" ready to go in the morning.

* * *

SAFETY TIP . . . Revving up your engine on beaches or gravel surfaces results in a sand blasting of the propeller as small stones, sand, etc. are sucked up into it. This causes nicking and scuffing of the blades. Sand-blasting effects can be reduced somewhat on taking-off from sandy or gravel areas by opening the throttle slowly so that the increasing forward speed will counteract the suction from the increasing rpm. This also will lessen the possibility of damaging tail surfaces by showering them with gravel. But be sure you have enough takeoff distance if you adopt the slow-throttle take-off.



Official U. S. Army photograph of Consolidated's powerful four-engine land bomber, designated as the XB-24. It has a bomb capacity of approximately four tons.

* * *

Howard Schaffer's crew at the Municipal Airport is prepared for the next field emergency, now that the Department of Commerce has provided the airport with a completely-equipped, modern airport emergency truck.

* * *

THE waters of Canandaigua Lake won't see as much of Dr. and Mrs. Chester Forkel next summer as they have in the past, for both have begun their flight instruction under the tutelage of Ray Hylan. Together they learned to ride, swim and sail and are now adding flying to their other accomplishments.

* * *

CONGRATULATIONS . . . to Joseph Sanara upon the successful completion of his first solo flight. Many happy landings to James Lattimer, Phl Long, Dick Werner, Al Struchen, Jim Long and Chester Pike, all of whom have begun flight instruction with the Rochester Flying School at Municipal Airport.

* * *

THE Hermmann brothers and Hank Zornow are sporting a new Aeronca tandem-trainer at Genesee Airport. The new ship is to be used for flight instruction.

Union 10/15/40

CONSAIR STANDARDIZATION SPEEDS U. S., BRITISH PLANES

WASHINGTON, Oct. 14 (I.N.S.)—Standardization of U. S. military equipment to conform with British needs has been placed in the hands of a new committee created by President Roosevelt, Treasury Secretary Morgenthau disclosed late today.

Besides Morgenthau, the committee is composed of War Secretary Stimson, Navy Secretary Knox and the national defense production commissioner, William S. Knudsen.

LONDON EXPERTS ON WAY

Broad duties of the group will include fundamental aid to Great Britain through further speeding of armament production and, especially, by long-range standardization of American artillery and aircraft to fit into the British war machine. The plan will be speeded, Morgenthau announced, by the early arrival in this country of 10 British experts, who will advise on the standardizing measures.

A system of making British and American fighting equipment uniform already has been started, Morgenthau said, in the case of the Curtiss plane plant at Buffalo, N. Y., where daily six P-40 pursuit planes leave the assembly line, destined for both U. S. and British air forces.

BUILDING TWO TYPES

Parallel uniformity is to be initiated in production of the Consolidated Aircraft plant at San Diego, Calif., the secretary added, where flying boats are under construction for both the U. S. army and the British Royal navy, as well as four-engined bombers for the air forces of both nations.

At the Consolidated plant in San Diego four types of planes were being produced, two types of flying boats for the American and British navies and two types of bombers for the American and British armies. Now production has been placed on a basis of one type of flying boat and one type of bomber.

O. K. Brazil, Chile Bases

WASHINGTON, Oct. 14 (A.P.)—The day brought these defense developments:

Secy. Hull indicated that naval and air base facilities were involved in exchanges taking place with various South American countries on all phases of hemisphere defense. His comment followed reports that Brazil and Chile had agreed to lease bases to the United States.

President Roosevelt signed legislation providing for a $150,000,000 housing program for defense workers.

The house completed congressional action on a measure authorizing states to establish "home guards" to replace national guardsmen called to federal service.

SEEK 186,000 VEHICLES

The treasury sent to congress a request for reorganization of the coast guard reserve as a military group whose members would be available for active duty in a war or emergency.

Acquisition of 186,000 automotive vehicles—enough to equip a field force of 1,400,000 men—was disclosed by Robert P. Patterson, assistant secretary of war, as the goal of the army's motorization policy.

William S. Knudsen, director of production for the national defense council, declared in Detroit that "if we all get together and pull for it," no nation can rival the United States in arms production.

PLAN POWER PROJECT

Earlier, in a press conference, the former General Motors presiden said the defense production schedule calls for full equipment for a army of 1,200,000 and heavy equipment for an army of 800,000 b April 1, 1942.

The United States and Canad have agreed to start immediate engineering "investigations" on a major hydro-electric project in the S Lawrence river in what the sta department described as a plan assure "adequate power supplie for defense industries.

Union 10/23/

BOARDING HOUSE BAN LIFTED IN EMERGENCY ORDINANCE

Prohibition against boarding houses in residential zones was lifted by the city council yesterday when it passed an emergency ordinance designed to provide additional housing facilities for the thousands of men who are coming here to engage in the rapidly expanding aircraft industry.

The action was taken over the vigorous objection of Glenn Rick, city planning engineer, who questioned legality and necessity of the measure, and who said it would "scuttle" zoning laws.

He said there are 58,000 residential units in the city, of which 46,000 are in zones in which boarding houses are permitted. Deed restrictions prevent 4000 of the remaining 12,000 units from being used as boarding houses, he reported, and argued that facilities are ample to care for the influx of aircraft workers in areas in which boarding houses are permitted.

CONSAIR PLANS CITED

Mayor P. J. Benbough reported that Consolidated Aircraft Corp., at whose behest the ordinance was prepared, plans to increase its force from 12,000 to 20,000 men, and that provision for housing and training aircraft workers must be made immediately if the huge plant is to obtain additional orders and is to be successful in its efforts to ward off requests that it establish another factory elsewhere.

"There will be complaints, and we are prepared for them," he said, "but we believe any difficulty that may arise from permitting boarding houses in residential zones can be adjusted. It is simply a question of whether San Diego is to aid or retard the national defense program, and I believe the people are willing to do their part."

Fear that the suspension "would jeopardize the entire plan under which the planning commission operates," was expressed by Fred B. Mitchell, realty board president, in a letter in which he reported the board is "in accord" with the council's "endeavor to meet the emergency needs for boarding and rooming houses. . . ."

As an alternative, the board suggested that the council grant individual requests for permission to operate such houses without conducting public hearings, charging a fee, or referring the applications to the planning commision. A similar procedure was urged by Rick, who asked that each case be considered on its merits.

H. B. Daniel, assistant city attorney, said the ordinance suspends, but does not repeal a zoning restriction and emphasized that every effort has been made to preserve "the integrity of zoning."

MAY EXTEND EMERGENCY

The ordinance provides that there is to be no relaxation of restrictions against rest homes, convalescent homes and homes for the ill and aged and was passed on motion by Councilman Addison Housh seconded by Councilman Louis Weggenman.

Under it, boarding house operators must register with the city clerk and agree not to continue to use their premises as boarding houses after the ordinance is repealed. The initial period of the housing-shortage emergency has been set at six months, but Benbough made it clear to protestants that it may be necessary to extend this period.

UNION - Oct. 24 '40

First Lodging House Listed

Loraine Burgess, 3605 Wawona dr., yesterday was the first person to register under the boarding-lodging house zoning moratorium ordinance passed by the city council Tuesday, Fred Sick, city clerk, reported.

The emergency measure lifts for six months the ban against boarding-lodging houses in residential zones, and is designed to relieve a housing shortage caused by steadily increasing employment at Consolidated Aircraft Corp.

Burgess' property was described by Clark Foote, chief deputy city clerk, as being in the heart of the Pt. Loma single-family-dwelling residential unit, and was registered by the owner as available for boarding and lodging 30 persons.

The registration forms, which all boarding-lodging house operators must fill out if they propose to operate in districts zoned against such uses, are in triplicate. The city retains one copy, the registrant receives one, and the third copy is sent to Consolidated.

Union Oct 10-40

$1,500,000 Airport Development Is Proposed for Mission Bay

A broad plan for development of a $1,500,000 airport on Mission bay was suggested to the city council yesterday morning by Maj. Frank Seifert, U. S. army air corps, and in the afternoon Matthew Gleason, state park commission chairman, said he will confer Monday with the attorney general on steps necessary to speed acquisition by the city of a site for the field.

Dredging of Mission bay to a uniform depth and using the spoil to build up the airport, was recommended by Seifert, and Gleason described the plan as "the salvation of Mission bay," development of which has been blocked by lack of funds.

SITES NEEDED

A long-time resident of San Diego, Seifert is a former city councilman and a distinguished pilot who years ago over this city flew into the headlines by participating in the first midair refueling. For years a reserve officer, he said he had been ordered back to active duty Oct. 1, and that he will leave tomorrow for Washington, D. C., where he will be in the office of the assistant secretary of war. However, he appeared yesterday before the council in the role of a private citizen, and asked that it be understood that his remarks carried no official weight.

Tracing briefly the rapid strides being made in aviation, he pointed to the limited facilities at Lindbergh field and to the indicated desire by several large plane manufacturers to move their plants here provided sites can be obtained.

He then said he long has felt that an ideal airport, with mile-long runways, could be developed on Mission bay marsh lands, and expressed the belief that national defense funds can be obtained.

Roughly, the improvement would be bounded on the north by the mean high-tide line; on the east by Pacific highway, and on the south by the now-abandoned La Jolla street car tracks. The western line would be west of the Causeway.

PLAN INDORSED

Major P. J. Benbough and councilmen quickly indorsed the plan, and Dayton Ault, city attorney; Walter Cooper, city manager, and Glen Rick, city planning engineer, were appointed to set it in motion.

Ault said that ownership of the more than 1000 acres involved is in the hands of the state, the city and about 80 individuals. Gleason, after a hurriedly called conference with Ault and H. B. Daniel, assistant city attorney, expressed belief that the park commission gladly will release control of land under its jurisdiction that is needed provided it legally can be accomplished.

It was suggested that a cooperative agreement might be worked out under which the state would give up the park lands in return for dredging Mission bay around which lies Mission Bay State park, and Gleason said he will lay this plan before the attorney general in San Francisco Monday. Then, he added, he will present the proposal to the park commission at its meeting Tuesday and Wednesday at Asilomar on the Monterey peninsula.

IDEAL AIRPORT

Basing his remarks on inspection trips he has made to plane factories since he returned to active duty, Seifert pictured for the council the huge planes of the future, and said that a Mission bay airport would be ideal for any planes now built or contemplated, as approaches would be unobstructed, and the planes could roar in over the field from any direction and at low altitudes.

"Fifty-five percent of the planes being built in the United States are being made in southern California," he said, and then told of the difficulty many southern California plants are having in expanding because of limited sites adjacent to airports.

He pointed to conditions at Lindbergh field, bounded by the coast guard air base, and the Ryan, Solar and Consolidated plants, and indicated that the time may come when this field should be used only by commercial airlines and by factory test pilots.

LOW COST SEEN

Fred Rhodes, public works director, described Seifert's plan as entirely feasible, and said that the cost of the proposed bay dredging would be low, as the water is shallow. This also was apparent from air photos Seifert used to illustrate his remarks.

The flier said that his $1,500,000 cost estimate was "a shot in the dark," and was subject to adjustment after an engineering survey. However, he said that should the figure be upped, the increase would not be an obstacle becouse of the millions of dollars that have been and will be made available for such vital national defense improvements.

NAVY NEWS

A permit for erection of a $700,000 final assembly building was granted Consolidated Aircraft Company at San Diego last week. The building will be 720 feet long and 360 feet wide. A duplicate building will be erected as soon as dredging and reclamation work makes land available at Western end of San Diego's airport.

10/15/40

COUNCIL RUSHES 5-POINT PLAN TO SPEED DEFENSE PROGRAM

S.D. "Tribune" – 10/17/40

San Diego's entire resources yesterday were marshaled behind the rapidly expanding national defense program. At a hurriedly called action-packed city council conference the way was cleared for training and housing thousands of aircraft workers, and obstacles that might delay a drafted municipal employe from entering the army when summoned.

Called by Major P. J. Benbough, the informal meeting was attended by Walter W. Cooper, city manager; Dayton Ault, city attorney; his assistant, H. B. Daniel, and by Councilmen Addison Housh, Fred Simpson and Herbert Fish. It was highlighted by:

1—Decision to pass an emergency ordinance declaring a six-month moratorium on certain zoning restrictions to permit San Diegans in any part of the city to turn their homes into boarding houses for employes of industries vital to national defense.

PARK BUILDINGS

2—Indorsement of a Consolidated Aircraft Corp., suggested plan to make park buildings available for national defense vocational training classes, and a pledge to approve any such occupancy permit on receipt of an application from the board of education.

3—Issuing of instructions to the city attorney to prepare a resolution in which the council formally and strongly will put itself on record as being behind all national defense measures, and in which the city will pledge itself to place facilities at its command at the disposal of the defense program.

4—A declaration that only in "exceptional and unusual" cases will a municipal worker of draft age be considered as indispensable, and will an affidavit be provided to this effect.

EMPLOYE LIST SOUGHT

5—Disclosure by Cooper that he has asked Russel T. Bailey, civil service personnel director, for the names and positions of the 401 city employes in the 21-to-35 age bracket who registered under the selective service act Wednesday, and an indication by the manager that not one of these men hold posts that readily could not be refilled, or a job that would lead to them being placed in deferred draft classifications if they so demanded.

Back of the meeting loomed a series of conferences between city officials and Consolidated executives, and the decisions reached yesterday were designed to bolster Consolidated's efforts to resist pressure from Washington to get the corporation to establish another plant elsewhere, and to make it possible, through provision of housing and training facilities, for Consolidated to get additional contracts that, it was reported unofficially, would total $80,000,000.

Accordingly, the council squared its shoulders against expected complaints from some residents in R-1 or single-family zones that will be opened to boarding houses and, after voicing the belief that it is the patriotic duty of every San Diegan to tolerate any inconvenience that may be caused by the emergency

(Continued on Page 2-A, Col. 5)

zoning moratorium, instructed the city attorney to draft the ordinance that will:

1—Lift the boarding house ban for six months.

2—Require all operators of such houses to register with the city clerk, giving their names, addresses, number of rooms to be rented, and proposed number of men to be accommodated.

3—Provide a form which the operators must sign, and in which they will agree to discontinue immediately the operation of a boarding house in violation of present zoning restrictions when the council lifts the moratorium and determines that there no longer is an emergency.

LIMITS SPECIFIED

The council was careful to emphasize that the boarding-house moratorium is to apply only to accommodating national defense industry workers, and that there is to be no relaxation of zone prohibitions against rest homes, nursing homes and homes for the aged.

Close control is to be exercised by Consolidated personnel executives over activities of employes of the huge plane factory who move into residential-zone boarding houses, said Mayor Benbough, and neither the city nor the corporation will tolerate any conditions that will lead to justifiable complaints, he added. This probably will be accomplished in part, he said, by drafting by Consolidated of a uniform set of rules that will be posted in all private homes thrown open to aircraft workers.

It was estimated by Glenn Rick, city planning engineer, that about 50 percent of the built-up part of the city now is zoned against boarding houses, and will be thrown open under the proposed moratorium.

So hurriedly was yesterday's conference called, that two councilmen—Louis Weggenman and Harley Knox—were unable to attend, and a third, A. E. Flowers, vice mayor, was out of the city on a vacation. However, the mayor and the three councilmen who attended, and who constituted a councilmanic majority, expressed the view that their colleagues, when informed of the factors behind the decisions, will concur when the resolution and ordinances that will put the actions into force, come up at next Tuesday's council meeting.

BUILDINGS SOUGHT

Immediately after the meeting, Will C. Crawford, city school's superintendent, mailed an application to Cooper for an occupancy permit to use the Ford building and the Foods and Beverages building for vocational training classes.

Also pending is an application for federal funds for the machinery that would be set up in the Ford building, which is being surveyed by the schools' architect and vocational director to determine how many students can be accommodated, what alterations, if any, will be needed, and where the machinery is to be placed.

Because of the structural condition of the Foods building, that structure would be used only for drafting and classroom instruction, said Crawford, who expressed hope that the training program can be strated in "a few weeks." Under it, students would be "graduated" at six-week intervals, and would have received sufficient training in that time to qualify for employment as aircraft workers.

Union Oct. 31-40

S. D. Vocational School Places 2500 in Jobs

More than 50 men and women, representing the business, professional and industrial life of San Diego, met yesterday as members of a citizens' advisory committee on vocational education and heard a report on the immense strides made in the last year in vocational training as a part of the city school system. The meeting was held at the vocational school building on Market and State sts. with Jacob Weinberger, city board of education president, presiding.

More than 2500 who attended vocational school last year have been placed in permament jobs here, 1294 of them in national defense work, Will C. Crawford, school superintendent told the committee. The school is turning out 125 weekly who find immediate employment in the aircraft industries. Enlarged facilities and staff, made possible by recent federal appropriations, will enable the school to more than double that output soon, Crawford said.

Included in the committee personnel are clubwomen, teachers, aircraft company officials, civil service heads, naval officers, chamber of commerce executives, realtors, clearing house members, industrialists and business and professional men. Organized almost four years ago, the committee has aided school authorities in development of vocational training work.

MORE FUNDS SOUGHT

Recently given $300,000 in federal funds for enlargement of facilities, Crawford informed the committee that an additional $600,000 for equipment and $900,000 for buildings has been requested and probably will be granted. The board of education had placed $400,000 in its budget for this year for the school, the present building has been purchased and contract let for an addition. Rooms in the Spreckels building have been rented for use of the business division of the vocational school and buildings in the park are being made available.

Growth of the school is shown in a report compiled for the board of education. Enrollment in September, 1939, was 722 and in September of this year, 2494. Enrollment in trade and industrial classes increased from 1918 for the fiscal year ended June 30, 1939, 3859 for the following fiscal year. Fifty-three instructors were employed to teach 97 evening classes.

Apprentice training classes are conducted in carpentry, plumbing, painting, electricity and meat cutting. The business division has a total enrollment of 2561 after opening Sept. 15', 1939, with 95 students. During the year, 292 students were placed with business firms. Public service, including selling classes, had 1500 enrolled.

HANDICAPPED CHILDREN

Vocational rehabilitation bureau handled 305 cases of physically handicapped children and rehabilitated 68 of them. The junior placement service provided employment since July 1, 1939, for 5076 young men and women of whom the vocational school trained 2637, or more than one-half the number placed.

Others to address the meeting were J. G. Sullivan, director of vocational education; Sam F. Fick, assistant supervisor, trade and industrial training, University of California at Los Angeles; Dr. Paul E. Wedgewood for the medical society; Jack Wright of the federal committee; Maj. T. C. Macaulay, chamber of commerce; Maj. Edgar N. Gott and R. H. Waterbury, Consolidated Aircraft Corp.

Maj. Gott repeated a former announcement that his company hoped to have 30,000 workers employed by July 1, 1941, and that preference in employment would be given to San Diegans, trained at the vocational school.

City Leads U.S. In Defense Awards, Word

Tribune 10/29

President Roosevelt's approval of "immediate construction of housing projects in 63 vital defense areas" with $45,762,500 of defense funds was announced today by Charles F. Palmer, defense housing coordinator, who said largest of the 63 projects would be at San Diego, The Associated Press reports from Washington. The local project involves approximately $15,000,000.

Unit Cost Set at $3000

The San Diego program, said Palmer provides for construction of 2000 additional dwelling units, 750 dormitory rooms for single men and 1000 portable-type homes. He said the projects would not exceed a maximum of $3000 a unit.

Site for the new community here has not been announced, said Charles A. Sloan, construction engineer, United States public build-

(Continued on Page 4A, Col. 3)

15 Million Awarded For Defense Homes

CONTINUED FROM PAGE ONE

ing administration, resident engineer for the project. Indications are the community may be in the Camp Kearny area.

"Absorption" Forecast

Palmer emphasized the new housing "will be absorbed in the San Diego community pattern so that the normal life will not be disrupted." He said a housing emergency resulted here from the large navy, army and aircraft expansion, and declared the new project "will create dwellings equivalent to those in a town of 30,000 people."

In Addition to Navy Job

The new work is in addition to a $3,800,000 project for 1200 concrete housing units for navy families, 600 of which will adjoin the destroyer base and 600 the naval training station. Contract for the navy housing project was awarded Oct. 17 to the William Simpson Construction Co., of Los Angeles.

All Complete in Year

Palmer said the $45,762,500 of defense funds will provide 13,315 family dwelling units throughout the United States, contracts to be handled by John M. Carmody, federal works administrator.

Palmer estimated all the projects will be completed in four to 12 months. Congress has provided a total of $290,000,000 for defense housing construction, he said, and estimates indicate a total of $560,000,000 will be needed to complete the job.

The number of family units to be constructed at other places, The Associated Press reported, is as follows: Tucson, 150; Benicia, Calif., 50; Fresno, 150; San Rafael, 175; Stockton, 150; Sunnyvale, 150; Boise, 100; Albuquerque, 100; Houston, 200; San Angelo, Tex., 100; Ft. Huachuca, Ariz., 30; Riverside, 150; Denver, 50; Lowry field, Colo., 125; Ft. Sill, Okla., 150; Ft. Meade, S. D., 50; El Paso, 200; Ft. Clark, Tex., 50; San Antonio, 500; South Tacoma, 150; Spokane, 200; Oahu, T. H., 550; Ft. Ord, Calif., 550, and Ft. Lewis, Wash., 250.

$80,000,000 For Facilities In S. D., Word

SD Tribune 10/21/40

By DON SHORT

Yielding to pressure by federal government officials, the city council today voted to turn over to the school board the Ford building in Balboa park and such other structures as may be desired for vocational training of youths to be employed in the aircraft industry.

To meet federal demands, also, the council voted to suspend zoning restriction in order that temporary housing and boarding can accomodate thousands of youths who are to be employed in the aircraft industry in this city.

Council action followed conferences late yesterday between federal agents, aircraft officials and Mayor P. J. Benbough when the latter was informed that an additional $80,000,000 for San Diego depends on the city's ability to take care of thousands of employes. The $80,000,000 will be spent here for factory construction and for greater plane output, it was said.

The agents here gave Mayor Benbough an ultimatum that word of the city's ability to cope with the nation's defense plans would have to be made known today. Hence, Benbough called the councilmen to his office this morning when they met with Walter W. Cooper, city manager, to discuss effect of the

(Continued on Page 4A, Col. 3)

ultimatum given the mayor, he said, by officials direct from the office of William Knudsen, of the national defense council, who was said to have allocated $80,000,000 more funds to San Diego provided the conditions could be met.

Council O.K.'s Action

Benbough put the issue direct to the councilmen and each agreed to the program as outlined by the government agents, who want at once, as an emergency measure, accommodations for training 600 youths in lots; that is when one batch of 600 recruits complete training, another 600 will take their place. Correlated to the training the government agents put up to the council requirements for housing the youths until such a time as the Consolidated Aircraft Corp. is ready to erect housing for its employes, for which money is forthcoming from the federal government, said Benbough.

The schooling is to be directed by the school board under Will C. Crawford, school superintendent, who conferred this morning with Cooper. Under the national defense act, schooling of employes for the defense industry is to be directed by the national board of education, through which office the San Diego school board was chosen to conduct the vocational schools here. Crawford informed Cooper that no expense, whatever, would be attached to the city; that in case funds were needed to repair park buildings he would find the money necessary to meet the cost.

Crawford suggested use of the food and beverage building in the park for training aircraft classes. He said it could be utilized for educational classes and that instructions in machinery operation would be conducted in the Ford building. Immediate use of the Ford structure was asked by the government agents. Councilmen were informed by Cooper that the main floor had been vacated by the national guard and was ready for turning over to the school board.

Repairs Suggested

Repairs to the roof of the food and beverage building was suggested by Benbough. Crawford said this would be taken care of by the school board. The council also considered and approved plans for the park board covering parking in the park during the emergency occupation of the buildings. Cooper reported that the board recommended restrictions on certain streets in the park would be enforced, but in general ample parking space would be reserved for the general public. Ample bus transportation was suggested by Councilman Herbert Fish, The mayor said he would consult street railway officials regarding use of buses.

Dayton L. Ault, city attorney, and H. B. Daniel, assistant, advised that the council had the right, under present emergency for the national defense, to transfer park structures to the school board and the federal government for use and that an ordinance granting an occupancy permit would be prepared for council consideration next Tuesday. Daniel suggested that it cover a six months' period with a clause for renewal if necessary.

To Suspend Zoning

The city attorney also will prepare an ordinance, as an emergency measure, suspending operation of the residential zoning ordinance so far as it affects so-called boarding or rooming houses. Under its provisions all persons having rooms for rent will be required to register with the city clerk, giving location, the number of rooms available and the price. Suggestion was made that this would tend to stiffen competition and, in a way, would prevent a hike in room rentals.

The youths who are to be trained for aircraft work are to come from different locations, it was suggested to the conference, and because of this suitable lodging and board must be provided. The mayor and council declared that the ordinance would be prepared in such a manner as to not apply to the numerous so-called rest homes or old peoples' homes which the zoning is intended to control.

Transportation for the youths to and from the aircraft plant was discussed by the council, numerous suggestions being made with the universal opinion that additional buses should be provided.

ADEQUATE WATER VITAL TO PLANE PLANTS, SAYS GOTT; VICENTE DAM, DISTRIBUTION SYSTEM EXPANSION BACKED

Union 10/15/40

By EDGAR N. GOTT

Vice President, Consolidated Aircraft Corp.

The aircraft industry in San Diego is definitely interested in the water propositions which will be presented to voters of the city at the election Nov. 5. Of immediate concern is the problem of assuring an adequate supply of water now and in the future, because nothing must be permitted to interfere with plant expansions and production under the national defense program.

E. N. Gott

Consolidated, Ryan and Solar plants require about 13,000,000 gallons a month. The demand for water will be stepped up materially when these plants swing into greater production.

One proposition to come before the voters will authorize extensions and enlargements of the water distribution system. I am informed that few major additions have been made to the system in about 25 years, despite the fact that the city's population has more than doubled in that period. The public will recall that due to inadequate transmission lines, low pressures and near-water shortages occurred this last summer and caused great inconvenience to many families.

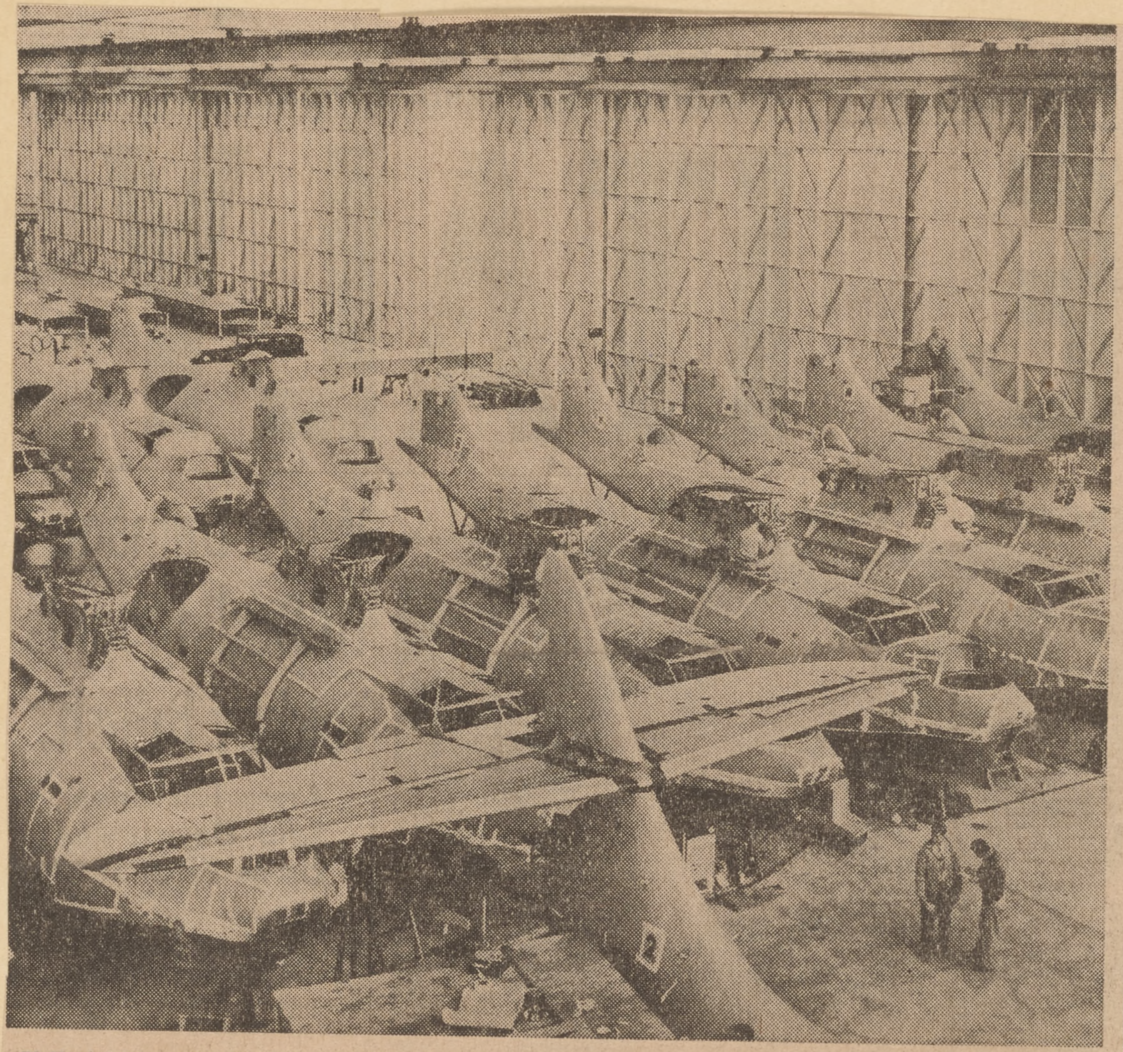
Any possibility of a curtailment of water supply to the aircraft industry necessarily would be viewed with grave concern.

Along with population increases has come the greatest industrial expansion in San Diego's history. Consolidated now employs 11,500 and by next summer anticipates the possibility of about 30,000 on its payroll. This industrial expansion is so closely linked with the national defense program that in itself it makes it imperative that the city provide immediate enlargements to the water distributing system.

In a semi-arid region such as this, it is a wise precaution to conserve every gallon of water we can. San Vicente dam is San Diego's next great water development and conservation project. It will appear on the special city ballot as Proposition 2. It should likewise have the approval of the voters, especially in view of the fact that with our anticipated population increase the present water storage facilities will soon become inadequate.

Union 10/28/40

Hundreds of engineers and draftsmen work in the huge engineering department of Consolidated Aircraft Corp., designing, detailing and checking all steps necessary to build modern birds of metal.



Hulls for Model 28 (U.S. Navy PBY) planes stand in the final assembly line. They are criss-crossed with heavy paper and tape to protect them during final assembly operations at the San Diego plant.

Rochester Democrat & Chronicle – Oct 28 1940

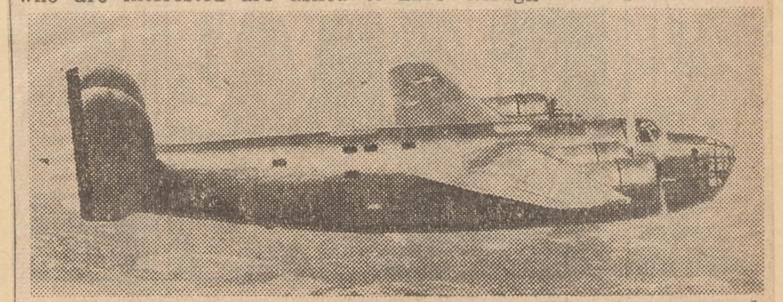
Airports and Airpilots

Hutchinson advertising agency

By G. J. DUNKLEBERG

PRIVATE pilots who for years have been spending their own money for flight instruction and for flying time to maintain their licenses, are at last to get a break from the Government! Holders of private certificates who can pass the Commercial CPT physical examination and who have at least 175 hours of flying time logged may apply for a commercial refresher course.

This consists of intensive advance ground school training and, for those who pass the ground school examination, a 25-hour commercial refresher flight course. Completion of this program will allow private pilots to secure commercial licenses. All qualified pilots who are interested are asked to communicate with Jim Wilmot at Rochester Municipal Airport as there is room for about 10 more applicants in the ground class.



Official U. S. Army photograph of Consolidated's powerful four-engine land bomber, designated as the XB-24. It has a bomb capacity of approximately four tons.

* * *

MANAGER Howard Schaffer had a busy time last week keeping pheasant hunters off the Municipal Airport areas. The airport is forbidden territory to hunters, and judging from the number of birds on the field, the pheasants know it.

* * *

SHIP 'O THE WEEK is the Consolidated Aircraft Corporation's XB-24, a four-motor land bomber built by the makers of the famous Consolidated Patrol Bombers for the Navy. The XB-24 is a high-wing bomber, all-metal, and with a full cantilever type wing of high aspect ratio. Fowler-type wing flaps extend from aileron to center section.

Power is furnished four Pratt & Whitney 14-cylinder twin-row radials rated at 1200 h.p. each. Hamilton Standard props are of the 3-bladed hydromatic constant speed type and are 12-feet in diameter. The new bomber weighs 40,000 pounds and has a wing span of 110 feet. Tactical requirements are for a crew of from six to nine, depending upon the mission to be performed.

From preliminary examinations, this new Consolidated giant gives evidence of living up to the exceptional advancements in aerodynamic performance characteristics predicted for it. These include a speed of better than 300 miles an hour, a range of approximately 3,000 miles and a bomb-carrying capacity of approximately four tons.

* * *

ANOTHER of the sleek new all-metal Luscombe Silvairs will be available at Rochester Municipal Airport shortly. Glen Wilkes, manager of the Rochester Flying School, has announced purchase of one of these popular ships from Jim Wilmot, Luscombe distributor.

* * *

A NEW kind of aircraft service for private plane owners and operators has been inaugurated at Rochester Municipal Airport. Charlie LaBar and Charlie Knab have established a plane service that is unique in that they do their work at night. Repairs and servicing done in the small hours have the ship "on the line" ready to go in the morning.

* * *

SAFETY TIP . . . Revving up your engine on beaches or gravel surfaces results in a sand blasting of the propeller as small stones, sand, etc. are sucked up into it. This causes nicking and scuffing of the blades. Sand-blasting effects can be reduced somewhat on taking-off from sandy or gravel areas by opening the throttle slowly so that the increasing forward speed will counteract the suction from the increasing rpm. This also will lessen the possibility of damaging tail surfaces by showering them with gravel. But be sure you have enough takeoff distance if you adopt the slow-throttle takeoff.

* * *

Howard Schaffer's crew at the Municipal Airport is prepared for the next field emergency, now that the Department of Commerce has provided the airport with a completely-equipped, modern airport emergency truck.

* * *

THE waters of Canandaigua Lake won't see as much of Dr. and Mrs. Chester Forkel next summer as they have in the past, for both have begun their flight instruction under the tutelage of Ray Hylan. Together they learned to ride, swim and sail and are now adding flying to their other accomplishments.

* * *

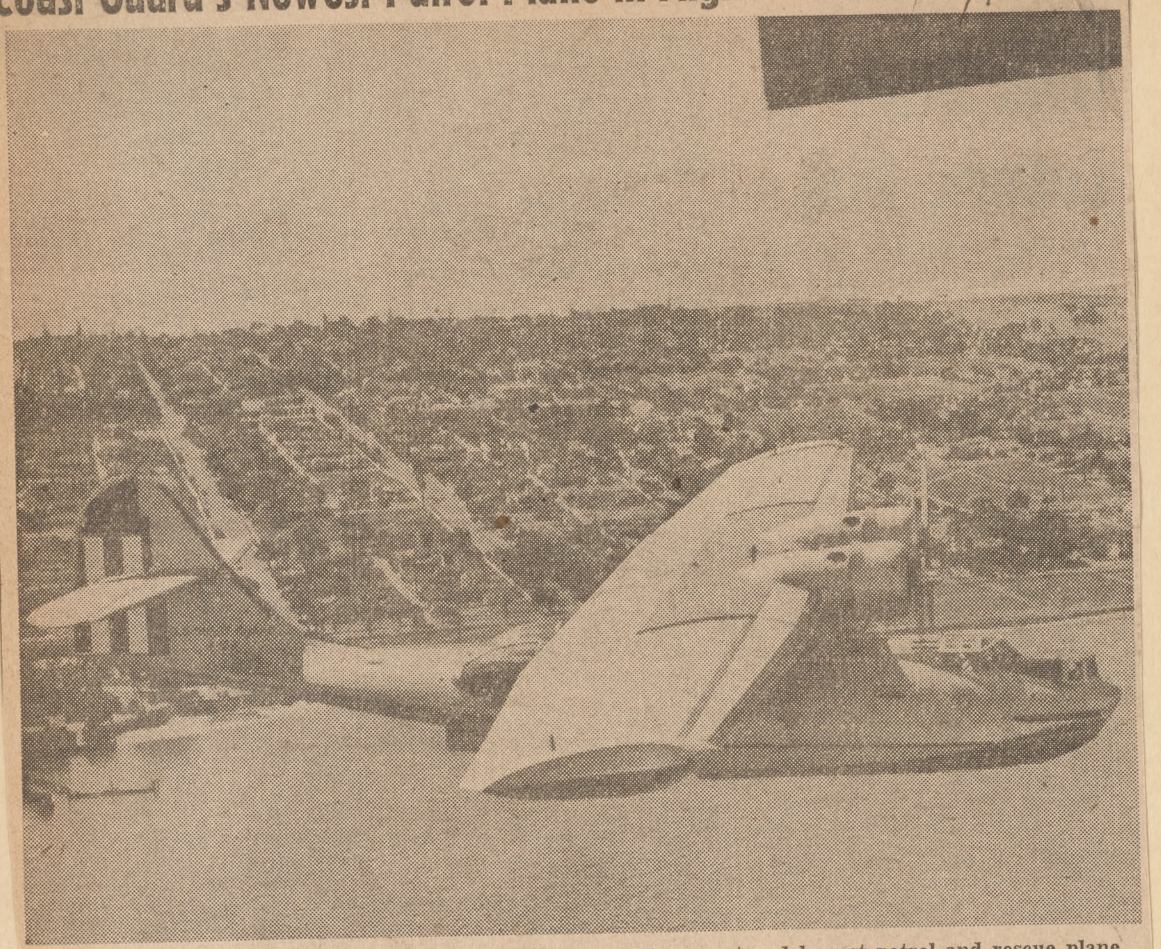
CONGRATULATIONS . . . to Joseph Sanara upon the successful completion of his first solo flight. Many happy landings to James Lattimer, Phl Long, Dick Werner, Al Struchen, Jim Long and Chester Pike, all of whom have begun flight instruction with the Rochester Flying School at Municipal Airport.

* * *

THE Hermmann brothers and Hank Zornow are sporting a new Aeronca tandem-trainer at Genesee Airport. The new ship is to be used for flight instruction.

Coast Guard's Newest Patrol Plane in Flight

Trib. 10/30/40



In graceful flight over San Diego bay, the coast guard's newest and largest patrol and rescue plane, a counterpart of the navy's famed Consolidated PBY patrol-bombers, is shown undergoing shakedown tests. (Official coast guard photo by H. Davis, chief yeoman.)

Union 10/5/40 Saturday

HIGH NAVAL OFFICIAL SHUNS CEREMONY IN LOCAL CALL

E. H. FOLEY JAMES V. FORRESTAL CAPT. G. W. RAVENSCROFT
. . . the undersecretary of the navy (center) works swiftly and quietly.

* * *

FORRESTAL VISITS CONSAIR PLANT IN BRIEF S. D. STOP

Speeding the tempo of national defense production is the job of James V. Forrestal, undersecretary of the navy, who arrived here yesterday on what was a flying trip in more ways than one.

It wasn't until Thursday evening that local naval officials revealed that the undersecretary—a recently created post which ranks second only to that of the secretary of the navy—was about to land. Yesterday morning, at the naval air station, the landing became an accomplished fact; the secretary alighted from his plane, with the small official party.

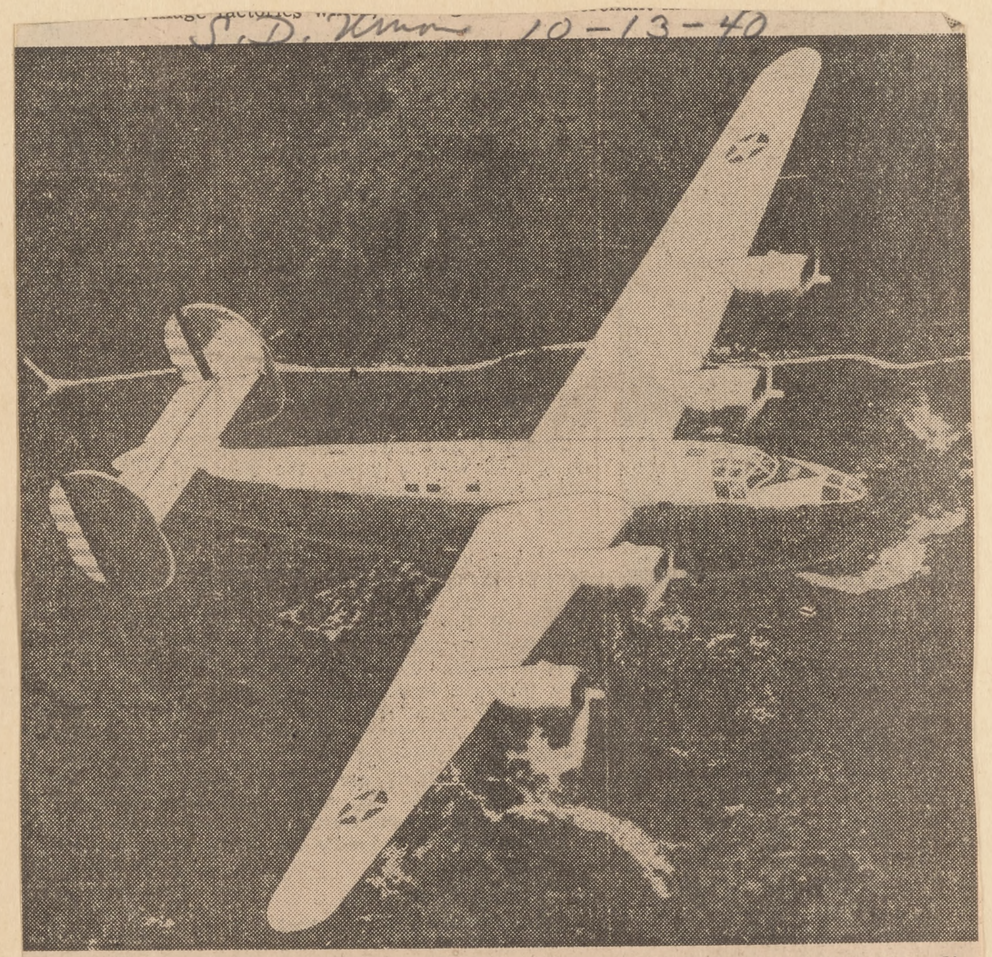
KEEP PURPOSE SECRET

With him on his trip to San Diego are E. H. Foley, assistant secretary of the treasury; Capt. George D. Murray of the bureau of aeronautics, navy department; Comdr. John Gingrich, the secretary's aid, and Lt. Frank A. Brandley, pilot. They were met by Capt. G. W. Ravenscroft, chief of staff of the 11th naval district, and left forthwith for the Consolidated Aircraft Co. plant — apparently their only objective here. In fact, the only available information on future movements of the party which was available was this:

"We hope to start back this afternoon."

A naval flier himself during World War I, Secy. Forrestal moves swiftly in other ways. When the $5,000,000,000 defense bill was signed, he already had prepared many contracts for naval armament, with a resultant saving of considerable time. Officers who have been associated with him give him credit for much of the streamlining of naval procurement which has no time to spare. While information on the party's movements is meager, it was intimated yesterday that Consolidated would be his only conference point while here, and that he then will return directly to the nation's capital.

S. D. Union 10-13-40



From our national rearmament efforts in making bombers like this Consolidated craft, the America of tomorrow will have better commercial planes and a host of thoroughly trained fliers.

DAILY TELEGRAPH - LONDON ENG.

10/5/40

U.S. TALKS WITH SOVIET

FROM OUR OWN CORRESPONDENT

WASHINGTON, Thursday.

The possibility of Russia becoming a full-fledged member of the "Three Power Desperadoes' Club" is felt to be remote in diplomatic circles here.

It is felt that her ambitions now conflict with Germany in the Baltic, with Germany and Italy in the Balkans, and with Japan in North China.

The United States strongly disapproves of her past policies, and any amelioration of the present relations between the two countries depends on future development of the Russian policy. Closer association with the Axis Powers would be unlikely to bring any material advantages to Russia, and would make the possibility of obtaining any of the economc favours which she is seeking in the United States extremely remote.

Conversations which have been taking place in Washington with the Russian Ambassador, Mr. K. Oumansky, and, since his return to Moscow, between Mr. Steinhardt, the United States Ambassador, and M. Molotoff, the Soviet Premier, have dealt realistically with the present situation. The United States has not adopted an "appeasement" policy of attempting to purchase Russian neutrality with concessions, but has dealt with the immediate situation in practical terms.

Since the middle of last century Japan and Russia have been rivals in North China, and the United States has given diplomatic support for first one, then the other. British diplomacy before the war failed to take advantage of Russian and German rivalry in Europe. It is felt here that the United States has no intention of repeating the error in the Far East.

TWO FURTHER STEPS

Two further steps to strengthen American defence were adopted to-day.

The Atlantic neutrality patrol and the Atlantic Fleet were united under the command of Adml. Hayne Ellis, and a drive was begun to speed up 'plane production by increased standardisation.

British air experts have been in Washington for some weeks and have made known improvements in design learned by practical experience. No attempt has been made to keep anything secret, and American and British production will both benefit from this policy.

A group of British and American experts left to-day for San Diego to consult with officials of the Consolidated Aircraft Company about co-ordinating designs of 'planes which they are building for the two countries. Later similar steps will be taken to standardise production of other companies manufacturing for both countries.

A similar policy was adopted some time ago in tank construction and Army chiefs paid tribute to the helpful advice which had been given by British experts.

HALF-FINISHED IN BIG CRAFT'S TEST HOPS

The half-way mark had been reached today in shakedown tests of the coast guard's newest and largest flying boat, a counterpart of the navy's famed PBY-5 Consolidated patrol-bombers.

The big plane was delivered Oct. 17 and has been undergoing the tests since, Lt. C. G. Bowman, commander of the local coast guard air base, revealed. It is assigned to the local base only for duration of the tests but Bowman said it possibly would be assigned here permanently.

Except for armament, the coast guard's PBY is exactly like the navy's planes of the type. Among its features are huge, glass-enclosed "blisters" amidships, where, in navy prototypes, machine guns are mounted.

With a range unofficially estimated at some 4000 miles non-stop, the flying boat is able to operate about twice as far as any coast guard plane now in service, said Bowman. It will be used primarily for rescue flights but is adaptable to armed patrol work should the need arise.

Tribune-Sun 10/18/40

Air Committee Members Fly to San Diego After Convention in Los Angeles

Members of the export [illegible]mittee of the Aeronautical Chamber of Commerce of America, who came here from Los Angeles by plane yesterday, and those who we[illegible]med them at Lindbergh field are shown here. The visitors toured the Consolidated, Ryan and Solar aircraft plants after a harbor excursion trip. In the group are Edgar N. Gott, T. Claude Ryan, Edmund T. Price, W. E. Ingold, Sam Breder, Ellie Molloy, Don Parkin and James M. Keefe, members of the welcoming committee. Others shown are Carl I. Friedlander, James A. Weagle, W. J. Blanchard, Robert R. Barr, J. S. Allard, Charles I. Morton, Carl Dolan, J. Story Smith, R. J. McGivney, H. W. Flickinger, Robert B. Lea, S. W. Bedell, C. G. Taylor, Arthur R. Christie, I. H. Taylor, Don Wiley and P. R. Mattix.

Official Publication of
Council of Aeronautical
Mechanics, I. A. of M.

☆☆☆ AMERICAN ☆☆☆

AIRCRAFT MECHANIC

THE VOICE OF THE AIRCRAFT INDUSTRY

Affiliated with the
American Federation
of Labor

SAN DIEGO, CALIFORNIA, OCTOBER 7, 1940

To All Consolidated Employees . . .

Who, and what is, Aircraft Local No. 1125? How many Consolidated Employees have asked themselves this question? Not many of the old employees perhaps, but plenty of the new ones have.

In answer to these questions, the following information comes from the Lodge itself. Aircraft Local No. 1125 is a group of **Consolidated employees** operating under a charter from the International Association of Machinists, to provide an appropriate unit for the purpose of collective bargaining as regards wages, hours, and other conditions of employment. This group of employees, now in the thousands as to number, are authorized by the Government of the United States to act as spokesman for every hourly paid employee. To date they have operated in such a manner as to merit the healthy respect of their employer, gaining at the same time for all employees, by group action, more pay, and more satisfactory working conditions, than the individual employee could possibly obtain for himself by individual action.

It's the old story, made popular by Ben Franklin, of "In Union there is strength." The Union of the States has brought to them, and their citizens, strength, riches, and an enviable position of World Power. From them let us take our lesson and cling to our own Union of Consolidated Employees, so that we as individuals may acquire more of the reward due us for our honest toil. This group of employees, by their contract with the Consolidated Aircraft Company, are engaged three times a year in reviewing the wage rate and employment record of every employee, no matter who he is or what he does. THE RESULTS THEY HAVE IN COMPELLING THE MANAGEMENT TO RECOGNIZE THE ABILITY OF AN EMPLOYEE TO EARN MORE PAY BY GIVING HIM AN INCREASE IN WAGES, IS IN DIRECT PROPORTION TO THE MEMBERSHIP OF THIS EMPLOYEE GROUP.

Knowing the above to be a fact, and knowing too, that the membership of this Union of Employees is more than four times as large as all the other Consair employee groups rolled into one, it is hard to conceive of any employee failing to actively support their own Union by becoming a member of it, when they have everything to gain and nothing to lose.

To those of us who do belong to this Union, wear the membership button in plain sight, so those who do not belong may know whom to ask for further information.

We meet at Turner Hall, 9th & G sts., at 8:00 every Tuesday evening for the Day Shift, and at the same Hall at 2:00 every Wednesday afternoon for the Night Shift. Our dues are low in comparison to the benefits we have obtained for our membership, and we invite you as a Consolidated employee to join hands with us in this important work of making a living that amounts to something financially.

L. A. PERRY,
Rec. Sec.

Fleet Forecasts Giant Consair Growth

Navy Plans 6,000 New Homes For Married Aircraft Workers

Recently Maj. Reuben H. Fleet, president of Consolidated Aircraft at San Diego, was in an expensive mood at a meeting of the army engineers held in the offices of the harbor commission. The outline of expansion ran up to and including a backlog of $300,000,000 with probably more than 35,000 employees. This compares with the present conditions of a backlog of $132,000,000 and 14,500 employees. Even after some allowance for shrinkage this still allows that Consolidated is a BIG aircraft company.

To Increase Employees At Rate of 500 Per Week

New employees are expected at the rate of 500 per week but no date was set for the beginning. To accommodate this number of

(Continued on Page 3)

NEW ORDER BOOSTS BACKLOG TO $221,300,000

War Department Awards Consair $85,800,000 Contract For Four Motored Planes

Consolidated Aircraft Corp. has a backlog of $221,300,000 as result of a contract for $85,800,000 for planes placed by the war department. The Associated Press, in a dispatch from Washington, D. C., states the order, placed yesterday, is for an "undisclosed number" of four-motored planes.

It is the second received by the firm this week. Tuesday, the Australian government announced its decision to purchase 11 flying boats in the United States for $3,500,000, and placed an order for this amount with Consolidated. The firm's previous backlog was $132,000,000.

Now Employs 10,600 Men

Approximately 10,600 are employed at the Consolidated plant, with several hundred new employes being added each week. The firm, which recently dedicated a new addition to its plant, has started work on still another addition to Lindbergh field.

Delivery dates for new army

New Order Boosts Backlog

(Continued from Page 1)

planes were not specified. The Associated Press reports from Melbourne, Australia, that the Australian planes are to be ready "for delivery before the year-end." They will replace 20 Sunderland flying boats ordered in the United Kingdom but now turned over to the Royal Air force.

The Australian government obtained first-hand information on the performance of Consolidated-built planes as a result of the round-the-world flight by Richard Archbold, scientist, in the flying boat Guba. Part of the Guba's route, after it left New Guinea, where Archbold carried on exploration work 10 months, was from Australia over the Indian ocean last year over a course never before covered by plane.

Craft for England

In addition to the planes for the army and for Australia, Consolidated also is building PBY-type craft for the navy and for England.

Rumors that Consolidated is planning to establish another plant "somewhere in the east," were scouted today by officials of the plant. Yesterday a query was received from Buffalo, N. Y., asking if a branch of the firm would be located there. Today, The Associated Press sent an inquiry asking if a branch would be established between Allentown and Easton, Pa. To both inquiries, Consolidated officials answered "No."

Objection to filling in 25 acres of land for use of the Consolidated Aircraft Corp. as a seaplane base was withdrawn yesterday afternoon by the planning commission when it was declared by an official that Consair was ready to turn out 15 seaplanes daily. The seaplane site is between the coast guard station and the marine base. Dredging now is in progress and the site for the spoil embraces a water frontage of 2500 feet by 200 feet wide.—Union-Tribune.

Fleet Forecasts Consair Growth

(Continued from Page 1)

workmen and their families housing facilities would have to be provided. This item would require several thousand new homes for married employees and barracks for the single men.

His plans for expansion apparently dwarf all previous activity in San Diego. His most startling revelation was the implication that the Navy Department and Consair have practically reached an agreement for construction of 6000 single units to house married couples and barracks for 6000 single men.

Coming down to the actual expansion of the plant at San Diego, Maj. Fleet pointed out that valuable time would be wasted if he had to continue the present policy of hauling huge new bombers from the final assembly plant across the flying field to the Coast Guard ramp.

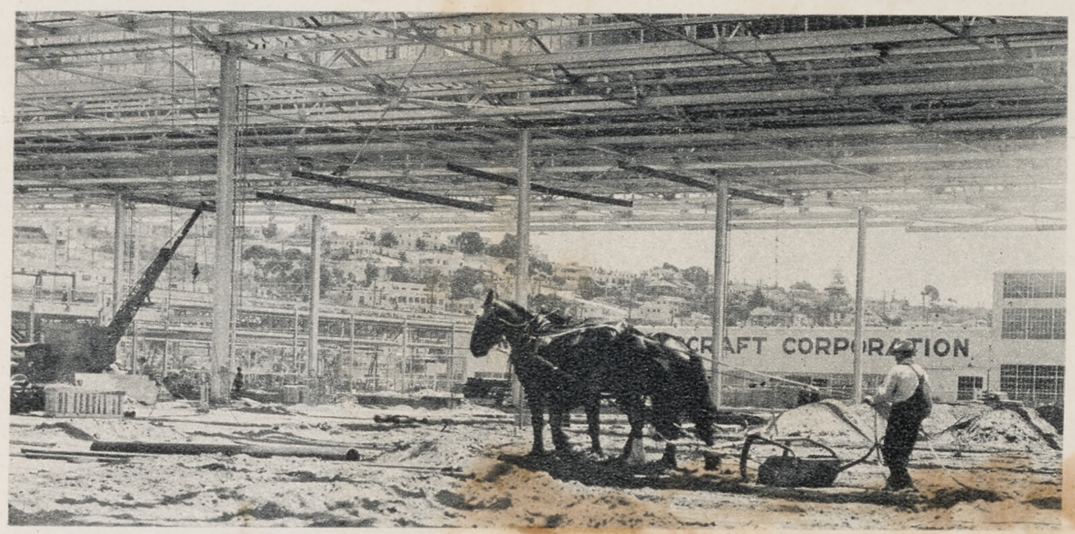
"It is imperative that we have our own ramp," said he.

Maj. Fleet predicted that the Consair organization will do as much business in the next two years as the company did in the previous sixteen years. Three eight hour shifts are planned instead of the present two ten hour shifts. In discussing the precarious condition the country is in he said, "the time has come when we have to take government aircraft contracts whether we want to or not." He also expressed his personal opposition to building plant number two in Texas.

Aircraft Factory Expansion

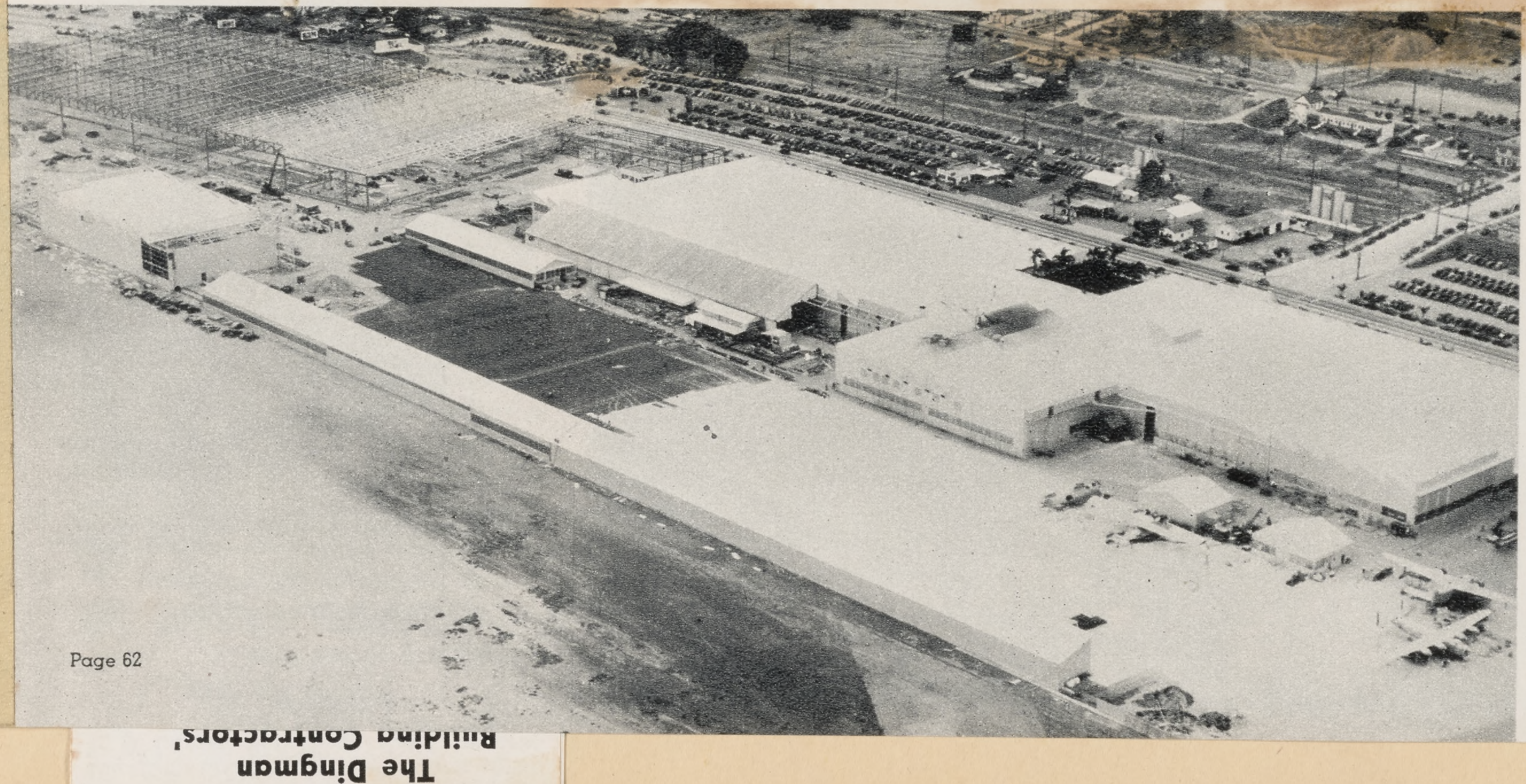
Adds 396,000 Sq. Ft. to Consolidated's Plant in San Diego, Calif.

Official U. S. Navy Photo



FOR NATIONAL DEFENSE

NEW FACTORY BUILDINGS (below) and open-air bituminous-paved areas for final assembly operations are features of big program of plant expansion for aircraft production at Lindbergh Field, San Diego, Calif. In upper left corner steel framework is being erected for 360x720-ft. final assembly building. Shed, in foreground, is 1,000 ft. long. **GRADING OF FLOOR** in 360x720-ft. final assembly building **(left)** is done by horse-drawn scraper, prior to pouring concrete slabs. Clear headroom within structure is indicated by crane boom at left. Roof is of sawtooth construction, utilizing north lighting.



---

ving to practical job management. With the aid
these books the contractor can get business in
se dull times by learning how to make savings,
d through them being able to make lower bids.
e construction superintendent can learn how to
p costs down, which insures his job these days.

The Dingman
Building Contractors'

Aviatio

Aircraft Buying Plan Becomes Definite

Nearly two months after it was first announced that the armed forces had settled on just what planes and engines they wanted to standardize on, the public is beginning to get a glimpse of the program. Only phase definitely announced is the plan for air-cooled big engines: 40,000 are wanted in the next two years about equally divided between Wright and Pratt & Whitney designs. This follows the accepted procedure of having two types of each item needed.

Still largely unsettled is the program for liquid-cooled engines, though it is generally assumed that GM's Allison will take about half the load and Packard's Rolls Royce the other half—with Ford's unofficial and still theoretical liquid engine still an unknown factor. About 6,000 Rolls Royces are believed definitely scheduled.

No authoritative statements have been made on plane types desired, but orders on the early program for which appropriations were completed in June, and first orders under the full program seem to reveal some phases of the pattern.

Definitely part of Army's pursuit squadrons will be Lockheed's P-38E, Curtiss's P-40D, Republic's P-44, and Bell's P-39; Army has apparently resolved its doubts about the radical design of Bell's Airacobra and is buying them in quantity.

As a two-engine ship there is the P-38E. Lockheed's ship is a new two-seater version of the P-38 and is said to be capable of 500 m.p.h.

The P-40 and P-39 are both single-place single-engine jobs using liquid-cooled engines. The P-44 provides an air-cooled engine alternative and is, moreover, especially designed for the high altitudes at which bombers are now operating.

Navy fighter plans are not so well established, but it is clear that a Grumman (probably the Skyrocket) will occupy an important place.

On heavy bombers, Boeing's four-engine B-17E has been bought in largest quantities, but Consolidated's similar B-24D has also been ordered. Medium bombers and attack bombers are still open.

North America's AT-6A is the main reliance for advanced trainers, while Vultee, with its BT-13A, provides most of the basic trainers. Primary trainers, as might be expected, are more split up.

Army and Navy between them want 41,500 air-cooled engines in the 500-2,000 hp. range, and have made arrangements to get them from Wright, Pratt & Whitney, and Ford. P & W, which is doing all its negotiation with Navy, will furnish 17,000 of the engines. Ford is settling details with the Army on a program to build 4,500 engines on the P & W 2,000-hp. design. Wright, which is also dealing with Army, will handle 20,000 Cyclone and Whirlwind engines.

To handle its share, Pratt & Whitney will undertake a 400,000-sq.ft. plant expansion (additional to 700,000 sq.ft. already this year). The company will meet the $15,000,000 cost of buildings, while Navy will pay for and retain title to $7,000,000 or $8,000,000 worth of tools.

Ford is paying for his own $11,000,000 plant (of which about $7,000,000 is for tools.) He is to pay P & W a nominal license fee of a dollar an engine.

The Wright engines involve expansion of more than 1,000,000 sq.ft. and will cost about $90,000,000 to be financed through an RFC defense loan.

AVIATION, October, 1940

The Sun News-Pictorial

£2,032,000 MORE

Victoria Australia 6/7/40

500 TRAINING

U.S. FLYING-BOATS TO SUPPLEMENT BIG ORDER LOCALLY

AIRCRAFT orders amounting to £2,032,000, including training and other aircraft to be made in Australia at a cost of more than £1,000,000, have been approved of by War Cabinet following consultation with Britain.

The aircraft will meet needs under the Empire Air Scheme which cannot now be fulfilled by Britain, and will also include special machines for Australian defence.

Seven flying-boats of the Guba type are to be bought from the United States to replace Empire flying-boats, which were to have been brought to Australia. These will cost about £500,000.

MAKING this announcement last night, the Prime Minister (Mr. Menzies) said orders would be placed in Australia for—

300 Tiger Moth aircraft,

with spare engines, airframe spares and engine spares. This order will be additional to the 350 of these craft at present being manufactured for the R.A.A.F. by the De Havilland Aircraft Pty. Ltd. in Sydney, which will also make the new planes.

200 Wackett Trainer aircraft

together with 50 spare engines, airframe spares and engine spares. This plane has been designed by the Commonwealth Aircraft Corporation and the order is subject to the successful outcome of trials which will be carried out next week by the R.A.A.F. The C.A.C. factory will switch to production of the new plane when Wirraway orders are completed.

An order will also be placed with the Commonwealth Aircraft Corporation for a prototype light bomber reconnaissance twin-engined aircraft, the design of which has already favorably impressed Australian air authorities.

It will be made from local materials and fitted with twin Row Wasp engines of the type to be made locally.

The specifications of this aircraft provide for long endurance, and good bomb-carrying capacity.

Its potential defensive ability and dive bombing characteristics, said Mr. Menzies, would make it of considerable utility for Australia's defence problem.

Continued on Page 41

Air Race Pilot's Ordeal In Holland

LONDON, Thursday. — After a fortnight's nightmare journey from Holland, Chevalier J. J. Moll, who was Chevalier Parmentier's co-pilot in the Centenary Air Race, has reached England.

During the first four days of the invasion, Chevalier Moll fought with a rifle against parachutists near Rotterdam and, on May 14, was placed in charge of a dyke, which he opened in the face of a German attack.

Chevalier J. J. Moll

Later, he was picked up by a lorry, which threaded its way through a stream of refugees.

Eventually he reached Ushant, where he caught a small freighter carrying cognac to England.

Chevalier Moll is now training Dutch pilots for squadrons which may operate separately or merge with the Royal Air Force. — **Exclusive.**

CONSOLIDATED AIRCRAFT CORPORATION
LINDBERGH FIELD, SAN DIEGO, CALIF.

VICTORIA AUSTRALIA FRIDAY, The Hera

One of the United States navy's flying boats of the type ordered by Australia.

GIANT "EYES" FOR OUR AIR FORCE

By The Herald Writer On Aviation

If a squadron of Royal Australian Air Force planes flew non-stop from Sydney to Darwin, most Australians would find it hard to believe.

If, instead of alighting there, the planes flew on over the Timor, over the Netherlands Indies, along the Java Sea, and finally touched down on Singapore Harbor, it would seem something like a miracle.

But to the seven Consolidated PBY5 flying-boats that have been ordered from the United States by the R.A.A.F., such a flight would be possible, provided they met no head winds.

THAT IS probably the most spectacular way of indicating the great range which is the outstanding feature of these 13-ton boats; or one could say that they could fly from their base at Rathmines (N.S.W.) to New Guinea and back, to Fiji and back, or to New Zealand and back, and then back to New Zealand again.

It may be found that the best way of getting them here is to fly them—if legal difficulties connected with the landing at Honolulu can be overcome. Scores of similar planes owned by the United States Navy have flown the longest stage of the journey, the 2400 miles from California to Hawaii, and Richard Archbold's Guba, an unarmed sister-ship of our new boats, flew down the Pacific before she pioneered the Indian Ocean route and casually crossed Africa and the Atlantic on her way home.

In choosing Consolidateds because Britain cannot spare us Sunderlands—the military version of the Empire boat which was previously on order—Australia is taking no gamble.

More PBYs are in service than any other type of flying-boat in the world. The United States Navy has long owned 250, and is reported to have ordered 300 more some months ago. The British Air Ministry bought one, tested it thoroughly, and ordered 50 more, with a further order for 250 regarded as almost certain.

When the United States battle fleet puts to sea it is preceded by a great screen of PBYs, scouting the ocean ahead as destroyers would, but over a vastly greater area.

LOOK into one of these boats on patrol.

In the cockpit are two pilots, one of whom frequently slips back into the chart room just behind his seat, where he may take a drift sight of a "shot" of the sun, then do a small sum to check the plane's position. In the chart room, too, is the radio operator, in touch with shore stations and the fleet, and perhaps with other boats patrolling not far out of sight.

Move further back in the hull — all bare metal work, with walls and structural members exposed, for this is no tourist ship—and you notice a pair of legs hanging from what seems to be a hole in the roof.

They belong to the flight engineer, whose chair is up in the turret-like structure that holds the wing well above the hull. Here he has before him all the instruments that tell him how the two engines are working—the temperature of cylinder-heads, oil, air intake, and a score of other things. This arrangement takes much work from the pilots, and lets them spend their time flying and navigating.

In the bunks in the main hold—a roomy cabin about 14ft. long, 10ft. wide, and with plenty of head room—members of the crew who are off duty may be sleeping or one of them may be through the next door aft, cooking a meal in the galley.

The boat's armaments are secret, but there is probably one machine-gun turret in the forward observation post out ahead of and below the cockpit. In a civil version this is used only for mooring. There would probably be another turret on top of the hull, in the roof of the galley, and perhaps another, with a downward view and sweep, well back along the narrowing tunnel of the hull, toward the tail.

The PBY carries a small bomb-load, and it can be equipped as a torpedo-carrier; but just as the bombing plane is primarily a very long range gun, so the reconnaissance flying-boat is primarily a very long-range eye.

It needs its machine guns for self-defence, its bombs in case, when convoying merchant ships, it sights a submarine; but its main job is to find out what is going on 1000 miles or so from the shore it is helping to defend.

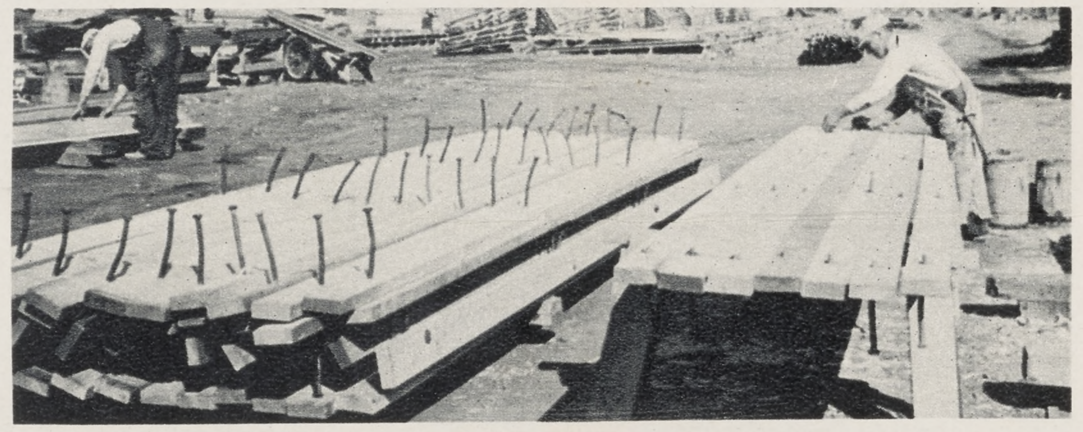
Compared with, say, the Sunderland, the Consolidated is not a big boat, weighing less than 30,000lb. when fully-loaded; but in comparison with most of our Air Force machines, the new boats are giants.

Its top speed is not much below 200 miles and hour, and it can cruise comfortably at 140 to 150 miles an hour. More important, it is no temperamental craft, but can stand hard usage. Probably no other flying-boat in the world has had as stern a test as the Archbold expedition gave the Guba in New Guinea, but when she had had a little overhaul work done in Australia, she was ready for more globe-spanning.

CONTROLLING EROSION on fill slopes of new four-lane divided highway at New London, Connecticut State Highway Department installs treated timber rail at shoulder edge and lines shallow ditch 1 ft. wide with 2 in. of bituminous material shoveled from suspended platform at back of truck **(above)** and spread and tamped to form a gutter **(below)** leading to drop inlets.

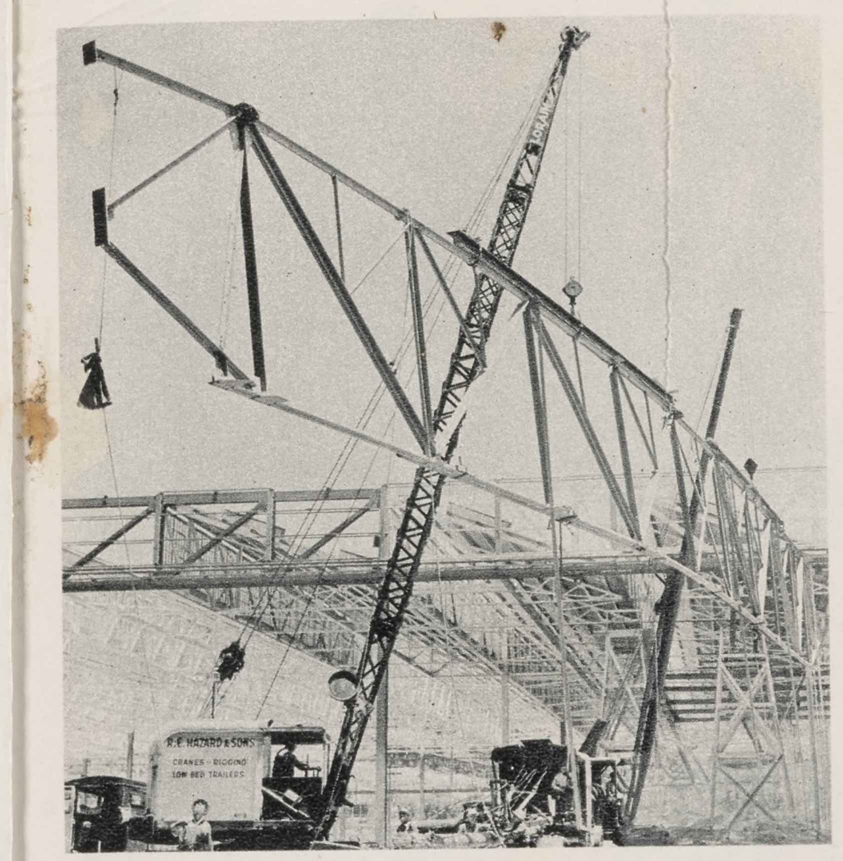
MECHANICAL SHAKER aids U. S. Bureau of Reclamation engineers make sieve analyses of sand samples at Grand Coulee dam.

ADJUSTABLE TELESCOPIC METAL SPOUT designed by Charles Inman, master mechanic, replaces awkward canvas spout under bulk cement batching plant of States Engineering Co., Rapid City, S. D., on Pennsylvania Turnpike paving job. Adjustable section of metal spout is to be suspended on counterweighted lines permitting ready raising and lowering to accommodate batch trucks of various heights.



BENT BY SLEDGE to prevent rotation in concrete when nuts are tightened, anchor bolts are installed in 2x6-in. plates which go on top of reinforced-concrete walls of row houses at Sunnydale housing project, San Francisco, Barrett & Hilp, contractors.

SPECIAL TRACTOR-DRAWN PLOW installs continuous counterpoise wire used in conjunction with two overhead ground wires to protect Parker-Phoenix 161-kv. transmission line against lighting damage in dry country. Continuous parallel counterpoise of ¼-in. black copper rod **(right)** feeds from reel on trailer **(left)** through welded tube on rig and around sheave in heel of plow, which can lay wire up to 26 in. underground. Metal tape on wood block **(right)** indicates that plow exceeds 2 ft. in length.



STEEL TRUSS ERECTION for final assembly building is handled by pair of truck-mounted cranes. Truss will carry overhead monorail connecting new assembly building and finish building.

OVERHEAD STRUCTURE of large steel building is coated with aluminum paint. Note wide spacing of columns to provide clear floor space.

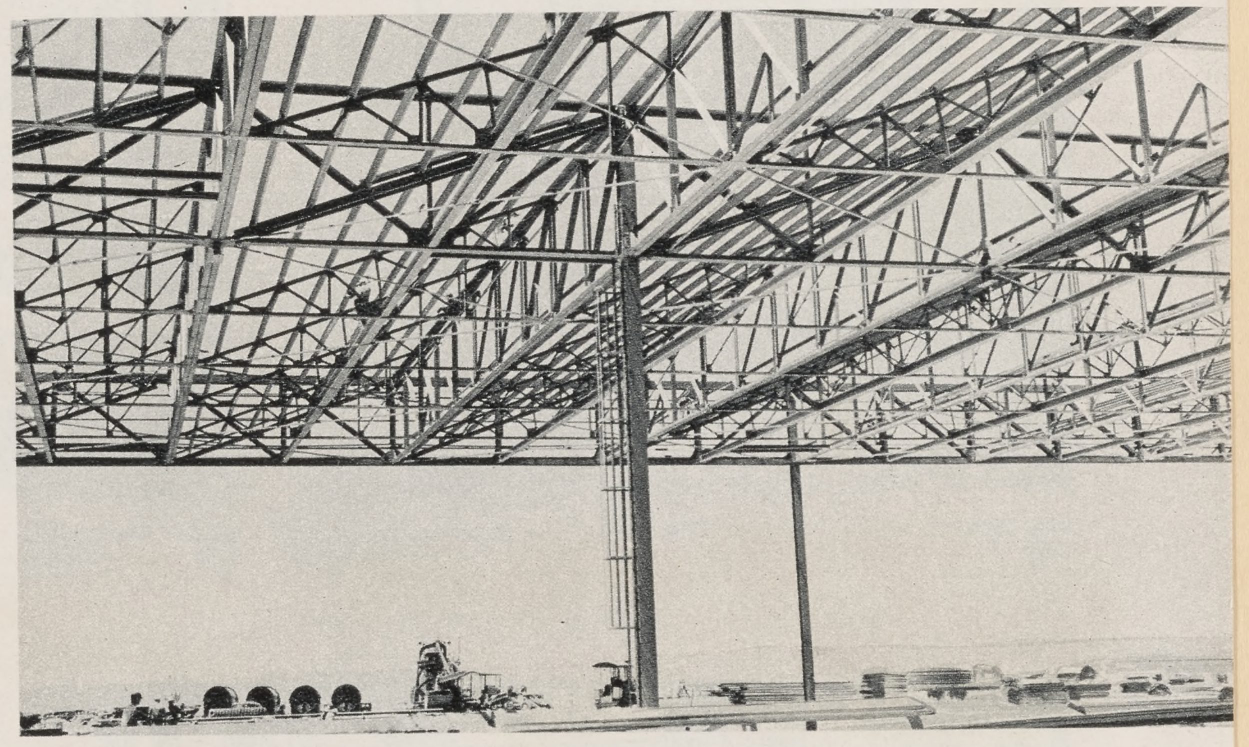
ANNOUNCEMENT WAS MADE by the Navy Department on December 20th, 1939, that the Consolidated Aircraft Corp. of San Diego, Calif., had been awarded a contract for $20,016,699, at that time the largest single order for airplanes ever placed by the United States Government. With work on other contracts occupying most of the production capacity, the record order made it necessary for the company to add new plant facilities to meet the deliveries required by the contract.

Prior to the expansion, Consolidated had under lease 24.7 acres on which factory buildings are located, and an additional 7.6 acres under option. New leases and options now cover an area of 64 acres. This area is all located on Lindbergh Field, San Diego's municipal airport.

The building expansion illustrated in the accompanying photographs, comprising additions to final assembly, final finish, paint shop, wood mill, experimental, maintenance and office departments aggregates approximately 396,000 sq.ft., or an increase in the former area of 87 per cent. The largest single area to be roofed is the new final assembly building measuring 360x720 ft. This has a clear span of 120 ft. and a clearance from floor to roof truss bottoms of 36 ft. Sawtooth roof construction similar to the existing buildings is used. Design of the buildings provides for a minimum of supporting columns, thus leaving floor space clear for manufacturing purposes.

In addition to the buildings, all factory yard areas are paved with asphaltic concrete. These areas, due to the mild

be



MINIMUM USE OF COLUMNS to support steel superstructure of aircraft factory buildings leaves floors unobstructed for manufacturing and assembling purposes.

BITUMINOUS PAVING (below) is applied to yard areas where 30 per cent of manufacturing operations may be conducted out of doors due to equable climate of Southern California.

Aviation DEFENSE

Aircraft Buying Plan Becomes Definite

Nearly two months after it was first announced that the armed forces had settled on just what planes and engines they wanted to standardize on, the public is beginning to get a glimpse of the program. Only phase definitely announced is the plan for air-cooled big engines: 40,000 are wanted in the next two years about equally divided between Wright and Pratt & Whitney designs. This follows the accepted procedure of having two types of each item needed.

Still largely unsettled is the program for liquid-cooled engines, though it is generally assumed that GM's Allison will take about half the load and Packard's Rolls Royce the other half—with Ford's unofficial and still theoretical liquid engine still an unknown factor. About 6,000 Rolls Royces are believed definitely scheduled.

No authoritative statements have been made on plane types desired, but orders on the early program for which appropriations were completed in June, and first orders under the full program seem to reveal some phases of the pattern.

Definitely part of Army's pursuit squadrons will be Lockheed's P-38E, Curtiss's P-40D, Republic's P-44, and Bell's P-39; Army has apparently resolved its doubts about the radical design of Bell's Airacobra and is buying them in quantity.

As a two-engine ship there is the P-38E. Lockheed's ship is a new two-seater version of the P-38 and is said to be capable of 500 m.p.h.

The P-40 and P-39 are both single-place single-engine jobs using liquid-cooled engines. The P-44 provides an air-cooled engine alternative and is, moreover, especially designed for the high altitudes at which bombers are now operating.

Navy fighter plans are not so well established, but it is clear that a Grumman (probably the Skyrocket) will occupy an important place.

On heavy bombers, Boeing's four-engine B-17E has been bought in largest quantities, but Consolidated's similar B-24D has also been ordered. Medium bombers and attack bombers are still open.

North America's AT-6A is the main reliance for advanced trainers, while Vultee, with its BT-13A, provides most of the basic trainers. Primary trainers, as might be expected, are more split up.

Army and Navy between them want 41,500 air-cooled engines in the 500-2,000 hp. range, and have made arrangements to get them from Wright, Pratt & Whitney, and Ford. P & W, which is doing all its negotiation with Navy, will furnish 17,000 of the engines. Ford is settling details with the Army on a program to build 4,500 engines on the P & W 2,000-hp. design. Wright, which is also dealing with Army, will handle 20,000 Cyclone and Whirlwind engines.

To handle its share, Pratt & Whitney will undertake a 400,000-sq.ft. plant expansion (additional to 700,000 sq.ft. already this year). The company will meet the $15,000,000 cost of buildings, while Navy will pay for and retain title to $7,000,000 or $8,000,000 worth of tools.

Ford is paying for his own $11,000,000 plant (of which about $7,000,000 is for tools.) He is to pay P & W a nominal license fee of a dollar an engine.

The Wright engines involve expansion of more than 1,000,000 sq.ft. and will cost about $90,000,000 to be financed through an RFC defense loan.

AVIATION, *October, 1940*

The Sun News-Pictorial

£2,032,000 MORE

Victoria Australia 6/7/40

500 TRAINING

U.S. FLYING-BOATS TO SUPPLEMENT BIG ORDER LOCALLY

AIRCRAFT orders amounting to £2,032,000, including training and other aircraft to be made in Australia at a cost of more than £1,000,000, have been approved of by War Cabinet following consultation with Britain.

The aircraft will meet needs under the Empire Air Scheme which cannot now be fulfilled by Britain, and will also include special machines for Australian defence.

Seven flying-boats of the Guba type are to be bought from the United States to replace Empire flying-boats, which were to have been brought to Australia. These will cost about £500,000.

MAKING this announcement last night, the Prime Minister (Mr. Menzies) said orders would be placed in Australia for—

300 Tiger Moth aircraft,

with spare engines, airframe spares and engine spares. This order will be additional to the 350 of these craft at present being manufactured for the R.A.A.F. by the De Havilland Aircraft Pty. Ltd. in Sydney, which will also make the new planes.

200 Wackett Trainer aircraft

together with 50 spare engines, airframe spares and engine spares. This plane has been designed by the Commonwealth Aircraft Corporation and the order is subject to the successful outcome of trials which will be carried out next week by the R.A.A.F. The C.A.C. factory will switch to production of the new plane when Wirraway orders are completed.

An order will also be placed with the Commonwealth Aircraft Corporation for a prototype light bomber reconnaissance twin-engined aircraft, the design of which has already favorably impressed Australian air authorities.

It will be made from local materials and fitted with twin Row Wasp engines of the type to be made locally.

The specifications of this aircraft provide for long endurance, and good bomb-carrying capacity.

Its potential defensive ability and dive bombing characteristics, said Mr. Menzies, would make it of considerable utility for Australia's defence problem.

Continued on Page 41

Air Race Pilot's Ordeal In Holland

LONDON, Thursday. — After a fortnight's nightmare journey from Holland, Chevalier J. J. Moll, who was Chevalier Parmentier's co-pilot in the Centenary Air Race, has reached England.

During the first four days of the invasion, Chevalier Moll fought with a rifle against parachutists near Rotterdam and, on May 14, was placed in charge of a dyke, which he opened in the face of a German attack.

Chevalier J. J. Moll

Later, he was picked up by a lorry, which threaded its way through a stream of refugees.

Eventually he reached Ushant, where he caught a small freighter carrying cognac to England.

Chevalier Moll is now training Dutch pilots for squadrons which may operate separately or merge with the Royal Air Force. — **Exclusive.**

CONSOLIDATED AIRCRAFT CORPORATION
LINDBERGH FIELD, SAN DIEGO, CALIF.

VICTORIA AUSTRALIA

FRIDAY, The Hera

One of the United States navy's flying boats of the type ordered by Australia.

GIANT "EYES" FOR OUR AIR FORCE

By The Herald Writer On Aviation

If a squadron of Royal Australian Air Force planes flew non-stop from Sydney to Darwin, most Australians would find it hard to believe.

If, instead of alighting there, the planes flew on over the Timor, over the Netherlands Indies, along the Java Sea, and finally touched down on Singapore Harbor, it would seem something like a miracle.

But to the seven Consolidated PBY5 flying-boats that have been ordered from the United States by the R.A.A.F., such a flight would be possible, provided they met no head winds.

THAT IS probably the most spectacular way of indicating the great range which is the outstanding feature of these 13-ton boats; or one could say that they could fly from their base at Rathmines (N.S.W.) to New Guinea and back, to Fiji and back, or to New Zealand and back, and then back to New Zealand again.

It may be found that the best way of getting them here is to fly them—if legal difficulties connected with the landing at Honolulu can be overcome. Scores of similar planes owned by the United States Navy have flown the longest stage of the journey, the 2400 miles from California to Hawaii, and Richard Archbold's Guba, an unarmed sister-ship of our new boats, flew down the Pacific before she pioneered the Indian Ocean route and casually crossed Africa and the Atlantic on her way home.

In choosing Consolidateds because Britain cannot spare us Sunderlands—the military version of the Empire boat which was previously on order—Australia is taking no gamble.

More PBYs are in service than any other type of flying-boat in the world. The United States Navy has long owned 250, and is reported to have ordered 300 more some months ago. The British Air Ministry bought one, tested it thoroughly, and ordered 50 more, with a further order for 250 regarded as almost certain.

When the United States battle fleet puts to sea it is preceded by a great screen of PBYs, scouting the ocean ahead as destroyers would, but over a vastly greater area.

LOOK into one of these boats on patrol.

In the cockpit are two pilots, one of whom frequently slips back into the chart room just behind his seat, where he may take a drift sight of a "shot" of the sun, then do a small sum to check the plane's position. In the chart room, too, is the radio operator, in touch with shore stations and the fleet, and perhaps with other boats patrolling not far out of sight.

Move further back in the hull — all bare metal work, with walls and structural members exposed, for this is no tourist ship—and you notice a pair of legs hanging from what seems to be a hole in the roof.

They belong to the flight engineer, whose chair is up in the turret-like structure that holds the wing well above the hull. Here he has before him all the instruments that tell him how the two engines are working—the temperature of cylinder-heads, oil, air intake, and a score of other things. This arrangement takes much work from the pilots, and lets them spend their time flying and navigating.

In the bunks in the main hold—a roomy cabin about 14ft. long, 10ft. wide, and with plenty of head room—members of the crew who are off duty may be sleeping or one of them may be through the next door aft, cooking a meal in the galley.

The boat's armaments are secret, but there is probably one machine-gun turret in the forward observation post out ahead of and below the cockpit. In a civil version this is used only for mooring. There would probably be another turret on top of the hull, in the roof of the galley, and perhaps another, with a downward view and sweep, well back along the narrowing tunnel of the hull, toward the tail.

The PBY carries a small bomb-load, and it can be equipped as a torpedo-carrier; but just as the bombing plane is primarily a very long range gun, so the reconnaissance flying-boat is primarily a very long-range eye.

It needs its machine guns for self-defence, its bombs in case, when convoying merchant ships, it sights a submarine; but its main job is to find out what is going on 1000 miles or so from the shore it is helping to defend.

Compared with, say, the Sunderland, the Consolidated is not a big boat, weighing less than 30,000lb. when fully-loaded; but in comparison with most of our Air Force machines, the new boats are giants.

Its top speed is not much below 200 miles and hour, and it can cruise comfortably at 140 to 150 miles an hour. More important, it is no temperamental craft, but can stand hard usage. Probably no other flying-boat in the world has had as stern a test as the Archbold expedition gave the Guba in New Guinea, but when she had had a little overhaul work done in Australia, she was ready for more globe-spanning.

THE DAYTON DAILY NEWS

Plane Concern Doubles Plant Size On Coast

BY HAROLD KEEN

Copyright, 1940, by North American Newspaper Alliance and The Dayton Daily News

SAN DIEGO, Cal., June 15.—Tracing a grim pattern along the shores of San Diego bay, against a background of warships and the biggest naval air base on the continent, a sprawling steel framework today dramatizes America's race to achieve air supremacy in a war-ravaged world.

By Aug. 1, those girders will support a structure through which will flow the materials for army and navy bombers in the nation's largest integrated aircraft plant.

Consolidated Aircraft Corp. will be the first major manufacturer of warplanes to implement the president's call for enlarged facilities in an unprecedented national defense production program.

At a cost of $2,000,000, its plant will be almost doubled. Now employing over 6000 men, an all-time high, this concern will have an estimated 10,000 on its payrolls by the end of 1940.

Within a single fenced-in area will be 1,910,000 square feet of manufacturing space adjacent to 954,440 square feet of municipal airport land under option for further expansion.

This is a graphic example of how the military aircraft industry, concentrated to great degree in southern California, is gearing itself to meet the staggering burden imposed by cataclysmic events that may threaten America's security.

Consolidated Aircraft has a backlog of unfilled orders totalling $70,000,000—much of this for 200 more of the famed PBY patrol bombers now used so effectively by the navy in neutrality patrols far off the mainland and insular possessions.

Should the United States, Hawaii, Alaska, the Philippines, the Canal Zone, Puerto Rico, the naval base at Guantanamo bay, Cuba, become the objective of an aggressor, much of the defense task will rest on this wide-ranging fleet of twin-engined air scouts.

Consolidated Aircraft production also is a matter of basic importance to the allies, who have just placed a $20,000,000 order for approximately 100 four-motored "Liberator" type army bombers, the recently engineered 20-ton giant which can outperform the "Flying Fortress," heretofore the deadliest weapon of the United

shores—Maj. Fleet and fellow officials have been quietly surveying interior points of the nation for a "branch" plant site.

Meanwhile, the clatter of steel workers erecting a great addition to an indispensable factory sounds the note of the times—preparedness in short order!

States army air corps. Able to carry an 8000-pound bomb load, this ship, powered with four 1200-horsepower engines, can travel 3000 miles non-stop at more than 300 miles per hour.

But it is for its seaplanes that Consolidated Aircraft is internationally famed. Since its establishment in 1923, the company has built four times as many giant airboats, with wingspan of 100 feet or more, as all other American manufacturers combined.

Use of these craft in non-stop flights from San Diego and San Francisco to Hawaii, the Canal Zone, the Caribbean, and even across the continent, has demonstrated that the United States navy is unequalled in its long-range flight equipment.

Identified most closely with the navy, Consolidated Aircraft is headed by a former army fl[illegible] Maj. Reuben H. Fleet, who was [illegible] charge of the first regularly scheduled United States airmail service more than two decades ago.

Well aware of the fact that San Diego, with its naval air station, its long harbor, in which 100 warships normally are based, would be a logical target of enemy attack—should the enemy reach Pacific

---

Union 11/20/40

18 Consair Bombers Will Hop to Australia

HONOLULU, Nov. 19 (U.P.)—The Australian government, it was reported tonight, has nearly completed plans to take delivery of 18 Consolidated PBY twin-engined patrol bombers built at the Consolidated factory in San Diego.

It was understood here the bombers, of the same type used by the U. S. Navy, will be flown over the transpacific route used by Pan American Airways' clipper ships.

Tribune 11/23/40

MAKE TEST FLIGHTS OF NEW CONSAIR NAVY BOMBER

San Diegans today turned eyes skyward to view the first of several 4-motor longrange patrol planes being built by Consolidated Aircraft Corp. for the navy, aloft on test flight Similar to the plane in which Secy. of Navy Frank Knox recently flew to Hawaii and back, the $200,000 silvery giant is the first of six being turned out for Patrol Squadron VP-13 here, of which Lt. Comdr. Stephen B. Cooke is in command.

Powered by four 1200-horsepower engines, the bomber weighs 30 tons and has a speed in excess of 200 miles an hour. Its range is more than 5000 miles. It has accommodations for a crew of nine. The experimental plane from which this model was made became aerial flagship of commander aircraft scouting force and made the flight to Hawaii with Knox aboard in record time.

Tribune 11/30/40

Consair Offers Aid To CCC Members

Checking on available employe material and vocational training facilities in the San Diego county civilian conservation corps camps, Consolidated Aircraft Corp. officials accompanied Allan Flaven, county CCC selecting aid, on an official camp tour.

The aircraft officials offered full cooperation with local camps in providing study and work materials, and professed willingness to give full consideration to all corps employment referrals of qualified subjects, Flaven said.

Company commanders who were hosts to the Consair group were Le. Henry Wishart of Vista; Le. Ernest Smith of Cuyamaca, and Capt. Joseph Benoit of Pine Valley.

Officials who made the tour were J. H. Waterbury, personnel director; Dr. S. A. Bearned, plant physician, and Earl T. Gray, H. R. Wiseman, H. E. Pasek and L. D. Larimer of the personnel department.

S. D. Youths Willing To Serve

Tribune 10/29/40

Robert Lockridge Darnell, first on list of 10 men who held No. 158 in San Diego county, didn't let the startling news interrupt his work as an electrician at Consolidated Aircraft Corp.

Aviation News Features 11/22/40

Expanding Plane Plants Mean More Residents, Bigger Payrolls

Case of San Diego Shows How Industry Adds to Prosperity of Typical Community

SAN DIEGO, Nov. 00.—Millions of dollars are being spent on plant expansions and thousands of skilled workers are being added to payrolls as aircraft manufacturers race into the creation of a mighty air force for the nation's defense.

What effect is this vast expansion, this upsurge of employment, having on the economic structure of communities where airplane plants are located? To answer this question, a researcher for the Aviation News Committee of the Aeronautical Chamber of Commerce of America visited San Diego, Calif.

FEW INDUSTRIES

The 1930 census gave San Diego a population of 147,995. Its limited basic industries—tuna fishing, boat building, some manufacturing—hardly classified it as an industrial community. But Army and Navy bases were located here and the city's prosperity consequently rested heavily upon payrolls of service personnel, which consequently fluctuated with the comings and goings of the Fleet.

From an aeronautical standpoint San Diego had two distinct advantages—almost perfect weather and an excellent airport practically in the center of the city.

In 1935, Major R. H. Fleet decided to bring his Consolidated Aircraft Corporation to San Diego. At that time the city's industrial payroll was $15,000,000.

Today San Diego has four aircraft and aircraft parts plants—Consolidated, Ryan Aeronautical Company, Solar Aircraft Company, Rohr Aircraft Company—employing more than 14,000 workers. Largely as a result of the coming of this industry, San Diego's industrial payroll has risen to approximately $20,000,000 in 1940. Two new theaters and between 25 and 30 grocery stores have been built.

And what of the future?

20,400 NEW WORKERS

Consolidated Aircraft, now hiring workers at a rate of 300 weekly, expects to add 13,000 new employes to its payroll within the next eight months. The smaller plants are also expanding rapidly. Result: the four plants will have taken on 20,400 additional workers by the summer of 1941.

Statisticians estimate that some 16,400 of these men will be drawn from outside the San Diego area. Of this number, they say, 9840 will be married. Bringing their families with them, they will increase San Diego's population by an estimated 29,500.

Already the influx of aircraft workers has resulted in stimulation of home construction. Increased payrolls are attracting new businesses. And the coming of nearly 10,000 tax-paying families will, it is estimated, mean the employment of more than 200 additional school teachers and the building of a like number of class rooms in the San Diego schools.

So extensive is the Consolidated Aircraft Corporation plant at San Diego, California, that employes use bicycles to travel from building to building.

L.A. Times 11/10/40

Plane Contract Goes to San Diego

WASHINGTON, Nov. 9. (AP)—The Navy today awarded a $75,313,000 contract for planes to the Consolidated Aircraft Corp., San Diego, Cal.

---

7 Consolidated Bombers to Be Sold to Britain

Union 11/4/40

Informed sources disclosed yesterday that Great Britain had contracted for seven of the Consolidated Aircraft Corp. new long-range bombers, the first of which received its initial test here Saturday.

It was reported the fleet of bombers first would be used to ferry Canadian pilots to the British Isles and return to Canada fliers not suited for combat duty to fly fighting planes back to England.

WOULD DOUBLE FIGURE

Official sources here indicated the British hoped to double the monthly deliverance of planes to England if the national defense priorities board gave favorable consideration to that nation's request for permission to purchase 12,000 additional ships in the United States. President Roosevelt recently asked the board to give "sympathetic consideration" to the request.

The bomber tested Saturday is similar to the XB-24, the first land plane developed by Consolidated last February for the U. S. army. That 20-ton bomber was tested by the army air corps, and later returned to the factory for improvements, apparently in armament, which company officials said were regarded as "highly advisable in the light of war developments."

HAVE WIDE RANGE

Both bombers, the one just tested and camouflaged and marked with the insignia of the British Royal air force, and the XB-24, are powered with four 1200-horsepower, 18-cylinder radial engines. They have a cruising range exceeding 3000 miles and a top speed better than 300 miles an hour.

In the interest of speed it was believed the bombers contracted by England would not be equipped with as extensive armament as is planned for the XB-24, which is capable of carrying a load of four tons of bombs.

TEST NEW BOMBER MADE LOCALLY FOR GREAT BRITAIN

Union 11/4/40

Forerunner of a fleet of at least seven long-range, four-motored bombers, which informed sources state have been ordered from the Consolidated Aircraft Corp. by Great Britain, the firm's B-24 received its initial test in flights over the city Saturday afternoon. The plane, piloted by George Newman and Jack Kline, Consolidated test pilots, was camouflaged and carried insignia of the Royal Air Force.

To Ferry Canadian Pilots

Initial work of the bombers, it was reported, will be to ferry Canadian pilots to the British islands and return to Canada fliers not suited for combat duty to fly fighting planes back to England. Armament will be limited in the interest of speed.

The plane flown Saturday is similar to the XB-24, first land plane developed by Consolidated, last February, for the United States army. It weighs 20 tons, has a cruising radius of 3000 miles and a speed of 300 miles an hour. It is powered by four 1200-horsepower, 18-cylinder, radial air-cooled Pratt-Whitney engines. The wingspread is 110 feet, fuselage 64 feet and overall height 19 feet. Planes of this type for the United States army are capable of carrying four tons of bombs.

Tribune 11/11

First Errand of Mercy For New Guard Plane

The new Consolidated-built PBY patrol plane at the local coast guard air base made its initial mercy of errand flight Saturday when it flew to Turtle bay, down the Lower California coast, and brought back a fisherman stricken with a throat infection, Robert King, 1132 Bush st., member of the crew of the fishing boat Senator. The plane was piloted by Lt. C. G. Bowman, commanding the air base, with Lt. T. J. Harris as co-pilot.

Union 11/7/40

Housing for 61,580 Needed Here As Army, Navy, Industries Expand

In the next eight months San Diego must provide houring for 45,530 persons who will reside in private homes, in addition to 16,050 men who will be housed in barracks and camps, as a result of army, navy and industrial expansion, Arnold Klaus, assistant manager, chamber of commerce, announced yesterday after completing a new population survey.

At present, Consolidation Aircraft Corp. has 12,000 employes, Arnold said, 5500 more than when the 1940 census was enumerated. The firm plans to hire 18,000 more in the next eight months, estimating that 60 percent of these new employes will be married men, and 80 percent will come from outside San Diego county.

Ryan Aeronautical Co. plans to add 1000 to its personnel of 1400 and Solar Aircraft Co. will increase its staff by 400 to a total of 1048, Klaus said. Rohr Aircraft Co. employs 35 and will add 250 to its San Diego plant by Jan. 1 and 700 in the Chula Vista plant by July 1, 1941.

Therefore, the four aircraft plants in the San Diego area will employ a total of 20,400 new men by July 1, Klaus said. Of these, 20 percent, or 4000, will be San Diego residents and the other 16,400 will be men from outside the county, the survey indicated.

Of the out-of-county men expected, 40 percent will be single. The 60 percent in the married group, avering three to a family, will bring an influx of 29,520 persons to the county, Klaus said.

Navy forces afloat were not enumerated in the census figure of 17,000 navy and marine corps officers and men in San Diego, Klaus pointed out. This number will be increased to 27,000 by July, he said. Of the new men, 2500 will be married. Assuming the three-a-family average, this will mean 7500 additional persons will establish residences here.

CANTONMENT PLANNED

Of 2000 men and 100 officers to be stationed at Ft. Rosecrans in the next six months, 100 officers and 100 married non-commissioned officers will acquire residences in the city. Assuming three to a family, this indicates 600 additional persons.

A cantonment planned by the army for the San Diego area will accommodate 7500 soldiers, plus 1000 regular officers and troops as instructors. This camp will necessitate the assignment of 225 officers and 225 married non-commissioned officers. This means that 450 additional homes in the community will be established as a result of this camp, to accommodate, in family figures, 1350 persons.

BUSINESS TO INCREASE

All this, Klaus said, does not take into account increased employment in mercantile establishments, theaters and other businesses resulting from the increased population. Probably most of the increased employment in these various businesses will be of persons already residing in the community, he said.

To the 1940 census total of 202,038 for San Diego's metropolitan population, the survey added 10,000 residents of other states enumerated as present in the city but not credited to San Diego. Combined with populations of surrounding towns: Coronado, 6908; National City, 10,204; Chula Vista, 5126; La Mesa, 3912; El Cajon, 2500, and officers and men resident on ships at anchor in San Diego bay, 16,000; the total population for the enumerated area was given as 256,688.

Consair Begins Tests of New Patrol Bombers

Union 11/4/40

Consolidated Aircraft Corp announced yesterday that the first group of the new PBY-5 twin-engined, long -range patrol bombers ordered for the navy were being given initial performance tests this week.

This type of craft, made by Consolidated for the navy, has established many group flight records from San Diego to Panama and Hawaii, and from Honolulu to the Philippines. Last March the company said it had obtained a release from the government for export sale of this type of patrol bomber for the Allies' use. The foreign contract was believed to involve a $9,000,000 expenditure.

Consolidated also is rushing a navy order for a squadron of 30-ton, four-engined, long-range patrol bombers. The huge airboats, if found satisfactory, may supplant the with the fleet patrol wings. It was understood six would be delivered twin-motored bombers in service to patrol squadron 12 at the naval air station here.

The new bombers will have a cruising range of 5000 miles, carrying a crew of nine and several tons of bombs. With a speed in excess of 200 miles an hour, they are expected to be the fastest aircraft of their type in the world.

Union 11/3/40

New Aircraft Firm To Open Plant Here

A new San Diego aviation industry will get under way in the next few days when the Weaver Aircraft Co. will begin operations, John L. Weaver, president, reported yesterday.

The company is starting business at 1341 State st., and will produce machine parts and sub-assembly jobs for aircraft manufacturing firms.

In addition the company expects to develop several of Weaver's "pancake" motors for government testing. These motors, it is claimed, develop one horsepower for each pound of weight.

Nashville and

Fire in Big Bomber Warming Up at Field

Flames shot from under the cowling of the port inboard engine of the Consolidated-built four-engine bomber, camouflaged and bearing the insignia of the R.A.F., as it warmed up on the line at Lindbergh field today.

The fire burned for several minutes before the engine was shut off, when it died out. The plane was taxied from the runway for inspection. The fire apparently caused no damage, for soon after the craft trundled down the field on its tricycle landing gear and shot into the air.

Tribune 11/14

Testing New Bombers Built by Consair

Initial test flights of the first group of new PBY-5 twin-engined long-range patrol bombers ordered for the navy are being made this week, Consolidated Aircraft Corp. officials report. Consolidated also is rushing a navy order for a squadron of 30-ton, four-engined patrol bombers, with a speed in excess of 200 miles an hour.

Trib. Sun 11/15/40

Consair Head Mum On New S. D. Plant

"No comments right now," said a spokesman for Consolidated Aircraft Corp. today on rumors the firm is planning to construct a large factory near Old Town for the manufacture of plane parts and accessories. The firm is building a large addition to its existing plant on Lindbergh field.

'S.D. Leading U.S. Air, Naval Base for All Time,' Claim Of Retiring Officer; New Chamber Officials Inducted

Tribune 11/8/40

Scott Takes Gavel Of Civic Group; Future Bright

Declaring that San Diego "for all time will accommodate a great aircraft industry and the greatest all-around navy base on the North American continent," Frank G. Forward yesterday relinquished the presidency of the chamber of commerce to George A. Scott, department store vice president and manager.

Speaking to members of the chamber's directorate, at its annual meeting, Forward urged that "any doubt as to the future of San Diego be dispelled."

"The constantly increasing importance of aircraft in national defense combined with the indisputable fact that no place in the country is so ideally adapted to the manufacture and testing of aircraft as is San Diego, means that for all time to come San Diego will accommodate a great aircraft industry established in this favored location," Forward said. "Your chamber of commerce, under its new leadership, will continue to strive untiringly to guarantee the future industrial and business welfare of your city and county."

In assuming the presidency, Scott pledged adherence to those same policies which accord the chamber of commerce opportunity to work cooperatively with "our navy, marine corps and army authorities, city and county officials, industrial and business leaders and others contributing to the economic welfare of the people of our city and county."

Other Officers Installed

Other officers elected to head the chamber in its 71st year of service to the community are D. R. Minshall, John T. Martin and G. Frank Nolan, vice presidents, and J. O. Miller, treasurer. For the 12th consecutive year, Maj. T. H. Macaulay was re-elected secretary-manager.

In concluding a 30-page report covering the multiplicity of chamber activities in 1940, Forward condemned "the defeatist attitude already apparent in certain quarters" concerning San Diego's future.

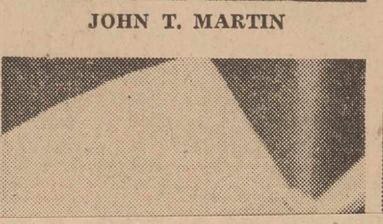
"Statements are being made," Forward declared, "that present expansion would end in the creation of a future 'ghost town.' Such statements are not only unworthy of forward-looking citizens but probably are the result of wishful thinking on the part of that small minority of our residents who fought Lindbergh field, harbor dredging, naval expansion, the Nolen plan and water conservation, and who profess to prefer the San Diego of old days

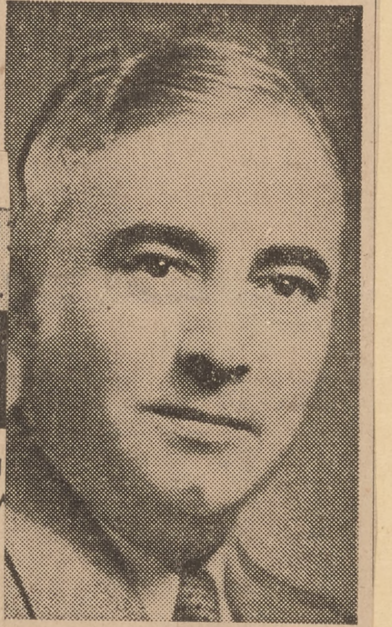
GEORGE A. SCOTT

D. R. MINSHALL

JOHN T. MARTIN

G. FRANK NOLAN





J. O. MILLER

directors for the new year are N. F. Baranov, H. H. Benjamin, Lester G. Bradley, A. B. Cadman, O. W. Cotton, Charles Davies, Don C. Dickinson, Earle F. Farnsworth, Frank Forward, Morley H. Golden, Maj. Edgar N. Gott, A. D. Hagaman, Donald E. Hanson, Fred A. Heilbron, Knute Kristell, William F. La Monte, R. F. MacNally, Lawrence Oliver, Walter C. Renwick, W. D. Rudd, Donald B. Smith, Herbert Sponholz, S. M. Sullivan, Phil D. Swing, Raymond A. Wheeler, G. Campbell Janney, E. K Hilton, Irving Friedman, Rear Adm. T. J. Senn,

...ithin the reach of everyone.

SEE A DEALER TODAY!

AN OPEN MINDED STUDY OF GAS HEATING SHOWS THESE FACTS

LESS HEAT LOSS
LESS HEATER COST
LESS INSTALLATION COST
LESS UPKEEP COST
Nothing To Be Carried In
Nothing To Be Carried Out

...WER THAN EVER BEFORE BECAUSE OF
...RATES • EFFECTIVE AS OF NOV. 1, 1940

...to GAS-HEATING

...THE INTEREST OF ALL GAS HEATING
...E ASS'N OF SAN DIEGO COUNTY

...alers in Gas

$15,000,000 S. D. Housing Project Approved; Work to Start at Once

Union 11/2/40

Immediate construction on a $15,000,000 federal housing program here was approved yesterday by President Roosevelt. San Diego will get the largest of the 63 housing projects which will total $45,762,500.

In announcing the president's approval yesterday, Charles F. Palmer, defense housing coordinator, said the local project calls for construction of 2000 additional dwelling units, 750 dormitory rooms for single men and 1000 portable-type homes, The Associated Press reported from Washington. He estimated the work would be completed within a year and some houses would be ready in four months.

Charles A. Sloan, federal construction engineer here to supervise the big job necessitated by demand for housing defense workers, reported the site for the new community has not been selected but there were indications it might be in the Kearny mesa section.

From Washington, Palmer said the new housing "will be absorbed in the San Diego community pattern so that normal life will not be interrupted." He added the housing emergency in this city resulted from the large navy, army and aircraft expansion and asserted the project "will create dwellings equivalent to those in a town of 30,000 people."

The program is in addition to a $3,800,000 navy-family project for 1200 housing units adjoining the destroyer base and naval training station. A contract for the navy project has been awarded.

Trib.-Sun 11/14/40

FREIGHTER HERE WITH YULE LIQUOR, CONSAIR METAL

Fresh to strong easterly winds off Pt. Loma were encountered early today by the American-Hawaiian intercoastal freighter American, which arrived from Atlantic waters with cargo for local discharge ranging from a carload of Christmas liquor to pipe and galvanized sheet metal for the new addition to the Consolidated Aircraft Corp. plant, according to report by Capt. Louis A. Carlisle, master. He reported the winds subsided as the freighter entered the harbor.

On his first visit to San Diego since 1922, when he was here aboard the American-Hawaiian freighter Dakotan, Carlisle said the last A-H freighter of which he was master, the Californian, was sunk the latter part of August soon after it had been sold to Great Britain. He turned the Californian over to an English master and crew at Mobile, Ala., July 29.

Word was received today by H. E. Holbrook, steamship agent, that the Norwegian motorship Braga is due at San Diego either Saturday or Sunday. The Braga has 500 tons of Cuban sugar aboard for discharge here.

Two westbound Quaker line freighters, the Vermont and San Clemente, are due here next Wednesday. Their cargo for San Diego ranges from marine corps trucks to canned soup.

Union 11/15/40

Consair Gets Huge Contract

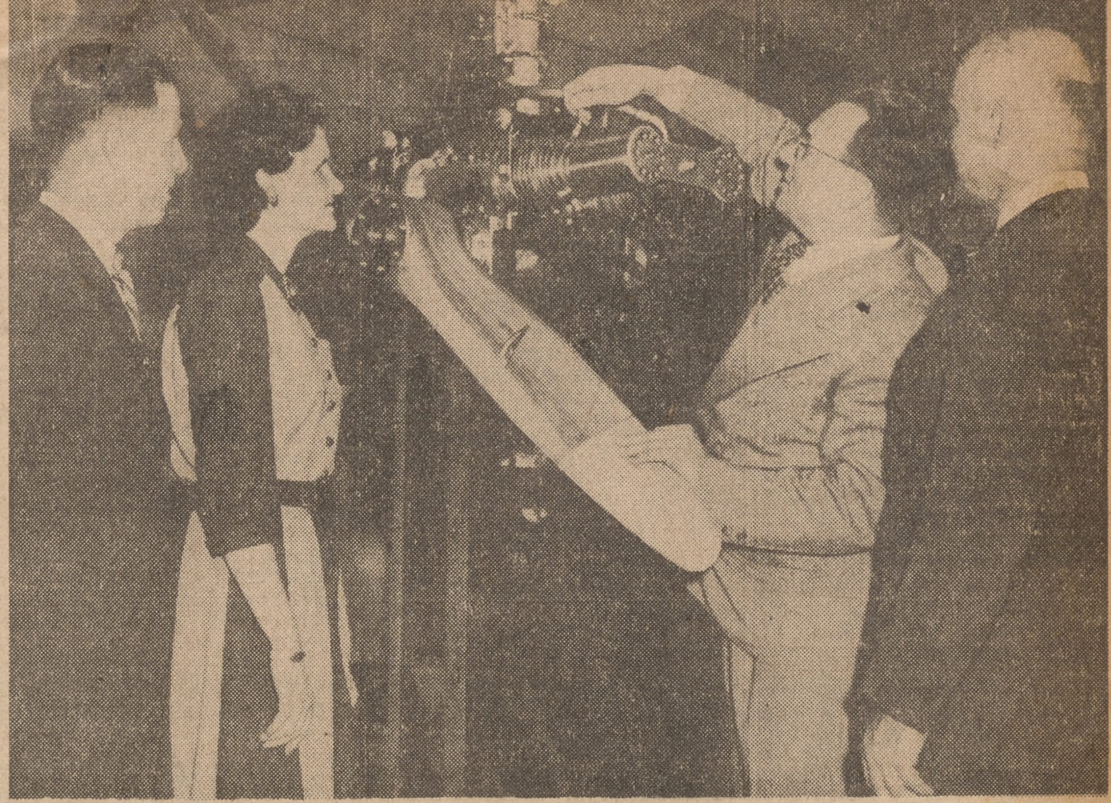
Bringing the total backlog to $324,500,000 Consolidated Aircraft Corp. received an $18,529,500 contract yesterday from the navy department for planes and spare parts.

No details of the contract were given by the bureau of aeronautics, The Associated Press reported from Washington. Last Saturday the firm received a $75,313,000 contract from the navy for an undisclosed number of four-motored patrol bombers.

Reports are current that Consolidated soon will build a $14,000,000 factory for the manufacture of plane parts and accessories near Old Town.

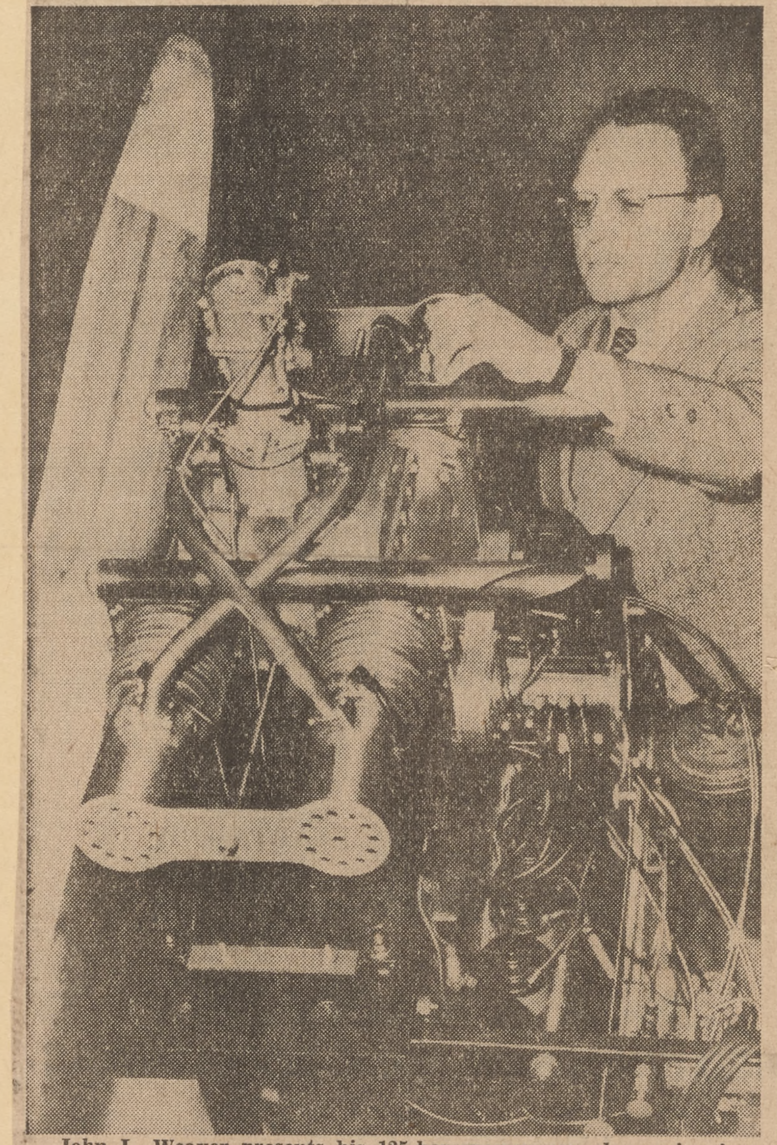
Union 11/14

'PANCAKE' ENGINE WILL BE BUILT IN SAN DIEGO



TOM BOMAR MRS. GRACE PRESCOTT J. L. WEAVER MAJ. T. C. MACAULAY

Weaver, head of Weaver Aircraft Co., exhibits one of the engines his company will build here, to chamber of commerce executives and Mrs. Prescott, noted aviatrix. He plans one 12 times as powerful.



John L. Weaver presents his 125-horsepower pancake engine in a close-up. It embodies ideas which he says give one horsepower for each pound of weight.

* * *

NEW AIRCRAFT PLANT PLANS TO BEGIN WORK NEXT WEEK

San Diego's newest factory—the Weaver Aircraft Co. plant at 1341 State st., will begin production of aviation engines and airplane parts early next week, John Weaver, company head, announced yesterday.

Contracts for engine and airplane parts already are on hand, and the company plans call for employment of approximately 150 men working two shifts. Some delay in starting operations has been experienced because part of the machinery for the plant has been delayed in arrival, Weaver said.

Along with the work of filling contracts for parts, the company will make two of the new-type Weaver engines. These machines are known as the "pancake" type and are four-cylinder supercharged models, estimated to deliver one horsepower for each pound of weight. The two to be built first will be somewhat in excess of 125 horsepower each. One is to be used by the company for its breakdown tests, and the other will be turned over to the army for military tests.

Weaver reported that plans for a 1500-horsepower model, with 24 cylinders, are now being made and he expects to have it completed within the next year.

Besides Weaver, the company's officers are Tom Keck, vice president, and Robert R. Dunn, secretary-treasurer.

TIN SMELTER FAVORED

WASHINGTON, Nov. 13 (A.P.)—A spokesman for the national defense commission today said the commission was sending a recommendation to the Reconstruction Finance Corp. for construction of a tin smelter.

Consair Gets Big Navy Order

Union 11/10/40

Backlog Tops 300-Million Mark

A contract for additional planes costing $75,313,000 yesterday was awarded to Consolidated Aircraft Corp. by the navy, it was reported in a Washington dispatch by The Associated Press.

Bringing to an estimated total of $306,000,000 the local plant's backlog, the latest planes are of types which wer not divulged, although it is understood that the order is for four-motored scouting craft of long-range type which the company has been turning out for the navy.

Types of planes, how many of each, and delivery dates were withheld, and officials at Consolidated declined comment. The order came as work was being rushed on a large addition to the factory on Lindbergh field, where a $2,000,000 extension to the plant was dedicated last Labor day.

Test flights on the first of seven 20-ton long-range bombers, reported building for the Royal Air Force, already have begun. The big four-motored plane was over San Diego yesterday.

As well as supplying planes to the American army and navy, Consolidated is turning them out for England and Australia. Two months ago, the Australian Commonwealth stated that the purchase of 11 flying boats from Consolidated had been decided upon, the planes to cost $3,500,000 and to be delivered this winter.

Operating on a 10-hour day and a five-day week, Consolidated now is reported to be employing 13,000 men.

Trib-Sun. Nov. 9/40

Plane Firms Agreed On Standardization

ST. LOUIS, Nov. 9 (A.P.)—Long-sought standardization in the aircraft industry to speed plane output for national defense was pledged today by the aircraft standards committee.

The national group, organized yesterday by 22 major aircraft companies, will "develop and get into production aircraft standard parts, material and processes."

William Smith, of Bell Aircraft Co., Buffalo, chairman of the committee, said screws, rivets and protective finishes were examples of things the committee would attempt to standardize.

"The development of these standards will permit a greater degree of interchangeability and facilitate mass production, with early delivery dates resulting in quantities required for the defense program," said Smith.

THE DAYTON DAILY NEWS

Plane Concern Doubles Plant Size On Coast

BY HAROLD KEEN

Copyright, 1940, by North American Newspaper Alliance and The Dayton Daily News

SAN DIEGO, Cal., June 15.—Tracing a grim pattern along the shores of San Diego bay, against a background of warships and the biggest naval air base on the continent, a sprawling steel framework today dramatizes America's race to achieve air supremacy in a war-ravaged world.

By Aug. 1, those girders will support a structure through which will flow the materials for army and navy bombers in the nation's largest integrated aircraft plant.

Consolidated Aircraft Corp. will be the first major manufacturer of warplanes to implement the president's call for enlarged facilities in an unprecedented national defense production program.

At a cost of $2,000,000, its plant will be almost doubled. Now employing over 6000 men, an all-time high, this concern will have an estimated 10,000 on its payrolls by the end of 1940.

Within a single fenced-in area will be 1,910,000 square feet of manufacturing space adjacent to 954,440 square feet of municipal airport land under option for further expansion.

This is a graphic example of how the military aircraft industry, concentrated to great degree in southern California, is gearing itself to meet the staggering burden imposed by cataclysmic events that may threaten America's security.

Consolidated Aircraft has a backlog of unfilled orders totalling $70,000,000—much of this for 200 more of the famed PBY patrol bombers now used so effectively by the navy in neutrality patrols far off the mainland and insular possessions.

Should the United States, Hawaii, Alaska, the Philippines, the Canal Zone, Puerto Rico, the naval base at Guantanamo bay, Cuba, become the objective of an aggressor, much of the defense task will rest on this wide-ranging fleet of twin-engined air scouts.

Consolidated Aircraft production also is a matter of basic importance to the allies, who have just placed a $20,000,000 order for approximately 100 four-motored "Liberator" type army bombers, the recently engineered 20-ton giant which can outperform the "Flying Fortress," heretofore the deadliest weapon of the United shores—Maj. Fleet and fellow officials have been quietly surveying interior points of the nation for a "branch" plant site.

Meanwhile, the clatter of steel workers erecting a great addition to an indispensable factory sounds the note of the times—preparedness in short order!

States army air corps. Able to carry an 8000-pound bomb load, this ship, powered with four 1200-horsepower engines, can travel 3000 miles non-stop at more than 300 miles per hour.

But it is for its seaplanes that Consolidated Aircraft is internationally famed. Since its establishment in 1923, the company has built four times as many giant airboats, with wingspan of 100 feet or more, as all other American manufacturers combined.

Use of these craft in non-stop flights from San Diego and San Francisco to Hawaii, the Canal Zone, the Caribbean, and even across the continent, has demonstrated that the United States navy is unequalled in its long-range flight equipment.

Identified most closely with the navy, Consolidated Aircraft is headed by a former army fl[illegible] Maj. Reuben H. Fleet, who was [illegible] charge of the first regularly scheduled United States airmail service more than two decades ago.

Well aware of the fact that San Diego, with its naval air station, its long harbor, in which 100 warships normally are based, would be a logical target of enemy attack—should the enemy reach Pacific

---

Union 11/20/40

18 Consair Bombers Will Hop to Australia

HONOLULU, Nov. 19 (U.P.)—The Australian government, it was reported tonight, has nearly completed plans to take delivery of 18 Consolidated PBY twin-engined patrol bombers built at the Consolidated factory in San Diego.

It was understood here the bombers, of the same type used by the U. S. Navy, will be flown over the transpacific route used by Pan American Airways' clipper ships.

Tribune 11/23/40

MAKE TEST FLIGHTS OF NEW CONSAIR NAVY BOMBER

San Diegans today turned eyes skyward to view the first of several 4-motor longrange patrol planes being built by Consolidated Aircraft Corp. for the navy, aloft on test flight Similar to the plane in which Secy. of Navy Frank Knox recently flew to Hawaii and back, the $200,000 silvery giant is the first of six being turned out for Patrol Squadron VP-13 here, of which Lt. Comdr. Stephen B. Cooke is in command.

Powered by four 1200-horsepower engines, the bomber weighs 30 tons and has a speed in excess of 200 miles an hour. Its range is more than 5000 miles. It has accommodations for a crew of nine. The experimental plane from which this model was made became aerial flagship of commander aircraft scouting force and made the flight to Hawaii with Knox aboard in record time.

Tribune 11/20/40

Consair Offers Aid To CCC Members

Checking on available employe material and vocational training facilities in the San Diego county civilian conservation corps camps, Consolidated Aircraft Corp. officials accompanied Allan Flaven, county CCC selecting aid, on an official camp tour.

The aircraft officials offered full cooperation with local camps in providing study and work materials, and professed willingness to give full consideration to all corps employment referrals of qualified subjects, Flaven said.

Company commanders who were hosts to the Consair group were Le. Henry Wishart of Vista; Le. Ernest Smith of Cuyamaca, and Capt. Joseph Benoit of Pine Valley.

Officials who made the tour were J. H. Waterbury, personnel director; Dr. S. A. Bearned, plant physician, and Earl T. Gray, H. R. Wiseman, H. E. Pasek and L. D. Larimer of the personnel department.

S. D. Youths Willing To Serve

Tribune 10/29/40

Robert Lockridge Darnell, first on list of 10 men who held No. 158 in San Diego county, didn't let the startling news interrupt his work as an electrician at Consolidated Aircraft Corp.

Aviation News Features 11/22/40

Expanding Plane Plants Mean More Residents, Bigger Payrolls

Case of San Diego Shows How Industry Adds to Prosperity of Typical Community

SAN DIEGO, Nov. 00.—Millions of dollars are being spent on plant expansions and thousands of skilled workers are being added to payrolls as aircraft manufacturers race into the creation of a mighty air force for the nation's defense.

What effect is this vast expansion, this upsurge of employment, having on the economic structure of communities where airplane plants are located? To answer this question, a researcher for the Aviation News Committee of the Aeronautical Chamber of Commerce of America visited San Diego, Calif.

FEW INDUSTRIES

The 1930 census gave San Diego a population of 147,995. Its limited basic industries—tuna fishing, boat building, some manufacturing—hardly classified it as an industrial community. But Army and Navy bases were located here and the city's prosperity consequently rested heavily upon payrolls of service personnel, which consequently fluctuated with the comings and goings of the Fleet.

From an aeronautical standpoint San Diego had two distinct advantages—almost perfect weather and an excellent airport practically in the center of the city.

In 1935, Major R. H. Fleet decided to bring his Consolidated Aircraft Corporation to San Diego. At that time the city's industrial payroll was $15,000,000.

Today San Diego has four aircraft and aircraft parts plants—Consolidated, Ryan Aeronautical Company, Solar Aircraft Company, Rohr Aircraft Company—employing more than 14,000 workers. Largely as a result of the coming of this industry, San Diego's industrial payroll has risen to approximately $20,000,000 in 1940. Two new theaters and between 25 and 30 grocery stores have been built.

And what of the future?

20,400 NEW WORKERS

Consolidated Aircraft, now hiring workers at a rate of 300 weekly, expects to add 13,000 new employes to its payroll within the next eight months. The smaller plants are also expanding rapidly. Result: the four plants will have taken on 20,400 additional workers by the summer of 1941.

Statisticians estimate that some 16,400 of these men will be drawn from outside the San Diego area. Of this number, they say, 9840 will be married. Bringing their families with them, they will increase San Diego's population by an estimated 29,500.

Already the influx of aircraft workers has resulted in stimulation of home construction. Increased payrolls are attracting new businesses. And the coming of nearly 10,000 tax-paying families will, it is estimated, mean the employment of more than 200 additional school teachers and the building of a like number of class rooms in the San Diego schools.

So extensive is the Consolidated Aircraft Corporation plant at San Diego, California, that employes use bicycles to travel from building to building.

L.A. Times 11/10/40

Plane Contract Goes to San Diego

WASHINGTON, Nov. 9. (AP)—The Navy today awarded a $75,313,000 contract for planes to the Consolidated Aircraft Corp., San Diego, Cal.

---

7 Consolidated Bombers to Be Sold to Britain

11/4/40

Informed sources disclosed yesterday that Great Britain had contracted for seven of the Consolidated Aircraft Corp. new long-range bombers, the first of which received its initial test here Saturday.

It was reported the fleet of bombers first would be used to ferry Canadian pilots to the British Isles and return to Canada fliers not suited for combat duty to fly fighting planes back to England.

WOULD DOUBLE FIGURE

Official sources here indicated the British hoped to double the monthly deliverance of planes to England if the national defense priorities board gave favorable consideration to that nation's request for permission to purchase 12,000 additional ships in the United States. President Roosevelt recently asked the board to give "sympathetic consideration" to the request.

The bomber tested Saturday is similar to the XB-24, the first land plane developed by Consolidated last February for the U. S. army. That 20-ton bomber was tested by the army air corps, and later returned to the factory for improvements, apparently in armament, which company officials said were regarded as "highly advisable in the light of war developments."

HAVE WIDE RANGE

Both bombers, the one just tested and camouflaged and marked with the insignia of the British Royal air force, and the XB-24, are powered with four 1200-horsepower, 18-cylinder radial engines. They have a cruising range exceeding 3000 miles and a top speed better than 300 miles an hour.

In the interest of speed it was believed the bombers contracted by England would not be equipped with as extensive armament as is planned for the XB-24, which is capable of carrying a load of four tons of bombs.

TEST NEW BOMBER MADE LOCALLY FOR GREAT BRITAIN

Union 11/4/40

Forerunner of a fleet of at least seven long-range, four-motored bombers, which informed sources state have been ordered from the Consolidated Aircraft Corp. by Great Britain, the firm's B-24 received its initial test in flights over the city Saturday afternoon. The plane, piloted by George Newman and Jack Kline, Consolidated test pilots, was camouflaged and carried insignia of the Royal Air Force.

To Ferry Canadian Pilots

Initial work of the bombers, it was reported, will be to ferry Canadian pilots to the British islands and return to Canada fliers not suited for combat duty to fly fighting planes back to England. Armament will be limited in the interest of speed.

The plane flown Saturday is similar to the XB-24, first land plane developed by Consolidated, last February, for the United States army. It weighs 20 tons, has a cruising radius of 3000 miles and a speed of 300 miles an hour. It is powered by four 1200-horsepower, 18-cylinder, radial air-cooled Pratt-Whitney engines. The wingspread is 110 feet, fuselage 64 feet and overall height 19 feet. Planes of this type for the United States army are capable of carrying four tons of bombs.

Tribune 11/11

First Errand of Mercy For New Guard Plane

The new Consolidated-built PBY patrol plane at the local coast guard air base made its initial mercy of errand flight Saturday when it flew to Turtle bay, down the Lower California coast, and brought back a fisherman stricken with a throat infection, Robert King, 1132 Bush st., member of the crew of the fishing boat Senator. The plane was piloted by Lt. C. G. Bowman, commanding the air base, with Lt. T. J. Harris as co-pilot.

Union 11/7/40

Housing for 61,580 Needed Here As Army, Navy, Industries Expand

In the next eight months San Diego must provide houring for 45,530 persons who will reside in private homes, in addition to 16,050 men who will be housed in barracks and camps, as a result of army, navy and industrial expansion, Arnold Klaus, assistant manager, chamber of commerce, announced yesterday after completing a new population survey.

At present, Consolidation Aircraft Corp. has 12,000 employes, Arnold said, 5500 more than when the 1940 census was enumerated. The firm plans to hire 18,000 more in the next eight months, estimating that 60 percent of these new employes will be married men, and 80 percent will come from outside San Diego county.

Ryan Aeronautical Co. plans to add 1000 to its personnel of 1400 and Solar Aircraft Co. will increase its staff by 400 to a total of 1048, Klaus said. Rohr Aircraft Co. employs 35 and will add 250 to its San Diego plant by Jan. 1 and 700 in the Chula Vista plant by July 1, 1941.

Therefore, the four aircraft plants in the San Diego area will employ a total of 20,400 new men by July 1, Klaus said. Of these, 20 percent, or 4000, will be San Diego residents and the other 16,400 will be men from outside the county, the survey indicated.

Of the out-of-county men expected, 40 percent will be single. The 60 percent in the married group, avering three to a family, will bring an influx of 29,520 persons to the county, Klaus said.

Navy forces afloat were not enumerated in the census figure of 17,000 navy and marine corps officers and men in San Diego, Klaus pointed out. This number will be increased to 27,000 by July, he said. Of the new men, 2500 will be married. Assuming the three-a-family average, this will mean 7500 additional persons will establish residences here.

CANTONMENT PLANNED

Of 2000 men and 100 officers to be stationed at Ft. Rosecrans in the next six months, 100 officers and 100 married non-commissioned officers will acquire residences in the city. Assuming three to a family, this indicates 600 additional persons.

A cantonment planned by the army for the San Diego area will accommodate 7500 soldiers, plus 1000 regular officers and troops as instructors. This camp will necessitate the assignment of 225 officers and 225 married non-commissioned officers. This means that 450 additional homes in the community will be established as a result of this camp, to accommodate, in family figures, 1350 persons.

BUSINESS TO INCREASE

All this, Klaus said, does not take into account increased employment in mercantile establishments, theaters and other businesses resulting from the increased population. Probably most of the increased employment in these various businesses will be of persons already residing in the community, he said.

To the 1940 census total of 202,038 for San Diego's metropolitan population, the survey added 10,000 residents of other states enumerated as present in the city but not credited to San Diego. Combined with populations of surrounding towns: Coronado, 6908; National City, 10,204; Chula Vista, 5126; La Mesa, 3912; El Cajon, 2500, and officers and men resident on ships at anchor in San Diego bay, 16,000; the total population for the enumerated area was given as 256,688

Consair Begins Tests of New Patrol Bombers

Union 11/6/40

Consolidated Aircraft Corp announced yesterday that the first group of the new PBY-5 twin-engined, long-range patrol bombers ordered for the navy were being given initial performance tests this week.

This type of craft, made by Consolidated for the navy, has established many group flight records from San Diego to Panama and Hawaii, and from Honolulu to the Philippines. Last March the company said it had obtained a release from the government for export sale of this type of patrol bomber for the Allies' use. The foreign contract was believed to involve a $9,000,000 expenditure.

Consolidated also is rushing a navy order for a squadron of 30-ton, four-engined, long-range patrol bombers. The huge airboats, if found satisfactory, may supplant the with the fleet patrol wings. It was understood six would be delivered twin-motored bombers in service to patrol squadron 12 at the naval air station here.

The new bombers will have a cruising range of 5000 miles, carrying a crew of nine and several tons of bombs. With a speed in excess of 200 miles an hour, they are expected to be the fastest aircraft of their type in the world.

Union 11/3/40

New Aircraft Firm To Open Plant Here

A new San Diego aviation industry will get under way in the next few days when the Weaver Aircraft Co. will begin operations, John L. Weaver, president, reported yesterday.

The company is starting business at 1341 State st., and will produce machine parts and sub-assembly jobs for aircraft manufacturing firms.

In addition the company expects to develop several of Weaver's "pancake" motors for government testing. These motors, it is claimed, develop one horsepower for each pound of weight.

Tribune 11/14

Testing New Bombers Built by Consair

Initial test flights of the first group of new PBY-5 twin-engined long-range patrol bombers ordered for the navy are being made this week, Consolidated Aircraft Corp. officials report. Consolidated also is rushing a navy order for a squadron of 30-ton, four-engined patrol bombers, with a speed in excess of 200 miles an hour.

Fire in Big Bomber Warming Up at Field

Flames shot from under the cowling of the port inboard engine of the Consolidated-built four-engine bomber, camouflaged and bearing the insignia of the R.A.F., as it warmed up on the line at Lindbergh field today.

The fire burned for several minutes before the engine was shut off, when it died out. The plane was taxied from the runway for inspection. The fire apparently caused no damage, for soon after the craft trundled down the field on its tricycle landing gear and shot into the air.

Trib. Sun 11/15/40

Consair Head Mum On New S. D. Plant

"No comments right now," said a spokesman for Consolidated Aircraft Corp. today on rumors the firm is planning to construct a large factory near Old Town for the manufacture of plane parts and accessories. The firm is building a large addition to its existing plant on Lindbergh field.

'S.D. Leading U.S. Air, Naval Base for All Time,' Claim Of Retiring Officer; New Chamber Officials Inducted

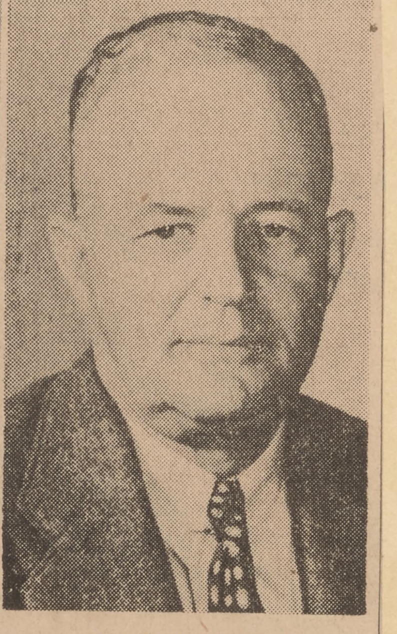
Tribune 11/8/40

Scott Takes Gavel Of Civic Group; Future Bright

GEORGE A. SCOTT

D. R. MINSHALL

JOHN T. MARTIN


G. FRANK NOLAN

MAJ. T. C. MACAULAY

J. O. MILLER

Declaring that San Diego "for all time will accommodate a great aircraft industry and the greatest all-around navy base on the North American continent," Frank G. Forward yesterday relinquished the presidency of the chamber of commerce to George A. Scott, department store vice president and manager.

Speaking to members of the chamber's directorate, at its annual meeting, Forward urged that "any doubt as to the future of San Diego be dispelled."

"The constantly increasing importance of aircraft in national defense combined with the indisputable fact that no place in the country is so ideally adapted to the manufacture and testing of aircraft as is San Diego, means that for all time to come San Diego will accommodate a great aircraft industry established in this favored location," Forward said. "Your chamber of commerce, under its new leadership, will continue to strive untiringly to guarantee the future industrial and business welfare of your city and county."

In assuming the presidency, Scott pledged adherence to those same policies which accord the chamber of commerce opportunity to work cooperatively with "our navy, marine corps and army authorities, city and county officials, industrial and business leaders and others contributing to the economic welfare of the people of our city and county."

Other Officers Installed

Other officers elected to head the chamber in its 71st year of service to the community are D. R. Minshall, John T. Martin and G. Frank Nolan, vice presidents, and J. O. Miller, treasurer. For the 12th consecutive year, Maj. T. H. Macaulay was re-elected secretary-manager.

In concluding a 30-page report covering the multiplicity of chamber activities in 1940, Forward condemned "the defeatist attitude already apparent in certain quarters" concerning San Diego's future.

"Statements are being made," Forward declared, "that present expansion would end in the creation of a future 'ghost town.' Such statements are not only unworthy of forward-looking citizens but probably are the result of wishful thinking on the part of that small minority of our residents who fought Lindbergh field, harbor dredging, naval expansion, the Nolen plan and water conservation, and who profess to prefer the San Diego of old days of mud-flats and horse-drawn vehicles to the attractive, rapidly growing metropolis of today.

To Hold Gains

"We believe that directors of this organization speak for our business interests and progressive, forward-looking citizens in general when we state that although perhaps it is premature to discuss the aftermath of new industrial expansion before it has occurred, there is no question that there are logical reasons to believe this community can consolidate and retain a considerable portion of its new-found gains. This can be done provided it carries out the same sound program and principles which have made this city what it is today.

"Let us remember that this present industrial growth has not just happened. It was not made possible by the defeatist or by political groups. It came solely as the direct results of the recognition by your organization of an industrial future tied into the aircraft industry.

"For two decades, the San Diego chamber of commerce has pointed out that just as Detroit became a great industrial community through the development of the automotive industry, San Diego can become another great city through the development of the aircraft industry and all that goes with it.

Sales Effort Told

"A great aircraft industry moved to San Diego in 1935 from the shores of Lake Erie. It was brought here, as its dynamic head has constantly reiterated, through sales effort by this organization. However, that sales effort would have counted for little had not a rare combination of careful planning, resulting in Lindbergh field, been augmented by climatic conditions beyond compare, plnus a smooth, calm protected harbor for the testing of the great multiple motored flying boats.

"That these factors provide us with an unbeatable combination to have and to hold and expand aircraft industry has been demonstrated by the fact that two of the major manufacturers of flying boats have indicated that San Diego has it all over their present location. In fact, one of these manufacturers, only a short time ago, made the statement that in the event his directors and stockholders would permit the movement of his great plant, he would favor its location in the South Bay area of San Diego as the most ideal location he knew of in the entire country. His judgment has only recently been confirmed by the location in that area of another great naval seaplane base with an initial allocation of funds totaling $3,875,000.

Jobs For Thousands

"Let us remember that after the termination of the present emergency, the repairs, overhaul and replacement of our great military and naval air fleets now built or building will mean jobs for thousands. Let us not forget that the past decade has indicated that air transport, both over land and water, has been expanding at such tremendous pace that air transport lines have been hard-pressed to obtain enough equipment to meet new demands for this type of transportation.

"These facts spell opportunity for San Diego, opportunity to work out our destiny for San Diego to a degree undreamed of heretofore. These facts spell opportunity, however, not alone to us but to our children and our children's children.

"With all of our advantages we have been handicapped by the fact that our young people, graduates of our schools and state college, have in constantly increasing numbers been forced to seek careers elsewhere. Our future holds opportunities that demand we meet a responsibility, a responsibility for taking necessary steps and laying necessary plans that we may realize new achievements which have been placed within our reach."

Growth Destined

Forward said that with continued cooperation of progressive organizations composed of forward-looking citizens, "San Diego is destined to continue to be the fastest growing city of the west."

Steps taken by the chamber in encouraging a program of vocational training to prepare San Diego's youth for employment in the new industries here, activities of important chamber committees and the cooperation accorded important navy, marine corps and army authorities and leading industrialists during the year were summarized by the retiring president.

Vast navy expansion, including provisions for a $3,000,000 graving dock large enough to accommodate vessels up to 10,000 tons; important improvements at all local shore establishments which will raise the navy's investment here to more than $80,000,000, and the important role San Diego citizens have played in ceding areas upon which this expansion can be carried out, were stressed by Forward.

Army Areas Sought

The retiring president also emphasized the chamber's part in encouraging creation of an army cantonment in this area which will accommodate 7500 enlisted men and 1200 regular officers and troops as instructors.

"Our organization has taken the leadership in working cooperatively toward a solution of problems such as sewage disposal and water distribution and supply — problems made more complex by the tremendous influx of newcomers to San Diego who today are engaged in many industrial and military activities."

Highway development, generous entertainment of visiting congressional committees, dissemination of local and nation-wide publicity concerning San Diego city and county; valuable research work concerning major proposed developments of various kinds; inauguration of steps for strengthening San Diego's defense facilities and many other activities were reviewed in the report.

Serving with new officers as directors for the new year are N. F. Baranov, H. H. Benjamin, Lester G. Bradley, A. B. Cadman, O. W. Cotton, Charles Davies, Don C. Dickinson, Earle F. Farnsworth, Frank Forward, Morley H. Golden, Maj. Edgar N. Gott, A. D. Hagaman, Donald E. Hanson, Fred A. Heilbron, Knute Kristell, William F. La Monte, R. F. MacNally, Lawrence Oliver, Walter C. Renwick, W. D. Rudd, Donald B. Smith, Herbert Sponholz, S. M. Sullivan, Phil D. Swing, Raymond A. Wheeler, G. Campbell Janney, E. K Hilton, Irving Friedman, Rear Adm. T. J. Senn, U.S.N., ret.; O. B. Wetzell, George Stephan, T. J. Lords, Russell S. Stowell, Arthur A. Jensen and the new junior chamber of commerce president.

Maj. Macaulay introduced chamber department heads including Tom Bomar, industrial and aviation; Arnold Klaus, San Diego-California club manager; William Van Dusen, membership and military affairs; D. W. Campbell, special events and federal projects; Harold Requa jr., publicity; Ernest Hulick, junior chamber secretary; Mabel Ferrin, bookkeeping; Susanne Montague, information. Department assistants introduced by Maj. Macaulay include Gertrude S. Bradford, Anne Dunn, Kathryn Fiedeke, Kathryn Simpson, Nadine S. Joy and Faith Miller.

$15,000,000 S. D. Housing Project Approved; Work to Start at Once

Union ~~to~~ 11/1/40

Immediate construction on a $15,000,000 federal housing program here was approved yesterday by President Roosevelt. San Diego will get the largest of the 63 housing projects which will total $45,762,500.

In announcing the president's approval yesterday, Charles F. Palmer, defense housing coordinator, said the local project calls for construction of 2000 additional dwelling units, 750 dormitory rooms for single men and 1000 portable-type homes, The Associated Press reported from Washington. He estimated the work would be completed within a year and some houses would be ready in four months.

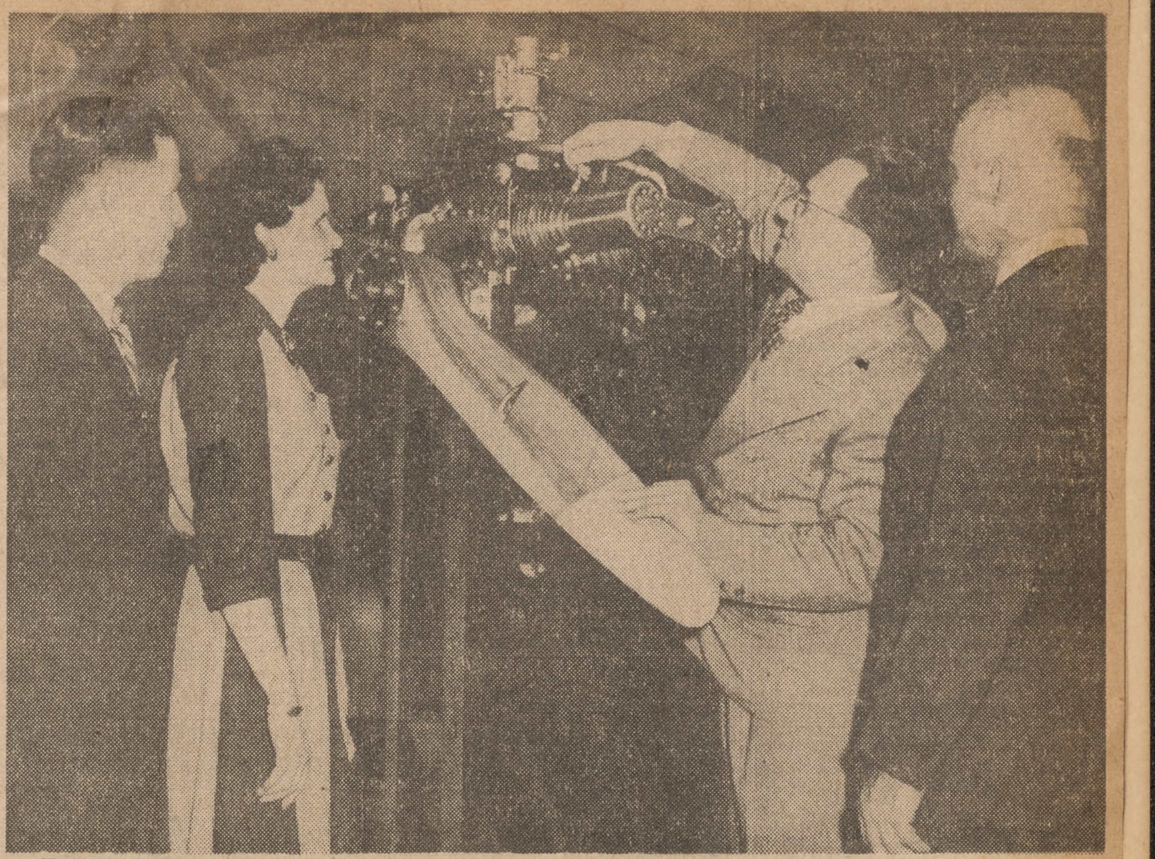
Charles A. Sloan, federal construction engineer here to supervise the big job necessitated by demand for housing defense workers, reported the site for the new community has not been selected but there were indications it might be in the Kearny mesa section.

From Washington, Palmer said the new housing "will be absorbed in the San Diego community pattern so that normal life will not be interrupted." He added the housing emergency in this city resulted from the large navy, army and aircraft expansion and asserted the project "will create dwellings equivalent to those in a town of 30,000 people."

The program is in addition to a $3,800,000 navy-family project for 1200 housing units adjoining the destroyer base and naval training station. A contract for the navy project has been awarded.

Union 11/14

'PANCAKE' ENGINE WILL BE BUILT IN SAN DIEGO


TOM BOMAR MRS. GRACE PRESCOTT J. L. WEAVER MAJ. T. C. MACAULAY

Weaver, head of Weaver Aircraft Co., exhibits one of the engines his company will build here, to chamber of commerce executives and Mrs. Prescott, noted aviatrix. He plans one 12 times as powerful.

Trib.-Sun 11/14/40

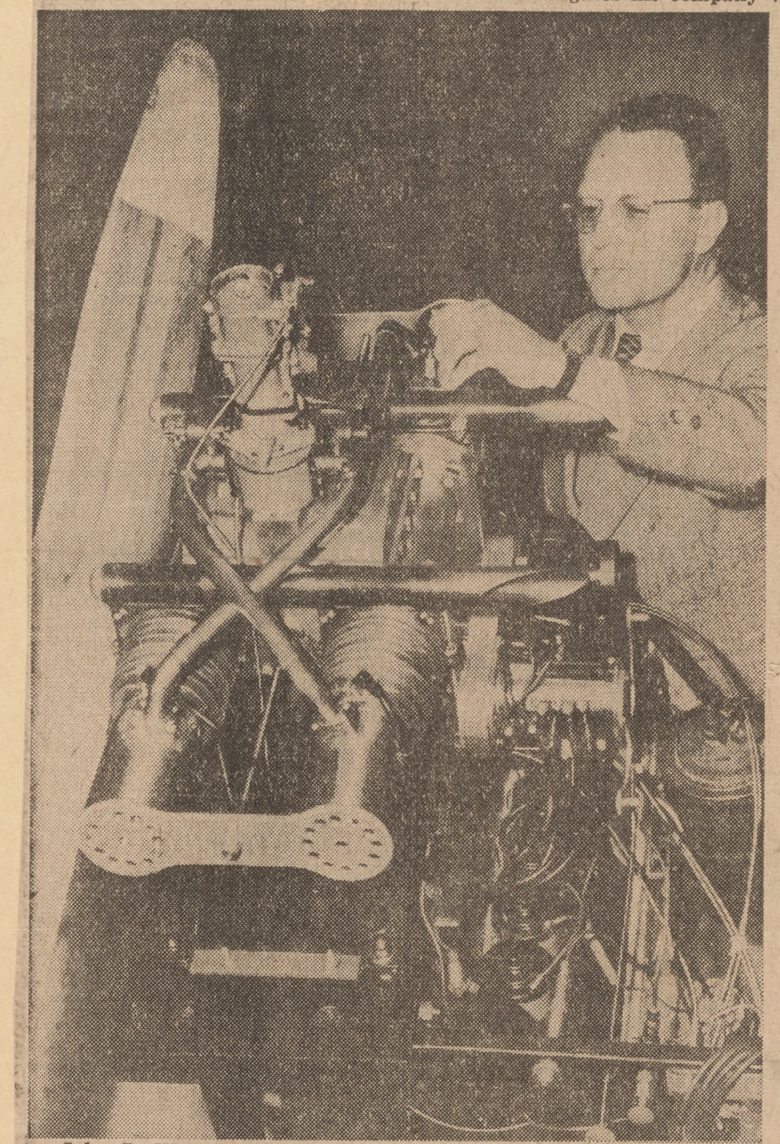
FREIGHTER HERE WITH YULE LIQUOR, CONSAIR METAL

Fresh to strong easterly winds off Pt. Loma were encountered early today by the American-Hawaiian intercoastal freighter American, which arrived from Atlantic waters with cargo for local discharge ranging from a carload of Christmas liquor to pipe and galvanized sheet metal for the new addition to the Consolidated Aircraft Corp. plant, according to report by Capt. Louis A. Carlisle, master. He reported the winds subsided as the freighter entered the harbor.

On his first visit to San Diego since 1922, when he was here aboard the American-Hawaiian freighter Dakotan, Carlisle said the last A-H freighter of which he was master, the Californian, was sunk the latter part of August soon after it had been sold to Great Britain. He turned the Californian over to an English master and crew at Mobile, Ala., July 29.

Word was received today by H. E. Holbrook, steamship agent, that the Norwegian motorship Braga is due at San Diego either Saturday or Sunday. The Braga has 500 tons of Cuban sugar aboard for discharge here.

Two westbound Quaker line freighters, the Vermont and San Clemente, are due here next Wednesday. Their cargo for San Diego ranges from marine corps trucks to canned soup.


John L. Weaver presents his 125-horsepower pancake engine in a close-up. It embodies ideas which he says give one horsepower for each pound of weight.

* * *

NEW AIRCRAFT PLANT PLANS TO BEGIN WORK NEXT WEEK

San Diego's newest factory—the Weaver Aircraft Co. plant at 1341 State st., will begin production of aviation engines and airplane parts early next week, John Weaver, company head, announced yesterday.

Contracts for engine and airplane parts already are on hand, and the company plans call for employment of approximately 150 men working two shifts. Some delay in starting operations has been experienced because part of the machinery for the plant has been delayed in arrival, Weaver said.

Along with the work of filling contracts for parts, the company will make two of the new-type Weaver engines. These machines are known as the "pancake" type and are four-cylinder supercharged models, estimated to deliver one horsepower for each pound of weight. The two to be built first will be somewhat in excess of 125 horsepower each. One is to be used by the company for its breakdown tests, and the other will be turned over to the army for military tests.

Weaver reported that plans for a 1500-horsepower model, with 24 cylinders, are now being made and he expects to have it completed within the next year.

Besides Weaver, the company's officers are Tom Keck, vice president, and Robert R. Dunn, secretary-treasurer.

TIN SMELTER FAVORED

WASHINGTON, Nov. 13 (A.P.)—A spokesman for the national defense commission today said the commission was sending a recommendation to the Reconstruction Finance Corp. for construction of a tin smelter.

Union 11/15/40

Consair Gets Huge Contract

Bringing the total backlog to $324,500,000 Consolidated Aircraft Corp. received an $18,529,500 contract yesterday from the navy department for planes and spare parts.

No details of the contract were given by the bureau of aeronautics, The Associated Press reported from Washington. Last Saturday the firm received a $75,313,000 contract from the navy for an undisclosed number of four-motored patrol bombers.

Reports are current that Consolidated soon will build a $14,000,000 factory for the manufacture of plane parts and accessories near Old Town.

Consair Gets Big Navy Order

Union 11/10/40

Backlog Tops 300-Million Mark

A contract for additional planes costing $75,313,000 yesterday was awarded to Consolidated Aircraft Corp. by the navy, it was reported in a Washington dispatch by The Associated Press.

Bringing to an estimated total of $306,000,000 the local plant's backlog, the latest planes are of types which wer not divulged, although it is understood that the order is for four-motored scouting craft of long-range type which the company has been turning out for the navy.

Types of planes, how many of each, and delivery dates were withheld, and officials at Consolidated declined comment. The order came as work was being rushed on a large addition to the factory on Lindbergh field, where a $2,000,000 extension to the plant was dedicated last Labor day.

Test flights on the first of seven 20-ton long-range bombers, reported building for the Royal Air Force, already have begun. The big four-motored plane was over San Diego yesterday.

As well as supplying planes to the American army and navy, Consolidated is turning them out for England and Australia. Two months ago, the Australian Commonwealth stated that the purchase of 11 flying boats from Consolidated had been decided upon, the planes to cost $3,500,000 and to be delivered this winter.

Operating on a 10-hour day and a five-day week, Consolidated now is reported to be employing 13,000 men.

Trib.-Sun. Nov. 9/40

Plane Firms Agreed On Standardization

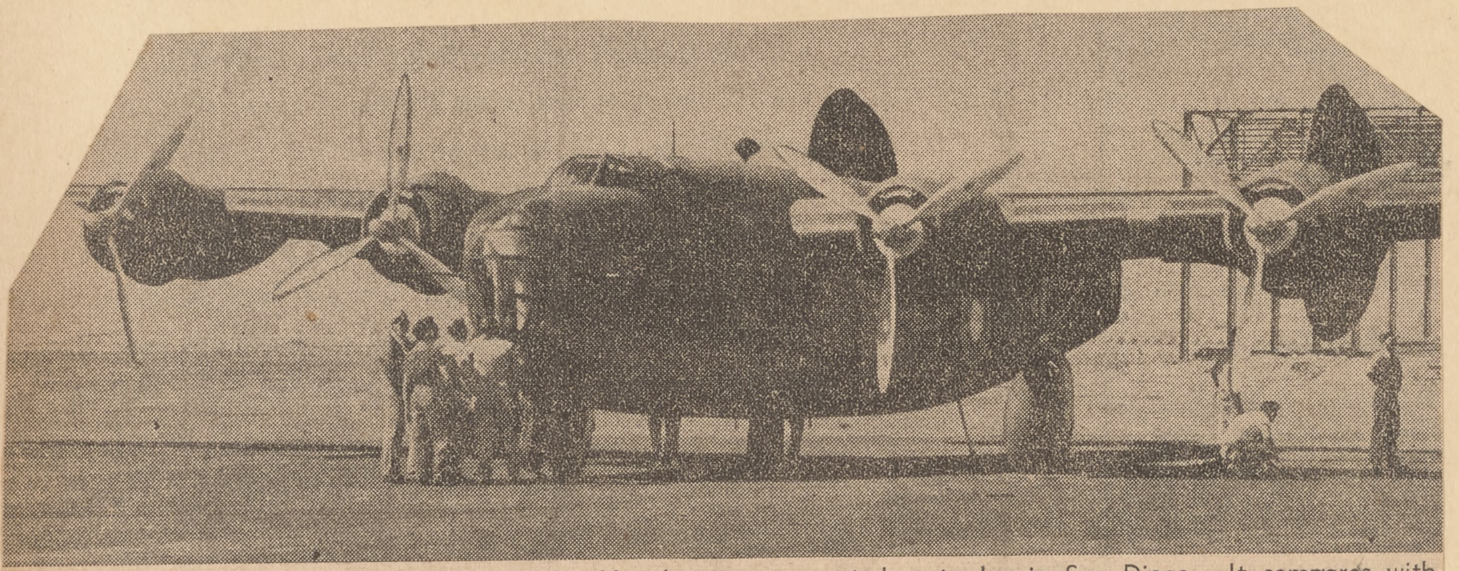
ST. LOUIS, Nov. 9 (A.P.)—Long-sought standardization in the aircraft industry to speed plane output for national defense was pledged today by the aircraft standards committee.

The national group, organized yesterday by 22 major aircraft companies, will "develop and get into production aircraft standard parts, material and processes."

William Smith, of Bell Aircraft Co., Buffalo, chairman of the committee, said screws, rivets and protective finishes were examples of things the committee would attempt to standardize.

"The development of these standards will permit a greater degree of interchangeability and facilitate mass production, with early delivery dates resulting in quantities required for the defense program," said Smith.

NEW $18,529,500 CONTRACT FOR CONSAIR



NEW WAR BIRD—Said to be most advanced land bomber in world, this new plane, first of order for Great Britain, was tested yesterday in San Diego. It compares with flying fortresses and contains many new improvements. Times photo

NOV 3 1940

L. A. Times

---

ifornia, Saturday, November 9,

Trib Sun '40

PLANE PARTS SAME UNDER PROPOSAL TO SPEED OUTPUT

LOS ANGELES, Nov. 9 (A.P.)—By making one piece of metal fit several kinds of planes, the American aircraft industry has taken a long step toward speedier production and lowered costs in the air-rearmament drive, says Engineer John T. Thompson.

Standardization in aircraft design—as has long been practiced in auto design—was described in Thompson's paper before the Society of Automotive Engineers' national production meeting.

Thompson, employed by the Glenn L. Martin Co., of Baltimore, declared "judicious standardization applied to aircraft design will form one method by which the mass production of planes may be expedited."

The idea originated in the Los Angeles area, where some 60 percent of all the large airplanes made in the United States are manufactured.

A "western aircraft standard's committee" was formed in the beginning. It was followed by a similar group on the east coast, The idea is now carried out to such extent that certain unrestricted engineering information, such as test reports and research data, is circulated freely among the various companies.

A "pool" for extrusion dies is the major accomplishment of the standards committes to date.

An extruded aircraft structure is a piece of metal which has been forced through a die, or shaping machine. The pool not only enables manufacturers of aircraft to standardize on many common structural parts, but reduces die costs as well.

Buffrelle's
EST. 1888
PRESS CLIPPING
BUREAU
NEW YORK

NEW YORK CITY, TIMES
NOVEMBER 18, 1940

OUR BEST BOMBER GOING TO BRITAIN

New Ship Approved for Export Even While 'Fortress' Sale Was Under Debate

North American Newspaper Alliance.

SAN DIEGO, Calif., Nov. 17—The most powerful long-range bombers in America—and probably the world—are in production here for the Royal Air Force, it was disclosed today, even though President Roosevelt has made known that a "rule-of-thumb" policy had been set whereby Great Britain and Canada were to receive 50 per cent of American defense items now coming off factory lines.

While debate raged whether the United States should make immediately available to England quantities of its B-17 "flying fortresses," this newest bomber, known to the Army as the B-24, actually had been approved for export and test flights on the first of an undisclosed number in the R. A. F. order are now nearing completion.

Made at the Consolidated Aircraft Corporation factory here, the B-24, a 20-ton four-motored craft, is said to incorporate engineering improvements perfected since the army acquired its Boeing "flying fortresses."

Lifts Backlog To Estimated $324,500,000

Tribune-Sun 11/14/40

Coming within five days of a large order which skyrocketed the firm's backlog above the $300,000,000 mark, the navy today announced award of a contract for $18,529,500 to Consolidated Aircraft Corp. for planes and parts, The Associated Press reported from Washington, D. C.

Details Not Disclosed

As with the previous order, no delivery dates or other details were made public.

The new order raises the Consolidated backlog to an estimated $324,500,000. Last Saturday the firm was awarded a navy department contract for $75,313,000, which raised the backlog to approximately $306,000,000.

Trib. 11/25/40

S. D. Bombers For British in Egypt, Word

The navy will permit Great Britain to take first deliveries on the long-range patrol bombers now coming off assembly lines of the Consolidated Aircraft Corp. plant at San Diego, The United Press reported today from Washington, D. C. The planes are expected to be used on flights from England to Egypt.

Consolidated officials made no statement, but officials at Washington emphasized that the arrangement does not involve formal negotiations or trade, such as occurred recently when the army released its biggest and newest type bombers.

Authoritative quarters said the huge twin-engined flying boats—PBY-5s—are being assembled on twin lines, one for the United States and the other for Britain, Australia and Canada. The company is understood to have orders for about 200 planes for the navy and a similar number for the others. They cost about $100,000 each.

Priority in Delieveries

The program envisages delieveries to each nation at an equal rate. The United Press informant said some delay has been encountered in obtaining sufficient wings to keep the two assembly lines operating. As a result, an informal arrangement was worked out whereby the British will get the first of the new planes until the wing supply situation is corrected.

The PBY-5s weigh 15 tons, carry a crew of five, have a reputed range of 4000 miles and a speed of about 300 miles an hour.

Aviation experts said the British easily could fly them from the British Isles to Egypt; that their long cruising range would make them especially valuable in the Mediterranean and far eastern areas. They can be serviced by tenders, making land bases unnecessary.

Trib. 11/25/40

FURTHER EXPANSION PLANNED BY CONSOLIDATED, SAYS SOLON

Declaring San Diego "is fortunate to have such a national defense project" as the Consolidated Aircraft Corp. plant, Rep. Dow Harter (D-O), chairman of the aviation subcommittee of the house committee on military affairs, prepared to leave today for March field and Los Angeles, after inspecting the Consolidated plant and conferring with Edgar N. Gott, vice president, and other officials. Gott and Harter became acquainted in Washington, D. C.

Harter intimated still further expansion is planned by Consolidated, but to date no official announcement on a project additional to the present expansion program has been made. En route to San Diego, Harter said, he stopped at the St. Louis division of the Curtiss-Wright Corp., which he described as "expanding," and at Lowry field, Denver, where, he said, the force of 4000 officers and men is expected to be doubled soon.

Accompanied by his wife, Harter spent the week-end visiting with his former Akron, O., neighbor, Ollie Morris, owner and operator of the Carlsbad hotel. This is his first visit to San Diego.

Union - 11/30/40

CONSERVATION CORPS HOSTS TO CONSAIR OFFICIALS

Vista CCC Camp 2948 representatives guided Consolidated Aircraft Corp. officials on a tour of county CCC camps. Left to right, Avery Hauser, camp educational adviser; Chaplain A. J. Armstrong, H. E. Pasek, J. H. Waterbury, personnel director; H. R. Wiseman, L. D. Larimer and Dr. S. A. Beadner, all of Consair; Lt. Henry H. Wishart, company commander, and Earl T. Gray of Consolidated.

Union 11/22/40

S. D. Bombers To Raid Berlin

LONDON, Nov. 21 (A.P.)—The Royal Air Force's offensive spirit flamed higher today as its bomber striking force, soon to be strengthened by the release of 26 of the United States army's big four-motored bombers, prepared for bolder and harder strokes against their powerful foe across the channel.

R.A.F. officers left little doubt the long-range Consolidated (San Diego) bombers now to come to Britain will be in the van of the attacks which they intend to extend to eastern Germany and more completely into Italy.

Equipped with the Sperry gyroscopic bombing sight, these gigantic planes also may be used for the nightly bombing "ferry service" to Berlin, they said.

R.A.F. officers said their large fuel capacity, bomb load and altitude keeping abilities made them "ideal for sustained attacks over important targets."

Other officers, who said every sign points to an early opening of a widespread air war on Italy, declared the American-made planes "are the babies to do it with."

Employment of the long-range American-made bombers also will release more British bombers for their most vital task outside the systematic attack on German industry—the steady hammering of German submarine nests along the channel, observers said.

Last night these bases at Lorient, Cherbourg, Dunkerque and Ostend were pounded again by bombers intent on strangling the submarine menace which if not checked may strangle Britain by cutting off her seaborne supplies.

The Ruhr, industrial heart of Germany, also was the objective of a "serious" British raid last night which the air ministry news service said "must inevitably have disorganized essential traffic and destroyed indispensable raw materials" at Duisburg-Ruhrort, the largest river port in the world.

Tribune-Sun 11/26/40

DELAY DELIVERY OF PLANES FOR NEW BOMBSIGHTS

Installation of the Sperry bombsight, instead of the highly secret Norden sight, on 20 Boeing "flying fortresses" sought by the British may delay their delivery for several months, it was learned today, The United Press reported from Washington, D. C. Since the flying fortresses originally were designed for the Norden sight, several changes in design and, in some cases, the actual structure of a finished plane would have to be made to permit installation of the Sperry bombsight. Substitution of the Sperry sight is one of the conditions on which the army air corps plans to release the flying fortresses, in addition to 26 heavy Consolidated bombers, to the Royal Air force.

Trib. 11/25/40

CONSAIR BIG COG IN U. S. DEFENSE, PRAISE OF SOLON

Deliveries to Great Britain first of Consolidated Aircraft Corp. long-range patrol bombers "is in keeping with what has been United States policy for several months to give all aid possible to England," Rep. Dow Harter, Dem., O., stated today as he inspected the huge San Diego plant.

Harter, chairman of the aviation sub-committee of the house committee on military affairs, added that "by permitting early deliveries of planes to England, we can have the advantage of any change which might result after the planes have been in actual usage in the war zone."

The Consolidated plant, he added, "is a very wonderful plant. I am surprised at its capacity. It is an important cog in national defense." Harter recently was re-elected to office. He came here Saturday with his wife from Akron to visit a former Akron neighbor, Ollie Morris, owner of the Carlsbad hotel. While here he decided to confer with Consolidated officials on proggress of bomber production.

Union 11/23/40

Big New Consair Bomber Tested

Test flights of a new type four-motored long-range patrol bomber, of which a number are being built by Consolidated Aircraft Corp. for the navy's patrol wings, were started here yesterday.

Similar in construction to the XPB-2Y1, in which Frank Knox, secretary of the navy, recently flew to Hawaii and return, the 30-ton airboats will be the first squadron of their design to be delivered to the navy. Six are to be delivered to Patrol Squadron 12 at the Naval Air station here.

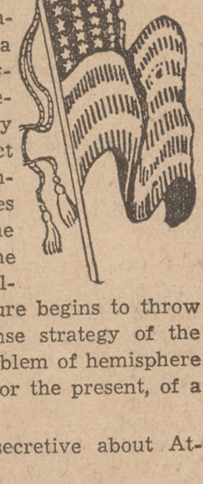
The new bombers have a cruising range of 5000 miles carrying a crew of nine and several tons of bombs. With a speed in excess of 200 miles an hour they are rated the fastest aircraft of their type in the world.

iego Union LOCAL FEATURES
Editorials and Theaters
DAY MORNING, NOV. 17, 1940 SECTION C

U. S. Patrol Bombers Will Guard Atlantic by Using Naval Bases Recently Acquired From Britain

By DEVON FRANCIS
Associated Press Aviation Editor

WASHINGTON, Nov. 16—The navy is buttressing defense in the Atlantic with warplanes which can fly half way to Europe in search of an enemy surface fleet. They are designed for long-distance patrol work, to flash back a wireless alarm of any hostile threat. They are designed also for heavy bombing, to make direct attacks on enemy ship concentrations, supply bases and aviation depots. The airplanes are rolling off the assembly line in big volume and their manufacture begins to throw some light on the defense strategy of the navy which faces the problem of hemisphere defense in the absence, for the present, of a two-ocean fleet.



The navy has been secretive about Atlantic defense.

A key to its plans has been the letting of huge contracts for long-range patrol bomb-

flying boats, for all practical purposes, are much like the clipper planes plying between the United States and Portugal. They are smaller in point of tonnaage by more than half but they carry heavy defensive armament and a formidable load of bombs at a cruising speed of more than 200 miles an hour.

The largest single contract for this type of plane recently was placed with the Glenn L. Martin Co., a pioneer flying boat builder, at Baltimore. The $106,125,000 being spent at the Martin Co. will provide approximately 400 of the planes, bi-motored and equipped with an odd-shaped "gull" wing.

Other contracts have been let by the navy from time to time to the Consolidated Aircraft Corp. of San Diego, another veteran builder of both commercial and military flying boats. This company, too, has received a fresh order for long-range bombers.

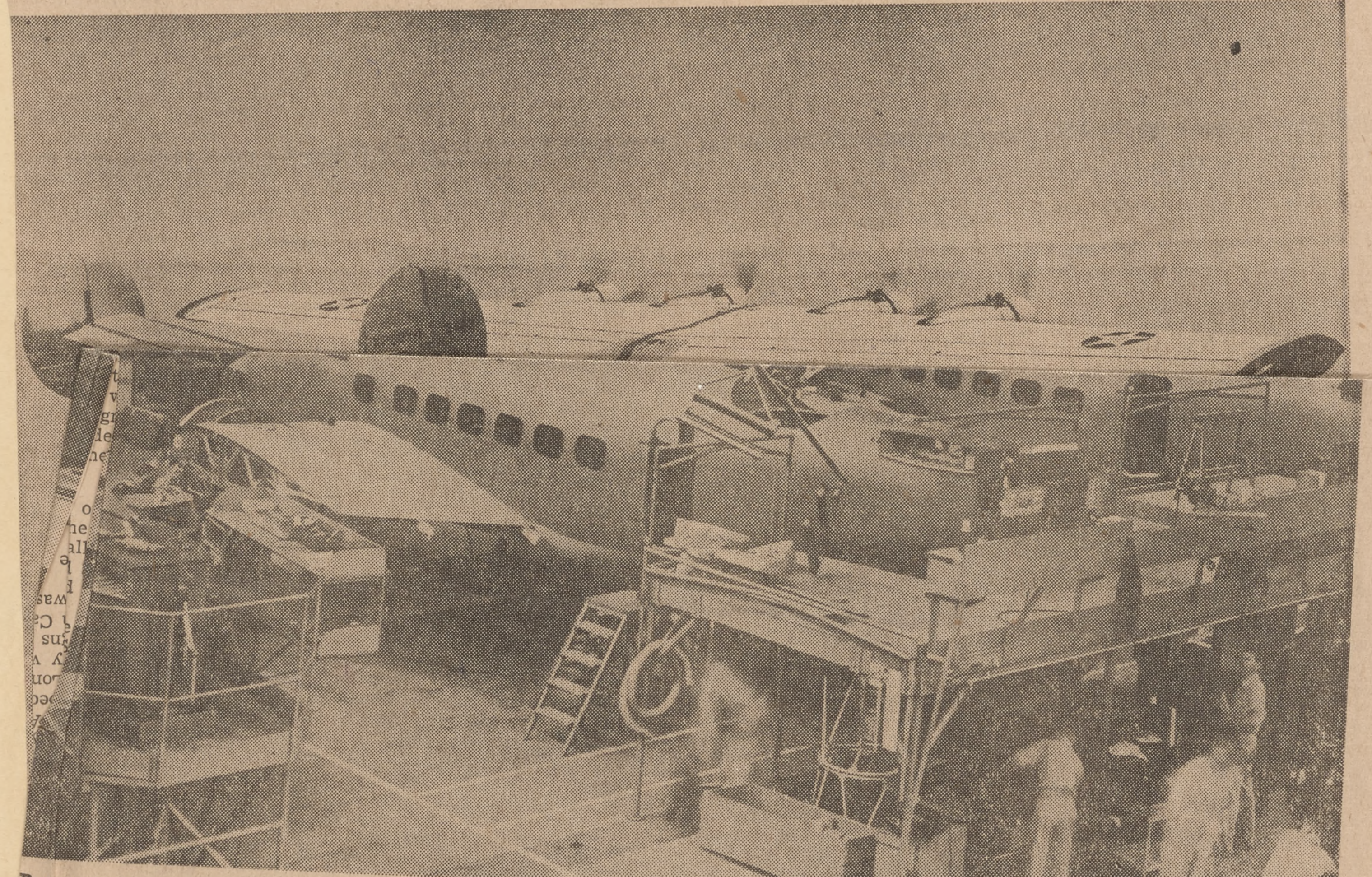
Even though the British should want half

ward from the root to place engines and propellers out of the reach of water in rough seas.

They have four visible gun emplacements for defense fire and at least one more which cannot be seen. Ample living quarters are provided for the crew to relieve the strain of long hours at sea. A secret and unique system of storing and dropping bombs is intended to make them bad news for any enemy surface vessels.

In a paper included in the Naval institute proceedings published last week, Lt. Comdr. A. B. Vosseller, skipper of a squadron of patrol bombers, remarks: "The question of whether bombers can sink battleships is, of course, of little importance, but the incontrovertible fact that ships can be bombed and unquestionably damaged must be considered by those charged with the responsibility for the national defense."

He adds that patrol bombers in formation, with concentrated fire power, ought to be almost immune to attack except by vastly superior numbers of enemy fighters. In other



Patrol and bombing planes are reported rolling off assembly lines in huge volume, as is evidenced by this view in the Lockheed plant. (Associated Press photo.)

, 1940

~~Aviation News~~ S. F. Chronicle 11/18/40

Consolidated Plant so Big The Workers Use Bikes

1468

By DON WILEY
Member, Aviation Writers' Assn.

This may sound like the sort of boastful exaggeration the rest of the nation likes to ascribe to California, but so help me it's the literal truth:

The Consolidated Aircraft Corporation's plant at Lindbergh Field, San Diego, is so big the employes use bicycles!

You see the bikes parked in racks at intersections between the factory buildings. You observe dozens of workers pedaling merrily from one building to another, tools or blueprints in wire baskets slung on the handlebars. And every so often you step aside for one of those tricky little motor scooters.

Guess they use the scooters for really long trips—say from one end of the plant to the other.

THEY NEED SPACE

Consolidated needs a big factory, for it builds big ships, and is building them at top speed.

This is the home nest of the famous PBY's, those twin-motored patrol bomber flying boats seen so frequently in the newsreels. The PBY's have given new eyes to the Navy, which already has more than 200 of them, many of which have made amazing 2500 to 3000-mile non-stop mass flights to such distant points as Pearl Harbor and Coco Solo, Panama. If activities at Consolidated are any criterion, the Navy is going to have a lot more of them in the future.

Inside the factory you see long lines of PBY's in various stages of construction. Outside are more ships, undergoing final assembly.

And if Major R. H. Fleet, Consolidated's energetic president, is too busy to go through the factory, he has only to step from his office and glance skyward to see how his PBY's are doing. For the sky over San Diego is seldom free of the patrol bombers droning to and from their base on North Island.

TWO NEW TYPES

Consolidated is also speeding production of two new types, bigger even than the PBY's, which ought to prove sturdy bulwarks of American defense.

One type is a regular aerial battleship—a four-motored monster designated the PB2Y—about which the Navy hasn't yet released any performance or armament figures. The PB2Y is described as a patrol bomber ("PB" stands for patrol bomber) but someone has very aptly called it a "flying flagship." Visitors to the San Francisco Exposition may recall seeing the first PB2Y resting on the Treasure Island lagoon last fall.

The other big fellow is a 40,000 pound (gross weight) land bomber now in production for the Army. Known by the Air Corps as the B-24, this high-wing monoplane has a wing span of 110 feet, will carry a crew of six to nine men and tote a four-ton bomb load.

The Army admits the speed of the B-24 is "more than 300 miles per hour." After a glimpse of the four 1200-horsepower radial motors and the "clean" design of the ship, our guess would be that that figure is mild, to say the least.

Consolidated is busy on big orders of PB2Y's and B-24's.

Nov. 21, '40

26 Consair Bombers in British Hands Prior to March 1, Says Marshall

The 26 huge long-range four-motor bombers being built by Consolidated Aircraft Corp. for British purchase, will be delivered prior to March 1, The Associated Press reported today from Washington, D. C. Gen. George C. Marshall, army chief of staff, was quoted as saying it was his understanding that the first of the planes, which has been making test flights over San Diego, was delivered last Saturday.

The army, in announcing that the 26 bombers were being "made available" for British purchase, disclosed that the Sperry bombsight had been released, and indicated that Boeing "flying fortresses" might be the next installment of aerial assistance for Great Britain.

Range 3000 Miles

The Consolidated bombers, credited with a 3000-mile range, would be capable of carrying a full bomb load to almost any existing target area in Europe. From bases in the British isles, they could strike at any objective within 1500 miles and then return, or they could operate on even longer missions by shuttling between airdromes in England and British bases in the Mediterranean theater.

The release of these bombers was made known by Marshall at a press conference yesterday. He announced that the 26 bombers originally ordered by the army from Consolidated were being made available for purchase by the British as fast as they came off the production line.

Marshall revealed at the same time that the army already had made available to the British the Sperry bombsight—a mechanism used by the United States air corps before the present jealously guarded Norden bombsight replaced it. Some military sources describe the Sperry sight as "very efficient equipment," although it does not match the high efficiency of the newer Norden sight.

Marshall said flatly that no bombers released for British purchase would have the Norden sight, which has been developed by the navy and subsequently adopted by both branches of the armed services.

Given Priority

The chief of staff then announced that the negotiations were under way for the release to the British of 20 B-17C bombers—the long-distance "flying fortresses" made by the Boeing Aircraft Corp. of Seattle.

Asked if these ships would be ones already delivered to the United States army or others scheduled for delivery in the near future, he said that would depend upon whether it was faster to substitute the Sperry for the secret Norden bombsight in existing planes or in machines still on the production line.

In his announcement that the British were being given priority on first deliveries of B-24 bombers, the four-engined ships just beginning to come from the Consolidated plant, Marshall said the United States was receiving in retun sufficient engines to equip 41 of the Boeing B-17C "flying fortresses."

The British ordered these engines from an American plant early in the war, he explained. Unless the army obtained them, he said, it would have no power plants for the 41 "flying fortresses" recently delivered without engines or to be belivered before Jan. 1.

From the viewpoint of the United States, said Marshall, the primary purpose of releasing the "flying fortresses" was to obtain "an actual service test" of the B-17C. In addition, he added, this government would receive "at least the equivalent of these planes."

Union 11/24/40

Navy to Get 2000 Bombers

Half on Order From Consair

WASHINGTON, Nov. 23. (U.P.)—The navy has on order more than 2000 great bomber flying boats to give its air arm a powerful striking force, it was learned tonight.

Contracts for the patrol bombers were awarded the Glenn L. Martin Co., Baltimore, and Consolidated Aircraft Corp., San Diego, in the last six weeks. Martin's contract calls for approximately 1100 PBM's at a total cost of $106,125,396. Consolidated will supply approximately 1000 PBY's at a cost of $93,842,500.

ENGINES ORDERED

Engines for the big flying boats were included in a $162,000,000 order to Pratt and Whitney.

These airships. navy air strategists believe, will give the United States control of the Atlantic ocean far beyond the halfway mark between this country and Europe. They will provide a powerful attacking force in the Pacific, operating from bases at Pearl Harbor, Cavite, P. I., and the islands of Wake, Midway and Guam if necessary.

REFUEL AT SEA

(Consolidated Friday started tests of its new 30-ton airboats being built for delivery to the navy. Six of these big boats will be delivered to Patrol Squadron 12 at the Naval Air station here. The new bombers have a cruising range of 5000 miles with crew of nine and several tons of bombs, and a speed in excess of 200 miles an hour).

Improvements in design of the navy's seaplane type bombers also permit their use directly with the fleet instead of making them dependent on island or mainland bases. They can land or take off from rough water and be refueled, provisioned and loaded from tenders at sea during bad weather.

The present production schedule calls for delivery of the last of the more than 2000 planes on order by mid-1941. The navy now has almost 300 similar patrol bombers which it is using on both Atlantic and Pacific patrol.

Navy sources said today that use for patrol purposes of two of the eight Atlantic island bases for which the United States traded 50 destroyers to Great Britain already has compensated for the loss of the destroyers. Patrol bombers now use bases at Bermuda and St. Lucia.

When all eight bases from New Foundland to Trinidad are in use American patrol bombers will be able to meet an invasion threat from Europe or Africa in the enemy's front yard.

COMPLETE FREEDOM

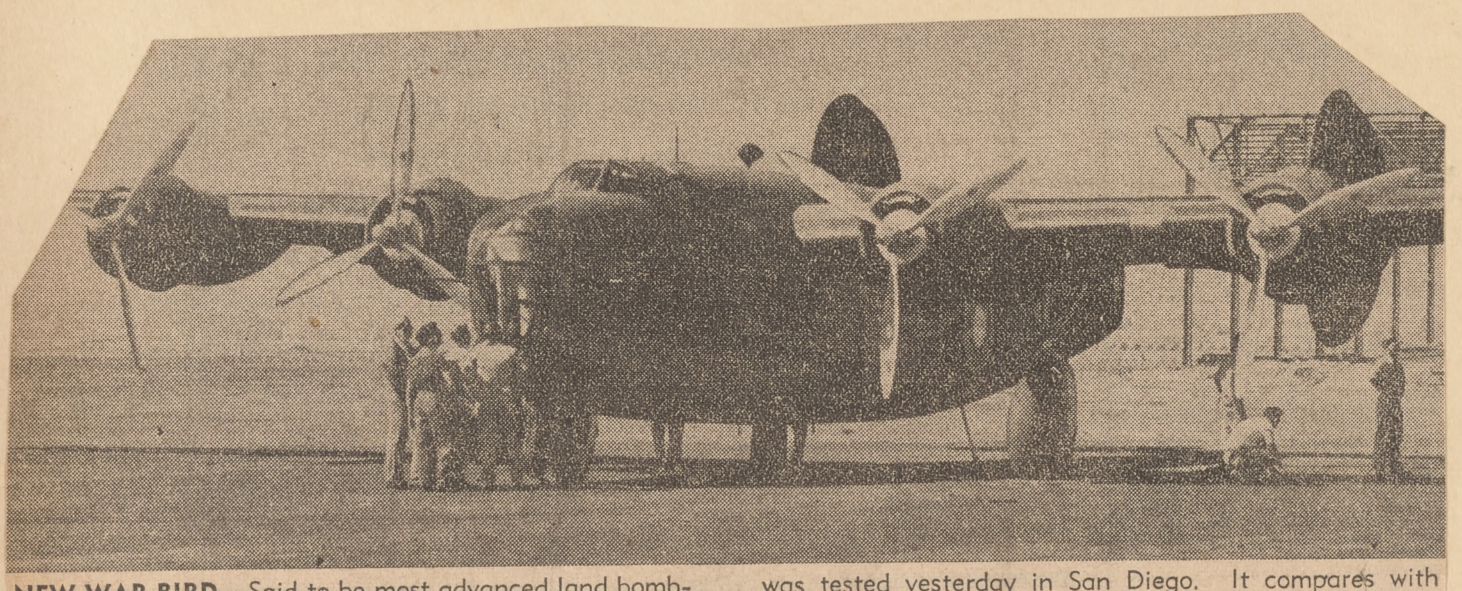
All of the navy's patrol bombers, on hand and on order, have accommodations for maintaining a crew over long periods. They have sleeping and cooking facilities and as long as supplies are available ashore or afloat as near as 1000 to 1500 miles they have almost complete freedom of operation.

The parol bombers also can make forced landings at sea for minor repairs and are in this respect superior to the big four-engined army land bombers. Some of the patrol bombers carry two 1500-horsepower engines and some have four 1000-horsepower engines.

The function of the patrol bombers, in addition to scouting the movements of an enemy force at sea, would be to carry a load of three to five tons of bombs to the enemy's ships, seek to destroy aircraft carriers and then cripple the remainder of his fleet.

Equipped with the navy's prized secret Norden bomb sight, the patrol bombers in sufficient numbers might be able to wipe out an attempt to invade the western hemisphere before the fleet could act.

NEW $18,529,500 CONTRACT FOR CONSAIR



NEW WAR BIRD—Said to be most advanced land bomber in world, this new plane, first of order for Great Britain, was tested yesterday in San Diego. It compares with flying fortresses and contains many new improvements.

Times photo

NOV 3 1940

L. A. Times.

Trib. 11/25/40

S. D. Bombers For British in Egypt, Word

The navy will permit Great Britain to take first deliveries on the long-range patrol bombers now coming off assembly lines of the Consolidated Aircraft Corp. plant at San Diego, The United Press reported today from Washington, D. C. The planes are expected to be used on flights from England to Egypt.

Consolidated officials made no statement, but officials at Washington emphasized that the arrangement does not involve formal negotiations or trade, such as occurred recently when the army released its biggest and newest type bombers.

Authoritative quarters said the huge twin-engined flying boats—PBY-5s—are being assembled on twin lines, one for the United States and the other for Britain, Australia and Canada. The company is understood to have orders for about 200 planes for the navy and a similar number for the others. They cost about $100,000 each.

Priority in Delieveries

The program envisages delieveries to each nation at an equal rate. The United Press informant said some delay has been encountered in obtaining sufficient wings to keep the two assembly lines operating. As a result, an informal arrangement was worked out whereby the British will get the first of the new planes until the wing supply situation is corrected.

The PBY-5s weigh 15 tons, carry a crew of five, have a reputed range of 4000 miles and a speed of about 300 miles an hour.

Aviation experts said the British easily could fly them from the British Isles to Egypt; that their long cruising range would make them especially valuable in the Mediterranean and far eastern areas. They can be serviced by tenders, making land bases unnecessary.

Trib. 11/25/40

FURTHER EXPANSION PLANNED BY CONSOLIDATED, SAYS SOLON

Declaring San Diego "is fortunate to have such a national defense project" as the Consolidated Aircraft Corp. plant, Rep. Dow Harter (D-O), chairman of the aviation subcommittee of the house committee on military affairs, prepared to leave today for March field and Los Angeles, after inspecting the Consolidated plant and conferring with Edgar N. Gott, vice president, and other officials. Gott and Harter became acquainted in Washington, D. C.

Harter intimated still further expansion is planned by Consolidated, but to date no official announcement on a project additional to the present expansion program has been made. En route to San Diego, Harter said, he stopped at the St. Louis division of the Curtiss-Wright Corp., which he described as "expanding," and at Lowry field, Denver, where, he said, the force of 4000 officers and men is expected to be doubled soon.

Accompanied by his wife, Harter spent the week-end visiting with his former Akron, O., neighbor, Ollie Morris, owner and operator of the Carlsbad hotel. This is his first visit to San Diego.

Union – 11/20/40

CONSERVATION CORPS HOSTS TO CONSAIR OFFICIALS

Vista CCC Camp 2948 representatives guided Consolidated Aircraft Corp. officials on a tour of county CCC camps. Left to right, Avery Hauser, camp educational adviser; Chaplain A. J. Armstrong, H. E. Pasek, J. H. Waterbury, personnel director; H. R. Wiseman, L. D. Larimer and Dr. S. A. Beadner, all of Consair; Lt. Henry H. Wishart, company commander, and Earl T. Gray of Consolidated.

...fornia, Saturday, November 9,

Trib Sun 11/9/40

PLANE PARTS SAME UNDER PROPOSAL TO SPEED OUTPUT

LOS ANGELES, Nov. 9 (A.P.)—By making one piece of metal fit several kinds of planes, the American aircraft industry has taken a long step toward speedier production and lowered costs in the air-rearmament drive, says Engineer John T. Thompson.

Standardization in aircraft design—as has long been practiced in auto design—was described in Thompson's paper before the Society of Automotive Engineers' national production meeting.

Thompson, employed by the Glenn L. Martin Co., of Baltimore, declared "judicious standardization applied to aircraft design will form one method by which the mass production of planes may be expedited."

The idea originated in the Los Angeles area, where some 60 percent of all the large airplanes made in the United States are manufactured.

A "western aircraft standard's committee" was formed in the beginning. It was followed by a similar group on the east coast, The idea is now carried out to such extent that certain unrestricted engineering information, such as test reports and research data, is circulated freely among the various companies.

A "pool" for extrusion dies is the major accomplishment of the standards committes to date.

An extruded aircraft structure is a piece of metal which has been forced through a die, or shaping machine. The pool not only enables manufacturers of aircraft to standardize on many common structural parts, but reduces die costs as well.

Union 11/22/40

S. D. Bombers To Raid Berlin

LONDON, Nov. 21 (A.P.)—The Royal Air Force's offensive spirit flamed higher today as its bomber striking force, soon to be strengthened by the release of 26 of the United States army's big four-motored bombers, prepared for bolder and harder strokes against their powerful foe across the channel.

R.A.F. officers left little doubt the long-range Consolidated (San Diego) bombers now to come to Britain will be in the van of the attacks which they intend to extend to eastern Germany and more completely into Italy.

Equipped with the Sperry gyroscopic bombing sight, these gigantic planes also may be used for the nightly bombing "ferry service" to Berlin, they said.

R.A.F. officers said their large fuel capacity, bomb load and altitude keeping abilities made them "ideal for sustained attacks over important targets."

Other officers, who said every sign points to an early opening of a widespread air war on Italy, declared the American-made planes "are the babies to do it with."

Employment of the long-range American-made bombers also will release more British bombers for their most vital task outside the systematic attack on German industry—the steady hammering of German submarine nests along the channel, observers said.

Last night these bases at Lorient, Cherbourg, Dunkerque and Ostend were pounded again by bombers intent on strangling the submarine menace which if not checked may strangle Britain by cutting off her seaborne supplies.

The Ruhr, industrial heart of Germany, also was the objective of a "serious" British raid last night which the air ministry news service said "must inevitably have disorganized essential traffic and destroyed indispensable raw materials" at Duisburg-Ruhrort, the largest river port in the world.

Burrelle's
EST. 1888
PRESS CLIPPING
BUREAU
NEW YORK

NEW YORK CITY, TIMES
NOVEMBER 18, 1940

OUR BEST BOMBER GOING TO BRITAIN

New Ship Approved for Export Even While 'Fortress' Sale Was Under Debate

North American Newspaper Alliance.

SAN DIEGO, Calif., Nov. 17—The most ~~powerful~~ long-range bombers in America—and probably the world—are in production here for the Royal Air Force, it was disclosed today, even though President Roosevelt has made known that a "rule-of-thumb" policy had been set whereby Great Britain and Canada were to receive 50 per cent of American defense items now coming off factory lines.

While debate raged whether the United States should make immediately available to England quantities of its B-17 "flying fortresses," this newest bomber, known to the Army as the B-24, actually had been approved for export and test flights on the first of an undisclosed number in the R. A. F. order are now nearing completion.

Made at the Consolidated Aircraft Corporation factory here, the B-24, a 20-ton four-motored craft, is said to incorporate engineering improvements perfected since the army acquired its Boeing "flying fortresses."

Tribune-Sun 11/26/40

DELAY DELIVERY OF PLANES FOR NEW BOMBSIGHTS

Installation of the Sperry bombsight, instead of the highly secret Norden sight, on 20 Boeing "flying fortresses" sought by the British may delay their delivery for several months, it was learned today, The United Press reported from Washington, D. C. Since the flying fortresses originally were designed for the Norden sight, several changes in design and, in some cases, the actual structure of a finished plane would have to be made to permit installation of the Sperry bombsight. Substitution of the Sperry sight is one of the conditions on which the army air corps plans to release the flying fortresses, in addition to 26 heavy Consolidated bombers, to the Royal Air force.

Lifts Backlog To Estimated $324,500,000

Tribune-Sun 11/14/40

Coming within five days of a large order which skyrocketed the firm's backlog above the $300,000,000 mark, the navy today announced award of a contract for $18,529,500 to Consolidated Aircraft Corp. for planes and parts, The Associated Press reported from Washington, D. C.

Details Not Disclosed

As with the previous order, no delivery dates or other details were made public.

The new order raises the Consolidated backlog to an estimated $324,500,000. Last Saturday the firm was awarded a navy department contract for $75,313,000, which raised the backlog to approximately $306,000,000.

Trib. 11/25/40

CONSAIR BIG COG IN U. S. DEFENSE, PRAISE OF SOLON

Deliveries to Great Britain first of Consolidated Aircraft Corp. long-range patrol bombers "is in keeping with what has been United States policy for several months to give all aid possible to England," Rep. Dow Harter, Dem., O., stated today as he inspected the huge San Diego plant.

Harter, chairman of the aviation sub-committee of the house committee on military affairs, added that "by permitting early deliveries of planes to England, we can have the advantage of any change which might result after the planes have been in actual usage in the war zone."

The Consolidated plant, he added, "is a very wonderful plant. I am surprised at its capacity. It is an important cog in national defense." Harter recently was re-elected to office. He came here Saturday with his wife from Akron to visit a former Akron neighbor, Ollie Morris, owner of the Carlsbad hotel. While here he decided to confer with Consolidated officials on proggress of bomber production.

Union 11/23/40

Big New Consair Bomber Tested

Test flights of a new type four-motored long-range patrol bomber, of which a number are being built by Consolidated Aircraft Corp. for the navy's patrol wings, were started here yesterday.

Similar in construction to the XPB-2Y1, in which Frank Knox, secretary of the navy, recently flew to Hawaii and return, the 30-ton airboats will be the first squadron of their design to be delivered to the navy. Six are to be delivered to Patrol Squadron 12 at the Naval Air station here.

The new bombers have a cruising range of 5000 miles carrying a crew of nine and several tons of bombs. With a speed in excess of 200 miles an hour they are rated the fastest aircraft of their type in the world.

iego Union LOCAL FEATURES
Editorials and Theaters

DAY MORNING, NOV. 17, 1940 SECTION C

U. S. Patrol Bombers Will Guard Atlantic by Using Naval Bases Recently Acquired From Britain

By DEVON FRANCIS
Associated Press Aviation Editor

WASHINGTON, Nov. 16—The navy is buttressing defense in the Atlantic with warplanes which can fly half way to Europe in search of an enemy surface fleet. They are designed for long-distance patrol work, to flash back a wireless alarm of any hostile threat. They are designed also for heavy bombing, to make direct attacks on enemy ship concentrations, supply bases and aviation depots. The airplanes are rolling off the assembly line in big volume and their manufacture begins to throw some light on the defense strategy of the navy which faces the problem of hemisphere defense in the absence, for the present, of a two-ocean fleet.

The navy has been secretive about Atlantic defense.

A key to its plans has been the letting of huge contracts for long-range patrol bombers for quick production while shipyards get geared to the infinitely slower job of turning out more surface vessels.

Bases acquired from the British under the administration's destroyer trade and probably other bases which will become available in Latin America, in addition to ports under the American flag, will be used by the new fleet of bombers.

The patrol bomber, essentially an American invention, grew out of the big, multi-motored flying boats which braved the Atlantic crossing back in 1919. One, it will be remembered, did get to Europe. The new flying boats, for all practical purposes, are much like the clipper planes plying between the United States and Portugal. They are smaller in point of tonnaage by more than half but they carry heavy defensive armament and a formidable load of bombs at a cruising speed of more than 200 miles an hour.

The largest single contract for this type of plane recently was placed with the Glenn L. Martin Co., a pioneer flying boat builder, at Baltimore. The $106,125,000 being spent at the Martin Co. will provide approximately 400 of the planes, bi-motored and equipped with an odd-shaped "gull" wing.

Other contracts have been let by the navy from time to time to the Consolidated Aircraft Corp. of San Diego, another veteran builder of both commercial and military flying boats. This company, too, has received a fresh order for long-range bombers.

Even though the British should want half the United States patrol bomber output, several hundred will be available for hemisphere defense in the next 12 months. Already in service are Consolidated flying boats which have taken the Pacific in stride on "routine" flights.

The new 20-ton Martin planes stand out in the defense picture principally because of the rapidity with which they are being produced at the expanded Baltimore plant.

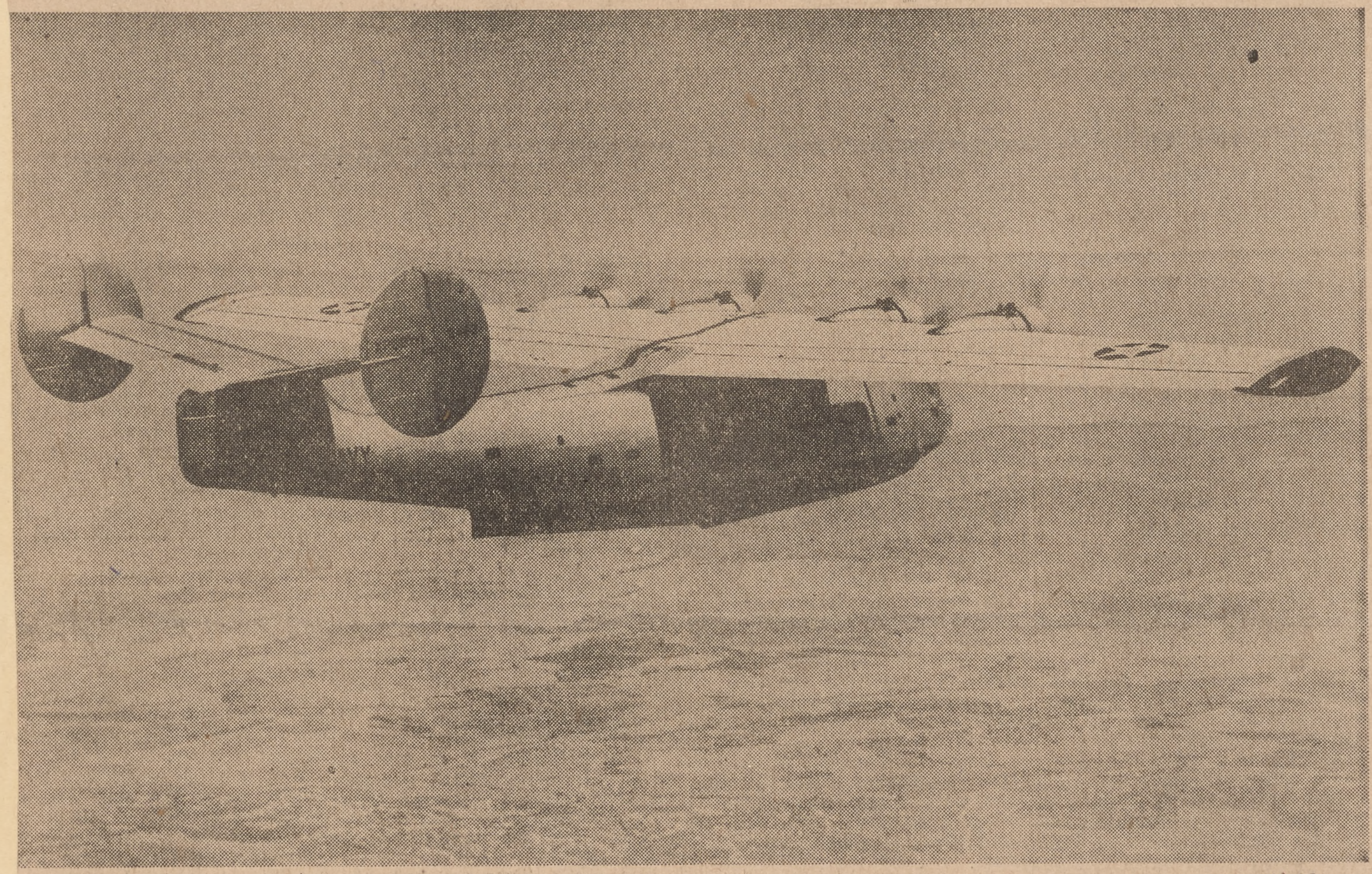
In addition to being exceptionally fast for flying boats with hulls that create "drag" problems at high speed, the Martins, known as P.B.M.-1's, have wings which thrust upward from the root to place engines and propellers out of the reach of water in rough seas.

They have four visible gun emplacements for defense fire and at least one more which cannot be seen. Ample living quarters are provided for the crew to relieve the strain of long hours at sea. A secret and unique system of storing and dropping bombs is intended to make them bad news for any enemy surface vessels.

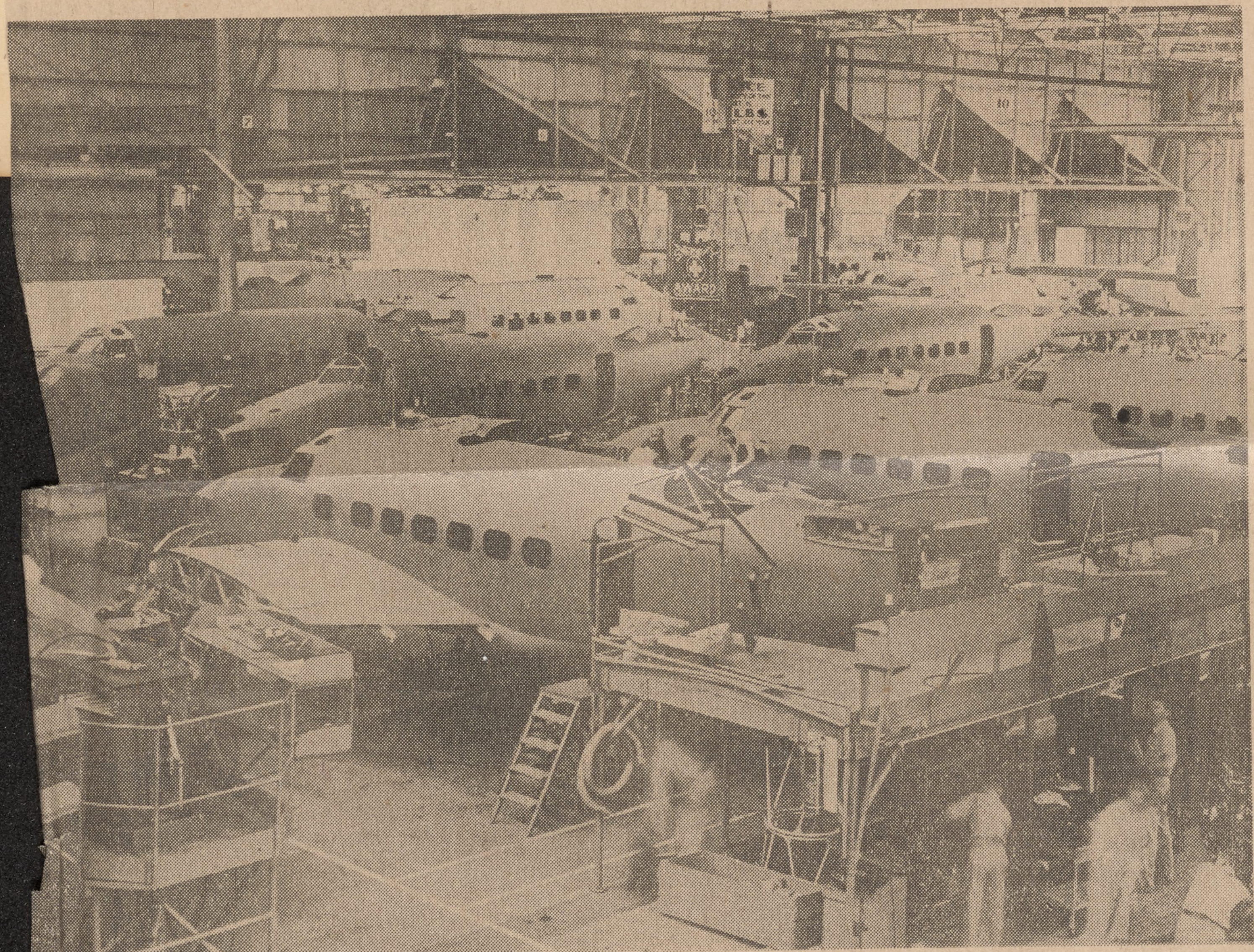
In a paper included in the Naval institute proceedings published last week, Lt. Comdr. A. B. Vosseller, skipper of a squadron of patrol bombers, remarks: "The question of whether bombers can sink battleships is, of course, of little importance, but the incontrovertible fact that ships can be bombed and unquestionably damaged must be considered by those charged with the responsibility for the national defense."

He adds that patrol bombers in formation, with concentrated fire power, ought to be almost immune to attack except by vastly superior numbers of enemy fighters. In other words, it would require the air fighting power of several enemy aircraft carriers to cope successfully with the patrol bombers which, in the next few months, can be marshaled to meet any threat of invasion by sea.

For mid-ocean patrol purposes, the new planes can be refueled at sea by tenders if necessary. Their hulls are built to take the shock of landings and takeoffs in pretty rough water. Armor, for crew protection, surrounds the "bridge" and gun stations. Self-sealing gasoline tanks are insurance against loss of fuel or fire from bullet punctures.



Long range bombers, such as this Consair craft, soon will patrol the Atlantic, using the bases recently made available to U.S. through our destroyer deal with England. (U.S. Navy official photo.)



Patrol and bombing planes are reported rolling off assembly lines in huge volume, as is evidenced by this view in the Lockheed plant. (Associated Press photo.)

, 1940

Aviation News

S.F. Chronicle [illegible]

Consolidated Plant so Big The Workers Use Bikes

By DON WILEY 1468
Member, Aviation Writers' Assn.

This may sound like the sort of boastful exaggeration the rest of the nation likes to ascribe to California, but so help me it's the literal truth:

The Consolidated Aircraft Corporation's plant at Lindbergh Field, San Diego, is so big the employes use bicycles!

You see the bikes parked in racks at intersections between the factory buildings. You observe dozens of workers pedaling merrily from one building to another, tools or blueprints in wire baskets slung on the handlebars. And every so often you step aside for one of those tricky little motor scooters.

Guess they use the scooters for really long trips—say from one end of the plant to the other.

THEY NEED SPACE

Consolidated needs a big factory, for it builds big ships, and is building them at top speed.

This is the home nest of the famous PBY's, those twin-motored patrol bomber flying boats seen so frequently in the newsreels. The PBY's have given new eyes to the Navy, which already has more than 200 of them, many of which have made amazing 2500 to 3000-mile non-stop mass flights to such distant points as Pearl Harbor and Coco Solo, Panama. If activities at Consolidated are any criterion, the Navy is going to have a lot more of them in the future.

Inside the factory you see long lines of PBY's in various stages of construction. Outside are more ships, undergoing final assembly. And if Major R. H. Fleet, Consolidated's energetic president, is too busy to go through the factory, he has only to step from his office and glance skyward to see how his PBY's are doing. For the sky over San Diego is seldom free of the patrol bombers droning to and from their base on North Island.

TWO NEW TYPES

Consolidated is also speeding production of two new types, bigger even than the PBY's, which ought to prove sturdy bulwarks of American defense.

One type is a regular aerial battleship—a four-motored monster designated the PB2Y—about which the Navy hasn't yet released any performance or armament figures. The PB2Y is described as a patrol bomber ("PB" stands for patrol bomber) but someone has very aptly called it a "flying flagship." Visitors to the San Francisco Exposition may recall seeing the first PB2Y resting on the Treasure Island lagoon last fall.

The other big fellow is a 40,000 pound (gross weight) land bomber now in production for the Army. Known by the Air Corps as the B-24, this high-wing monoplane has a wing span of 110 feet, will carry a crew of six to nine men and tote a four-ton bomb load.

The Army admits the speed of the B-24 is "more than 300 miles per hour." After a glimpse of the four 1200-horsepower radial motors and the "clean" design of the ship, our guess would be that that figure is mild, to say the least.

Consolidated is busy on big orders of PB2Y's and B-24's.

Nov. 21 '40

26 Consair Bombers in British Hands Prior to March 1, Says Marshall

The 26 huge long-range four-motor bombers being built by Consolidated Aircraft Corp. for British purchase, will be delivered prior to March 1, The Associated Press reported today from Washington, D. C. Gen. George C. Marshall, army chief of staff, was quoted as saying it was his understanding that the first of the planes, which has been making test flights over San Diego, was delivered last Saturday.

The army, in announcing that the 26 bombers were being "made available" for British purchase, disclosed that the Sperry bombsight had been released, and indicated that Boeing "flying fortresses" might be the next installment of aerial assistance for Great Britain.

Range 3000 Miles

The Consolidated bombers, credited with a 3000-mile range, would be capable of carrying a full bomb load to almost any existing target area in Europe. From bases in the British isles, they could strike at any objective within 1500 miles and then return, or they could operate on even longer missions by shuttling between airdromes in England and British bases in the Mediterranean theater.

The release of these bombers was made known by Marshall at a press conference yesterday. He announced that the 26 bombers originally ordered by the army from Consolidated were being made available for purchase by the British as fast as they came off the production line.

Marshall revealed at the same time that the army already had made available to the British the Sperry bombsight—a mechanism used by the United States air corps before the present jealously guarded Norden bombsight replaced it. Some military sources describe the Sperry sight as "very efficient equipment," although it does not match the high efficiency of the newer Norden sight.

Marshall said flatly that no bombers released for British purchase would have the Norden sight, which has been developed by the navy and subsequently adopted by both branches of the armed services.

Given Priority

The chief of staff then announced that the negotiations were under way for the release to the British of 20 B-17C bombers—the long-distance "flying fortresses" made by the Boeing Aircraft Corp. of Seattle.

Asked if these ships would be ones already delivered to the United States army or others scheduled for delivery in the near future, he said that would depend upon whether it was faster to substitute the Sperry for the secret Norden bombsight in existing planes or in machines still on the production line.

In his announcement that the British were being given priority on first deliveries of B-24 bombers, the four-engined ships just beginning to come from the Consolidated plant, Marshall said the United States was receiving in retun sufficient engines to equip 41 of the Boeing B-17C "flying fortresses."

The British ordered these engines from an American plant early in the war, he explained. Unless the army obtained them, he said, it would have no power plants for the 41 "flying fortresses" recently delivered without engines or to be belivered before Jan. 1.

From the viewpoint of the United States, said Marshall, the primary purpose of releasing the "flying fortresses" was to obtain "an actual service test" of the B-17C. In addition, he added, this government would receive "at least the equivalent of these planes."

Union 11/24/40

Navy to Get 2000 Bombers

Half on Order From Consair

WASHINGTON, Nov. 23. (U.P.)—The navy has on order more than 2000 great bomber flying boats to give its air arm a powerful striking force, it was learned tonight.

Contracts for the patrol bombers were awarded the Glenn L. Martin Co., Baltimore, and Consolidated Aircraft Corp., San Diego, in the last six weeks. Martin's contract calls for approximately 1100 PBM's at a total cost of $106,125,396. Consolidated will supply approximately 1000 PBY's at a cost of $93,842,500.

ENGINES ORDERED

Engines for the big flying boats were included in a $162,000,000 order to Pratt and Whitney.

These airships, navy air strategists believe, will give the United States control of the Atlantic ocean far beyond the halfway mark between this country and Europe. They will provide a powerful attacking force in the Pacific, operating from bases at Pearl Harbor, Cavite, P. I., and the islands of Wake, Midway and Guam if necessary.

REFUEL AT SEA

(Consolidated Friday started tests of its new 30-ton airboats being built for delivery to the navy. Six of these big boats will be delivered to Patrol Squadron 12 at the Naval Air station here. The new bombers have a cruising range of 5000 miles with crew of nine and several tons of bombs, and a speed in excess of 200 miles an hour).

Improvements in design of the navy's seaplane type bombers also permit their use directly with the fleet instead of making them dependent on island or mainland bases. They can land or take off from rough water and be refueled, provisioned and loaded from tenders at sea during bad weather.

The present production schedule calls for delivery of the last of the more than 2000 planes on order by mid-1941. The navy now has almost 300 similar patrol bombers which it is using on both Atlantic and Pacific patrol.

Navy sources said today that use for patrol purposes of two of the eight Atlantic island bases for which the United States traded 50 destroyers to Great Britain already has compensated for the loss of the destroyers. Patrol bombers now use bases at Bermuda and St. Lucia.

When all eight bases from New Foundland to Trinidad are in use American patrol bombers will be able to meet an invasion threat from Europe or Africa in the enemy's front yard.

COMPLETE FREEDOM

All of the navy's patrol bombers, on hand and on order, have accommodations for maintaining a crew over long periods. They have sleeping and cooking facilities and as long as supplies are available ashore or afloat as near as 1000 to 1500 miles they have almost complete freedom of operation.

The parol bombers also can make forced landings at sea for minor repairs and are in this respect superior to the big four-engined army land bombers. Some of the patrol bombers carry two 1500-horsepower engines and some have four 1000-horsepower engines.

The function of the patrol bombers, in addition to scouting the movements of an enemy force at sea, would be to carry a load of three to five tons of bombs to the enemy's ships, seek to destroy aircraft carriers and then cripple the remainder of his fleet.

Equipped with the navy's prized secret Norden bomb sight, the patrol bombers in sufficient numbers might be able to wipe out an attempt to invade the western hemisphere before the fleet could act.

Tribune-Sun 11/20/40

BRITISH GET S.D. BOMBERS, U.S. BOMB SIGHT

Union 11/21/40

Britain to Get 24 S.D. Planes, Army Bombsight

Boeing to Release 20 of 'Flying Fortress' Type

Twenty-six four-motored long-range patrol bombers, one of which completed its flight tests last week, are to be delivered by the Consolidated Aircraft Corp. to the British Royal Flying corps, the war department announced yesterday. The planes will be equipped with the famous secret army bombsight.

Twenty other four-motored bombers, similar in type to the army's famed "flyng fortress," are to be delivered to Great Britain by the Boeing plant at Seattle.

PRIORITY GRANTED

The Associated Press reported from Washington that Gen. George C. Marshall, army chief of staff, had granted a priority delivery of the Consolidataed planes to Great Britain in an exchange of priority of engines ordered by the British.

The Boeing-built bombers are to be turned over to the R. A. F. when a basis of release, now being negotiated, has been reached.

The Boeing and Consolidated bombers, each capable of cruising more than 3000 miles carrying four tons of heavy demolition bombs, will be able to reach any section of Germany from flying bases in the British isles and return easily without refueling, it is said.

Consolidated authorities refused comment on the plane delivery.

CAMOUFLAGE PLANNED

The 26 Consolidated bombers, when released from the final assembly plant, will be painted with the R.A.F. insignia and camouflaged similarly to the plane tested last week.

The other 20 bombers are of the B-17 type and will be fitted with the secret bombsight before being sent abroad.

The bombers, urgently desired by Britain for long-distance raids on Germany and Mediterranean objectives, will thus have the added advantage of a bombsight unequalled by any other warring power, International News Service reported.

The only other comparable one is also a U. S. product and vital military secret. Manufactured by the Norden Co. and developed by the navy, it is now standard equipment on planes in both military branches. The latter sight is not being released, Gen. Marshall said.

U. S. HAS OBSERVERS

In revealing the deals to give Great Britain immediate supplies of super-bombers, Gen. Marshall at a press conference also disclosed that the U. S. army has some of its aviators flying in British war planes as observers, but only on those that fly over the British isles and over the English channel.

"We have a string of observers with the British army," Gen. Marshall said.

U. S. artillery, anti-aircraft, ordnance and other officers are with the British army. Observers have been sent to Egypt to gather information there, he revealed. Later, Secretary of the Navy Frank Knox told newsmen the navy also has observers with the British navy.

And U. S. naval aircraft already have begun using Bermuda and St. Lucia, two of the British base-sites recently approved by the U. S. in their patrolling of the Atlantic neutrality zone, he said.

While details on areas to be used at Trinidad in the Caribbean sea are yet to be arranged, all of the harbors acquired by President Roosevelt in the historic transfer of 50 U. S. destroyers, are now usable for the United States fleet, Knox

---

Union 11/17/40 Sunday

LOCAL NO. 1 CONSCRIPT GETS ORDERS

ARTHUR ROEDEL

. . . has the distinction of being the first San Diegan to be drafted under the selective service act. Roedel has been employed as a welder.

WILLIAM N. ROTH

. . . drafted from Consolidated aircraft plant.

Trib. 11/26/40

Lauds Consair Plant

Rep. Dow Harter (D-O), who visited the Consolidated Aircraft Corp. plant yesterday, said the plant is an important cog in national defense. Harter, who came to San Diego following a week-end visit with his former Akron, O., neighbor, Ollie Morris, owner and operator of the Carlsbad hotel, was honored at a chamber of commerce aviation committee luncheon, where he said aviation is the most important adjunct of modern armies. Harter, chairman of the aviation subcommittee of the house military affairs committee, conferred here with E. N. Gott, Consolidated vice president, with whom he became acquainted in Washington, D. C.

S.D. Trib 11/22/40

THE

Italy Marked For Raids by S. D. Bombers

San Diego-made Consolidated four-motor army bombers will rain death and destruction over Europe, according to plans of the British to use the 26 planes ordered from here in bolder and harder strokes against their foes across the English channel. The Associated Press, in a dispatch from London, said R.A.F. officers left little doubt the long-range Consolidated bombers will be in the van of the attacks which they intend to extend to eastern Germany and more completely into Italy.

Equipped with the Sperry gyroscopic bombing sight, these gigantic planes also may be used for the nightly bombing "ferry service" to Berlin, they said.

R.A.F. officers said their large fuel capacity, bomb load and altitude-keeping abilities made them "ideal for sustained attacks over important targets."

"Are Babies To Do It"

Other officers, who said every sign points to an early opening of a widespread air war on Italy, declared the American-made planes "are the babies to do it with."

Employment of the long-range American-made bombers also will release more British bombers for their most vital task outside the systematic attack on German industry—the steady hammering of German submarine nests along the channel, observers said.

Last night these bases at Lorient, Cherbourg, Dunkerque and Ostend were pounded again by bombers intent on strangling the submarine menace which if not checked may strangle Britain by cutting off her seaborne supplies.

The Ruhr, industrial heart of Germany, also was the objective of a "serious" British raid last night which the air ministry news service said "must inevitably have disorganized essential traffic and destroyed indispensable raw materials" at Duisburg-Ruhrort, the largest river port in the world.

Tribune-Sun 11/27/40

$342,169 Added To Consair List

The gigantic backlog of the Consolidated Aircraft Corp. was increased $342,169 today by the war department, in a new contract to cover increased costs of specification changes in airplanes now under construction, The Associated Press reported from Washington, D. C. Among the $19,620,000 total orders placed by the army today for equipment and supplies for the air corps, ordnance department and quartermaster corps were: Ford Motor Co., Detroit, trucks, $1,387,500, and passenger cars, $625,000; Standard Oil Co., San Francisco, airplane fuel, $101,250; Shell Oil Co., Inc., St. Louis, airplane fuel, $103,044, and Duncan & Son, Inc., Seattle, saddles, $100,000. Delivery dates were not disclosed.

Aircraft News 11/14/40

FOUR-MOTOR RAF BOMBER IN TEST FLIGHT

SAN DIEGO. — While debate rages as to whether the Army Air Corps' flying fortresses have been or are to be sent to Great Britain, a camouflaged giant four-motored bomber with Royal Air Force markings was given its first test flight from Lindbergh Field here last Monday.

Performance characteristics it was reliably reported, reflect aerodynamic improvements perfected by the aircraft industry since the flying fortresses were accepted by the Army Air Corps, indicating it is the most advanced land bomber in the world.

MAY FLY ATLANTIC

A large number — the exact amount is undisclosed—is under production at Consolidated for the Royal Air Force and the planes probably will be fiown across the Atlantic to Great Britain as fast as they roll off the assembly lines here.

Capable of carrying four tons of bombs at a speed of 300 miles per hour more than 3000 miles nonstop, the Consolidated bombers are expected to be employed by Great Britain in ever-increasing quantities next spring in long-distance battering of enemy objectives.

The plane used in the test was painted a mottled brown and green, with the top of the 110-foot wing made to resemble fields of grass and grain. Pilot Georgge Newman was in charge.

CARRIES LIGHT CANNON

Length of the fuselage is 64 feet, overall height is 19 feet and the three-bladed propellers are 12 feet in diameter. Six to nine men are required to operate it, depending on tactical requirements.

The engines are 18-cylinder twin-row radial air-cooled and the all-metal fuselage is equipped with hatches and windows in the nose, tail, turtle deck, back and bottom, affording machine gun and light cannon protection on all sides. The landing gear is of tricycle type.

---

26 Turned Out By Consair; 1 Delivered

The army high command today acted to release 46 of the largest United States bombing planes, 26 of which are being built by the Consolidated Aircraft Co. here, to Great Britain, it is announced in dispatches of the Associated Press from Washington.

In Two Categories

The dispatches also carried the information that one of two high-accuracy bomb sights developed in the United States already has been released for use by the British.

The 46 bombing planes for which release has been announced fall into two categories, Gen. George C. Marshall, army chief of staff, informed The Associated Press. They are:

Twenty-six four-engine planes coming from the production line at he Consair plant, the first of which as understood to have been delivered to the British last Saturday, after the army had granted a delivery priority in exchange for priority of engines ordered by the British.

Twenty planes built by the Boeing Co. and already fully equipped, to be turned over to Britain when a basis of release, now being negotiated, has been reached.

Both makes of planes are long-range craft, able to reach any part of Germany from the British Isles. They weigh about 40,000 pounds each without bomb loads.

The planes built at the local plant, said to have undergone test flights already, reportedly are equipped with Pratt & Whitney engines.

S. D. Bomber Hops To Join British

Trib. Sun 11/29/40

Camouflaged and destined ultimately to be used in the defense of Great Britain, the first of a fleet of Consolidated bombers took off from San Diego bay early today for an unannounced east coast destination. The giant craft, of the Model 28 type and similar to the United States navy's PBY bombers, left at 4:35 a.m. from the coast guard air base after being towed from the Consolidated factory to the seaplane ramp on Lindbergh field.

Observers ashore could hear the roar of the craft's two 1000-horsepower motors, but it was too dark to see the plane. Aboard the ship. which has a 104-foot wingspread, are Lt. W. C. Cleveland, naval reserve, and Douglas Kelly, local flier, as pilots, and Russell Rogers and I. G. Ross, observers. Rogers was pilot of Richard Archbold's round-the-world Consolidated-built flying boat Guba.

Delivery is to be taken by the Canadian government on the east coast. The Associated Press reported but company officials refused to say where. It is rumored a Canadian Airways crew will take it over at New York, ferrying it to Halifax, N. S., for the transatlantic flight.

The plane, camouflaged an olive green, was reported over El Paso at 9:37 a.m. (MST), after averaging well over 170 miles per hour. Meanwhile, another olive green bomber took off from the bay in mid-morning for a two-hour test flight. It landed off the seaplane ramp shortly before 11 a.m.

Aircraft Mechanic

CONSOLIDATED NOT LAYING OFF EMPLOYEES

11/14/40

Until the new buildings are completed, new employment at Consolidated has slacked off. The rumor that 5,000 men were to be laid off is entirely unfounded and is evidently being circulated by irresponsibles in an effort to place the Consolidated Aircraft Company in an embarrassing position and undermine the confdience of the public and business in the Aircraft Industry.

Aircraft Mech.

Are We Ready?

11/14/40

The Collecive Bargaining Agency for all Consolidated employees is now preparing the records for the coming Wage Review. Of course, due to the heavy expense involved, complete and elaborate records to support the employees' claim for an increase in wages, will be made up only for the members of the Collective Bargaining Agency which is Lodge 1125. This means that the claims for wage increases by the members of Lodge 1125 will be better and more ably presented than those of the other employees, and therefore the Lodge wishes to state once more that the individual employees' claim for a pay increase will be handled in a manner that will bring the greatest return.

Submitted by L. A. Perry, Recording Secretary, Lodge 1125.

San Diego Firm Gets Plane Contract

Aircraft News 11/14/40

WASHINGTON.—The Navy this week awarded a $75,313,000 contract to Consolidated Aircraft Corp., San Diego, for an undisclosed number of airplanes.

The contract was cleared by the defense advisory commission. The Navy would not state the type or number of the planes, but it was pointed out that Consolidated is one of the major producers of large patrol bombers.

War Production Centers Strafed

LONDON, Nov. 21 (Thursday (I.N.S.) — Hundreds of Germa bombers rocked the heart of Bri ain's midland industrial area wi demolition and fire-setting bom through the night and early tod unleashing their fury particular on two towns of vital importance

UNION Sat 11/16/40

Defense Chiefs Here to Inspect Plane Plants

Aircraft Output Nears High Peak, Says Rep. Snyder

Asserting that "American aircraft manufacturing plants are doing a remarkable job in speeding up their part of the national defense program," Rep. J. Buell Snyder (D-Pa), chairman of the house committee on army appropriations, arrived at dusk yesterday from March field, Riverside, in a Douglas army transport plane.

The Pennsylvania solon was accompanied by John Pugh, secretary of the house army and navy appropriations committee, and Maj. Thomas E. Lewis of the army general staff. Snyder is on a tour of inspection of military cantonments and aircraft factories in the south and west.

AHEAD OF SCHEDULE

"American aircraft plants will produce a total of 1100 military planes in November and this number will be materially increased in the months to come," Rep. Snyder said. "Contrary to what many radio commentators have said, the production of planes for the national defense program is far ahead of schedule. The aircraft industry has performed wonders in the last year and it has not hit its full stride.

"Congress, and I am sure the war department, have made no plans for creating any new aircraft manufacturing plants in the midwestern states or of moving plants to that section from their present locations on the Pacific coast. I understand that the Boeing company is planning to extend its manufacturing facilities at Wichita, Kan., in a plant, however, that this concern acquired some time ago.

"On my present inspection tour I inspected the mechanized cavalry units at Ft. Knox, Ky., and army cantonment construction at Little Rock, Ark., and Ft. Sill, Okla. Little Rock is preparing to house 20,000 troops and Ft. Sill 25,000 troops.

FILL PROCEED TO L. A.

"Thie chief objective of the trip is to visit aircraft plants engaged in the manufacture of planes for the army air corps, to see how they have expanded and to investigate their possible production output as of July 1, 1941."

This morning Rep. Snyder will inspect the Consolidated, Ryan and Solar plants. He will leave at noon for Los Angeles for an inspection

---

ARRIVE BY AIR FOR STUDY OF MILITARY FACILITIES

REP. J. BUELL SNYDER — JOHN PUGH — MAJ. THOMAS E. LEWIS

. . . Pennsylvania solon, chairman of the house committee on army appropriations, arrived yesterday on an inspection trip accompanied by Pugh, secretary of the house army and navy appropriations committee, and Maj. Lewis of the army general staff. They will visit aircraft plants here.

BRITISH TO GET 26,375 U. S. AIRPLANES

Aircraft News 11/14/40

WASHINGTON.—Great Britain will receive approximately 26,375 American made planes before July, 1942, under the arrangement for a 50-50 split of American defense production between this country and Britain, informed officials have asnounced.

American plane plants will be geared to produce more than 66,000 planes before that time, aeronautical sources indicated. The Army and Navy already have approximately 40,000 planes on order.

COST $2,000,000,000

It was estimatedt hat the British orders would total almost $2,000,000,000. Orders on hand from Britain for 14,375 planes will cost about $1,000,000,000. The additional 12,000 planes which the priorities board of the defense commission has authorized the British to negotiate for would cost about the same amount. They will include a larger proportion of expensive heavy bombers.

Just how fast British deliveries will be arranged remained unsettled. Fighter plane production was between 900 and 950 in September and October. Of these the British were said to have received about 40 per cent.

INCREASE EXPECTED

The rate of increase in those two months was small, but aeronautical trade experts estimated that production would jump to between 1000 and 1500 planes monthly in January.

There are no figures on arms and ammunition production, making it impossible to determine how much of those supplies Britain is getting in this country. Total British defense orders here amount to about $2,000,000,000. With a little more than half going for planes, something less than $1,000,000,000 probably is being spent for arms and ammunition.

Arms and ammunition production capacities are regarded as secret information by the War and Navy departments.

Trib. Sun 11/28/40

$342,169 Added To Consair List

The gigantic backlog of the Consolidated Aircraft Corp. was increased $342,169 yesterday by the war department, in a new contract to cover increased costs of specification changes in airplanes now under construction, The Associated Press reported from Washington, D. C. Among the $19,620,000 total orders placed by the army yesterday for equipment and supplies for the air corps, ordnance department and quartermaster corps were: Ford Motor Co., Detroit, trucks, $1,387,500, and passenger cars, $625,000; Standard Oil Co., San Francisco, airplane fuel, $101,250; Shell Oil Co., Inc., St. Louis, airplane fuel, $103,044, and Duncan & Son, Inc., Seattle, saddles, $10,000. Delivery dates were not disclosed.

The new order raises Consolidated's backlog to nearly $325,000,000. On Nov. 9 the navy awarded Consair a $75,513,000 contract for planes, followed by another order Nov. 14 for $18,529,500. These two orders raised the backlog to approximately $324,500,000.

Trib. Sun 11/28/40

Consair Inspected By Under-Secretary

Inspection of Consolidated Aircraft Corp. plant was made today by James V. Forrestal, under-secretary of the navy, who arrived here by plane late yesterday from Washington, D. C., via Seattle and Los Angeles. He was accompanied by Capt. S. M. Kraus, of the navy bureau of aeronautics.

Forrestal is on his second visit to San Diego in recent weeks. He was expected to depart this afternoon.

Aircraft Mechanic 11/14/40

Backlog at Consolidated Well Over $306,000,000

The navy has awarded a new $75,313,000 contract for planes to the Consolidated Aircraft Corp., the Associated Press reported from Washington, D. C. The new order brings the firm's backlog to an estimated $306,000,000.

Details Withheld

Types, numbers, delivery dates and other details were withheld, but it was understood that the order was for additional long-range, four-motored scouting craft such as the company has been turning out for the navy, wor[illegible] rom Washington states. Consolidated officials said they had no statement to make.

The order came as the firm pushed constructoin work on another large addition to its factory on Lindbergh field, following the completion of a $2,000,000 addition which was dedicated Labor Day

In addition to manufacturing planes for the army and navy, Consolidated also is turning out planes for Great Britain and Australia. The first of seven 20-ton, long-range four-motored bombers reported destined for Great Britain is receiving its test flights. The Australian government just two months ago announced its decision to purchase 11 flying boats from Consolidated at a cost of $3,500,000, for delivery this winter.

Consolidated now employs slightly more than 13,000, it was reported at the plant. The company is on a 10-hour day, five-day week—The Tribune-Sun.

Aircraft Mechanic 11/14/40

Southern California Prosperity

A few years ago some optimistic Chamber of Commerce announced that Southern California would soon become the "Air Capital" of the United States. There was much lifting of eyebrows, and many a shoulder shrug from readers of that statement.

But this time the "Boosters" were right—plenty right. If we were not witnessing the development of this industry with our own eyes, the figures shown in the chart would appear fantastic and would challenge our credulity. But facts are facts, and no overstatement is necessary to make us realize the great progress already made, and the tremendous possibilities of the future.

The figures show that this "infant" industry has already become one of the biggest factors contributing to the prosperity of Southern California. Where is there any other enterprise with a backlog of orders amounting to over a billion and a half dollars? And the present monthly payroll of nearly ten millions of dollars paid to approximately 65,000 employees will, in all probability, be doubled within a year, with a corresponding increase in personnel.

No wonder residents and business men throughout this entire area are more than ever looking to the Aircraft Industry as a vehicle to prosperity for themselves and everybody in Southern California.

Company	Employees	Backlog	Recent Orders	Est. Monthly Payroll	Planned Expansion	Plan to Employ
Lockheed	12,258	$209,195,356	$ 16,182,422	$1,550,000	Yes	Not known
Vega	2,207	Not known	Not known	$340,000	New plant	Not known
No. American	6,545	$216,000,000	$135,000,000	Not known	Yes, also new Texas plant	15,000
Douglas	Appr. 20,000	$561,153,194	$211,000,000	Not known	Yes, new plant in Long Beach	Not known
Vultee	5,230	$ 84,700,000	$ 62,200,000	$772,000	Yes, Downey and Nashville	Not known
Northrup	1,300	$ 24,117,586	$ 21,042,000	Not known	Yes	Not known
Interstate	500	Not known	Not known	Not known	Not known	Not known
Ryan	1,500	$ 10,000,000	$2,074,000	$225,000	Yes	2,500
Consolidated	14,000	$306,000,000	$ 75,313,000	$2,500,000	Yes	30,000
Rohr Aircraft	100	$750,000	Not known	$15,000	Yes	Not known
Weaver	New Plant	Not known	Not known	Not known	Not known	Not known
Solar	648	$2,000,000	$750,000	Not known	Yes	Not known

VITAL STATISTICS AS OF OCT. 1, 1940 (See Prepared Chart)

Editor's Note: The information is from authoritative sources. The blank spaces represent lack of authentic information. As more contracts are made our information will be more complete and more accurate. We plan to frequently print in chart form for quick reading and fast comparison the standing of the companies in relative size and activity. Guesses and rumors are not reported.

1. Interstate is on the verge of blooming into a large company. Plan to build 900 small planes.

2 Unable to verify number of employees or to get breakdown of the Santa Monica and El Segundo plants as to backlog for each.

3. Authentic information lacking. News stories not verified.

Aircraft Mechanic 11/14/40

—BULLETIN BOARD—
CONSOLIDATED

NOTICE TO ALL EMPLOYEES
Subject: Personnel Changes

The following personnel changes will be effective Nov. 11, 1940:

Mr. Glenn Hotchkiss is relieved of his duties as Foreman of the Hull Department to become Superintendent of Building No. 2 and the Yard.

Mr. George Wire transferred from Foreman of the Hull Department nights to Foreman of the Hull Department days.

Mr. Frank Popadowski, Foreman of the Hull Department days, to Foreman of the Hull Department nights.

JAS. L. KELLEY,
Factory Manager.

Boxing and Wrestling

THE PLANT BOXING AND WRESTLING CHAMPIONSHIPS will be held Dec. 7, 14, and 21, at the Coliseum. Please sign up at the Welfare Office or with anyone in the Boxing and Wrestling Club. A.A.U. rules will be used.

Ice Skating and Hockey

ICE SKATING AND HOCKEY meeting at Glacier Gardens, foot of Eighth Ave., 12 noon. All men interested contact these men in your departments for further information:

ART FIELD, Engineering Kellogg, Day Production;

POGGI, Engineering English, Night Production;

JOHN STYN, Night Experimental;

KEITH SANFORD, Day Experimental;

JACK BLAAUW, Hull No. 1;

THOMPSON and BILL PETTIT, Hull No. 1;

RICHARD and JOHN RAY, Night Metal Bench;

CUZINSKI, Day Metal Bench;

JERMYN, Night Wing.

Consolidated has special rates between 6:00 and 7:30 p. m., every Friday and Sunday for ice skating at the Glacier Gardens.

Union 11/21/40

Britain to Get 24 S.D. Planes, Army Bombsight

Boeing to Release 20 of 'Flying Fortress' Type

Twenty-six four-motored long-range patrol bombers, one of which completed its flight tests last week, are to be delivered by the Consolidated Aircraft Corp. to the British Royal Flying corps, the war department announced yesterday. The planes will be equipped with the famous secret army bombsight.

Twenty other four-motored bombers, similar in type to the army's famed "flyng fortress," are to be delivered to Great Britain by the Boeing plant at Seattle.

PRIORITY GRANTED

The Associated Press reported from Washington that Gen. George C. Marshall, army chief of staff, had granted a priority delivery of the Consolidataed planes to Great Britain in an exchange of priority of engines ordered by the British.

The Boeing-built bombers are to be turned over to the R. A. F. when a basis of release, now being negotiated, has been reached.

The Boeing and Consolidated bombers, each capable of cruising more than 3000 miles carrying four tons of heavy demolition bombs, will be able to reach any section of Germany from flying bases in the British isles and return easily without refueling, it is said.

Consolidated authorities refused comment on the plane delivery.

CAMOUFLAGE PLANNED

The 26 Consolidated bombers, when released from the final assembly plant, will be painted with the R.A.F. insignia and camouflaged similarly to the plane tested last week.

The other 20 bombers are of the B-17 type and will be fitted with the secret bombsight before being sent abroad.

The bombers, urgently desired by Britain for long-distance raids on Germany and Mediterranean objectives, will thus have the added advantage of a bombsight unequalled by any other warring power, International News Service reported.

The only other comparable one is also a U. S. product and vital military secret. Manufactured by the Norden Co. and developed by the navy, it is now standard equipment on planes in both military branches. The latter sight is not being released, Gen. Marshall said.

U. S. HAS OBSERVERS

In revealing the deals to give Great Britain immediate supplies of super-bombers, Gen. Marshall at a press conference also disclosed that the U. S. army has some of its aviators flying in British war planes as observers, but only on those that fly over the British isles and over the English channel.

"We have a string of observers with the British army," Gen. Marshall said.

U. S. artillery, anti-aircraft, ordnance and other officers are with the British army. Observers have been sent to Egypt to gather information there, he revealed. Later, Secretary of the Navy Frank Knox told newsmen the navy also has observers with the British navy.

And U. S. naval aircraft already have begun using Bermuda and St. Lucia, two of the British base-sites recently approved by the U. S. in their patrolling of the Atlantic neutrality zone, he said.

While details on areas to be used at Trinidad in the Caribbean sea are yet to be arranged, all of the harbors acquired by President Roosevelt in the historic transfer of 50 U. S. destroyers, are now usable for the United States fleet, Knox explained.

Preliminary work of surveying and planning for construction at the bases is going forward rapidly, under an allotment of $25,000,000, and the projects will be rapidly completed, he said.

But it was the far-reaching transaction consummated by the war department with Great Britain on dispatch of a big bomber fleet that took the spotlight in the steadily-closer cooperation between the American and British governments.

"We have completed negotiations with the British government, giving them priority on the delivery of 26 four-engined, heavy bombers called B-24, from the Consolidated plant in San Diego," Gen. Marshall said in an unemotional tone that increased the dramatic potent of his announcement.

"The United States," he continued, "is to accept a delay in the start of its deliveries on present contract of approximately three months. In consideration for this priority, the British government has released to us sufficient engines to equip 41 of the 'flying fortress' type of four-engine bombers, which the army had already accepted delivery on without engines or would have received by Jan. 1.

Tribune-Sun 11/20/40

BRITISH GET S.D. BOMBERS, U.S. BOMB SIGHT

Union 11/17/40 Sunday

LOCAL NO. 1 CONSCRIPT GETS ORDERS

ARTHUR ROEDEL

. . . has the distinction of being the first San Diegan to be drafted under the selective service act. Roedel has been employed as a welder.

WILLIAM N. ROTH

. . . drafted from Consolidated aircraft plant.

Trib. 11/26/40

Lauds Consair Plant

Rep. Dow Harter (D-O), who visited the Consolidated Aircraft Corp. plant yesterday, said the plant is an important cog in national defense. Harter, who came to San Diego following a week-end visit with his former Akron, O., neighbor, Ollie Morris, owner and operator of the Carlsbad hotel, was honored at a chamber of commerce aviation committee luncheon, where he said aviation is the most important adjunct of modern armies. Harter, chairman of the aviation subcommittee of the house military affairs committee, conferred here with E. N. Gott, Consolidated vice president, with whom he became acquainted in Washington, D. C.

Aircraft Mechanic

CONSOLIDATED NOT LAYING OFF EMPLOYEES

11/14/40

Until the new buildings are completed, new employment at Consolidated has slacked off. The rumor that 5,000 men were to be laid off is entirely unfounded and is evidently being circulated by irresponsibles in an effort to place the Consolidated Aircraft Company in an embarrassing position and undermine the confdience of the public and business in the Aircraft Industry.

Aircraft Mech.

Are We Ready?

11/14/40

The Collecive Bargaining Agency for all Consolidated employees is now preparing the records for the coming Wage Review. Of course, due to the heavy expense involved, complete and elaborate records to support the employees' claim for an increase in wages, will be made up only for the members of the Collective Bargaining Agency which is Lodge 1125. This means that the claims for wage increases by the members of Lodge 1125 will be better and more ably presented than those of the other employees, and therefore the Lodge wishes to state once more that the individual employees' claim for a pay increase will be handled in a manner that will bring the greatest return.

Submitted by L. A. Perry, Recording Secretary, Lodge 1125.

S.D. Trib 11/22/40

THE

Italy Marked For Raids by S. D. Bombers

San Diego-made Consolidated four-motor army bombers will rain death and destruction over Europe, according to plans of the British to use the 26 planes ordered from here in bolder and harder strokes against their foes across the English channel. The Associated Press, in a dispatch from London, said R.A.F. officers left little doubt the long-range Consolidated bombers will be in the van of the attacks which they intend to extend to eastern Germany and more completely into Italy.

Equipped with the Sperry gyroscopic bombing sight, these gigantic planes also may be used for the nightly bombing "ferry service" to Berlin, they said.

R.A.F. officers said their large fuel capacity, bomb load and altitude-keeping abilities made them "ideal for sustained attacks over important targets."

"Are Babies To Do It"

Other officers, who said every sign points to an early opening of a widespread air war on Italy, declared the American-made planes "are the babies to do it with."

Employment of the long-range American-made bombers also will release more British bombers for their most vital task outside the systematic attack on German industry—the steady hammering of German submarine nests along the channel, observers said.

Last night these bases at Lorient, Cherbourg, Dunkerque and Ostend were pounded again by bombers intent on strangling the submarine menace which if not checked may strangle Britain by cutting off her seaborne supplies.

The Ruhr, industrial heart of Germany, also was the objective of a "serious" British raid last night which the air ministry news service said "must inevitably have disorganized essential traffic and destroyed indispensable raw materials" at Duisburg-Ruhrort, the largest river port in the world.

Aircraft News 11/14/40

San Diego Firm Gets Plane Contract

WASHINGTON.—The Navy this week awarded a $75,313,000 contract to Consolidated Aircraft Corp., San Diego, for an undisclosed number of airplanes.

The contract was cleared by the defense advisory commission. The Navy would not state the type or number of the planes, but it was pointed out that Consolidated is one of the major producers of large patrol bombers.

Tribune-Sun 11/27/40

$342,169 Added To Consair List

The gigantic backlog of the Consolidated Aircraft Corp. was increased $342,169 today by the war department, in a new contract to cover increased costs of specification changes in airplanes now under construction, The Associated Press reported from Washington, D. C. Among the $19,620,000 total orders placed by the army today for equipment and supplies for the air corps, ordnance department and quartermaster corps were: Ford Motor Co., Detroit, trucks, $1,387,500, and passenger cars, $625,000; Standard Oil Co., San Francisco, airplane fuel, $101,250; Shell Oil Co., Inc., St. Louis, airplane fuel, $103,044, and Duncan & Son, Inc., Seattle, saddles, $100,000. Delivery dates were not disclosed.

Aircraft News 11/14/40

FOUR-MOTOR RAF BOMBER IN TEST FLIGHT

SAN DIEGO. — While debate rages as to whether the Army Air Corps' flying fortresses have been or are to be sent to Great Britain, a camouflaged giant four-motored bomber with Royal Air Force markings was given its first test flight from Lindbergh Field here last Monday.

Performance characteristics, it was reliably reported, reflect aerodynamic improvements perfected by the aircraft industry since the flying fortresses were accepted by the Army Air Corps, indicating it is the most advanced land bomber in the world.

MAY FLY ATLANTIC

A large number — the exact amount is undisclosed—is under production at Consolidated for the Royal Air Force and the planes probably will be flown across the Atlantic to Great Britain as fast as they roll off the assembly lines here.

Capable of carrying four tons of bombs at a speed of 300 miles per hour more than 3000 miles nonstop, the Consolidated bombers are expected to be employed by Great Britain in ever-increasing quantities next spring in long-distance battering of enemy objectives.

The plane used in the test was painted a mottled brown and green, with the top of the 110-foot wing made to resemble fields of grass and grain. Pilot Georgge Newman was in charge.

CARRIES LIGHT CANNON

Length of the fuselage is 64 feet, overall height is 19 feet and the three-bladed propellers are 12 feet in diameter. Six to nine men are required to operate it, depending on tactical requirements.

The engines are 18-cylinder twin-row radial air-cooled and the all-metal fuselage is equipped with hatches and windows in the nose, tail, turtle deck, back and bottom, affording machine gun and light cannon protection on all sides. The landing gear is of tricycle type.

---

26 Turned Out By Consair; 1 Delivered

The army high command today acted to release 46 of the largest United States bombing planes, 26 of which are being built by the Consolidated Aircraft Co. here, to Great Britain, it is announced in dispatches of the Associated Press from Washington.

In Two Categories

The dispatches also carried the information that one of two high-accuracy bomb sights developed in the United States already has been released for use by the British.

The 46 bombing planes for which release has been announced fall into two categories, Gen. George C. Marshall, army chief of staff, informed The Associated Press. They are:

Twenty-six four-engine planes coming from the production line at the Consair plant, the first of which was understood to have been delivered to the British last Saturday, after the army had granted a delivery priority in exchange for priority of engines ordered by the British.

Twenty planes built by the Boeing Co. and already fully equipped, to be turned over to Britain when a basis of release, now being negotiated, has been reached.

Both makes of planes are long-range craft, able to reach any part of Germany from the British Isles. They weigh about 40,000 pounds each without bomb loads.

The planes built at the local plant, said to have undergone test flights already, reportedly are equipped with Pratt & Whitney engines.

Trib. Sun 11/24/40

S. D. Bomber Hops To Join British

Camouflaged and destined ultimately to be used in the defense of Great Britain, the first of a fleet of Consolidated bombers took off from San Diego bay early today for an unannounced east coast destination. The giant craft, of the Model 28 type and similar to the United States navy's PBY bombers, left at 4:35 a.m. from the coast guard air base after being towed from the Consolidated factory to the seaplane ramp on Lindbergh field.

Observers ashore could hear the roar of the craft's two 1000-horsepower motors, but it was too dark to see the plane. Aboard the ship, which has a 104-foot wingspread, are Lt. W. C. Cleveland, naval reserve, and Douglas Kelly, local flier, as pilots, and Russell Rogers and I. G. Ross, observers. Rogers was pilot of Richard Archbold's round-the-world Consolidated-built flying boat Guba.

Delivery is to be taken by the Canadian government on the east coast. The Associated Press reported but company officials refused to say where. It is rumored a Canadian Airways crew will take it over at New York, ferrying it to Halifax, N. S., for the transatlantic flight.

The plane, camouflaged an olive green, was reported over El Paso at 9:37 a.m. (MST), after averaging well over 170 miles per hour. Meanwhile, another olive green bomber took off from the bay in midmorning for a two-hour test flight. It landed off the seaplane ramp shortly before 11 a.m.

UNION Sat 11/16/40

Defense Chiefs Here to Inspect Plane Plants

Aircraft Output Nears High Peak, Says Rep. Snyder

Asserting that "American aircraft manufacturing plants are doing a remarkable job in speeding up their part of the national defense program," Rep. J. Buell Snyder (D-Pa), chairman of the house committee on army appropriations, arrived at dusk yesterday from March field, Riverside, in a Douglas army transport plane.

The Pennsylvania solon was accompanied by John Pugh, secretary of the house army and navy appropriations committee, and Maj. Thomas E. Lewis of the army general staff. Snyder is on a tour of inspection of military cantonments and aircraft factories in the south and west.

AHEAD OF SCHEDULE

"American aircraft plants will produce a total of 1100 military planes in November and this number will be materially increased in the months to come," Rep. Snyder said. "Contrary to what many radio commentators have said, the production of planes for the national defense program is far ahead of schedule. The aircraft industry has performed wonders in the last year and it has not hit its full stride.

"Congress, and I am sure the war department, have made no plans for creating any new aircraft manufacturing plants in the midwestern states or of moving plants to that section from their present locations on the Pacific coast. I understand that the Boeing company is planning to extend its manufacturing facilities at Wichita, Kan., in a plant, however, that this concern acquired some time ago.

"On my present inspection tour I inspected the mechanized cavalry units at Ft. Knox, Ky., and army cantonment construction at Little Rock, Ark., and Ft. Sill, Okla. Little Rock is preparing to house 20,000 troops and Ft. Sill 25,000 troops.

FILL PROCEED TO L. A.

"Thie chief objective of the trip is to visit aircraft plants engaged in the manufacture of planes for the army air corps, to see how they have expanded and to investigate their possible production output as of July 1, 1941."

This morning Rep. Snyder will inspect the Consolidated, Ryan and Solar plants. He will leave at noon for Los Angeles for an inspection

---

ARRIVE BY AIR FOR STUDY OF MILITARY FACILITIES

REP. J. BUELL SNYDER — JOHN PUGH — MAJ. THOMAS E. LEWIS

. . . Pennsylvania solon, chairman of the house committee on army appropriations, arrived yesterday on an inspection trip accompanied by Pugh, secretary of the house army and navy appropriations committee, and Maj. Lewis of the army general staff. They will visit aircraft plants here.

BRITISH TO GET 26,375 U. S. AIRPLANES

Aircraft News 11/14/40

WASHINGTON. — Great Britain will receive approximately 26,375 American made planes before July, 1942, under the arrangement for a 50-50 split of American defense production between this country and Britain, informed officials have asnounced.

American plane plants will be geared to produce more than 66,000 planes before that time, aeronautical sources indicated. The Army and Navy already have approximately 40,000 planes on order.

COST $2,000,000,000

It was estimatedt hat the British orders would total almost $2,000,000,000. Orders on hand from Britain for 14,375 planes will cost about $1,000,000,000. The additional 12,000 planes which the priorities board of the defense commission has authorized the British to negotiate for would cost about the same amount. They will include a larger proportion of expensive heavy bombers.

Just how fast British deliveries will be arranged remained unsettled. Fighter plane production was between 900 and 950 in September and October. Of these the British were said to have received about 40 per cent.

INCREASE EXPECTED

The rate of increase in those two months was small, but aeronautical trade experts estimated that production would jump to between 1000 and 1500 planes monthly in January.

There are no figures on arms and ammunition production, making it impossible to determine how much of those supplies Britain is getting in this country. Total British defense orders here amount to about $2,000,000,000. With a little more than half going for planes, something less than $1,000,000,000 probably is being spent for arms and ammunition.

Arms and ammunition production capacities are regarded as secret information by the War and Navy departments.

Trib Sun 11/28/40

Consair Inspected By Under-Secretary

Inspection of Consolidated Aircraft Corp. plant was made today by James V. Forrestal, under-secretary of the navy, who arrived here by plane late yesterday from Washington, D. C., via Seattle and Los Angeles. He was accompanied by Capt. S. M. Kraus, of the navy bureau of aeronautics.

Forrestal is on his second visit to San Diego in recent weeks. He was expected to depart this afternoon.

Trib. Sun 11/28/40

$342,169 Added To Consair List

The gigantic backlog of the Consolidated Aircraft Corp. was increased $342,169 yesterday by the war department, in a new contract to cover increased costs of specification changes in airplanes now under construction, The Associated Press reported from Washington, D. C. Among the $19,620,000 total orders placed by the army yesterday for equipment and supplies for the air corps, ordnance department and quartermaster corps were: Ford Motor Co., Detroit, trucks, $1,387,500, and passenger cars, $625,000; Standard Oil Co., San Francisco, airplane fuel, $101,250; Shell Oil Co., Inc., St. Louis, airplane fuel, $103,044, and Duncan & Son, Inc., Seattle, saddles, $10,000. Delivery dates were not disclosed.

The new order raises Consolidated's backlog to nearly $325,000,000. On Nov. 9 the navy awarded Consair a $75,513,000 contract for planes, followed by another order Nov. 14 for $18,529,500. These two orders raised the backlog to approximately $324,500,000.

Aircraft Mechanic 11/14/40

Backlog at Consolidated Well Over $306,000,000

The navy has awarded a new $75,313,000 contract for planes to the Consolidated Aircraft Corp., the Associated Press reported from Washington, D. C. The new order brings the firm's backlog to an estimated $306,000,000.

Details Withheld

Types, numbers, delivery dates and other details were withheld, but it was understood that the order was for additional long-range, four-motored scouting craft such as the company has been turning out for the navy, wo[illegible]om Washington states. Consolidated officials said they had no statement to make.

The order came as the firm pushed constructoin work on another large addition to its factory on Lindbergh field, following the completion of a $2,000,000 addition which was dedicated Labor Day

In addition to manufacturing planes for the army and navy, Consolidated also is turning out planes for Great Britain and Australia. The first of seven 20-ton, long-range four-motored bombers reported destined for Great Britain is receiving its test flights. The Australian government just two months ago announced its decision to purchase 11 flying boats from Consolidated at a cost of $3,500,000, for delivery this winter.

Consolidated now employs slightly more than 13,000, it was reported at the plant. The company is on a 10-hour day, five-day week—The Tribune-Sun.

Aircraft Mechanic 11/14/40

Southern California Prosperity

A few years ago some optimistic Chamber of Commerce announced that Southern California would soon become the "Air Capital" of the United States. There was much lifting of eyebrows, and many a shoulder shrug from readers of that statement.

But this time the "Boosters" were right—plenty right. If we were not witnessing the development of this industry with our own eyes, the figures shown in the chart would appear fantastic and would challenge our credulity. But facts are facts, and no overstatement is necessary to make us realize the great progress already made, and the tremendous possibilities of the future.

The figures show that this "infant" industry has already become one of the biggest factors contributing to the prosperity of Southern California. Where is there any other enterprise with a backlog of orders amounting to over a billion and a half dollars? And the present monthly payroll of nearly ten millions of dollars paid to approximately 65,000 employees will, in all probability, be doubled within a year, with a corresponding increase in personnel.

No wonder residents and business men throughout this entire area are more than ever looking to the Aircraft Industry as a vehicle to prosperity for themselves and everybody in Southern California.

Company	Employees	Backlog	Recent Orders	Est. Monthly Payroll	Planned Expansion	Plan to Employ
Lockheed	12,258	$209,195,356	$ 16,182,422	$1,550,000	Yes	Not known
Vega	2,207	Not known	Not known	$340,000	New plant	Not known
No. American	6,545	$216,000,000	$135,000,000	Not known	Yes, also new Texas plant	15,000
Douglas	Appr. 20,000	$561,153,194	$211,000,000	Not known	Yes, new plant in Long Beach	Not known
Vultee	5,230	$ 84,700,000	$ 62,200,000	$772,000	Yes, Downey and Nashville	Not known
Northrup	1,300	$ 24,117,586	$ 21,042,000	Not known	Yes	Not known
Interstate	500	Not known	Not known	Not known	Not known	Not known
Ryan	1,500	$ 10,000,000	$2,074,000	$225,000	Yes	2,500
Consolidated	14,000	$306,000,000	$ 75,313,000	$2,500,000	Yes	30,000
Rohr Aircraft	100	$750,000	Not known	$15,000	Yes	Not known
Weaver	New Plant	Not known	Not known	Not known	Not known	Not known
Solar	648	$2,000,000	$750,000	Not known	Yes	Not known

VITAL STATISTICS AS OF OCT. 1, 1940 (See Prepared Chart)

Editor's Note: The information is from authoritative sources. The blank spaces represent lack of authentic information. As more contracts are made our information will be more complete and more accurate. We plan to frequently print in chart form for quick reading and fast comparison the standing of the companies in relative size and activity. Guesses and rumors are not reported.

1. Interstate is on the verge of blooming into a large company. Plan to build 900 small planes.

2 Unable to verify number of employees or to get breakdown of the Santa Monica and El Segundo plants as to backlog for each.

3. Authentic information lacking. News stories not verified.

Aircraft Mechanic 11/14/40

—BULLETIN BOARD— CONSOLIDATED

NOTICE TO ALL EMPLOYEES

Subject: Personnel Changes

The following personnel changes will be effective Nov. 11, 1940:

Mr. Glenn Hotchkiss is relieved of his duties as Foreman of the Hull Department to become Superintendent of Building No. 2 and the Yard.

Mr. George Wire transferred from Foreman of the Hull Department nights to Foreman of the Hull Department days.

Mr. Frank Popadowski, Foreman of the Hull Department days, to Foreman of the Hull Department nights.

JAS. L. KELLEY,
Factory Manager.

Boxing and Wrestling

THE PLANT BOXING AND WRESTLING CHAMPIONSHIPS will be held Dec. 7, 14, and 21, at the Coliseum. Please sign up at the Welfare Office or with anyone in the Boxing and Wrestling Club. A.A.U. rules will be used.

Ice Skating and Hockey

ICE SKATING AND HOCKEY meeting at Glacier Gardens, foot of Eighth Ave., 12 noon. All men interested contact these men in your departments for further information:

ART FIELD, Engineering Kellogg, Day Production;

POGGI, Engineering English, Night Production;

JOHN STYN, Night Experimental;

KEITH SANFORD, Day Experimental;

JACK BLAAUW, Hull No. 1;

THOMPSON and BILL PETTIT, Hull No. 1;

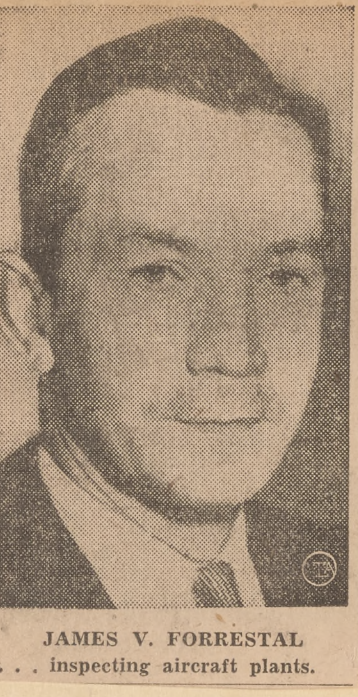
RICHARD and JOHN RAY, Night Metal Bench;

CUZINSKI, Day Metal Bench;

JERMYN, Night Wing.

Consolidated has special rates between 6:00 and 7:30 p. m., every Friday and Sunday for ice skating at the Glacier Gardens.

Arrives by Plane



JAMES V. FORRESTAL
. . . inspecting aircraft plants.

Union 11/28/40

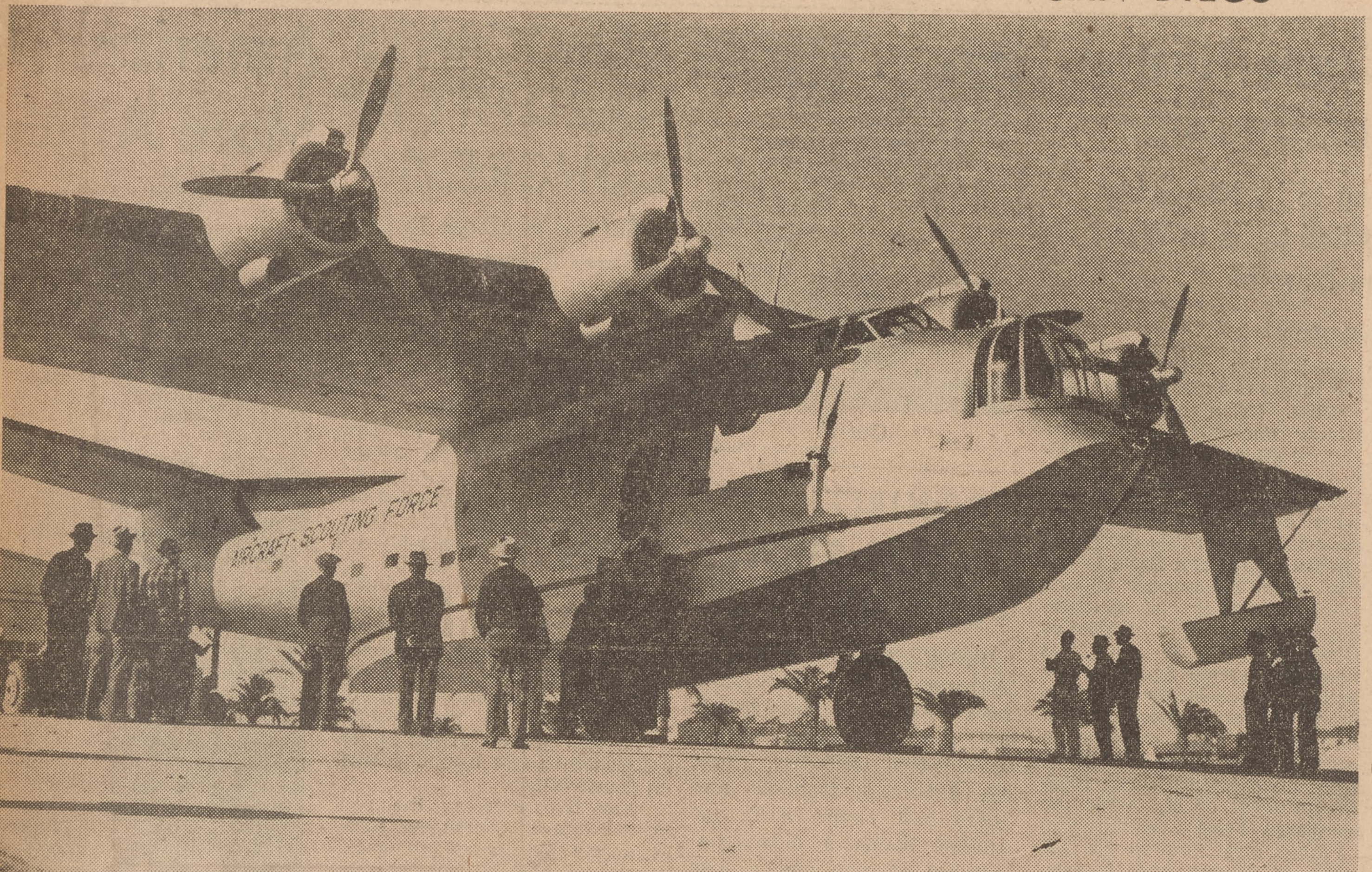
Forrestal Here On Consair Visit

On an inspection tour of west coast aircraft factories which are engaged in the manufacture of planes for the navy, James V. Forrestal, under-secretary of the navy, arrived by plane late yesterday from Washington, D. C., via Seattle and Los Angeles. He was accompanied by Capt. Sidney M. Kraus of the bureau of aeronautics.

Landing at the Naval Air station at 5:10 from Mines field, Los Angeles, Forrestal was greeted by Vice Adm. W. F. Halsey, Rear Adm. Charles A. Blakely, 11th Naval district commandant, and chamber of commerce executives. He went to Hotel del Coronado.

At Seattle Forrestal inspected the Boeing factory and at Los Angeles the Douglas and North American aircraft plants. He will visit the Consolidated plant here today.

SKY GIANT SUCCESSFULLY TRIES WINGS AT SAN DIEGO



AIR LEVIATHAN—Here is prototype of first "battleship of the air" which has undergone tests successfully.

Los Angeles Times - 11/24/40

Huge New Air Battleship Given First Test Flights

One of Navy's Six Most Powerful Bombers, Built at San Diego, Tries Out Its Wings

SAN DIEGO, Nov. 23.—Test flights on the first of six four-motored, 25-ton "battleships of the air," most powerful bombers in the Navy, have been started here by a Consolidated Aircraft Corp. crew, with delivery to a Navy trial board due next month, it was learned today.

Equipped with a supercharger enabling operations at extremely high altitudes, the craft will be assigned to the recently commissioned Patrol Squadron 13, commanded by Lieut. Comdr. Stephen B. Cooke, at the San Diego naval air station.

CARRIES MACHINE GUNS

All six, the first group of a Navy mass production order, are expected to be delivered to the 100-man squadron by February or March, it was indicated.

Capable of flying 5000 miles nonstop, the air Leviathan has two machine-driven revolving turrets, one in the bow and another topside, mounting heavy-caliber machine guns. Additional protection from fighter planes is afforded by manually operated gun stations.

The engines are 1200 h.p. Pratt & Whitney radial air-cooled, housed in a 115-foot wing.

NONSTOP FLIGHTS

The plane is similar to the $1,000,000 experimental prototype flagship of the Aircraft Scouting Force, used to transport Secretary of the Navy Frank Knox across the Pacific to Hawaii and back on his recent inspection trip. This airboat last year made two nonstop flights across the continent, from San Diego to Anacostia, D.C., and return.

Cost of each of the six bombers, the first four-motored patrol planes in the Navy, will be about $300,000, including engines, it was reported authoritatively.

Official Publication of
Council of Aeronautical
Mechanics, I. A. of M.

☆☆☆ AMERICAN ☆☆☆

Affiliated with the
American Federation
of Labor

AIRCRAFT MECHANIC

INTERNATIONAL ASSOCIATION OF MACHINISTS

THE VOICE OF THE AIRCRAFT INDUSTRY

VOLUME 1 SAN DIEGO, CALIFORNIA, NOVEMBER 21, 1940 NUMBER 6

WAGE REVIEW STARTS DEC. 2 AT CONSAIR

A large attendance was reported at last Monday's meeting, at which time approximately 150 new members were received into the union. Tuesday night's meeting was attended by approximately 350 members at which time over 250 new members were admitted to the union.

Nominations received at both day and night shifts to date are as follows:

President: L. A. Perry, R. B. Felton, W. J. Chudleigh, and Bros. Shields and Burney.

Vice-President: J. L. Castle, J. S. Burney, H. Gillan, A. J. Fischer, and Bro. Granstead.

Financial Secretary: W. J. Chudleigh, R. B. Felton, A. J. Fischer, H. A. Abbey, Bro. McIllivich, L. A. Perry, and F. H. Cole.

Recording Secretary: L. A. Perry, F. M. Martin, Al Hogan, and Bro. Morris.

Treasurer: Herman Stellar, Al Cox, and Bro. Wilder.

Conductor: A. Peterson, F. Martin, A. J. Fischer, and Bro. McCune.

Sentinel: H. W. Clark, R. B. Felton, H. A. Abbey, A. Peterson, and Bro. Swaed.

Trustees: A. Hogan, J. J. Braun, P. McManus, L. Larsen.

Executive Board: H. Torres, J. Coe, R. B. Felton, J. D. Barnes, H. A. Abbey.

Brother Parker was elected as member of Wage Review Board from the Night Shift to serve with Bro. Chudleigh.

Motion made at the night shift meeting on last Monday that nomination of officers for the whole lodge be held over to special meeting which will be held at 2 p. m., Sunday, Nov. 24th, when a public agent also will be nominated. This was held to be out of order and unconstitutional at the meeting of the day shift Tuesday night, Nov. 19th, as nomination for officers must be made at two regular meetings to be held in November.

The nominations were closed from the day shift, but can still be placed before the union at next Monday's meeting of the night shift, which is held in Turner Hall at 10 a. m. Special meeting for Sunday cannot be legally held.

The discharge and lay off of the members was discussed and it was suggested that, where the employee concerned considered that the lay off or discharge was unjust and that he was being discriminated against, he should contact his shop committeeman immediately as re-instatements were much easier to secure if acted upon as soon as possible.

Matters pertaining to the immediate wage increase for employees in the lower brackets who have been employed since Aug. 31, 1940, will be discussed at a full committee meeting with the management which has been planned for Monday.

Wage review problems were discussed and plans were made for the proper presentation.

Information blanks have been distributed to the employees of Local 1125 requiring the following information: Name of Employee, Clock Number, Address. Do you feel that you are entitled to a wage increase? How much per hour? Reason for increase? Give details of the work you are now doing.

If you have not received one of these blanks, contact your shop committeeman and get this information to him as soon as possible.

Shop Committeemen—Day Side

W. J. Chudleigh, tool room.
Harry Hudson, sheet metal.
J. D. Barnes, machine shop.
M. J. Castle, metal bench.
C. E. Danner, finish.
Hammett, tool bending.
H. E. Leonard, experimental.
S. W. Adams, M. T.
R. J. Bragg, hull department.
Carl E. Heilbach, wood shop.
Don Greene, final assembly.
J. B. Waskey, wing.
L. A. Perry, wing.
Kobets, tank.

The names of night shift committeemen have not been secured at this time.

The following communication for Consolidated management was read:

San Diego, Cal., Nov. 19, 1940.
Memo to: All Foremen
Subject: Wage Review.

In order to proceed with our next wage review starting 2 December, 1940, you are requested to keep separate all record sheets of employees who have been hired since 31 August, 1940. These record sheets will be reviewed after our regular wage review period.

The order of departments to be reviewed will be as follows:

1. Tool Room and Wood Shop.
2. Machine Shop.
3. Welding.
4. Sheet Metal.
5. Hull Department.
6. Drop Hammer and Tank.
7. Wing Department.
8. Metal Bench.
9. Final Assembly.
10. Paint Shop.
11. Sub Ass'y and Spare Parts.
12. Maintenance.
13. Draw Bench.
14. Heat Treat. and Spotweld.
15. Tubing.
16. Experimental.
17. Loft.
18. Productoin Department.
19. Shipping and Receiving.

JAS. L. KELLEY,
Factory Manager.

Union 11/29/40

War-Bound S. D. Bomber to Hop

The first of a large order of patrol-bomber type seaplanes ordered by Britain will leave the Consolidated Aircraft Corp. plant before dawn this morning bound for the east coast and embattled England.

The ship is a model 28 type, similar to the famous navy P.B.Y. planes. It is equipped with two 1000-horsepower engines and has a wing span of 104 feet. It has been camouflaged for its flight to the war zone.

Lt. W. Cleveland, naval reserve, and Douglas Kelley, local flier, will be pilots. Russ Rogers, who flew the Archibald plane Guba around the world, will act as observer, according to report from Consolidated officials.

Another observer aboard will be I. G. Ross, Canadian pilot, who may be slated for the job of taking the plane across the Atlantic after the crew supplied by Consolidated makes delivery on the east coast.

NOV. 29, 1940 Union

Air Reserve Head

LT. H. B. DUCKWORTH
. . . 10 years a test pilot

Duckworth Aids Army Inspector

Announcement has been made by Maj. E. R. McReynolds, air corps factory representative in San Diego that Lt. Hubert B. Duckworth has been assigned by the war department to assist Maj. McReynolds in final testing and acceptance of army planes at Consolidated Aircraft Corps. and Ryan Aeronautical Co.

This assignment is in addition to Lt. Duckworth's duties as commanding officer of the air corps reserve base at Lindbergh field, and as unit instructor of the local air corps unit of reserve pilots.

Lt. Duckworth has had 10 years' experience as a test pilot for the civil aeronautics administration, Curtis-Wright Aircraft Corp. and the Army air corps.

Duckworth Assigned To S. D. Army Duty

Trib-Sun 11/29/40

Lt. Hubert B. Duckworth has been assigned by the war department to assist Maj. E. R. McReynolds, air corps factory representative in San Diego, in final testing and acceptance of army planes at the Consolidated Aircraft Corp. and Ryan Aeronautical Co. plants, according to announcement by McReynolds. Duckworth, who has had 10 years' experience as test pilot for the civil aeronautics administration, the Curtiss-Wright Aircraft Corp. and the army air corps, is commanding officer of the air corps reserve base at Lindbergh field and instructor of the local air corps unit of reserve pilots.

Trib-Sun 11/29/40

Navy Aid Leaves After Viewing Plants

Completing his inspection of local aircraft factories, James V. Forrestal, under-secretary of the navy, who arrived Wednesday, left by plane late yesterday for Washington, D. C. While here he conferred with officials of the Consolidated Aircraft Corp. and the Ryan Aeronautical Co. He was accompanied by Capt. Sidney M. Kraus, of the bureau of aeronautics.

Union 11/29/40

Navy Under-Secretary Leaves for Capital

Completing inspection of local aircraft factories, James V. Forrestal, under-secretary of the navy, left by plane late yesterday for Washington. He was accompanied by Capt. Sidney M. Kraus of the bureau of aeronautics with Lt. Bruce Van Voorhis of Anacostia, D. C., Naval Air station at the controls of the transport plane.

Forrestal arrived Wednesday afternoon after inspecting aircraft plants at Seattle and Los Angeles. yesterday he spent the greater part of the day conferring with Consolidated Aircraft Corp. officials and inspecting the Ryan plant.

Union 12/1/40

Consolidated Bomber Arrives in New York

PORT WASHINGTON, N. Y., Nov. 30 (A.P.)—The first of a fleet of Consolidated 28 patrol bomber type seaplanes destined for Great Britain arrived today from San Diego, by way of Fort Worth.

Presumably, the plane will be flown later to Halifax for delivery to Canadian authorities who will fly or transport it to Great Britain

---

Navy Bombers Make Another Flight to Hawaii

Aero Digest Oct. 39

A flight of fourteen Consolidated patrol-bombers commanded by Lieut. Comdr. Stuart H. Ingersoll, arrived in Honolulu one day last month after a non-stop flight of 2500 miles from San Diego.

The planes, with 98 officers and men aboard, were sent to Hawaii to replace another squadron which was expected to fly from Honolulu to Manila to take up neutrality patrol in Philippine waters. They were from Squadron 13, based at the North Island naval air station, San Diego Bay.

AMERICAN EXPORT AIRLINES WILL USE NEW SIKORSKY

Natl. Aircraft Counsellor 10-22-40

The board of directors of American Export Airlines, Inc., announced last week that Durston G. Richardson has been elected vice-president in charge of operations. Mr. Richardson has been associated with this company for two years.

American Export Airlines was recently granted a Civil Aeronautics Board certificate of convenience and necessity to establish transatlantic air service between the United States and Europe using New York and Lisbon as terminals. The company plans to pioneer non-stop service on this route as soon as its three new Sikorsky S-44a four-engined flying boats are ready. These are now under construction at the United Aircraft Corporation Sikorsky plant at Bridgeport.

Meanwhile, the airlines will use their Consolidated Model 28 flying boat (an adaption of the PBY long-range bomber) which, like the Sikorskys, was originally developed for the Navy. Horta, Azores, will be used as an intermediate port for the preliminary mail and express service.

Under Mr. Richardson's direction, technical details for co-ordinating certain facilities of the new airlines with those of the parent company, American Export Lines, Inc., have been perfected. This represents the first time in history that a transoceanic airline and steamship service, operating under a single house flag, have thus pooled technical resources.

American Export Lines today operates the only regularly scheduled American flag steamship service between the United States and Europe and, like the airline, uses New York and Lisbon as its terminals. Thus, the flying boats and surface vessels will follow identical routes.

According to Mr. Richardson, the airlines will station a trained meteorologist, representing its own weather bureau, aboard each of the

"Four Ace" passenger liner
erated by the steamship com
These men have been assign
make constant observation
winds aloft and to relay th
formation by radio at regul
tervals to the United States V
er Bureau and to the com
aircraft on the course overh

Company meteorologists
been stationed for training
each of the two United
Coast Guard vessels now st
in mid-Atlantic for the pur
assembling and reporting
weather data.

Mr. Richardson, who serv
flying officer in the Army
during the last war, has be
tinuously associated with
since that time.

In 1920 he was a pilot
first American overseas
operated by Aeromarine
Inc., between Key West
vana and Miami-Nassau.
years he served as an of
charge of international ai
erations covering Centr
South American countries.

Natl. Aircraft

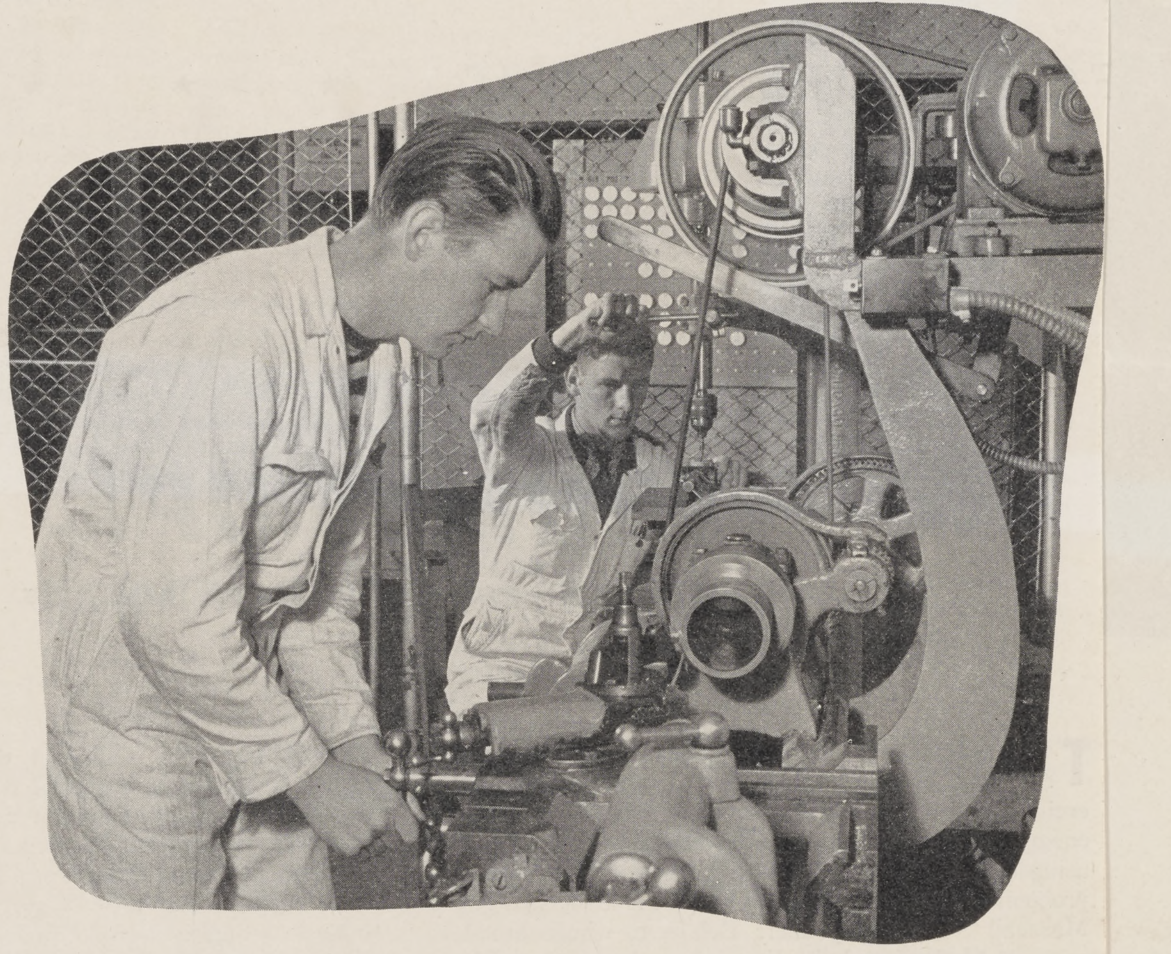
* * *

CONSOLIDATED CORPORATION: Ch
because of the brilli
ance of its huge
Consolidated still d
field of naval aviati
currently has a bac
than $150,000,000 fo
ed bombers and patr
standing capitalizati
23,820 shares of $
vertible Preferred
shares of $1.00 par
stock. Common is
ing at around $23 p
solidated, the write
fers excellent profi
from the long range
located at San Dieg
solidated has grown
short years to be t
est industrial organ

10-22-40

* *

AVIATION - November 1940



Employment managers give preference to men with aviation training. These youngsters are learning machine shop work at the school of California Flyers.

How Aircraft Factories Find Their Men

Airplane plants on the West Coast have increased their manpower from 15,000 to 45,000 within a year. Thousands more will be hired. This is where they come from.*

NOW nibbling away at a backlog of more than a billion dollars, the Southern California aircraft industry is already "over the hump" in its personnel procurement program. This in the face of new factory expansions, such as the $20,000,000 building program now under way by Douglas! We don't mean to say that the personnel managers can coast from here on in. But it is interesting to point out that from a total of 15,000 workers in 1939, payrolls have been upped to more than 45,000 in 1940. And the expansion now under way does not seem to require more than a total of 100,000 aircraft workers in this area by the end of 1941. The formula for employee training has been well established and it should be possible to follow it successfully in meeting any future need of our national defense program.

The story of how this army of 30,000 factory workers has been put to work in approximately the space of one year is a bit involved, but some indication of how it was done, and of how future needs will be met, is given by quoting the enrollment figures of almost 2,000 students at a single private aircraft school in this area, Curtiss-Wright Technical Institute, Glendale. Also, the public high schools and junior colleges of Southern California, with the help of the federal government, have more than 9,000 students under instruction in various aircraft courses.

Aircraft personnel men are working closely with both private and public schools. Generally speaking the private schools provide the thoroughly trained workers who quickly become lead men and supervisors. The public schools train thousands of men in short job training courses which fit them for jobs

---

*This is the second article of a series on factory training methods, the first of which appeared in the October issue.

S. D. B

Great Britain, according to informed sources, soon is to receive seven bombers, of this type, from Consolidated Aircraft Corp. The long-range, four-motored ship was given its initial test last week. The plane, similar to the XB-24 developed by Consolidated for the United States army in February, weighs 20 tons, has a cruising radius of 3000 miles and a speed of 300 miles an hour. Four 1200-hp, 18-cylinder, radial air-cooled Pratt-Whitney engines power the bomber, said to be capable of carrying four tons of bombs. First duty of the plane will be to ferry R.A.F. pilots to England from Canada and to return pilots unsuitable for combat service who in turn will fly combat planes to England. Until pressed into service as a bomber, the plane's armament will be limited to increase speed.

11/15/40

ntract
Million
nsair

Coming within five days of a large order which skyrocketed the firm's backlog above the $300,000,000 mark, the navy yesterday announced award of a contract for $18,529,500 to Consolidated Aircraft Corp. for planes and parts, The Associated Press reported from Washington, D. C.

As with the previous order, no delivery dates or other details were made public.

The new order raises the Consolidated backlog to an estimated $324,500,000. Last Saturday the firm was awarded a navy department contract for $75,313,000, which raised the backlog to approximately $306,000,000.

Burrelle's
EST. 1888
PRESS CLIPPING BUREAU
NEW YORK

NEW YORK CITY, HERALD-TRIB
NOVEMBER 24, 1940

U. S. 2-Ocean Bomber Fleet Being Built

2,000 Navy Flying Boats With 4,000-Mile Range to Patrol Both Coasts

Designed to Cripple Invader Far at Sea

Craft Will Be Ready by Mid-1941; New Bases Extend Striking Power

By The United Press

WASHINGTON, Nov. 23.—The Navy has on order more than two thousand great bomber flying boats to give its air arm a more powerful striking force in the Atlantic and Pacific Oceans, it was learned tonight.

Contracts for the patrol bombers were awarded the Glenn L. Martin Company, Baltimore, and Consolidated Aircraft Corporation, San Diego, in the last six weeks. The Martin contract calls for approximately 1,100 PBM's at a total cost of $106,125,396. Consolidated will supply approximately one thousand PBY's at a cost of $93,842,500.

Engines for the big flying boats were included in a $162,000,000 order to Pratt & Whitney.

These craft, with an operating range of 4,000 miles, Navy air strategists believe, will give the United States control of the Atlantic far beyond the halfway mark between this country and Europe. They will provide a powerful attacking force in the Pacific, operating from bases at Pearl Harbor, Cavite, P. I., and the islands of Wake, Midway and Guam, if necessary.

Planes for Use With Fleet

Improvements in design of the Navy's seaplane-type bombers also will permit their use directly with the fleet instead of making them dependent on island or mainland bases. They can land or take off from rough water and be fueled, provisioned and loaded from tenders at sea during bad weather.

The present production schedule calls for delivery of the last of the planes on order by mid-1941. The Navy now has almost three hundred similar bombers which it is using on both Atlantic and Pacific patrol.

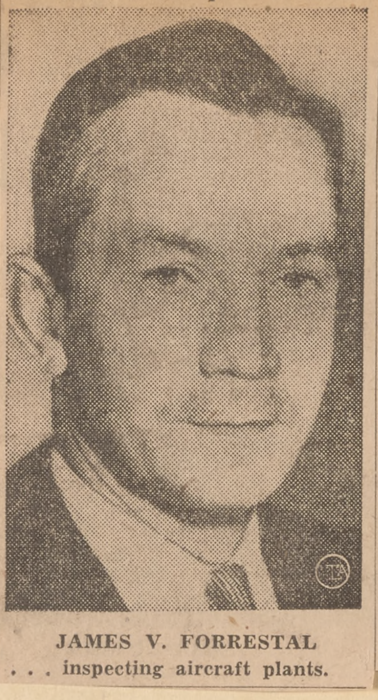
All of the Navy's patrol bombers, on hand and on order, have accommodations for maintaining a crew over long periods. They have sleeping and cooking facilities, and as long as supplies are available, ashore or afloat as near as 1,000 to 1,500 miles, have almost complete freedom of operation.

Consair Plane Leaves N. Y. for Nova Scotia

12/3/40

NEW YORK, Dec. 2 (I.N.S.) — A 14-ton Consolidated seaplane bomber from San Diego, Calif., first of a large order destined for the British Royal Air force—left Port Washington airport today, bound for Halifax, N. S.

Arrives by Plane



JAMES V. FORRESTAL
. . . inspecting aircraft plants.

Union 11/28/40

Forrestal Here On Consair Visit

On an inspection tour of west coast aircraft factories which are engaged in the manufacture of planes for the navy, James V. Forrestal, under-secretary of the navy, arrived by plane late yesterday from Washington, D. C., via Seattle and Los Angeles. He was accompanied by Capt. Sidney M. Kraus of the bureau of aeronautics.

Landing at the Naval Air station at 5:10 from Mines field, Los Angeles, Forrestal was greeted by Vice Adm. W. F. Halsey, Rear Adm. Charles A. Blakely, 11th Naval district commandant, and chamber of commerce executives. He went to Hotel del Coronado.

At Seattle Forrestal inspected the Boeing factory and at Los Angeles the Douglas and North American aircraft plants. He will visit the Consolidated plant here today.

Official Publication of Council of Aeronautical Mechanics, I. A. of M.

☆☆☆ AMERICAN ☆☆☆

AIRCRAFT MECHANIC

INTERNATIONAL ASSOCIATION OF MACHINISTS

THE VOICE OF THE AIRCRAFT INDUSTRY

Affiliated with the American Federation of Labor

VOLUME 1 SAN DIEGO, CALIFORNIA, NOVEMBER 21, 1940 NUMBER 6

WAGE REVIEW STARTS DEC. 2 AT CONSAIR

been employed since Aug. 31, 1940, will be discussed at a full committee meeting with the management which has been planned for Monday.

Wage review problems were discussed and plans were made for the proper presentation.

Information blanks have been distributed to the employees of Local 1125 requiring the following information: Name of Employee, Clock Number, Address. Do you feel that you are entitled to a wage increase? How much per hour? Reason for increase? Give details of the work you are now doing.

If you have not received one of these blanks, contact your shop committeeman and get this information to him as soon as possible.

Shop Committeemen—Day Side

W. J. Chudleigh, tool room.
Harry Hudson, sheet metal.
J. D. Barnes, machine shop.
M. J. Castle, metal bench.
C. E. Danner, finish.
Hammett, tool bending.
H. E. Leonard, experimental.
S. W. Adams, M. T.
R. J. Bragg, hull department.
Carl E. Heilbach, wood shop.
Don Greene, final assembly.
J. B. Waskey, wing.
L. A. Perry, wing.
Kobets, tank.

The names of night shift committeemen have not been secured at this time.

The following communication for Consolidated management was read:

San Diego, Cal., Nov. 19, 1940.
Memo to: All Foremen
Subject: Wage Review.

In order to proceed with our next wage review starting 2 December, 1940, you are requested to keep separate all record sheets of employees who have been hired since 31 August, 1940. These record sheets will be reviewed after our regular wage review period.

The order of departments to be reviewed will be as follows:

1. Tool Room and Wood Shop.
2. Machine Shop.
3. Welding.
4. Sheet Metal.
5. Hull Department.
6. Drop Hammer and Tank.
7. Wing Department.
8. Metal Bench.
9. Final Assembly.
10. Paint Shop.
11. Sub Ass'y and Spare Parts.
12. Maintenance.
13. Draw Bench.
14. Heat Treat. and Spotweld.
15. Tubing.
16. Experimental.
17. Loft.
18. Productoin Department.
19. Shipping and Receiving.

JAS. L. KELLEY,
Factory Manager.

A large attendance was reported at last Monday's meeting, at which time approximately 150 new members were received into the union. Tuesday night's meeting was attended by approximately 350 members at which time over 250 new members were admitted to the union.

Nominations received at both day and night shifts to date are as follows:

President: L. A. Perry, R. B. Felton, W. J. Chudleigh, and Bros. Shields and Burney.

Vice-President: J. L. Castle, J. S. Burney, H. Gillan, A. J. Fischer, and Bro. Granstead.

Financial Secretary: W. J. Chudleigh, R. B. Felton, A. J. Fischer, H. A. Abbey, Bro. McIllivich, L. A. Perry, and F. H. Cole.

Recording Secretary: L. A. Perry, F. M. Martin, Al Hogan, and Bro. Morris.

Treasurer: Herman Stellar, Al Cox, and Bro. Wilder.

Conductor: A. Peterson, F. Martin, A. J. Fischer, and Bro. McCune.

Sentinel: H. W. Clark, R. B. Felton, H. A. Abbey, A. Peterson, and Bro. Swaed.

Trustees: A. Hogan, J. J. Braun, P. McManus, L. Larsen.

Executive Board: H. Torres, J. Coe, R. B. Felton, J. D. Barnes, H. A. Abbey.

Brother Parker was elected as member of Wage Review Board from the Night Shift to serve with Bro. Chudleigh.

Motion made at the night shift meeting on last Monday that nomination of officers for the whole lodge be held over to special meeting which will be held at 2 p. m., Sunday, Nov. 24th, when a public agent also will be nominated. This was held to be out of order and unconstitutional at the meeting of the day shift Tuesday night, Nov. 19th, as nomination for officers must be made at two regular meetings to be held in November.

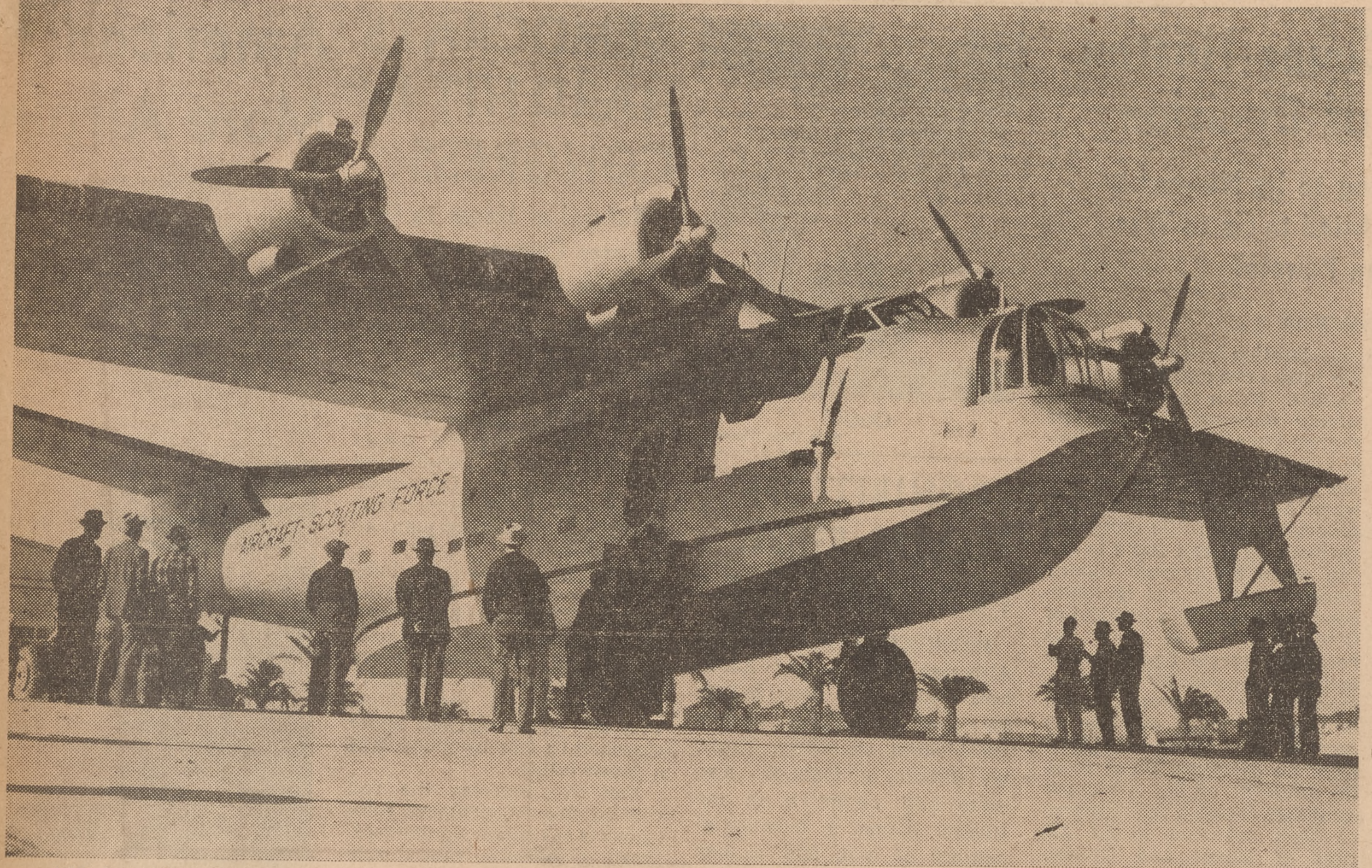
The nominations were closed from the day shift, but can still be placed before the union at next Monday's meeting of the night shift, which is held in Turner Hall at 10 a. m. Special meeting for Sunday cannot be legally held.

The discharge and lay off of the members was discussed and it was suggested that, where the employee concerned considered that the lay off or discharge was unjust and that he was being discriminated against, he should contact his shop committeeman immediately as re-instatements were much easier to secure if acted upon as soon as possible.

Matters pertaining to the immediate wage increase for employees in the lower brackets who have

---

SKY GIANT SUCCESSFULLY TRIES WINGS AT SAN DIEGO



AIR LEVIATHAN—Here is prototype of first "battleship of the air" which has undergone tests successfully.

Los Angeles Times - 11/24/40

Huge New Air Battleship Given First Test Flights

One of Navy's Six Most Powerful Bombers, Built at San Diego, Tries Out Its Wings

SAN DIEGO, Nov. 23.—Test flights on the first of six four-motored, 25-ton "battleships of the air," most powerful bombers in the Navy, have been started here by a Consolidated Aircraft Corp. crew, with delivery to a Navy trial board due next month, it was learned today.

Equipped with a supercharger enabling operations at extremely high altitudes, the craft will be assigned to the recently commissioned Patrol Squadron 13, commanded by Lieut. Comdr. Stephen B. Cooke, at the San Diego naval air station.

CARRIES MACHINE GUNS

All six, the first group of a Navy mass production order, are expected to be delivered to the 100-man squadron by February or March, it was indicated.

Capable of flying 5000 miles nonstop, the air Leviathan has two machine-driven revolving turrets, one in the bow and another topside, mounting heavy-caliber machine guns. Additional protection from fighter planes is afforded by manually operated gun stations.

The engines are 1200 h.p. Pratt & Whitney radial air-cooled, housed in a 115-foot wing.

NONSTOP FLIGHTS

The plane is similar to the $1,000,000 experimental prototype flagship of the Aircraft Scouting Force, used to transport Secretary of the Navy Frank Knox across the Pacific to Hawaii and back on his recent inspection trip. This airboat last year made two nonstop flights across the continent, from San Diego to Anacostia, D.C., and return.

Cost of each of the six bombers, the first four-motored patrol planes in the Navy, will be about $300,000, including engines, it was reported authoritatively.

Union 11/29/40

War-Bound S. D. Bomber to Hop

The first of a large order of patrol-bomber type seaplanes ordered by Britain will leave the Consolidated Aircraft Corp. plant before dawn this morning bound for the east coast and embattled England.

The ship is a model 28 type, similar to the famous navy P.B.Y. planes. It is equipped with two 1000-horsepower engines and has a wing span of 104 feet. It has been camouflaged for its flight to the war zone.

Lt. W. Cleveland, naval reserve, and Douglas Kelley, local flier, will be pilots. Russ Rogers, who flew the Archibald plane Guba around the world, will act as observer, according to report from Consolidated officials.

Another observer aboard will be I. G. Ross, Canadian pilot, who may be slated for the job of taking the plane across the Atlantic after the crew supplied by Consolidated makes delivery on the east coast.

NOV. 29, 1940 Union

Air Reserve Head

LT. H. B. DUCKWORTH
. . . 10 years a test pilot

Duckworth Aids Army Inspector

Announcement has been made by Maj. E. R. McReynolds, air corps factory representative in San Diego that Lt. Hubert B. Duckworth has been assigned by the war department to assist Maj. McReynolds in final testing and acceptance of army planes at Consolidated Aircraft Corps. and Ryan Aeronautical Co.

This assignment is in addition to Lt. Duckworth's duties as commanding officer of the air corps reserve base at Lindbergh field, and as unit instructor of the local air corps unit of reserve pilots.

Lt. Duckworth has had 10 years' experience as a test pilot for the civil aeronautics administration, Curtis-Wright Aircraft Corp. and the Army air corps.

Trib-Sun 11/29/40

Duckworth Assigned To S. D. Army Duty

Lt. Hubert B. Duckworth has been assigned by the war department to assist Maj. E. R. McReynolds, air corps factory representative in San Diego, in final testing and acceptance of army planes at the Consolidated Aircraft Corp. and Ryan Aeronautical Co. plants, according to announcement by McReynolds. Duckworth, who has had 10 years' experience as test pilot for the civil aeronautics administration, the Curtiss-Wright Aircraft Corp. and the army air corps, is commanding officer of the air corps reserve base at Lindbergh field and instructor of the local air corps unit of reserve pilots.

Trib-Sun 11/29/40

Navy Aid Leaves After Viewing Plants

Completing his inspection of local aircraft factories, James V. Forrestal, under-secretary of the navy, who arrived Wednesday, left by plane late yesterday for Washington, D. C. While here he conferred with officials of the Consolidated Aircraft Corp. and the Ryan Aeronautical Co. He was accompanied by Capt. Sidney M. Kraus, of the bureau of aeronautics.

Union 11/29/40

Navy Under-Secretary Leaves for Capital

Completing inspection of local aircraft factories, James V. Forrestal, under-secretary of the navy, left by plane late yesterday for Washington. He was accompanied by Capt. Sidney M. Kraus of the bureau of aeronautics with Lt. Bruce Van Voorhis of Anacostia, D. C., Naval Air station at the controls of the transport plane.

Forrestal arrived Wednesday afternoon after inspecting aircraft plants at Seattle and Los Angeles. yesterday he spent the greater part of the day conferring with Consolidated Aircraft Corp. officials and inspecting the Ryan plant.

Union 12/1/40

Consolidated Bomber Arrives in New York

PORT WASHINGTON, N. Y., Nov. 30 (A.P.)—The first of a fleet of Consolidated 28 patrol bomber type seaplanes destined for Great Britain arrived today from San Diego, by way of Fort Worth.

Presumably, the plane will be flown later to Halifax for delivery to Canadian authorities who will fly or transport it to Great Britain

---

Aero Digest Oct. 39

Navy Bombers Make Another Flight to Hawaii

A flight of fourteen Consolidated patrol-bombers commanded by Lieut. Comdr. Stuart H. Ingersoll, arrived in Honolulu one day last month after a non-stop flight of 2500 miles from San Diego.

The planes, with 98 officers and men aboard, were sent to Hawaii to replace another squadron which was expected to fly from Honolulu to Manila to take up neutrality patrol in Philippine waters. They were from Squadron 13, based at the North Island naval air station, San Diego Bay.

FOR NOVEMBER 1940

★ ★ ★ ★ ★

BY SPECIAL CABLE TO AVIATION MAGAZINE
Kingston-On-Thames, October 15th.

THUMBS UP!

—is the "all well" symbol of the British these days.

THE Marshal of The Royal Air Force, Sir John Salmond, when Chief of Airstaff after defense exercises five or six years ago, said that some of the enemy bombers will always get through. He is now using his high intelligence and great experience on the problem of stopping them. With him is associated Air Marshall Sir Philip Joubert Delaferte, whose broadcasts in England and the States have been among the most heartening and impressive of official utterances on the air war. Marshal of the R.A.F., the Viscount Trenchard, has all along preached bombing the other fellow to stop him from starting. That policy is also being actively pursued. The idea before the war was to develop sea interceptor fighters, but that was purely a defensive weapon and all here agree that defense is the first stage of defeat, as it was in France. Offense is the only reliable defense. Hit first and keep on hitting constantly.

In daylight and clear weather little harm is done to London or other important centers by Nazi bombs. Remember that London is not England, Scotland, Wales or North Ireland. When the Germans start in the early morning from France, Belgium, Holland, Germany, or even Denmark or Norway, they are met often far out at sea by our fighters and brought down in the proportion of anything between three and ten Germans to one of ours. And every German brought down is dead or a prisoner. Most of our pilots escape by parachute. When clouds are thick and low, enterprising Germans sometimes get through and bomb wildly and disappear, but they are followed by sound locators and the anti-aircraft guns, working with predictor machinery. The sound locators fire at the sound through the clouds and box the raiders in a barrage which always drives them away. Above the clouds they are beset by the fighters. On clear moonlight nights the sound locators track the sound of enemy engines. Their course is plotted by a special staff at the fighter command. Heavily-armed night fighters are warned by radio to go in that direction and hunt for them. Searchlights show them up. The rest is easy. On thick nights things are not so good. Searchlights are useless and fighters cannot find the enemy without help from the ground, so the guns fire by sound through the clouds. But if the clouds are low, star shells and tracers show the whereabouts of the enemy to the fighters above, and they go looksee, often with good results. Without being over-optimistic I do believe that there are new weapons being developed which will enable the R.A.F. to sink the enemy in the dark as well as in daylight. So far they are only being tried out experimentally. The Germans are trying all sorts of bombs, both big and little, high explosives, incendiaries, delay action, or time bombs, land mines, and a good proportion of duds that don't go off.

The real heroes of defense are the chaps who dig up the time bombs and hurry them to wide open spaces. The other heroes are the amateur firemen, the ambulance folk, the gunners, searchlighters, and sound locators. Even the night-flying pilots have cushy jobs by comparison. But they all admire one another so they are all happy. London still carries on and is not noticeably altered in shape. If it were all destroyed England would still carry on. Sirens, however, are a nuisance.

The roof-spotter system on factories and offices works directly with the listening posts and depends on individual judgment. The results have been excellent in keeping up man-hours and the production of munitions, and in preserving life.

C. G. GREY

AIRLINES

ho
e
r, ha
ed w

vas a p
n overs
Aeromarin
Key We
iami-Nassa
rved as an
international
covering C
nerican countr

r
l-
day
ned-
ser-
states
airline,
as its
g boats
l follow

Richardson,
n a trained
ting its own
rd each of the

---

* *

CONSOLIDATE
CORPORATION:
because of the br
ance of its huge
Consolidated still
field of naval avia
currently has a ba
than $150,000,000
ed bombers and pa
standing capitaliza
23,820 shares of
vertible Preferred
shares of $1.00 par
stock. Common is
ing at around $23
solidated, the write
fers excellent prof
from the long range
located at San Dieg
solidated has grown
short years to be t
est industrial organ

10-22-40

* *

By Charles F. McReynolds

Pacific Coast Editor, Aviation

riveters or sheet metal workers. y also train an appreciable number aircraft mechanics. At the same there are many private schools ing job courses. As a matter of t, there are more than 50 private rcraft schools in California. They ange all the way from imposing institutions covering many thousands of square feet of floor space in modern fire-proof buildings, down to the school which is currently doing a good job of training hundreds of riveters in the chicken houses of an abandoned chicken ranch in the San Fernando Valley.

It is doubtless a good thing for the industry, and for the private schools, that the temporary load of job training can be carried by the public school system. The private schools are the very heart of the whole training system, as they provide the close relation with the industry and the concentration on specialized courses which will always be needed for training serious recruits to the aircraft manufacturing industry. The real value of the private schools is found in their long courses of ten months or more of concentrated study on aircraft production subjects. By giving the bulk of job training work to the public schools the better private schools are kept more nearly free to concentrate on their long courses. Also, this public school activity tends to discourage the mushroom private job training schools which, except in certain specialized cases, are not helpful to the factories or to the better private schools.

Factory personnel men prefer to hire the graduates of long-term courses such as are given by the better private schools, and if such men were always available they would never hire the job-trained men. However, the private and public schools together cannot supply the current demand for thoroughly trained men and it has been necessary to compromise. This compromise consists of taking men who are trained to do just one thing and do it well. Usually these men are trained for rivet work. A large portion of such training is being given by the public schools although, to meet urgent needs, at least one manufacturer has contracted with private schools to train large numbers of riveters at the manufacturer's expense. In any case these riveters are encouraged to continue their training during leisure hours after they have been put to work. Between such extension training, on-the-job instruction and encouragement by lead men and supervisors, these "green" workers are moved ahead as fast as possible, making room for more riveters at the bottom of the personnel ladder.

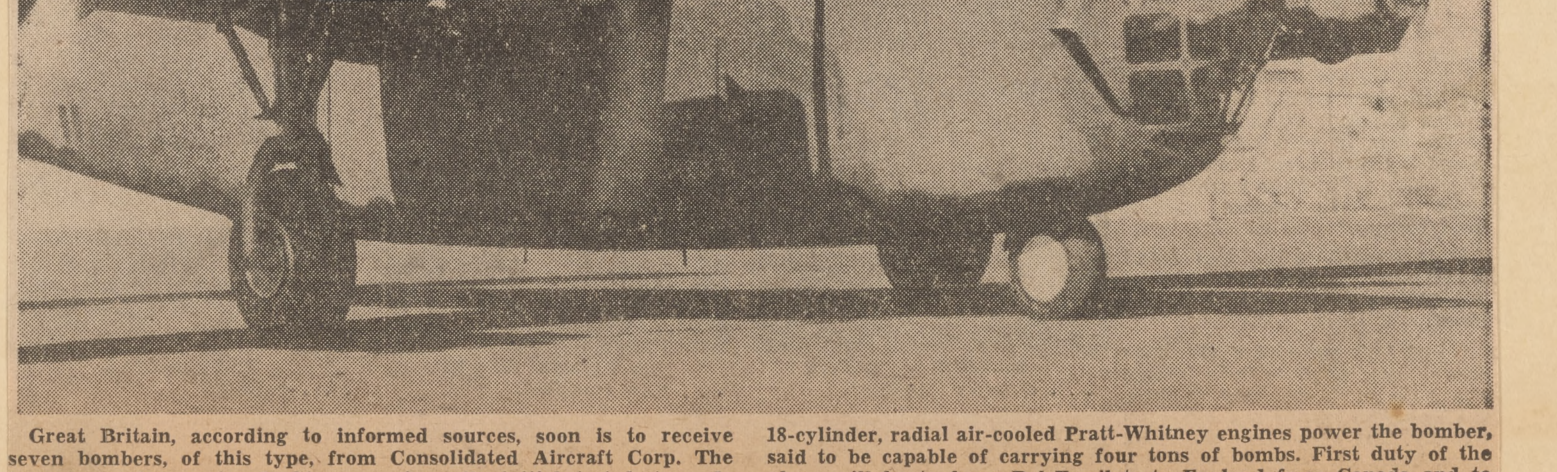
Factory personnel men have worked very closely with both public and private schools in helping to set up courses, in supplying experienced teachers from among qualified factory men, and in encouraging enrollment in such courses on the part of factory employees. Frequently the night school instructors are men who are working a full shift in the factory. In many cases school instructors are released by the manufacturer with a guarantee of their jobs back with full seniority rights when the emergency training program is over.

Since the employee training program has been largely turned over to the schools, public and private, instead of being administered by the manufacturers direct within their own plants, we will briefly outline the school situation on the Pacific Coast. Certain California public schools have been outstanding in their development of aviation courses. Such schools as the California Polytechnic Institute at San Luis Obispo, George Washington High School and Frank Wiggins Trade School, Los Angeles; Sacramento Junior College, Pasadena Junior College, and a number of others have shown great initiative in providing aviation training. Frank Wiggins Trade School, for example, a Los Angeles city school, has more than 250 students studying courses in aircraft drafting, welding, sheet metal, machine shop, and engineering. Such courses have now been set up in almost all Southern California high schools and junior colleges as a result of the National Defense Program for vocational education, initiated by the U.S. Office of Education. Such training is being financed during the current quarter out of an appropriation of $15,000,000 covering all national defense education, al-

(Turn to page 112)

Every factory is giving advanced training to its men. C. T. Reid, Douglas educational director, is shown instructing plant employees.

S. D. BO



Great Britain, according to informed sources, soon is to receive seven bombers, of this type, from Consolidated Aircraft Corp. The long-range, four-motored ship was given its initial test last week. The plane, similar to the XB-24 developed by Consolidated for the United States army in February, weighs 20 tons, has a cruising radius of 3000 miles and a speed of 300 miles an hour. Four 1200-hp, 18-cylinder, radial air-cooled Pratt-Whitney engines power the bomber, said to be capable of carrying four tons of bombs. First duty of the plane will be to ferry R.A.F. pilots to England from Canada and to return pilots unsuitable for combat service who in turn will fly combat planes to England. Until pressed into service as a bomber, the plane's armament will be limited to increase speed.

/15/40

tract
llion
Consair

Coming within five days of a large order which skyrocketed the firm's backlog above the $300,000,000 mark, the navy yesterday announced award of a contract for $18,529,500 to Consolidated Aircraft Corp. for planes and parts, The Associated Press reported from Washington, D. C.

As with the previous order, no delivery dates or other details were made public.

The new order raises the Consolidated backlog to an estimated $324,500,000. Last Saturday the firm was awarded a navy department contract for $75,313,000, which raised the backlog to approximately $306,000,000.

Burrelle's
EST. 1888
PRESS CLIPPING
BUREAU
NEW YORK

NEW YORK CITY, HERALD-TRIB
NOVEMBER 24, 1940

U. S. 2-Ocean Bomber Fleet Being Built

2,000 Navy Flying Boats With 4,000-Mile Range to Patrol Both Coasts

Designed to Cripple Invader Far at Sea

Craft Will Be Ready by Mid-1941; New Bases Extend Striking Power

By The United Press

WASHINGTON, Nov. 23.—The Navy has on order more than two thousand great bomber flying boats to give its air arm a more powerful striking force in the Atlantic and Pacific Oceans, it was learned tonight.

Contracts for the patrol bombers were awarded the Glenn L. Martin Company, Baltimore, and Consolidated Aircraft Corporation, San Diego, in the last six weeks. The Martin contract calls for approximately 1,100 PBM's at a total cost of $106,125,396. Consolidated will supply approximately one thousand PBY's at a cost of $93,842,500.

Engines for the big flying boats were included in a $162,000,000 order to Pratt & Whitney.

These craft, with an operating range of 4,000 miles, Navy air strategists believe, will give the United States control of the Atlantic far beyond the halfway mark between this country and Europe. They will provide a powerful attacking force in the Pacific, operating from bases at Pearl Harbor, Cavite, P. I., and the islands of Wake, Midway and Guam, if necessary.

Planes for Use With Fleet

Improvements in design of the Navy's seaplane-type bombers also will permit their use directly with the fleet instead of making them dependent on island or mainland bases. They can land or take off from rough water and be fueled, provisioned and loaded from tenders at sea during bad weather.

The present production schedule calls for delivery of the last of the planes on order by mid-1941. The Navy now has almost three hundred similar bombers which it is using on both Atlantic and Pacific patrol.

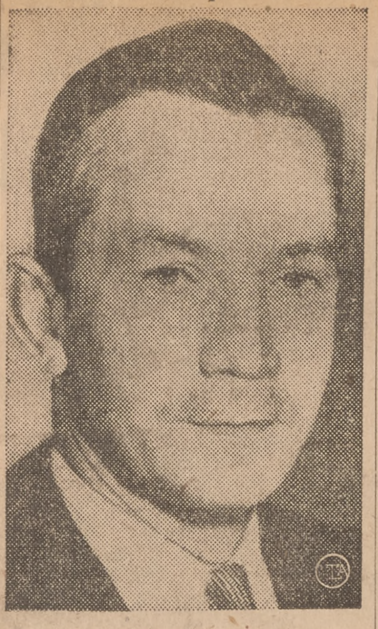
All of the Navy's patrol bombers, on hand and on order, have accommodations for maintaining a crew over long periods. They have sleeping and cooking facilities, and as long as supplies are available, ashore or afloat as near as 1,000 to 1,500 miles, have almost complete freedom of operation.

Consair Plane Leaves N. Y. for Nova Scotia

12/3/40

NEW YORK, Dec. 2 (I.N.S.) — A 14-ton Consolidated seaplane bomber from San Diego, Calif., first of a large order destined for the British Royal Air force—left Port Washington airport today, bound for Halifax, N. S.

Arrives by Plane



JAMES V. FORRESTAL
. . . inspecting aircraft plants.

Union 11/28/40

Forrestal Here On Consair Visit

On an inspection tour of west coast aircraft factories which are engaged in the manufacture of planes for the navy, James V. Forrestal, under-secretary of the navy, arrived by plane late yesterday from Washington, D. C., via Seattle and Los Angeles. He was accompanied by Capt. Sidney M. Kraus of the bureau of aeronautics.

Landing at the Naval Air station at 5:10 from Mines field, Los Angeles, Forrestal was greeted by Vice Adm. W. F. Halsey, Rear Adm. Charles A. Blakely, 11th Naval district commandant, and chamber of commerce executives. He went to Hotel del Coronado.

At Seattle Forrestal inspected the Boeing factory and at Los Angeles the Douglas and North American aircraft plants. He will visit the Consolidated plant here today.

Official Publication of Council of Aeronautical Mechanics, I. A. of M.

☆☆☆ AMERICAN ☆☆☆

AIRCRAFT MECHANIC

THE VOICE OF THE AIRCRAFT INDUSTRY

Affiliated with the American Federation of Labor

VOLUME 1 SAN DIEGO, CALIFORNIA, NOVEMBER 21, 1940 NUMBER 6

WAGE REVIEW STARTS DEC. 2 AT CONSAIR

been employed since Aug. 31, 1940, will be discussed at a full committee meeting with the management which has been planned for Monday.

Wage review problems were discussed and plans were made for the proper presentation.

Information blanks have been distributed to the employees of Local 1125 requiring the following information: Name of Employee, Clock Number, Address. Do you feel that you are entitled to a wage increase? How much per hour? Reason for increase? Give details of the work you are now doing.

If you have not received one of these blanks, contact your shop committeeman and get this information to him as soon as possible.

Shop Committeemen—Day Side

W. J. Chudleigh, tool room.
Harry Hudson, sheet metal.
J. D. Barnes, machine shop.
M. J. Castle, metal bench.
C. E. Danner, finish.
Hammett, tool bending.
H. E. Leonard, experimental.
S. W. Adams, M. T.
R. J. Bragg, hull department.
Carl E. Heilbach, wood shop.
Don Greene, final assembly.
J. B. Waskey, wing.
L. A. Perry, wing.
Kobets, tank.

The names of night shift committeemen have not been secured at this time.

The following communication for Consolidated management was read:

San Diego, Cal., Nov. 19, 1940.
Memo to: All Foremen
Subject: Wage Review.

In order to proceed with our next wage review starting 2 December, 1940, you are requested to keep separate all record sheets of employees who have been hired since 31 August, 1940. These record sheets will be reviewed after our regular wage review period.

The order of departments to be reviewed will be as follows:

1. Tool Room and Wood Shop.
2. Machine Shop.
3. Welding.
4. Sheet Metal.
5. Hull Department.
6. Drop Hammer and Tank.
7. Wing Department.
8. Metal Bench.
9. Final Assembly.
10. Paint Shop.
11. Sub Ass'y and Spare Parts.
12. Maintenance.
13. Draw Bench.
14. Heat Treat. and Spotweld.
15. Tubing.
16. Experimental.
17. Loft.
18. Productoin Department.
19. Shipping and Receiving.

JAS. L. KELLEY,
Factory Manager.

A large attendance was reported at last Monday's meeting, at which time approximately 150 new members were received into the union. Tuesday night's meeting was attended by approximately 350 members at which time over 250 new members were admitted to the union.

Nominations received at both day and night shifts to date are as follows:

President: L. A. Perry, R. B. Felton, W. J. Chudleigh, and Bros. Shields and Burney.

Vice-President: J. L. Castle, J. S. Burney, H. Gillan, A. J. Fischer, and Bro. Granstead.

Financial Secretary: W. J. Chudleigh, R. B. Felton, A. J. Fischer, H. A. Abbey, Bro. McIllivich, L. A. Perry, and F. H. Cole.

Recording Secretary: L. A. Perry, F. M. Martin, Al Hogan, and Bro. Morris.

Treasurer: Herman Stellar, Al Cox, and Bro. Wilder.

Conductor: A. Peterson, F. Martin, A. J. Fischer, and Bro. McCune.

Sentinel: H. W. Clark, R. B. Felton, H. A. Abbey, A. Peterson, and Bro. Swaed.

Trustees: A. Hogan, J. J. Braun, P. McManus, L. Larsen.

Executive Board: H. Torres, J. Coe, R. B. Felton, J. D. Barnes, H. A. Abbey.

Brother Parker was elected as member of Wage Review Board from the Night Shift to serve with Bro. Chudleigh.

Motion made at the night shift meeting on last Monday that nomination of officers for the whole lodge be held over to special meeting which will be held at 2 p. m., Sunday, Nov. 24th, when a public agent also will be nominated. This was held to be out of order and unconstitutional at the meeting of the day shift Tuesday night, Nov. 19th, as nomination for officers must be made at two regular meetings to be held in November.

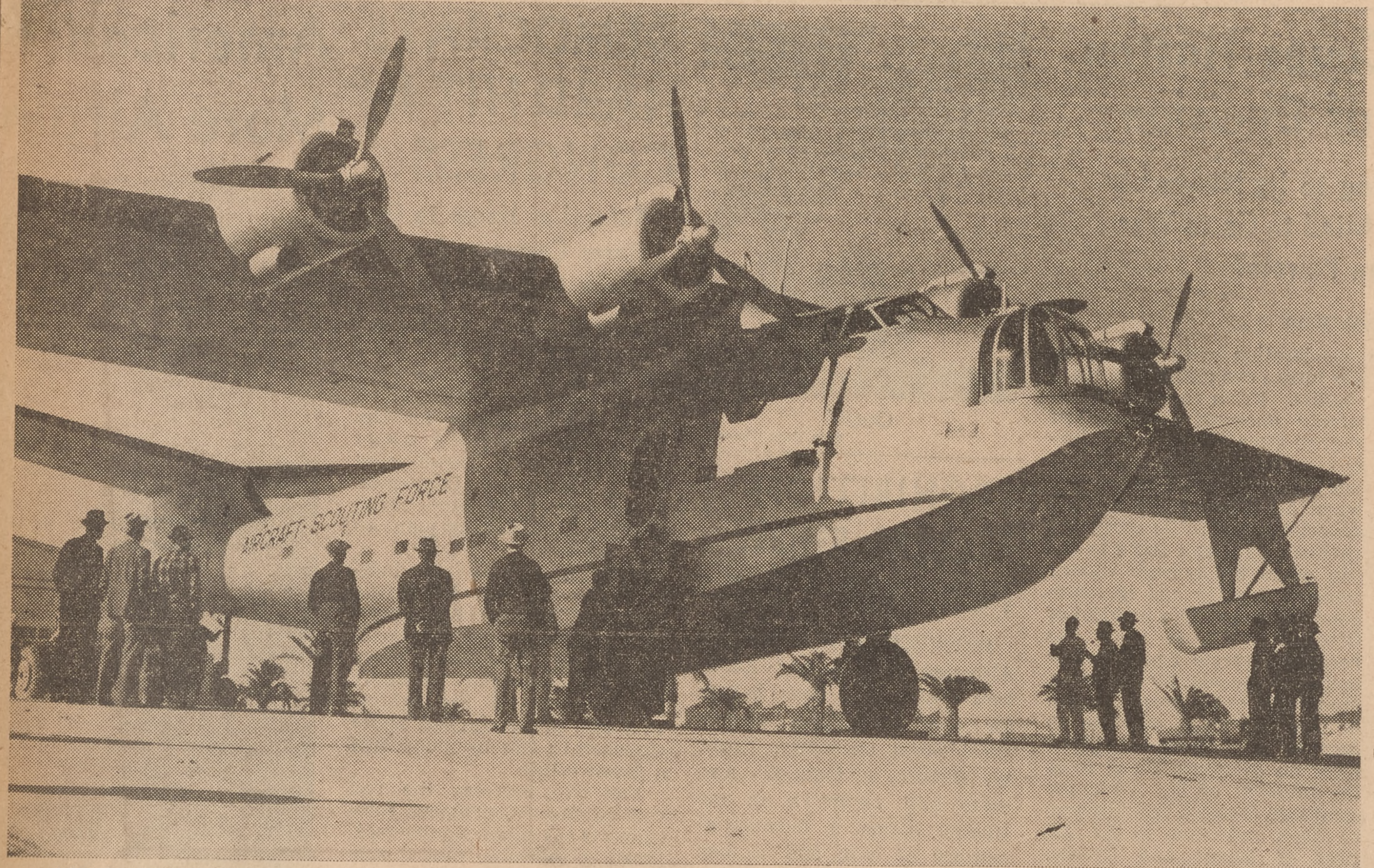
The nominations were closed from the day shift, but can still be placed before the union at next Monday's meeting of the night shift, which is held in Turner Hall at 10 a. m. Special meeting for Sunday cannot be legally held.

The discharge and lay off of the members was discussed and it was suggested that, where the employee concerned considered that the lay off or discharge was unjust and that he was being discriminated against, he should contact his shop committeeman immediately as re-instatements were much easier to secure if acted upon as soon as possible.

Matters pertaining to the immediate wage increase for employees in the lower brackets who have

---

SKY GIANT SUCCESSFULLY TRIES WINGS AT SAN DIEGO



AIR LEVIATHAN—Here is prototype of first "battleship of the air" which has undergone tests successfully.

Los Angeles Times - 11/24/40

Huge New Air Battleship Given First Test Flights

One of Navy's Six Most Powerful Bombers, Built at San Diego, Tries Out Its Wings

SAN DIEGO, Nov. 23.—Test flights on the first of six four-motored, 25-ton "battleships of the air," most powerful bombers in the Navy, have been started here by a Consolidated Aircraft Corp. crew, with delivery to a Navy trial board due next month, it was learned today.

Equipped with a supercharger enabling operations at extremely high altitudes, the craft will be assigned to the recently commissioned Patrol Squadron 13, commanded by Lieut. Comdr. Stephen B. Cooke, at the San Diego naval air station.

CARRIES MACHINE GUNS

All six, the first group of a Navy mass production order, are expected to be delivered to the 100-man squadron by February or March, it was indicated.

Capable of flying 5000 miles nonstop, the air Leviathan has two machine-driven revolving turrets, one in the bow and another topside, mounting heavy-caliber machine guns. Additional protection from fighter planes is afforded by manually operated gun stations.

The engines are 1200 h.p. Pratt & Whitney radial air-cooled, housed in a 115-foot wing.

NONSTOP FLIGHTS

The plane is similar to the $1,000,000 experimental prototype flagship of the Aircraft Scouting Force, used to transport Secretary of the Navy Frank Knox across the Pacific to Hawaii and back on his recent inspection trip. This airboat last year made two nonstop flights across the continent, from San Diego to Anacostia, D.C., and return.

Cost of each of the six bombers, the first four-motored patrol planes in the Navy, will be about $300,000, including engines, it was reported authoritatively.

Union 11/29/40

War-Bound S. D. Bomber to Hop

The first of a large order of patrol-bomber type seaplanes ordered by Britain will leave the Consolidated Aircraft Corp. plant before dawn this morning bound for the east coast and embattled England.

The ship is a model 28 type, similar to the famous navy P.B.Y. planes. It is equipped with two 1000-horsepower engines and has a wing span of 104 feet. It has been camouflaged for its flight to the war zone.

Lt. W. Cleveland, naval reserve, and Douglas Kelley, local flier, will be pilots. Russ Rogers, who flew the Archibald plane Guba around the world, will act as observer, according to report from Consolidated officials.

Another observer aboard will be I. G. Ross, Canadian pilot, who may be slated for the job of taking the plane across the Atlantic after the crew supplied by Consolidated makes delivery on the east coast.

NOV. 29, 1940 Union

Air Reserve Head

LT. H. B. DUCKWORTH
. . . 10 years a test pilot

Duckworth Aids Army Inspector

Announcement has been made by Maj. E. R. McReynolds, air corps factory representative in San Diego that Lt. Hubert B. Duckworth has been assigned by the war department to assist Maj. McReynolds in final testing and acceptance of army planes at Consolidated Aircraft Corps. and Ryan Aeronautical Co.

This assignment is in addition to Lt. Duckworth's duties as commanding officer of the air corps reserve base at Lindbergh field, and as unit instructor of the local air corps unit of reserve pilots.

Lt. Duckworth has had 10 years' experience as a test pilot for the civil aeronautics administration. Curtis-Wright Aircraft Corp. and the Army air corps.

Duckworth Assigned To S. D. Army Duty

Trib Sun 11/29/40

Lt. Hubert B. Duckworth has been assigned by the war department to assist Maj. E. R. McReynolds, air corps factory representative in San Diego, in final testing and acceptance of army planes at the Consolidated Aircraft Corp. and Ryan Aeronautical Co. plants, according to announcement by McReynolds. Duckworth, who has had 10 years' experience as test pilot for the civil aeronautics administration, the Curtiss-Wright Aircraft Corp. and the army air corps, is commanding officer of the air corps reserve base at Lindbergh field and instructor of the local air corps unit of reserve pilots.

Trib Sun 11/29/40

Navy Aid Leaves After Viewing Plants

Completing his inspection of local aircraft factories, James V. Forrestal, under-secretary of the navy, who arrived Wednesday, left by plane late yesterday for Washington, D. C. While here he conferred with officials of the Consolidated Aircraft Corp. and the Ryan Aeronautical Co. He was accompanied by Capt. Sidney M. Kraus, of the bureau of aeronautics.

Union 11/29/40

Navy Under-Secretary Leaves for Capital

Completing inspection of local aircraft factories, James V. Forrestal, under-secretary of the navy, left by plane late yesterday for Washington. He was accompanied by Capt. Sidney M. Kraus of the bureau of aeronautics with Lt. Bruce Van Voorhis of Anacostia, D. C., Naval Air station at the controls of the transport plane.

Forrestal arrived Wednesday afternoon after inspecting aircraft plants at Seattle and Los Angeles. yesterday he spent the greater part of the day conferring with Consolidated Aircraft Corp. officials and inspecting the Ryan plant.

Union 12/1/40

Consolidated Bomber Arrives in New York

PORT WASHINGTON, N. Y., Nov. 30 (A.P.)—The first of a fleet of Consolidated 28 patrol bomber type seaplanes destined for Great Britain arrived today from San Diego, by way of Fort Worth.

Presumably, the plane will be flown later to Halifax for delivery to Canadian authorities who will fly or transport it to Great Britain

---

Navy Bombers Make Another Flight to Hawaii

Aero Digest Oct. 39

A flight of fourteen Consolidated patrol-bombers commanded by Lieut. Comdr. Stuart H. Ingersoll, arrived in Honolulu one day last month after a non-stop flight of 2500 miles from San Diego.

The planes, with 98 officers and men aboard, were sent to Hawaii to replace another squadron which was expected to fly from Honolulu to Manila to take up neutrality patrol in Philippine waters. They were from Squadron 13, based at the North Island naval air station, San Diego Bay.

Looking up the production line when the French Bombers were being built. Notice separate nose, center, and tail sections each built as an individual unit

BOMBERS IN QUANTITY

When engineers in competing organizations say, "They do a fine production job,"—that's news. The Martin engineering staff is praised throughout the industry for it's efficient work.

By Jay P. AuWerter,

Assistant Editor

THREE bombers a day is some production rate—but not to the Glenn L. Martin Co. They were doing this and even more at the time when production on the famous French Martin Bomber was in full swing.

To stand at the end of the assembly line and watch the finished ships roll off, the tremendous amount of planning and experience necessary for such a record is not readily noticed. It has come about only through a vast amount of training and personnel cooperation all striving for a goal that is the aim of every aircraft plant.

The successful production of an airplane depends on certain fundamental factors. The ship must be well designed not only for optimum performance but also for ease of production.

The first two of these points is left to the design engineers, while the carrying out of the second becomes the job of the various production departments. Their task is obviously a big one and when done well the company shows a profit; if it is not done well, the figures are in red.

In order for production to flow most effectively through the plant there must be perfect coordination among the production departments, with advice from engineers on certain phases of design. To accomplish this at the Martin plant, a planned series of meetings is held throughout the whole period of production of a model and in these all irregularities are ironed out.

Intensive engineering on a new model begins on the day the contract has been agreed upon between the customer and the company. As soon as agreement on the type of ship, its price and other features has been reached production planning and scheduling is started. The contract date for delivery is always the deadline for production and the scheduling of the ships for construction is made backwards from this day. Every step in the process must finish on time.

Final Engineering Design

When the final design of the airplane has been agreed upon a schedule is set up for the engineering department to follow in releasing blueprints of the various plane parts for production. As designs are ready to be released a meeting is called between the planning, tool design and engineering departments. At this conference the design is thoroughly investigated and a final agreement reached on any changes necessary for ease of production. To speed or facilitate production the engineering department then releases copies of the design to both the production planning department and the tool design department simultaneously.

Scheduling for Production

One of the most important steps in the production program is the determination of what parts are to be subcontracted. In periods of rapid expansion

---

AIRLINES

AVIATION - November 1940

Factory Training

(Continued from page 33)

gh the bulk of this money will bably be spent for training of aircraft workers. Present instruction is divided about evenly between instruction of unemployed candidates for aircraft jobs, and those who are already at work in the aircraft factories. Instruction is given in aeronautical engineering, production engineering, tool planning, tool designing, aircraft lofting, toolmaking, die making, machine operation, welding, pattern making, template making, tool and jig building, aircraft service mechanics, and all-around mechanics. Limited teacher training courses are also given in order to provide needed teachers and to standardize instruction.

In Los Angeles proper there are now more than 1,500 students under instruction in connection with this program. In Burbank, largely due to the activity of Lockheed Aircraft Corp., there are more than 4,000 active students, with the expectation that a peak of more than 10,000 will be reached early next year. In San Diego, a special effort has been made to meet the needs of Consolidated Aircraft Corp. The city of San Diego is building a $367,000 school plant for the San Diego Vocational School, which is operating under the National Defense plan. Larry Boeing, former Consolidated man, has been granted a leave of absence to act as head of the aeronautics department of this school. Sixteen hundred graduates of this school have been placed in San Diego industry during the first nine months of 1940, about 1,500 of them being employed by Consolidated. J. H. Waterbury, personnel director for Consolidated Aircraft Corp., has cooperated fully by providing 24 experienced men as instructors in sheet metal layout, riveting, welding, etc. Blueprint reading, shop mathematics, machine shop, and general aircraft construction and assembly, are also taught. Enrollment in this school exceeds 1,000 and about 260 men are graduated each week, major emphasis being on the short job training courses.

A review of private school activities does not permit mentioning even all of the outstanding private schools, due to the large number operating in this area. However, the better private schools all have in common the fact that they are working very closely with the aircraft personnel managers to provide men thoroughly trained to move into positions of responsibility in production. Graduates of such schools are generally capable of devoting all their time and attention to the problems of the aircraft plant which employs them, without having to devote long hours to further outside studies in school extension courses.

The private schools generally have an advantage over the public schools in being located on an airport or adjacent to an aircraft plant. Also, they teach only aeronautical subjects and the student can obtain as much information pertaining to his prospective job in a period of ten months as he could get in two years of public school.

We have mentioned the Curtiss-Wright Technical Institute of Aeronautics, located on Grand Central Air Terminal, Glendale. With an enrollment now around the 2,000 mark, this is probably the largest private aviation school in America.

Also in Glendale is the Aeronautical Institute of Technology, which specializes in aircraft production engineering and production methods. This school has close connections with a number of large manufacturers and has grown rapidly, now having an enrollment in the neighborhood of 1,000 students.

California Flyers, Inc., located on Los Angeles Municipal Airport, is an example of a fine type of private school, located almost in the backyard of the major aircraft plants. North American Aviation and the El Segundo Division of Douglas Aircraft Co. are both on this field, giving students an unusual opportunity of observing manufacturing operations as well as test flying. This institution conducts flight instruction, but the major emphasis is on aircraft manufacturing courses, with about 200 students under instruction.

American School of Aircraft Instruments, devoted entirely to instruction of instrument men, is an example of the specialization of some of the private schools. Located in Glendale, this school has grown rapidly in line with the need for instrument specialists. Another special school, recently opened in Hollywood, is the Academy of Aerial Photography, for instruction in all branches of aerial photography. One might think this out of line with the aircraft production problem, but investigation shows that a tremendous volume of aerial photography is done by all major aircraft plants.

The Boeing School of Aeronautics, Oakland, a division of United Air Lines, also has a direct relationship with Boeing Aircraft Co., Seattle, and has supplied many production men for Boeing and other factories. The Boeing School specializes in long term training of the most thorough kind.

The Ryan School of Aeronautics, San Diego, is unique in that it is a subsidiary of the Ryan Aeronautical Co. Thus the graduates of the Ryan School have, for the most part, gone directly into production work for the Ryan factory. The relationship also makes it possible to give students actual factory experience during the advanced stages of their school work.

There are several notable examples of short-term, job training schools which have been unusually successful. These include the Warren School of Aeronautics, Los Angeles, which has specialized in low-cost practical training, turning out graduates who have won wide favor with aircraft personnel men. Then the Fletcher Aircraft Schools of Santa Monica, Burbank, and South Gate, have worked with Douglas and Lockheed to give large volume short-term courses to prospective employees. Lockheed alone has put about 1,500 men through the Fletcher Schools and through the Powers Aircraft School, Van Nuys.

Summarizing the special activities of the various aircraft plants in this area, space permits only a sketchy outline. The Boeing Aircraft Co., Seattle, has faced a special problem due to its location far from a major source of skilled labor, and far from a major aircraft school. Boeing has received close cooperation from various California aircraft manufacturers in supplying key men. Local Seattle schools have supplied large numbers of job trained men. On-the-job training has closed the gap between the skilled and unskilled, experienced and inexperienced men.

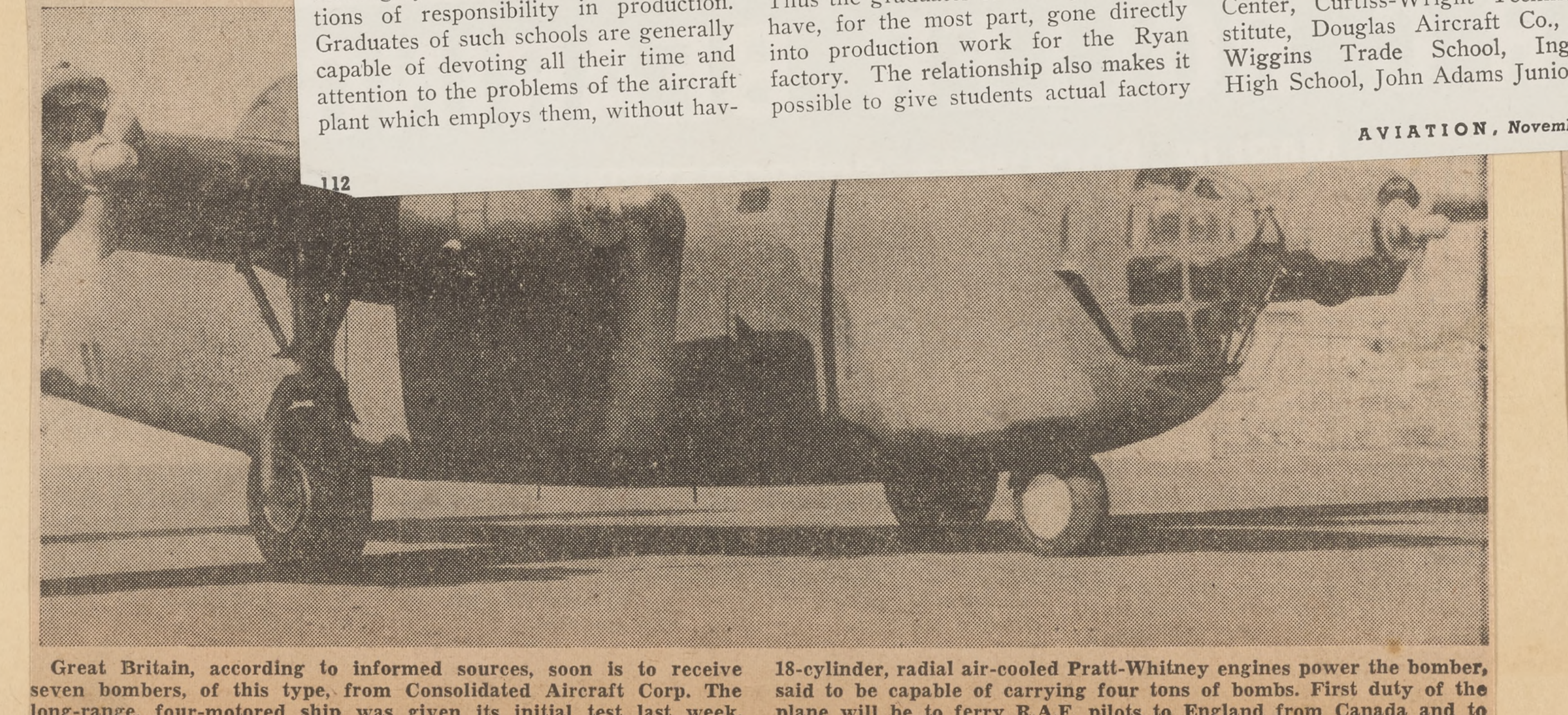
Consolidated Aircraft Corp., San Diego, is close enough to the Los Angeles area to draw easily on the available trained aircraft workers from that area. The bulk of new employees, however, have come from San Diego by way of the San Diego Vocational School or the Ryan School of Aeronautics.

The Douglas Aircraft Co., Santa Monica, has faced a tremendous problem in upping the payroll from 7,000 to 18,000 people in one year. W. G. Jerrems, personnel director, and C. T. Reid, director of education, have combined all available facilities in staging a mass education program probably not matched by any other aircraft manufacturer in this country. As a result a total of 35 courses have been taught by Douglas personnel in public schools, private schools, or in the plant itself. These courses include: aviation for stenographers, blueprint reading, aircraft template development, aircraft assembly, drafting, aircraft tool design, aircraft hydraulic design, aircraft mechanical drawing, metal fitting fabrication, wood pattern making, aircraft plumbing, riveting, sheet metal layout, sheet metal work, shop mathematics, stress analysis, technical sketching, lofting, and welding. These courses and their various subdivisions are offered at: Santa Monica Adult Education Center, Curtiss-Wright Technical Institute, Douglas Aircraft Co., Frank Wiggins Trade School, Inglewood High School, John Adams Junior High

olds

L.A.

S. D. BOMBER



Great Britain, according to informed sources, soon is to receive seven bombers, of this type, from Consolidated Aircraft Corp. The long-range, four-motored ship was given its initial test last week. The plane, similar to the XB-24 developed by Consolidated for the United States army in February, weighs 20 tons, has a cruising radius of 3000 miles and a speed of 300 miles an hour. Four 1200-hp, 18-cylinder, radial air-cooled Pratt-Whitney engines power the bomber, said to be capable of carrying four tons of bombs. First duty of the plane will be to ferry R.A.F. pilots to England from Canada and to return pilots unsuitable for combat service who in turn will fly combat planes to England. Until pressed into service as a bomber, the plane's armament will be limited to increase speed.

---

rib. 11/15/40

Contract 8 Million For Consair

Coming within five days of a large order which skyrocketed the firm's backlog above the $300,000,000 mark, the navy yesterday announced award of a contract for $18,529,500 to Consolidated Aircraft Corp. for planes and parts, The Associated Press reported from Washington, D. C.

As with the previous order, no delivery dates or other details were made public.

The new order raises the Consolidated backlog to an estimated $324,500,000. Last Saturday the firm was awarded a navy department contract for $75,313,000, which raised the backlog to approximately $306,000,000.

Burrelle's
EST. 1888
PRESS CLIPPING BUREAU
NEW YORK

NEW YORK CITY, HERALD-TRIB
NOVEMBER 24, 1940

U. S. 2-Ocean Bomber Fleet Being Built

2,000 Navy Flying Boats With 4,000-Mile Range to Patrol Both Coasts

Designed to Cripple Invader Far at Sea

Craft Will Be Ready by Mid-1941; New Bases Extend Striking Power

By The United Press

WASHINGTON, Nov. 23.—The Navy has on order more than two thousand great bomber flying boats to give its air arm a more powerful striking force in the Atlantic and Pacific Oceans, it was learned tonight.

Contracts for the patrol bombers were awarded the Glenn L. Martin Company, Baltimore, and Consolidated Aircraft Corporation, San Diego, in the last six weeks. The Martin contract calls for approximately 1,100 PBM's at a total cost of $106,125,396. Consolidated will supply approximately one thousand PBY's at a cost of $93,842,500.

Engines for the big flying boats were included in a $162,000,000 order to Pratt & Whitney.

These craft, with an operating range of 4,000 miles, Navy air strategists believe, will give the United States control of the Atlantic far beyond the halfway mark between this country and Europe. They will provide a powerful attacking force in the Pacific, operating from bases at Pearl Harbor, Cavite, P. I., and the islands of Wake, Midway and Guam, if necessary.

Planes for Use With Fleet

Improvements in design of the Navy's seaplane-type bombers also will permit their use directly with the fleet instead of making them dependent on island or mainland bases. They can land or take off from rough water and be fueled, provisioned and loaded from tenders at sea during bad weather.

The present production schedule calls for delivery of the last of the planes on order by mid-1941. The Navy now has almost three hundred similar bombers which it is using on both Atlantic and Pacific patrol.

All of the Navy's patrol bombers, on hand and on order, have accommodations for maintaining a crew over long periods. They have sleeping and cooking facilities, and as long as supplies are available, ashore or afloat as near as 1,000 to 1,500 miles, have almost complete freedom of operation.

Consair Plane Leaves N. Y. for Nova Scotia

12/3/40

NEW YORK, Dec. 2 (I.N.S.) — A 14-ton Consolidated seaplane bomber from San Diego, Calif., first of a large order destined for the British Royal Air force—left Port Washington airport today, bound for Halifax, N. S.

Arrives by Plane

JAMES V. FORRESTAL
. . . inspecting aircraft plants.

Union 11/28/40

Forrestal Here On Consair Visit

On an inspection tour of west coast aircraft factories which are engaged in the manufacture of planes for the navy, James V. Forrestal, under-secretary of the navy, arrived by plane late yesterday from Washington, D. C., via Seattle and Los Angeles. He was accompanied by Capt. Sidney M. Kraus of the bureau of aeronautics.

Landing at the Naval Air station at 5:10 from Mines field, Los Angeles, Forrestal was greeted by Vice Adm. W. F. Halsey, Rear Adm. Charles A. Blakely, 11th Naval district commandant, and chamber of commerce executives. He went to Hotel del Coronado.

At Seattle Forrestal inspected the Boeing factory and at Los Angeles the Douglas and North American aircraft plants. He will visit the Consolidated plant here today.

Official Publication of Council of Aeronautical Mechanics, I. A. of M.

☆☆☆ AMERICAN ☆☆☆

AIRCRAFT MECHANIC

THE VOICE OF THE AIRCRAFT INDUSTRY

INTERNATIONAL ASSOCIATION OF MACHINISTS

Affiliated with the American Federation of Labor

VOLUME 1 SAN DIEGO, CALIFORNIA, NOVEMBER 21, 1940 NUMBER 6

WAGE REVIEW STARTS DEC. 2 AT CONSAIR

been employed since Aug. 31, 1940, will be discussed at a full committee meeting with the management which has been planned for Monday.

Wage review problems were discussed and plans were made for the proper presentation.

Information blanks have been distributed to the employees of Local 1125 requiring the following information: Name of Employee, Clock Number, Address. Do you feel that you are entitled to a wage increase? How much per hour? Reason for increase? Give details of the work you are now doing.

If you have not received one of these blanks, contact your shop committeeman and get this information to him as soon as possible.

Shop Committeemen—Day Side

W. J. Chudleigh, tool room.
Harry Hudson, sheet metal.
J. D. Barnes, machine shop.
M. J. Castle, metal bench.
C. E. Danner, finish.
Hammett, tool bending.
H. E. Leonard, experimental.
S. W. Adams, M. T.
R. J. Bragg, hull department.
Carl E. Heilbach, wood shop.
Don Greene, final assembly.
J. B. Waskey, wing.
L. A. Perry, wing.
Kobets, tank.

The names of night shift committeemen have not been secured at this time.

The following communication for Consolidated management was read:

San Diego, Cal., Nov. 19, 1940.
Memo to: All Foremen
Subject: Wage Review.

In order to proceed with our next wage review starting 2 December, 1940, you are requested to keep separate all record sheets of employees who have been hired since 31 August, 1940. These record sheets will be reviewed after our regular wage review period.

The order of departments to be reviewed will be as follows:

1. Tool Room and Wood Shop.
2. Machine Shop.
3. Welding.
4. Sheet Metal.
5. Hull Department.
6. Drop Hammer and Tank.
7. Wing Department.
8. Metal Bench.
9. Final Assembly.
10. Paint Shop.
11. Sub Ass'y and Spare Parts.
12. Maintenance.
13. Draw Bench.
14. Heat Treat. and Spotweld.
15. Tubing.
16. Experimental.
17. Loft.
18. Productoin Department.
19. Shipping and Receiving.

JAS. L. KELLEY,
Factory Manager.

A large attendance was reported at last Monday's meeting, at which time approximately 150 new members were received into the union. Tuesday night's meeting was attended by approximately 350 members at which time over 250 new members were admitted to the union.

Nominations received at both day and night shifts to date are as follows:

President: L. A. Perry, R. B. Felton, W. J. Chudleigh, and Bros. Shields and Burney.

Vice-President: J. L. Castle, J. S. Burney, H. Gillan, A. J. Fischer, and Bro. Granstead.

Financial Secretary: W. J. Chudleigh, R. B. Felton, A. J. Fischer, H. A. Abbey, Bro. McIllivich, L. A. Perry, and F. H. Cole.

Recording Secretary: L. A. Perry, F. M. Martin, Al Hogan, and Bro. Morris.

Treasurer: Herman Stellar, Al Cox, and Bro. Wilder.

Conductor: A. Peterson, F. Martin, A. J. Fischer, and Bro. McCune.

Sentinel: H. W. Clark, R. B. Felton, H. A. Abbey, A. Peterson, and Bro. Swaed.

Trustees: A. Hogan, J. J. Braun, P. McManus, L. Larsen.

Executive Board: H. Torres, J. Coe, R. B. Felton, J. D. Barnes, H. A. Abbey.

Brother Parker was elected as member of Wage Review Board from the Night Shift to serve with Bro. Chudleigh.

Motion made at the night shift meeting on last Monday that nomination of officers for the whole lodge be held over to special meeting which will be held at 2 p. m., Sunday, Nov. 24th, when a public agent also will be nominated. This was held to be out of order and unconstitutional at the meeting of the day shift Tuesday night, Nov. 19th, as nomination for officers must be made at two regular meetings to be held in November.

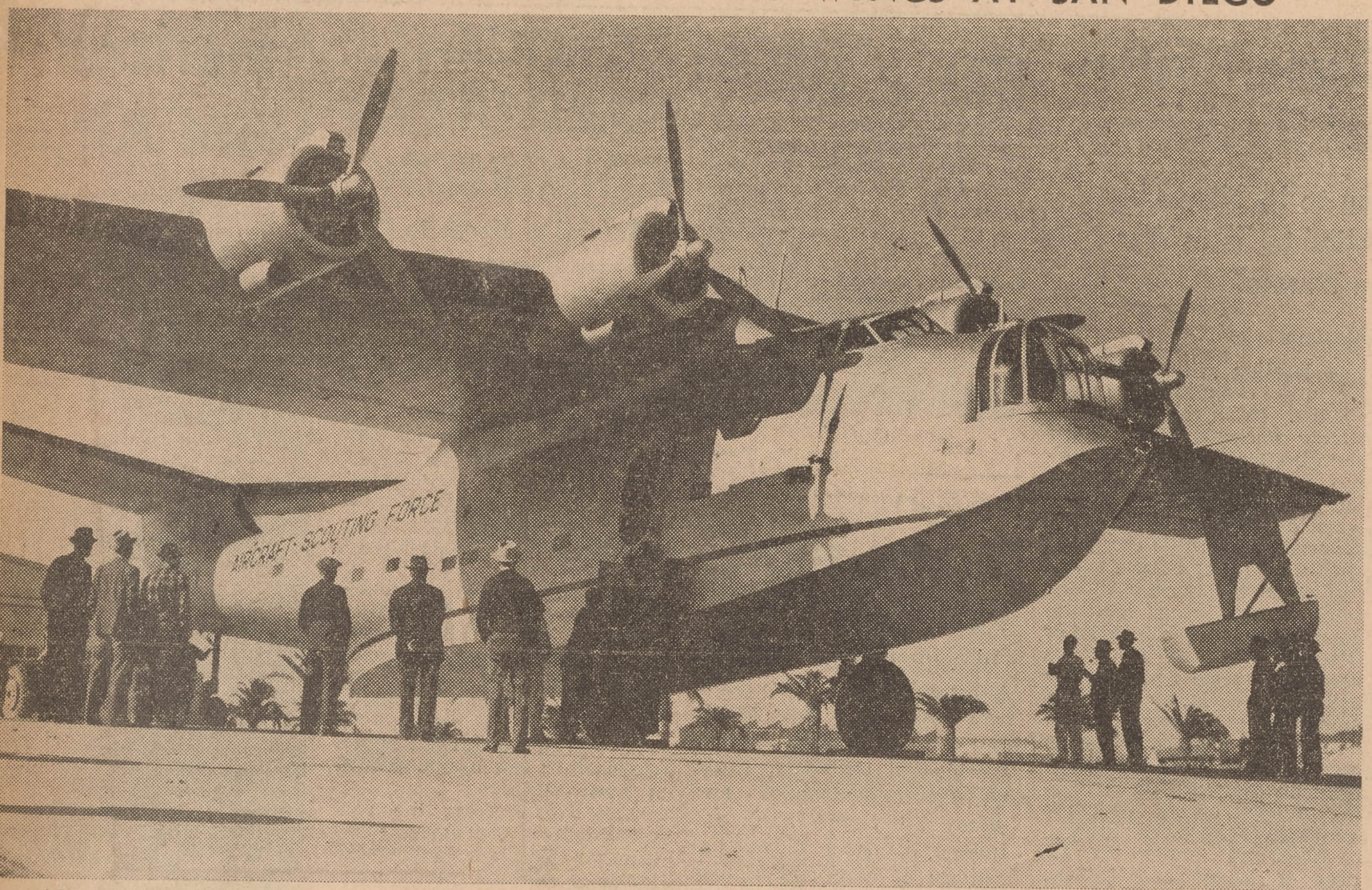
The nominations were closed from the day shift, but can still be placed before the union at next Monday's meeting of the night shift, which is held in Turner Hall at 10 a. m. Special meeting for Sunday cannot be legally held.

The discharge and lay off of the members was discussed and it was suggested that, where the employee concerned considered that the lay off or discharge was unjust and that he was being discriminated against, he should contact his shop committeeman immediately as re-instatements were much easier to secure if acted upon as soon as possible.

Matters pertaining to the immediate wage increase for employees in the lower brackets who have

---

SKY GIANT SUCCESSFULLY TRIES WINGS AT SAN DIEGO



AIR LEVIATHAN—Here is prototype of first "battleship of the air" which has undergone tests successfully.

Los Angeles Times - 11/24/40

Huge New Air Battleship Given First Test Flights

One of Navy's Six Most Powerful Bombers, Built at San Diego, Tries Out Its Wings

SAN DIEGO, Nov. 23.—Test flights on the first of six four-motored, 25-ton "battleships of the air," most powerful bombers in the Navy, have been started here by a Consolidated Aircraft Corp. crew, with delivery to a Navy trial board due next month, it was learned today.

Equipped with a supercharger enabling operations at extremely high altitudes, the craft will be assigned to the recently commissioned Patrol Squadron 13, commanded by Lieut. Comdr. Stephen B. Cooke, at the San Diego naval air station.

CARRIES MACHINE GUNS

All six, the first group of a Navy mass production order, are expected to be delivered to the 100-man squadron by February or March, it was indicated.

Capable of flying 5000 miles nonstop, the air Leviathan has two machine-driven revolving turrets, one in the bow and another topside, mounting heavy-caliber machine guns. Additional protection from fighter planes is afforded by manually operated gun stations.

The engines are 1200 h.p. Pratt & Whitney radial air-cooled, housed in a 115-foot wing.

NONSTOP FLIGHTS

The plane is similar to the $1,000,000 experimental prototype flagship of the Aircraft Scouting Force, used to transport Secretary of the Navy Frank Knox across the Pacific to Hawaii and back on his recent inspection trip. This airboat last year made two nonstop flights across the continent, from San Diego to Anacostia, D.C., and return.

Cost of each of the six bombers, the first four-motored patrol planes in the Navy, will be about $300,000, including engines, it was reported authoritatively.

Union 11/29/40

War-Bound S. D. Bomber to Hop

The first of a large order of patrol-bomber type seaplanes ordered by Britain will leave the Consolidated Aircraft Corp. plant before dawn this morning bound for the east coast and embattled England.

The ship is a model 28 type, similar to the famous navy P.B.Y. planes. It is equipped with two 1000-horsepower engines and has a wing span of 104 feet. It has been camouflaged for its flight to the war zone.

Lt. W. Cleveland, naval reserve, and Douglas Kelley, local flier, will be pilots. Russ Rogers, who flew the Archibald plane Guba around the world, will act as observer, according to report from Consolidated officials.

Another observer aboard will be I. G. Ross, Canadian pilot, who may be slated for the job of taking the plane across the Atlantic after the crew supplied by Consolidated makes delivery on the east coast.

NOV. 29, 1940 Union

Air Reserve Head

LT. H. B. DUCKWORTH
. . . 10 years a test pilot

Duckworth Aids Army Inspector

Announcement has been made by Maj. E. R. McReynolds, air corps factory representative in San Diego that Lt. Hubert B. Duckworth has been assigned by the war department to assist Maj. McReynolds in final testing and acceptance of army planes at Consolidated Aircraft Corps. and Ryan Aeronautical Co.

This assignment is in addition to Lt. Duckworth's duties as commanding officer of the air corps reserve base at Lindbergh field, and as unit instructor of the local air corps unit of reserve pilots.

Lt. Duckworth has had 10 years' experience as a test pilot for the civil aeronautics administration, Curtis-Wright Aircraft Corp. and the Army air corps.

Duckworth Assigned To S. D. Army Duty

Trib-Sun 11/29/40

Lt. Hubert B. Duckworth has been assigned by the war department to assist Maj. E. R. McReynolds, air corps factory representative in San Diego, in final testing and acceptance of army planes at the Consolidated Aircraft Corp. and Ryan Aeronautical Co. plants, according to announcement by McReynolds. Duckworth, who has had 10 years' experience as test pilot for the civil aeronautics administration, the Curtiss-Wright Aircraft Corp. and the army air corps, is commanding officer of the air corps reserve base at Lindbergh field and instructor of the local air corps unit of reserve pilots.

Trib-Sun 11/29/40

Navy Aid Leaves After Viewing Plants

Completing his inspection of local aircraft factories, James V. Forrestal, under-secretary of the navy, who arrived Wednesday, left by plane late yesterday for Washington, D. C. While here he conferred with officials of the Consolidated Aircraft Corp. and the Ryan Aeronautical Co. He was accompanied by Capt. Sidney M. Kraus, of the bureau of aeronautics.

Union 11/29/40

Navy Under-Secretary Leaves for Capital

Completing inspection of local aircraft factories, James V. Forrestal, under-secretary of the navy, left by plane late yesterday for Washington. He was accompanied by Capt. Sidney M. Kraus of the bureau of aeronautics with Lt. Bruce Van Voorhis of Anacostia, D. C., Naval Air station at the controls of the transport plane.

Forrestal arrived Wednesday afternoon after inspecting aircraft plants at Seattle and Los Angeles. yesterday he spent the greater part of the day conferring with Consolidated Aircraft Corp. officials and inspecting the Ryan plant.

Union 12/1/40

Consolidated Bomber Arrives in New York

PORT WASHINGTON, N. Y., Nov. 30 (A.P.)—The first of a fleet of Consolidated 28 patrol bomber type seaplanes destined for Great Britain arrived today from San Diego, by way of Fort Worth.

Presumably, the plane will be flown later to Halifax for delivery to Canadian authorities who will fly or transport it to Great Britain

---

Navy Bombers Make Another Flight to Hawaii

Aero Digest Oct. 39

A flight of fourteen Consolidated patrol-bombers commanded by Lieut. Comdr. Stuart H. Ingersoll, arrived in Honolulu one day last month after a non-stop flight of 2500 miles from San Diego.

The planes, with 98 officers and men aboard, were sent to Hawaii to replace another squadron which was expected to fly from Honolulu to Manila to take up neutrality patrol in Philippine waters. They were from Squadron 13, based at the North Island naval air station, San Diego Bay.

AMERICAN EXPORT AIRLINES WILL USE NEW SIKORSKY

Nat'l. Aircraft Counsellor 10-22-40

The board of directors of American Export Airlines, Inc., announced last week that Durston G. Richardson has been elected vice-president in charge of operations. Mr. Richardson has been associated with this company for two years.

American Export Airlines was recently granted a Civil Aeronautics Board certificate of convenience and necessity to establish transatlantic air service between the United States and Europe using New York and Lisbon as terminals. The company plans to pioneer non-stop service on this route as soon as its three new Sikorsky S-44a four-engined flying boats are ready. These are now under construction at the United Aircraft Corporation Sikorsky plant at Bridgeport.

Meanwhile, the airlines will use their Consolidated Model 28 flying boat (an adaption of the PBY long-range bomber) which, like the Sikorskys, was originally developed for the Navy. Horta, Azores, will be used as an intermediate port for the preliminary mail and express service.

Under Mr. Richardson's direction, technical details for co-ordinating certain facilities of the new airlines with those of the parent company, American Export Lines, Inc., have been perfected. This represents the first time in history that a transoceanic airline and steamship service, operating under a single house flag, have thus pooled technical resources.

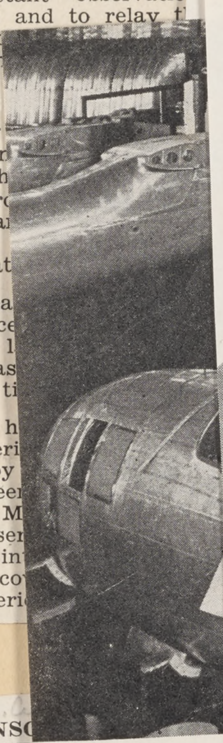
American Export Lines today operates the only regularly scheduled American flag steamship service between the United States and Europe and, like the airline, uses New York and Lisbon as its terminals. Thus, the flying boats and surface vessels will follow identical routes.

According to Mr. Richardson, the airlines will station a trained meteorologist, representing its own weather bureau, aboard each of the "Four Ace" passenger liner erated by the steamship con These men have been assig make constant observatio winds aloft and to relay t formation b tervals to th er Bureau aircraft on

Company been station each of th Coast Guard in mid-Atla assembling weather dat

Mr. Richa flying office during the l tinuously as since that ti

In 1920 h first Ameri operated by Inc., between vana and M years he se charge of in erations co South Ameri



Natl.

CONSO CORPOR

because ance of Consolida field of r currently than $15 ed bombe standing 23,820 sh vertible shares of stock. C ing at ar solidated, fers excel from the l located at solidated l short year est industr

10-22-40

AVIATION - November 1940

personnel director of Ford has us public and pro- lle, where new Stin- city had g training of age in was possi- line with ville resi- ent upon training than 50 part-time aircraft he great- field of jig, and minimum and then trate on such as nd form- trying to o such a personnel an with nths or aving to he then xtension nights a rough a advance d make w men. rted on ut into

■ ■ ■

ds

L.A.

Announcin
M-R-
ROLL
BEARIN
Sp
A
En
MRC R218F1
Wright
Pratt & Whitney
Lycoming
Jacobs
Ranger

Here is a new roller bearing with three outstanding features contributing to greater safety in air transportation: (1) Correct relief and crowning of contact surfaces for maximum capacity and shaft deflection; (2) New, much stronger one-piece retainer without rivets which permits complete disassembly for inspection; (3) 10 to 20% more rollers than the conventional type.

The New

M-R-C ROLLER BEARING

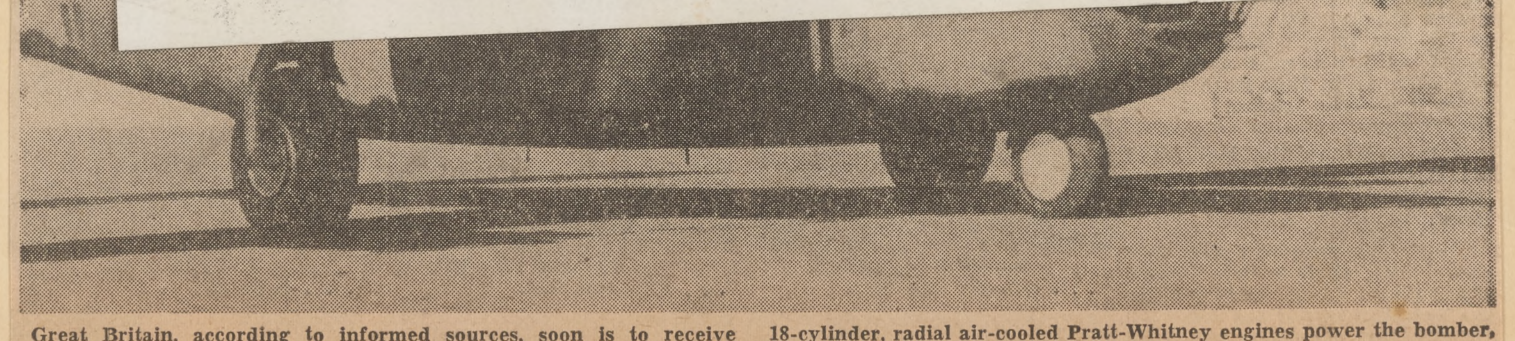
are now standard equipment on the following engi

WRIGHT J-6 Whirlwind, R-1820 G-100 Cyclone, R-1820 G-200 Cyc R-2600 Double Row Cyclone & Duplex Cyclone; **PRATT & WHIT** R-1340 Wasp, R-1690 Hornet & R-1830 Twin Wasp; **RANGER** 770B-3, 4, 5, 6, 7; **LYCOMING** R-680-D5, R-680-D6, R-680-E1, R-680- R-680-E3; **JACOBS** L-4, L-4M, L-4MB, L-4MA, L-4PT, L-5, L-5M, L-5MB L-6M, L-6MB & L-6MA.

M-R-C ROLLER BEARING

MARLIN - ROCKWELL CORPORATION

S. D



Great Britain, according to informed sources, soon is to receive seven bombers, of this type, from Consolidated Aircraft Corp. The long-range, four-motored ship was given its initial test last week. The plane, similar to the XB-24 developed by Consolidated for the United States army in February, weighs 20 tons, has a cruising radius of 3000 miles and a speed of 300 miles an hour. Four 1200-hp, 18-cylinder, radial air-cooled Pratt-Whitney engines power the bomber, said to be capable of carrying four tons of bombs. First duty of the plane will be to ferry R.A.F. pilots to England from Canada and to return pilots unsuitable for combat service who in turn will fly combat planes to England. Until pressed into service as a bomber, the plane's armament will be limited to increase speed.

---

b. 11/15/40

Contract 3 Million onsair

within five days of a order which skyrocketed the firm's backlog above the $300,000,000 mark, the navy yesterday announced award of a contract for $18,529,500 to Consolidated Aircraft Corp. for planes and parts, The Associated Press reported from Washington, D. C.

As with the previous order, no delivery dates or other details were made public.

The new order raises the Consolidated backlog to an estimated $324,500,000. Last Saturday the firm was awarded a navy department contract for $75,313,000, which raised the backlog to approximately $306,000,000.

Burrelle's
EST. 1888
PRESS CLIPPING BUREAU
NEW YORK

NEW YORK CITY, HERALD-TRIB
NOVEMBER 24, 1940

U. S. 2-Ocean Bomber Fleet Being Built

2,000 Navy Flying Boats With 4,000-Mile Range to Patrol Both Coasts

Designed to Cripple Invader Far at Sea

Craft Will Be Ready by Mid-1941; New Bases Extend Striking Power

By The United Press

WASHINGTON, Nov. 23.—The Navy has on order more than two thousand great bomber flying boats to give its air arm a more powerful striking force in the Atlantic and Pacific Oceans, it was learned tonight.

Contracts for the patrol bombers were awarded the Glenn L. Martin Company, Baltimore, and Consolidated Aircraft Corporation, San Diego, in the last six weeks. The Martin contract calls for approximately 1,100 PBM's at a total cost of $106,125,396. Consolidated will supply approximately one thousand PBY's at a cost of $93,842,500.

Engines for the big flying boats were included in a $162,000,000 order to Pratt & Whitney.

These craft, with an operating range of 4,000 miles, Navy air strategists believe, will give the United States control of the Atlantic far beyond the halfway mark between this country and Europe. They will provide a powerful attacking force in the Pacific, operating from bases at Pearl Harbor, Cavite, P. I., and the islands of Wake, Midway and Guam, if necessary.

Planes for Use With Fleet

Improvements in design of the Navy's seaplane-type bombers also will permit their use directly with the fleet instead of making them dependent on island or mainland bases. They can land or take off from rough water and be fueled, provisioned and loaded from tenders at sea during bad weather.

The present production schedule calls for delivery of the last of the planes on order by mid-1941. The Navy now has almost three hundred similar bombers which it is using on both Atlantic and Pacific patrol.

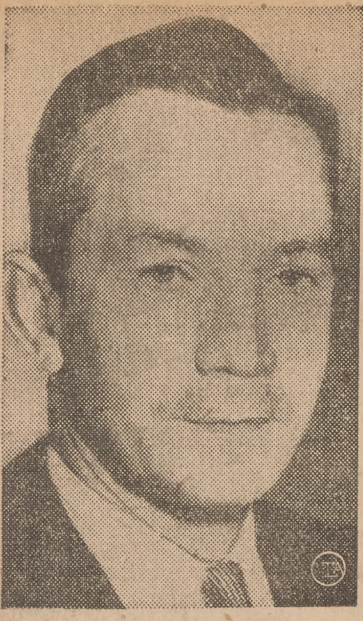
All of the Navy's patrol bombers, on hand and on order, have accommodations for maintaining a crew over long periods. They have sleeping and cooking facilities, and as long as supplies are available, ashore or afloat as near as 1,000 to 1,500 miles, have almost complete freedom of operation.

Consair Plane Leaves N. Y. for Nova Scotia

12/3/40

NEW YORK, Dec. 2 (I.N.S.) — A 14-ton Consolidated seaplane bomber from San Diego, Calif., first of a large order destined for the British Royal Air force—left Port Washington airport today, bound for Halifax, N. S.

Arrives by Plane



JAMES V. FORRESTAL
. . . inspecting aircraft plants.

Union 11/28/40

Forrestal Here On Consair Visit

On an inspection tour of west coast aircraft factories which are engaged in the manufacture of planes for the navy, James V. Forrestal, under-secretary of the navy, arrived by plane late yesterday from Washington, D. C., via Seattle and Los Angeles. He was accompanied by Capt. Sidney M. Kraus of the bureau of aeronautics.

Landing at the Naval Air station at 5:10 from Mines field, Los Angeles, Forrestal was greeted by Vice Adm. W. F. Halsey, Rear Adm. Charles A. Blakely, 11th Naval district commandant, and chamber of commerce executives. He went to Hotel del Coronado.

At Seattle Forrestal inspected the Boeing factory and at Los Angeles the Douglas and North American aircraft plants. He will visit the Consolidated plant here today.

Official Publication of
Council of Aeronautical
Mechanics, I. A. of M.

☆☆☆ AMERICAN ☆☆☆

Affiliated with the
American Federation
of Labor

AIRCRAFT MECHANIC

THE VOICE OF THE AIRCRAFT INDUSTRY

VOLUME 1 — SAN DIEGO, CALIFORNIA, NOVEMBER 21, 1940 — NUMBER 6

WAGE REVIEW STARTS DEC. 2 AT CONSAIR

A large attendance was reported at last Monday's meeting, at which time approximately 150 new members were received into the union. Tuesday night's meeting was attended by approximately 350 members at which time over 250 new members were admitted to the union.

Nominations received at both day and night shifts to date are as follows:

President: L. A. Perry, R. B. Felton, W. J. Chudleigh, and Bros. Shields and Burney.

Vice-President: J. L. Castle, J. S. Burney, H. Gillan, A. J. Fischer, and Bro. Granstead.

Financial Secretary: W. J. Chudleigh, R. B. Felton, A. J. Fischer, H. A. Abbey, Bro. McIllivich, L. A. Perry, and F. H. Cole.

Recording Secretary: L. A. Perry, F. M. Martin, Al Hogan, and Bro. Morris.

Treasurer: Herman Stellar, Al Cox, and Bro. Wilder.

Conductor: A. Peterson, F. Martin, A. J. Fischer, and Bro. McCune.

Sentinel: H. W. Clark, R. B. Felton, H. A. Abbey, A. Peterson, and Bro. Swaed.

Trustees: A. Hogan, J. J. Braun, P. McManus, L. Larsen.

Executive Board: H. Torres, J. Coe, R. B. Felton, J. D. Barnes, H. A. Abbey.

Brother Parker was elected as member of Wage Review Board from the Night Shift to serve with Bro. Chudleigh.

Motion made at the night shift meeting on last Monday that nomination of officers for the whole lodge be held over to special meeting which will be held at 2 p. m., Sunday, Nov. 24th, when a public agent also will be nominated. This was held to be out of order and unconstitutional at the meeting of the day shift Tuesday night, Nov. 19th, as nomination for officers must be made at two regular meetings to be held in November.

The nominations were closed from the day shift, but can still be placed before the union at next Monday's meeting of the night shift, which is held in Turner Hall at 10 a. m. Special meeting for Sunday cannot be legally held.

The discharge and lay off of the members was discussed and it was suggested that, where the employee concerned considered that the lay off or discharge was unjust and that he was being discriminated against, he should contact his shop committeeman immediately as re-instatements were much easier to secure if acted upon as soon as possible.

Matters pertaining to the immediate wage increase for employees in the lower brackets who have been employed since Aug. 31, 1940, will be discussed at a full committee meeting with the management which has been planned for Monday.

Wage review problems were discussed and plans were made for the proper presentation.

Information blanks have been distributed to the employees of Local 1125 requiring the following information: Name of Employee, Clock Number, Address. Do you feel that you are entitled to a wage increase? How much per hour? Reason for increase? Give details of the work you are now doing.

If you have not received one of these blanks, contact your shop committeeman and get this information to him as soon as possible.

Shop Committeemen—Day Side

W. J. Chudleigh, tool room.
Harry Hudson, sheet metal.
J. D. Barnes, machine shop.
M. J. Castle, metal bench.
C. E. Danner, finish.
Hammett, tool bending.
H. E. Leonard, experimental.
S. W. Adams, M. T.
R. J. Bragg, hull department.
Carl E. Heilbach, wood shop.
Don Greene, final assembly.
J. B. Waskey, wing.
L. A. Perry, wing.
Kobets, tank.

The names of night shift committeemen have not been secured at this time.

The following communication for Consolidated management was read:

San Diego, Cal., Nov. 19, 1940.
Memo to: All Foremen
Subject: Wage Review.

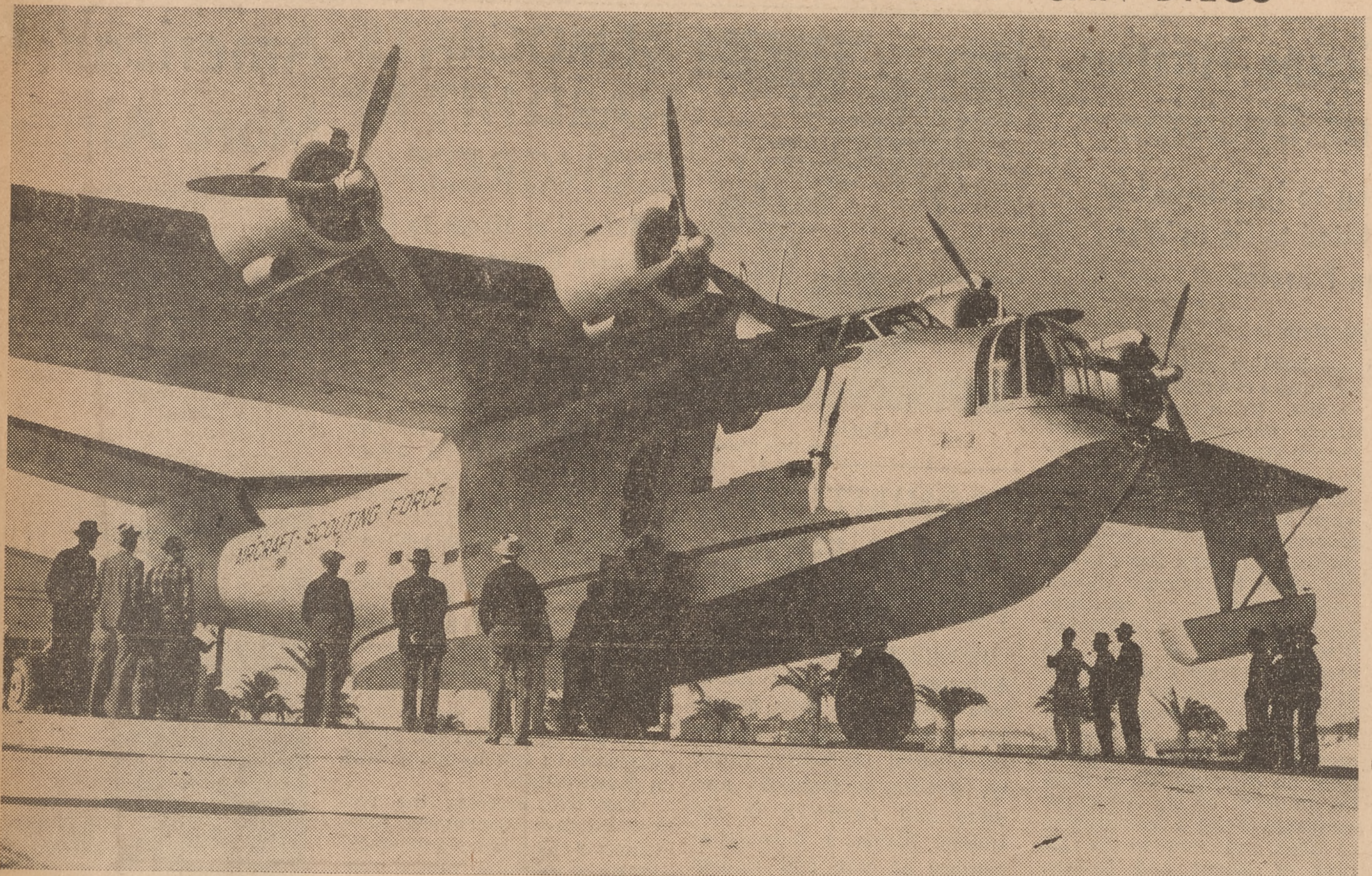
In order to proceed with our next wage review starting 2 December, 1940, you are requested to keep separate all record sheets of employees who have been hired since 31 August, 1940. These record sheets will be reviewed after our regular wage review period.

The order of departments to be reviewed will be as follows:

1. Tool Room and Wood Shop.
2. Machine Shop.
3. Welding.
4. Sheet Metal.
5. Hull Department.
6. Drop Hammer and Tank.
7. Wing Department.
8. Metal Bench.
9. Final Assembly.
10. Paint Shop.
11. Sub Ass'y and Spare Parts.
12. Maintenance.
13. Draw Bench.
14. Heat Treat. and Spotweld.
15. Tubing.
16. Experimental.
17. Loft.
18. Productoin Department.
19. Shipping and Receiving.

JAS. L. KELLEY,
Factory Manager.

SKY GIANT SUCCESSFULLY TRIES WINGS AT SAN DIEGO



AIR LEVIATHAN—Here is prototype of first "battleship of the air" which has undergone tests successfully.

Los Angeles Times - 11/24/40

Huge New Air Battleship Given First Test Flights

One of Navy's Six Most Powerful Bombers, Built at San Diego, Tries Out Its Wings

SAN DIEGO, Nov. 23.—Test flights on the first of six four-motored, 25-ton "battleships of the air," most powerful bombers in the Navy, have been started here by a Consolidated Aircraft Corp. crew, with delivery to a Navy trial board due next month, it was learned today.

Equipped with a supercharger enabling operations at extremely high altitudes, the craft will be assigned to the recently commissioned Patrol Squadron 13, commanded by Lieut. Comdr. Stephen B. Cooke, at the San Diego naval air station.

CARRIES MACHINE GUNS

All six, the first group of a Navy mass production order, are expected to be delivered to the 100-man squadron by February or March, it was indicated.

Capable of flying 5000 miles nonstop, the air Leviathan has two machine-driven revolving turrets, one in the bow and another topside, mounting heavy-caliber machine guns. Additional protection from fighter planes is afforded by manually operated gun stations.

The engines are 1200 h.p. Pratt & Whitney radial air-cooled, housed in a 115-foot wing.

NONSTOP FLIGHTS

The plane is similar to the $1,000,000 experimental prototype flagship of the Aircraft Scouting Force, used to transport Secretary of the Navy Frank Knox across the Pacific to Hawaii and back on his recent inspection trip. This airboat last year made two nonstop flights across the continent, from San Diego to Anacostia, D.C., and return.

Cost of each of the six bombers, the first four-motored patrol planes in the Navy, will be about $300,000, including engines, it was reported authoritatively.

Union 11/29/40

War-Bound S. D. Bomber to Hop

The first of a large order of patrol-bomber type seaplanes ordered by Britain will leave the Consolidated Aircraft Corp. plant before dawn this morning bound for the east coast and embattled England.

The ship is a model 28 type, similar to the famous navy P.B.Y. planes. It is equipped with two 1000-horsepower engines and has a wing span of 104 feet. It has been camouflaged for its flight to the war zone.

Lt. W. Cleveland, naval reserve, and Douglas Kelley, local flier, will be pilots. Russ Rogers, who flew the Archibald plane Guba around the world, will act as observer, according to report from Consolidated officials.

Another observer aboard will be I. G. Ross, Canadian pilot, who may be slated for the job of taking the plane across the Atlantic after the crew supplied by Consolidated makes delivery on the east coast.

NOV. 29, 1940 Union

Air Reserve Head

LT. H. B. DUCKWORTH
. . . 10 years a test pilot

Duckworth Aids Army Inspector

Announcement has been made by Maj. E. R. McReynolds, air corps factory representative in San Diego that Lt. Hubert B. Duckworth has been assigned by the war department to assist Maj. McReynolds in final testing and acceptance of army planes at Consolidated Aircraft Corps. and Ryan Aeronautical Co.

This assignment is in addition to Lt. Duckworth's duties as commanding officer of the air corps reserve base at Lindbergh field, and as unit instructor of the local air corps unit of reserve pilots.

Lt. Duckworth has had 10 years' experience as a test pilot for the civil aeronautics administration, Curtis-Wright Aircraft Corp. and the Army air corps.

Duckworth Assigned To S. D. Army Duty

Trib. Sun 11/29/40

Lt. Hubert B. Duckworth has been assigned by the war department to assist Maj. E. R. McReynolds, air corps factory representative in San Diego, in final testing and acceptance of army planes at the Consolidated Aircraft Corp. and Ryan Aeronautical Co. plants, according to announcement by McReynolds. Duckworth, who has had 10 years' experience as test pilot for the civil aeronautics administration, the Curtiss-Wright Aircraft Corp. and the army air corps, is commanding officer of the air corps reserve base at Lindbergh field and instructor of the local air corps unit of reserve pilots.

Trib. Sun 11/29/40

Navy Aid Leaves After Viewing Plants

Completing his inspection of local aircraft factories, James V. Forrestal, under-secretary of the navy, who arrived Wednesday, left by plane late yesterday for Washington, D. C. While here he conferred with officials of the Consolidated Aircraft Corp. and the Ryan Aeronautical Co. He was accompanied by Capt. Sidney M. Kraus, of the bureau of aeronautics.

Union 11/29/40

Navy Under-Secretary Leaves for Capital

Completing inspection of local aircraft factories, James V. Forrestal, under-secretary of the navy, left by plane late yesterday for Washington. He was accompanied by Capt. Sidney M. Kraus of the bureau of aeronautics with Lt. Bruce Van Voorhis of Anacostia, D. C., Naval Air station at the controls of the transport plane.

Forrestal arrived Wednesday afternoon after inspecting aircraft plants at Seattle and Los Angeles. yesterday he spent the greater part of the day conferring with Consolidated Aircraft Corp. officials and inspecting the Ryan plant.

Union 12/1/40

Consolidated Bomber Arrives in New York

PORT WASHINGTON, N. Y., Nov. 30 (A.P.)—The first of a fleet of Consolidated 28 patrol bomber type seaplanes destined for Great Britain arrived today from San Diego, by way of Fort Worth.

Presumably, the plane will be flown later to Halifax for delivery to Canadian authorities who will fly or transport it to Great Britain

---

Navy Bombers Make Another Flight to Hawaii

Aero Digest Oct. 39

A flight of fourteen Consolidated patrol-bombers commanded by Lieut. Comdr. Stuart H. Ingersoll, arrived in Honolulu one day last month after a non-stop flight of 2500 miles from San Diego.

The planes, with 98 officers and men aboard, were sent to Hawaii to replace another squadron which was expected to fly from Honolulu to Manila to take up neutrality patrol in Philippine waters. They were from Squadron 13, based at the North Island naval air station, San Diego Bay.

AMERICAN EXPORT AIRLINES WILL USE NEW SIKORSKY

Natl. Aircraft Counsellor 10-22-40

The board of directors of American Export Airlines, Inc., announced last week that Durston G. Richardson has been elected vice-president in charge of operations. Mr. Richardson has been associated with this company for two years.

American Export Airlines was recently granted a Civil Aeronautics Board certificate of convenience and necessity to establish transatlantic air service between the United States and Europe using New York and Lisbon as terminals. The company plans to pioneer non-stop service on this route as soon as its three new Sikorsky S-44a four-engined flying boats are ready. These are now under construction at the United Aircraft Corporation Sikorsky plant at Bridgeport.

Meanwhile, the airlines will use their Consolidated Model 28 flying boat (an adaption of the PBY long-range bomber) which, like the Sikorskys, was originally developed for the Navy. Horta, Azores, will be used as an intermediate port for the preliminary mail and express service.

Under Mr. Richardson's direction, technical details for co-ordinating certain facilities of the new airlines with those of the parent company, American Export Lines, Inc., have been perfected. This represents the first time in history that a transoceanic airline and steamship service, operating under a single house flag, have thus pooled technical resources.

American Export Lines today operates the only regularly scheduled American flag steamship service between the United States and Europe and, like the airline, uses New York and Lisbon as its terminals. Thus, the flying boats and surface vessels will follow identical routes.

According to Mr. Richardson, the airlines will station a trained meteorologist, representing its own weather bureau, aboard each of the "Four Ace" passenger liners operated by the steamship company. These men have been assigned to make constant observations of winds aloft and to relay this information by radio at regular intervals to the United States Weather Bureau and to the company's aircraft on the course overhead.

Company meteorologists have been stationed for training aboard each of the two United States Coast Guard vessels now stationed in mid-Atlantic for the purpose of assembling and reporting flying weather data.

Mr. Richardson, who served as a flying officer in the Army Corps during the last war, has been continuously associated with aviation since that time.

In 1920 he was a pilot on the first American overseas airline operated by Aeromarine Airways, Inc., between Key West and Havana and Miami-Nassau. For ten years he served as an official in charge of international airline operations covering Central and South American countries.

Natl. Aircraft Counsellor

* * *

CONSOLIDATED AIRCRAFT CORPORATION: Chiefly known because of the brilliant performance of its huge flying boats, Consolidated still dominates this field of naval aviation. Company currently has a backlog of more than $150,000,000 for four-motored bombers and patrol boats. Outstanding capitalization consists of 23,820 shares of $3.00 par Convertible Preferred and 576,160, shares of $1.00 par value Common stock. Common is currently selling at around $23 per share. Consolidated, the writer believes, offers excellent profit possibilities from the long range view. Plant is located at San Diego, where Consolidated has grown within a few short years to be the city's largest industrial organization.

10-22-40

* * *

AVIATION - November 1940

School, Santa Monica, Santa Monica Technical School, United Aircraft School, Venice High School, Westwood Correspondence School, and the Willis Business College.

This brief outline will serve to illustrate the steps taken by one major manufacturer to meet the personnel training problem. Approximately 2,000 Douglas employees are currently enrolled in these courses, in addition to prospective employees undergoing instruction.

An interesting and significant problem is that faced by Interstate Aircraft & Engineering Corp., a subcontractor machining aircraft parts. About 300 machinists are employed at this plant, with the number being steadily expanded. It is no longer possible to hire experienced machinists in any quantity, and training machinists is a long and tedious process which has been begun too late in this country to satisfy the immediate need. Lawrence Ley, shop superintendent at Interstate, has solved this problem through combining a high degree of supervision with a system of progressive advancement for new men, or boys. The really experienced and capable all-around machinists available have been about evenly divided between the tool room and the shop. Those in the shop are used almost exclusively as lead men, to supervise work set-ups and to instruct green men in specific operations. Under such instruction it is possible to reach a high rate of production with comparatively inexperienced help. Boys out of high school but with thorough high school machine shop instruction, are hired and put to work on the burring bench. After several months of burring work, and as they show aptitude and opportunities open up, these boys are advanced to thread mills, where they are under close supervision. After a few months of thread mill work they go on to production mill work where, with careful supervision, they soon develop into good production men. This does not produce the all-around machinists such as are trained by the apprentice plan, but it does provide production machinists in the shortest possible space of time, and with maximum production efficiency while advancing.

A similar problem has been met by the Kinner and Menasco aircraft engine companies of Glendale and Burbank, respectively. Both have relied on accelerated training of younger men, under close shop supervision, to fill out the ranks of machine shop personnel. Also, a higher degree of machine specialization is necessary under this plan, restricting workers to the operation of equipment on which they have had experience.

Under R. Randall Irwin, industrial relations manager, the Lockheed Aircraft Corp. has conducted a long-range employee selection and training program. The Lockheed program starts with unusual care in selection of employees off the hiring line. It includes every conceivable avenue of employee training, including paying tuition of untrained employees through short courses in private schools, as previously mentioned, and also including unusually close cooperation with the public school system. Lockheed has also, largely at its own expense, initiated engineering brush-up courses for making aircraft engineers out of engineers trained and experienced in other fields, such as civil or structural engineering. Such courses are being given with the cooperation of the California Institute of Technology.

North American Aviation, Inc., has increased the payroll from 3,700 to 6,600 in a year and is now shooting for a total of 10,000 employees at the El Segundo plant (12,000 will be employed in the new Dallas factory). Under the direction of Major Howe Thayer, education director, North American has cooperated with many of the public and private schools already mentioned to provide adequate employee training.

Northrop Aircraft, Inc., has already advanced from zero to more than 1,200 employees this year, and expects to have 3,000 at work in the near future. A nucleus of this new staff were seasoned men from neighboring aircraft plants. The balance consists of new men obtained through the various established schools.

One thing worth mentioning in connection with the method used by Ryan Aeronautical Co. in obtaining students from the Ryan School of Aeronautics, is that the school has inaugurated a three-shift, 24-hr. per day training program in order to meet the factory's requirements for trained men.

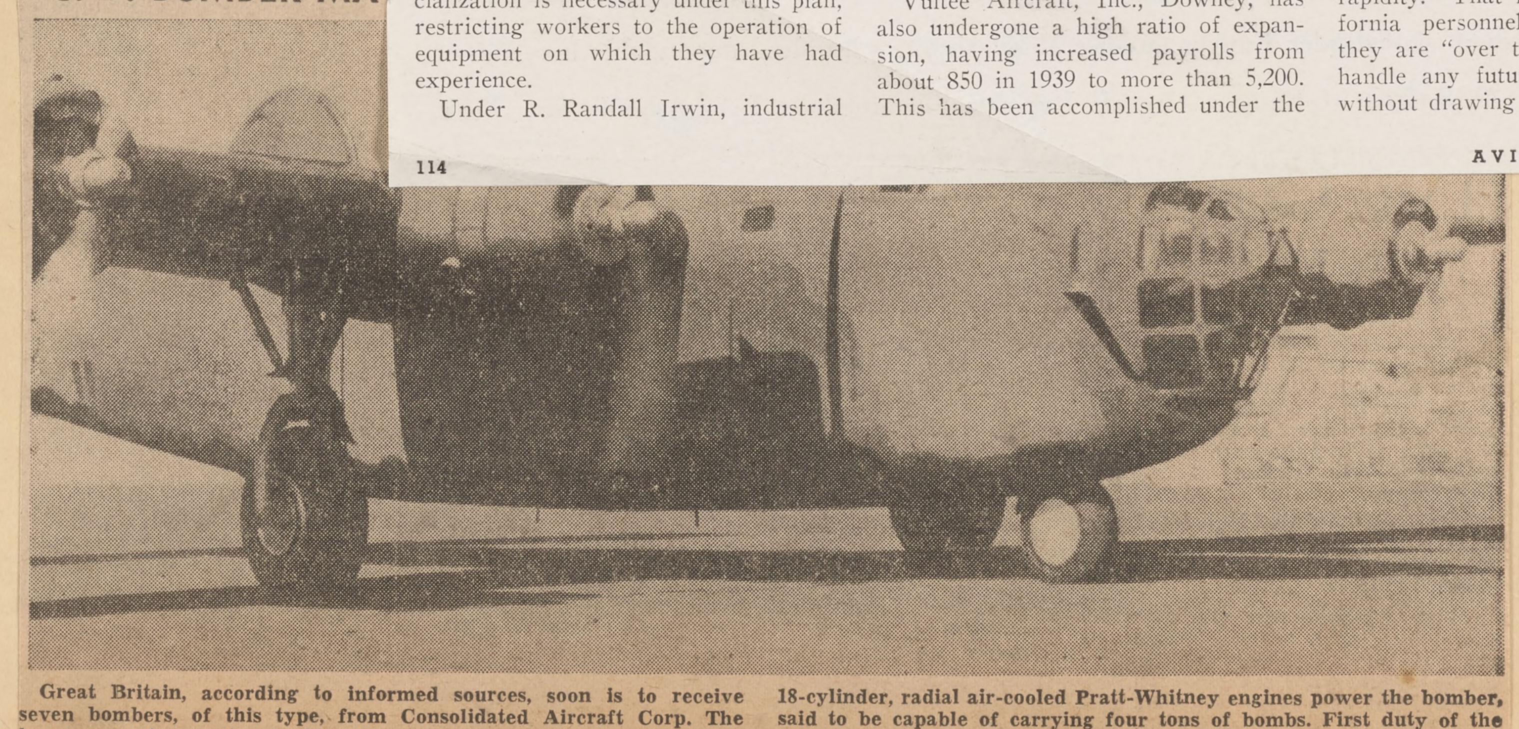
Solar Aircraft Co., San Diego, employs a high percentage of welders in manufacturing the special Solar manifolds which are standard throughout the industry. These welders have been obtained from various schools and then carefully checked through a system set up in the Solar plant, which includes qualifying each welder to meet Army-Navy requirements.

Vega Aircraft Co., Burbank, as a subsidiary of Lockheed, has relied directly on the Lockheed organization to provide necessary executive supervision for expansion of the payroll, which has leaped from less than 100 to approximately 3,000.

Vultee Aircraft, Inc., Downey, has also undergone a high ratio of expansion, having increased payrolls from about 850 in 1939 to more than 5,200. This has been accomplished under the supervision of Gerald Tuttle, personnel manager, and George Ford, director of education and training. Mr. Ford has worked closely with various public schools in setting up courses and providing instructors. At Nashville, where Vultee recently took over the new Stinson factory, he found that the city had a charter provision preventing training anyone more than 21 years of age in the public school system. It was possible to modify this provision in line with the opportunity afforded Nashville residents of immediate employment upon completion of suitable aircraft training work. Vultee now has more than 50 employees who are doing part-time teaching in public or private aircraft training schools. Ford finds the greatest shortage right now in the field of experienced machinists, tool, jig, and die makers. He prefers a minimum short course of eight weeks and then wants the trainee to concentrate on learning to do one thing well, such as riveting, sheet metal layout, hand forming, assembly, etc. rather than trying to compress a whole education into such a short period. As with other personnel men, Ford would prefer the man with all-around training of ten months or more, if he could get him. Having to take the short-term trainee, he then encourages him to take extension courses at least one or two nights a week. All new men are put through a course of work training to advance them as rapidly as possible and make more room at the bottom for new men. Machinist candidates are started on bench work and later worked out into the shop under the close supervision of set-up men. Sheet metal workers are started on the simplest possible operations and advanced as they learn; riveters are started as buckers and on the simplest type of riveting, a green man always being placed with an experienced man. Promising lead men are selected for foreman training on company time, such training being given by Ford. Vultee expects to have 10,000 men at work in the Downey plant in the near future, and 6,000 at work in Nashville.

One lesson emphasized by many personnel men is that sheer manpower is not the answer to accelerating production. It is better sometimes not to expand too fast, or at least not faster than it is possible to train the key men who must supervise the green men coming in under them. Once those key men have been properly prepared for their added responsibilities it is possible to pyramid personnel with much greater rapidity. That is why Southern California personnel managers feel that they are "over the hump" and able to handle any future expansion program without drawing a deep breath.

S. D. BOMBER MA



Great Britain, according to informed sources, soon is to receive seven bombers, of this type, from Consolidated Aircraft Corp. The long-range, four-motored ship was given its initial test last week. The plane, similar to the XB-24 developed by Consolidated for the United States army in February, weighs 20 tons, has a cruising radius of 3000 miles and a speed of 300 miles an hour. Four 1200-hp, 18-cylinder, radial air-cooled Pratt-Whitney engines power the bomber, said to be capable of carrying four tons of bombs. First duty of the plane will be to ferry R.A.F. pilots to England from Canada and to return pilots unsuitable for combat service who in turn will fly combat planes to England. Until pressed into service as a bomber, the plane's armament will be limited to increase speed.

/15/40

ntract illion For Consair

Coming within five days of a large order which skyrocketed the firm's backlog above the $300,000,000 mark, the navy yesterday announced award of a contract for $18,529,500 to Consolidated Aircraft Corp. for planes and parts, The Associated Press reported from Washington, D. C.

As with the previous order, no delivery dates or other details were made public.

The new order raises the Consolidated backlog to an estimated $324,500,000. Last Saturday the firm was awarded a navy department contract for $75,313,000, which raised the backlog to approximately $306,000,000.

Burrelle's
EST. 1888
PRESS CLIPPING BUREAU
NEW YORK

NEW YORK CITY, HERALD-TRIB
NOVEMBER 24, 1940

U. S. 2-Ocean Bomber Fleet Being Built

2,000 Navy Flying Boats With 4,000-Mile Range to Patrol Both Coasts

Designed to Cripple Invader Far at Sea

Craft Will Be Ready by Mid-1941; New Bases Extend Striking Power

By The United Press

WASHINGTON, Nov. 23.—The Navy has on order more than two thousand great bomber flying boats to give its air arm a more powerful striking force in the Atlantic and Pacific Oceans, it was learned tonight.

Contracts for the patrol bombers were awarded the Glenn L. Martin Company, Baltimore, and Consolidated Aircraft Corporation, San Diego, in the last six weeks. The Martin contract calls for approximately 1,100 PBM's at a total cost of $106,125,396. Consolidated will supply approximately one thousand PBY's at a cost of $93,842,500.

Engines for the big flying boats were included in a $162,000,000 order to Pratt & Whitney.

These craft, with an operating range of 4,000 miles, Navy air strategists believe, will give the United States control of the Atlantic far beyond the halfway mark between this country and Europe. They will provide a powerful attacking force in the Pacific, operating from bases at Pearl Harbor, Cavite, P. I., and the islands of Wake, Midway and Guam, if necessary.

Planes for Use With Fleet

Improvements in design of the Navy's seaplane-type bombers also will permit their use directly with the fleet instead of making them dependent on island or mainland bases. They can land or take off from rough water and be fueled, provisioned and loaded from tenders at sea during bad weather.

The present production schedule calls for delivery of the last of the planes on order by mid-1941. The Navy now has almost three hundred similar bombers which it is using on both Atlantic and Pacific patrol.

All of the Navy's patrol bombers, on hand and on order, have accommodations for maintaining a crew over long periods. They have sleeping and cooking facilities, and as long as supplies are available, ashore or afloat as near as 1,000 to 1,500 miles, have almost complete freedom of operation.

Consair Plane Leaves N. Y. for Nova Scotia

Union 12/3/40

NEW YORK, Dec. 2 (I.N.S.) — A 14-ton Consolidated seaplane bomber from San Diego, Calif., first of a large order destined for the British Royal Air force—left Port Washington airport today, bound for Halifax, N. S.

Union 11/28/40

Arrives by Plane

JAMES V. FORRESTAL
. . . inspecting aircraft plants.

Forrestal Here On Consair Visit

On an inspection tour of west coast aircraft factories which are engaged in the manufacture of planes for the navy, James V. Forrestal, under-secretary of the navy, arrived by plane late yesterday from Washington, D. C., via Seattle and Los Angeles. He was accompanied by Capt. Sidney M. Kraus of the bureau of aeronautics.

Landing at the Naval Air station at 5:10 from Mines field, Los Angeles, Forrestal was greeted by Vice Adm. W. F. Halsey, Rear Adm. Charles A. Blakely, 11th Naval district commandant, and chamber of commerce executives. He went to Hotel del Coronado.

At Seattle Forrestal inspected the Boeing factory and at Los Angeles the Douglas and North American aircraft plants. He will visit the Consolidated plant here today.

Official Publication of Council of Aeronautical Mechanics, I. A. of M.

★★★ AMERICAN ★★★

Affiliated with the American Federation of Labor

AIRCRAFT MECHANIC

THE VOICE OF THE AIRCRAFT INDUSTRY

VOLUME 1 SAN DIEGO, CALIFORNIA, NOVEMBER 21, 1940 NUMBER 6

WAGE REVIEW STARTS DEC. 2 AT CONSAIR

been employed since Aug. 31, 1940, will be discussed at a full committee meeting with the management which has been planned for Monday.

Wage review problems were discussed and plans were made for the proper presentation.

Information blanks have been distributed to the employees of Local 1125 requiring the following information: Name of Employee, Clock Number, Address. Do you feel that you are entitled to a wage increase? How much per hour? Reason for increase? Give details of the work you are now doing.

If you have not received one of these blanks, contact your shop committeeman and get this information to him as soon as possible.

Shop Committeemen—Day Side

W. J. Chudleigh, tool room.
Harry Hudson, sheet metal.
J. D. Barnes, machine shop.
M. J. Castle, metal bench.
C. E. Danner, finish.
Hammett, tool bending.
H. E. Leonard, experimental.
S. W. Adams, M. T.
R. J. Bragg, hull department.
Carl E. Heilbach, wood shop.
Don Greene, final assembly.
J. B. Waskey, wing.
L. A. Perry, wing.
Kobets, tank.

The names of night shift committeemen have not been secured at this time.

The following communication for Consolidated management was read:

San Diego, Cal., Nov. 19, 1940.
Memo to: All Foremen
Subject: Wage Review.

In order to proceed with our next wage review starting 2 December, 1940, you are requested to keep separate all record sheets of employees who have been hired since 31 August, 1940. These record sheets will be reviewed after our regular wage review period.

The order of departments to be reviewed will be as follows:

1. Tool Room and Wood Shop.
2. Machine Shop.
3. Welding.
4. Sheet Metal.
5. Hull Department.
6. Drop Hammer and Tank.
7. Wing Department.
8. Metal Bench.
9. Final Assembly.
10. Paint Shop.
11. Sub Ass'y and Spare Parts.
12. Maintenance.
13. Draw Bench.
14. Heat Treat. and Spotweld.
15. Tubing.
16. Experimental.
17. Loft.
18. Productoin Department.
19. Shipping and Receiving.

JAS. L. KELLEY,
Factory Manager.

A large attendance was reported at last Monday's meeting, at which time approximately 150 new members were received into the union. Tuesday night's meeting was attended by approximately 350 members at which time over 250 new members were admitted to the union.

Nominations received at both day and night shifts to date are as follows:

President: L. A. Perry, R. B. Felton, W. J. Chudleigh, and Bros. Shields and Burney.

Vice-President: J. L. Castle, J. S. Burney, H. Gillan, A. J. Fischer, and Bro. Granstead.

Financial Secretary: W. J. Chudleigh, R. B. Felton, A. J. Fischer, H. A. Abbey, Bro. McIllivich, L. A. Perry, and F. H. Cole.

Recording Secretary: L. A. Perry, F. M. Martin, Al Hogan, and Bro. Morris.

Treasurer: Herman Stellar, Al Cox, and Bro. Wilder.

Conductor: A. Peterson, F. Martin, A. J. Fischer, and Bro. McCune.

Sentinel: H. W. Clark, R. B. Felton, H. A. Abbey, A. Peterson, and Bro. Swaed.

Trustees: A. Hogan, J. J. Braun, P. McManus, L. Larsen.

Executive Board: H. Torres, J. Coe, R. B. Felton, J. D. Barnes, H. A. Abbey.

Brother Parker was elected as member of Wage Review Board from the Night Shift to serve with Bro. Chudleigh.

Motion made at the night shift meeting on last Monday that nomination of officers for the whole lodge be held over to special meeting which will be held at 2 p. m., Sunday, Nov. 24th, when a public agent also will be nominated. This was held to be out of order and unconstitutional at the meeting of the day shift Tuesday night, Nov. 19th, as nomination for officers must be made at two regular meetings to be held in November.

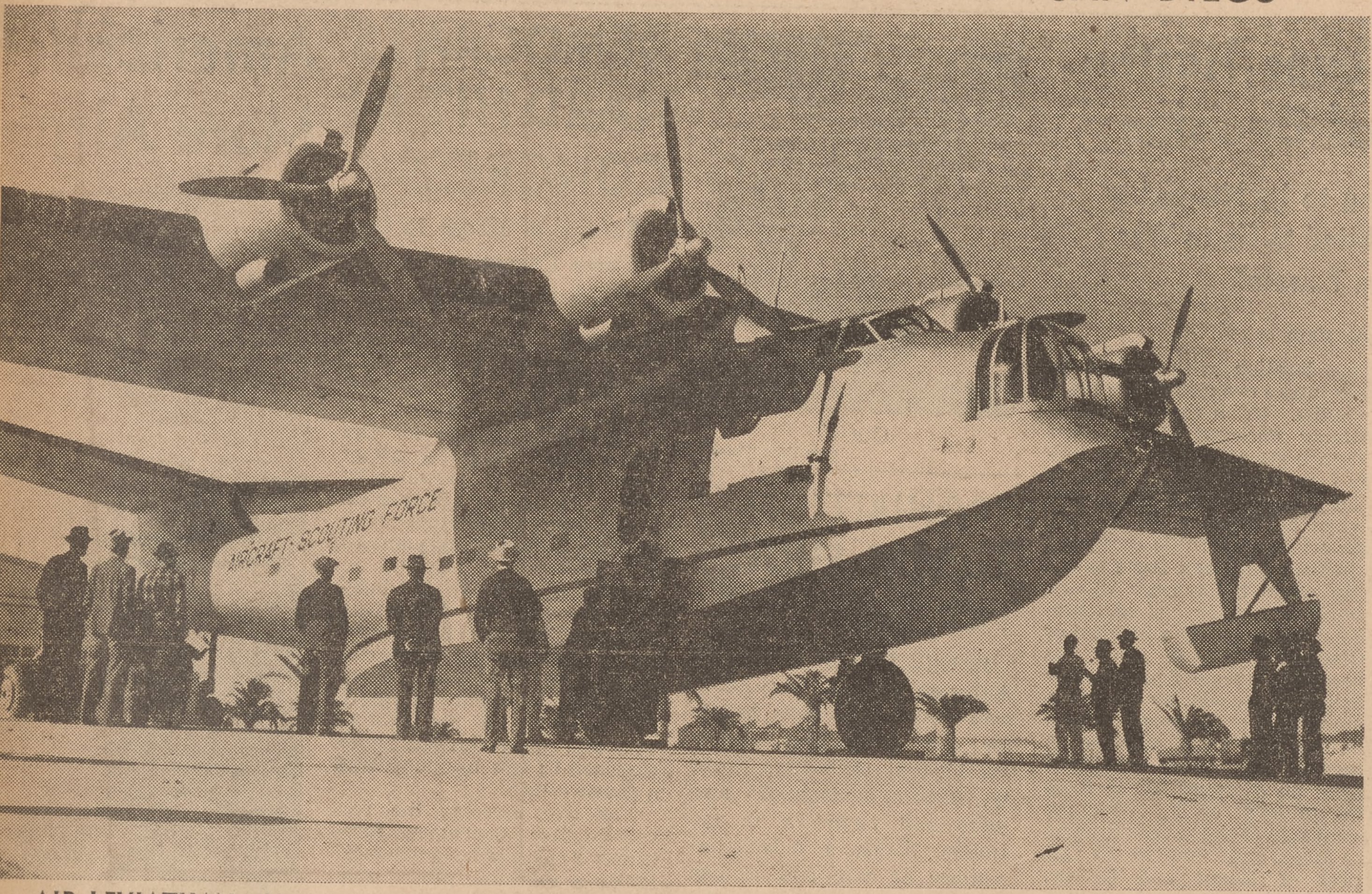
The nominations were closed from the day shift, but can still be placed before the union at next Monday's meeting of the night shift, which is held in Turner Hall at 10 a. m. Special meeting for Sunday cannot be legally held.

The discharge and lay off of the members was discussed and it was suggested that, where the employee concerned considered that the lay off or discharge was unjust and that he was being discriminated against, he should contact his shop committeeman immediately as re-instatements were much easier to secure if acted upon as soon as possible.

Matters pertaining to the immediate wage increase for employees in the lower brackets who have

---

SKY GIANT SUCCESSFULLY TRIES WINGS AT SAN DIEGO



AIR LEVIATHAN—Here is prototype of first "battleship of the air" which has undergone tests successfully.

Los Angeles Times - 11/24/40

Huge New Air Battleship Given First Test Flights

One of Navy's Six Most Powerful Bombers, Built at San Diego, Tries Out Its Wings

SAN DIEGO, Nov. 23.—Test flights on the first of six four-motored, 25-ton "battleships of the air," most powerful bombers in the Navy, have been started here by a Consolidated Aircraft Corp. crew, with delivery to a Navy trial board due next month, it was learned today.

Equipped with a supercharger enabling operations at extremely high altitudes, the craft will be assigned to the recently commissioned Patrol Squadron 13, commanded by Lieut. Comdr. Stephen B. Cooke, at the San Diego naval air station.

CARRIES MACHINE GUNS

All six, the first group of a Navy mass production order, are expected to be delivered to the 100-man squadron by February or March, it was indicated.

Capable of flying 5000 miles nonstop, the air Leviathan has two machine-driven revolving turrets, one in the bow and another topside, mounting heavy-caliber machine guns. Additional protection from fighter planes is afforded by manually operated gun stations.

The engines are 1200 h.p. Pratt & Whitney radial air-cooled, housed in a 115-foot wing.

NONSTOP FLIGHTS

The plane is similar to the $1,000,000 experimental prototype flagship of the Aircraft Scouting Force, used to transport Secretary of the Navy Frank Knox across the Pacific to Hawaii and back on his recent inspection trip. This airboat last year made two nonstop flights across the continent, from San Diego to Anacostia, D.C., and return.

Cost of each of the six bombers, the first four-motored patrol planes in the Navy, will be about $300,000, including engines, it was reported authoritatively.

Union 11/29/40

War-Bound S. D. Bomber to Hop

The first of a large order of patrol-bomber type seaplanes ordered by Britain will leave the Consolidated Aircraft Corp. plant before dawn this morning bound for the east coast and embattled England.

The ship is a model 28 type, similar to the famous navy P.B.Y. planes. It is equipped with two 1000-horsepower engines and has a wing span of 104 feet. It has been camouflaged for its flight to the war zone.

Lt. W. Cleveland, naval reserve, and Douglas Kelley, local flier, will be pilots. Russ Rogers, who flew the Archibald plane Guba around the world, will act as observer, according to report from Consolidated officials.

Another observer aboard will be I. G. Ross, Canadian pilot, who may be slated for the job of taking the plane across the Atlantic after the crew supplied by Consolidated makes delivery on the east coast.

NOV. 29, 1940 Union

Air Reserve Head

LT. H. B. DUCKWORTH
. . . 10 years a test pilot

Duckworth Aids Army Inspector

Announcement has been made by Maj. E. R. McReynolds, air corps factory representative in San Diego that Lt. Hubert B. Duckworth has been assigned by the war department to assist Maj. McReynolds in final testing and acceptance of army planes at Consolidated Aircraft Corps. and Ryan Aeronautical Co.

This assignment is in addition to Lt. Duckworth's duties as commanding officer of the air corps reserve base at Lindbergh field, and as unit instructor of the local air corps unit of reserve pilots.

Lt. Duckworth has had 10 years' experience as a test pilot for the civil aeronautics administration, Curtis-Wright Aircraft Corp. and the Army air corps.

Duckworth Assigned To S. D. Army Duty

Trib Sun 11/29/40

Lt. Hubert B. Duckworth has been assigned by the war department to assist Maj. E. R. McReynolds, air corps factory representative in San Diego, in final testing and acceptance of army planes at the Consolidated Aircraft Corp. and Ryan Aeronautical Co. plants, according to announcement by McReynolds. Duckworth, who has had 10 years' experience as test pilot for the civil aeronautics administration, the Curtiss-Wright Aircraft Corp. and the army air corps, is commanding officer of the air corps reserve base at Lindbergh field and instructor of the local air corps unit of reserve pilots.

Trib Sun 11/29/40

Navy Aid Leaves After Viewing Plants

Completing his inspection of local aircraft factories, James V. Forrestal, under-secretary of the navy, who arrived Wednesday, left by plane late yesterday for Washington, D. C. While here he conferred with officials of the Consolidated Aircraft Corp. and the Ryan Aeronautical Co. He was accompanied by Capt. Sidney M. Kraus, of the bureau of aeronautics.

Union 11/29/40

Navy Under-Secretary Leaves for Capital

Completing inspection of local aircraft factories, James V. Forrestal, under-secretary of the navy, left by plane late yesterday for Washington. He was accompanied by Capt. Sidney M. Kraus of the bureau of aeronautics with Lt. Bruce Van Voorhis of Anacostia, D. C., Naval Air station at the controls of the transport plane.

Forrestal arrived Wednesday afternoon after inspecting aircraft plants at Seattle and Los Angeles. yesterday he spent the greater part of the day conferring with Consolidated Aircraft Corp. officials and inspecting the Ryan plant.

Union 12/1/40

Consolidated Bomber Arrives in New York

PORT WASHINGTON, N. Y., Nov. 30 (A.P.)—The first of a fleet of Consolidated 28 patrol bomber type seaplanes destined for Great Britain arrived today from San Diego, by way of Fort Worth.

Presumably, the plane will be flown later to Halifax for delivery to Canadian authorities who will fly or transport it to Great Britain

---

Navy Bombers Make Another Flight to Hawaii

Aero Digest Oct, 39

A flight of fourteen Consolidated patrol-bombers commanded by Lieut. Comdr. Stuart H. Ingersoll, arrived in Honolulu one day last month after a non-stop flight of 2500 miles from San Diego.

The planes, with 98 officers and men aboard, were sent to Hawaii to replace another squadron which was expected to fly from Honolulu to Manila to take up neutrality patrol in Philippine waters. They were from Squadron 13, based at the North Island naval air station, San Diego Bay.

AMERICAN EXPORT AIRLINES WILL USE NEW SIKORSKY

Nat'l. Aircraft Counsellor 10-22-40

The board of directors of American Export Airlines, Inc., announced last week that Durston G. Richardson has been elected vice-president in charge of operations. Mr. Richardson has been associated with this company for two years.

American Export Airlines was recently granted a Civil Aeronautics Board certificate of convenience and necessity to establish transatlantic air service between the United States and Europe using New York and Lisbon as terminals. The company plans to pioneer non-stop service on this route as soon as its three new Sikorsky S-44a four-engined flying boats are ready. These are now under construction at the United Aircraft Corporation Sikorsky plant at Bridgeport.

Meanwhile, the airlines will use their Consolidated Model 28 flying boat (an adaption of the PBY long-range bomber) which, like the Sikorskys, was originally developed for the Navy. Horta, Azores, will be used as an intermediate port for the preliminary mail and express service.

Under Mr. Richardson's direction, technical details for co-ordinating certain facilities of the new airlines with those of the parent company, American Export Lines, Inc., have been perfected. This represents the first time in history that a transoceanic airline and steamship service, operating under a single house flag, have thus pooled technical resources.

American Export Lines today operates the only regularly scheduled American flag steamship service between the United States and Europe and, like the airline, uses New York and Lisbon as its terminals. Thus, the flying boats and surface vessels will follow identical routes.

According to Mr. Richardson, the airlines will station a trained meteorologist, representing its own weather bureau, aboard each of the "Four Ace" passenger liners operated by the steamship company. These men have been assigned to make constant observations of winds aloft and to relay this information by radio at regular intervals to the United States Weather Bureau and to the company's aircraft on the course overhead.

Company meteorologists have been stationed for training aboard each of the two United States Coast Guard vessels now stationed in mid-Atlantic for the purpose of assembling and reporting flying weather data.

Mr. Richardson, who served as a flying officer in the Army Corps during the last war, has been continuously associated with aviation since that time.

In 1920 he was a pilot on the first American overseas airline operated by Aeromarine Airways, Inc., between Key West and Havana and Miami-Nassau. For ten years he served as an official in charge of international airline operations covering Central and South American countries.

Nat'l Aircraft Counsellor

* * *

CONSOLIDATED AIRCRAFT CORPORATION: Chiefly known because of the brilliant performance of its huge flying boats, Consolidated still dominates this field of naval aviation. Company currently has a backlog of more than $150,000,000 for four-motored bombers and patrol boats. Outstanding capitalization consists of 23,820 shares of $3.00 par Convertible Preferred and 576,160, shares of $1.00 par value Common stock. Common is currently selling at around $23 per share. Consolidated, the writer believes, offers excellent profit possibilities from the long range view. Plant is located at San Diego, where Consolidated has grown within a few short years to be the city's largest industrial organization.

10-22-40

* * *

AVIATION - November 1940

School, Santa Monica, Santa Monica Technical School, United Aircraft School, Venice High School, Westwood Correspondence School, and the Willis Business College.

This brief outline will serve to illustrate the steps taken by one major manufacturer to meet the personnel training problem. Approximately 2,000 Douglas employees are currently enrolled in these courses, in addition to prospective employees undergoing instruction.

An interesting and significant problem is that faced by Interstate Aircraft & Engineering Corp., a subcontractor machining aircraft parts. About 300 machinists are employed at this plant, with the number being steadily expanded. It is no longer possible to hire experienced machinists in any quantity, and training machinists is a long and tedious process which has been begun too late in this country to satisfy the immediate need. Lawrence Ley, shop superintendent at Interstate, has solved this problem through combining a high degree of supervision with a system of progressive advancement for new men, or boys. The really experienced and capable all-around machinists available have been about evenly divided between the tool room and the shop. Those in the shop are used almost exclusively as lead men, to supervise work set-ups and to instruct green men in specific opera-

relations manager, the Lockheed Aircraft Corp. has conducted a long-range employee selection and training program. The Lockheed program starts with unusual care in selection of employees off the hiring line. It includes every conceivable avenue of employee training, including paying tuition of untrained employees through short courses in private schools, as previously mentioned, and also including unusually close cooperation with the public school system. Lockheed has also, largely at its own expense, initiated engineering brush-up courses for making aircraft engineers out of engineers trained and experienced in other fields, such as civil or structural engineering. Such courses are being given with the cooperation of the California Institute of Technology.

North American Aviation, Inc., has increased the payroll from 3,700 to 6,600 in a year and is now shooting for a total of 10,000 employees at the El Segundo plant (12,000 will be employed in the new Dallas factory). Under the direction of Major Howe Thayer, education director, North American has cooperated with many of the public and private schools already mentioned to provide adequate employee training.

Northrop Aircraft, Inc., has already advanced from zero to more than 1,200 employees this year, and expects to have 3,000 at work in the near future. A nucleus of this new staff were seasoned from neighboring aircraft plants.

supervision of Gerald Tuttle, personnel manager, and George Ford, director of education and training. Mr. Ford has worked closely with various public schools in setting up courses and providing instructors. At Nashville, where Vultee recently took over the new Stinson factory, he found that the city had a charter provision preventing training anyone more than 21 years of age in the public school system. It was possible to modify this provision in line with the opportunity afforded Nashville residents of immediate employment upon completion of suitable aircraft training work. Vultee now has more than 50 employees who are doing part-time teaching in public or private aircraft training schools. Ford finds the greatest shortage right now in the field of experienced machinists, tool, jig, and die makers. He prefers a minimum short course of eight weeks and then wants the trainee to concentrate on learning to do one thing well, such as riveting, sheet metal layout, hand forming, assembly, etc. rather than trying to compress a whole education into such a short period. As with other personnel men, Ford would prefer the man with all-around training of ten months or more, if he could get him. Having to take the short-term trainee, he then encourages him to take extension courses at least one or two nights a week. All new men are put through a course of work training to advance them as rapidly as possible and make more room at the bottom for new men.

candidates are started on

Charles F. McReynolds

9121 Dalton Ave., L.A.

... the new GRUMMAN "Widgeon" Amphibian

Playing a major role in the high performance of this very versatile airplane, are a pair of streamlined, six-cylinder Ranger engines, delivering two hundred dependable horsepower apiece. A product of Ranger Aircraft Engines, Farmingdale, Long Island, New York, Division of Fairchild Engine & Airplane Corporation.

Burrelle's
EST. 1888
PRESS CLIPPING BUREAU
NEW YORK

NEW YORK CITY, HERALD-TRIB
NOVEMBER 24, 1940

U. S. 2-Ocean Bomber Fleet Being Built

2,000 Navy Flying Boats With 4,000-Mile Range to Patrol Both Coasts

Designed to Cripple Invader Far at Sea

Craft Will Be Ready by Mid-1941; New Bases Extend Striking Power

By The United Press

WASHINGTON, Nov. 23.—The Navy has on order more than two thousand great bomber flying boats to give its air arm a more powerful striking force in the Atlantic and Pacific Oceans, it was learned tonight.

Contracts for the patrol bombers were awarded the Glenn L. Martin Company, Baltimore, and Consolidated Aircraft Corporation, San Diego, in the last six weeks. The Martin contract calls for approximately 1,100 PBM's at a total cost of $106,125,396. Consolidated will supply approximately one thousand PBY's at a cost of $93,842,500.

Engines for the big flying boats were included in a $162,000,000 order to Pratt & Whitney.

These craft, with an operating range of 4,000 miles, Navy air strategists believe, will give the United States control of the Atlantic far beyond the halfway mark between this country and Europe. They will provide a powerful attacking force in the Pacific, operating from bases at Pearl Harbor, Cavite, P. I., and the islands of Wake, Midway and Guam, if necessary.

Planes for Use With Fleet

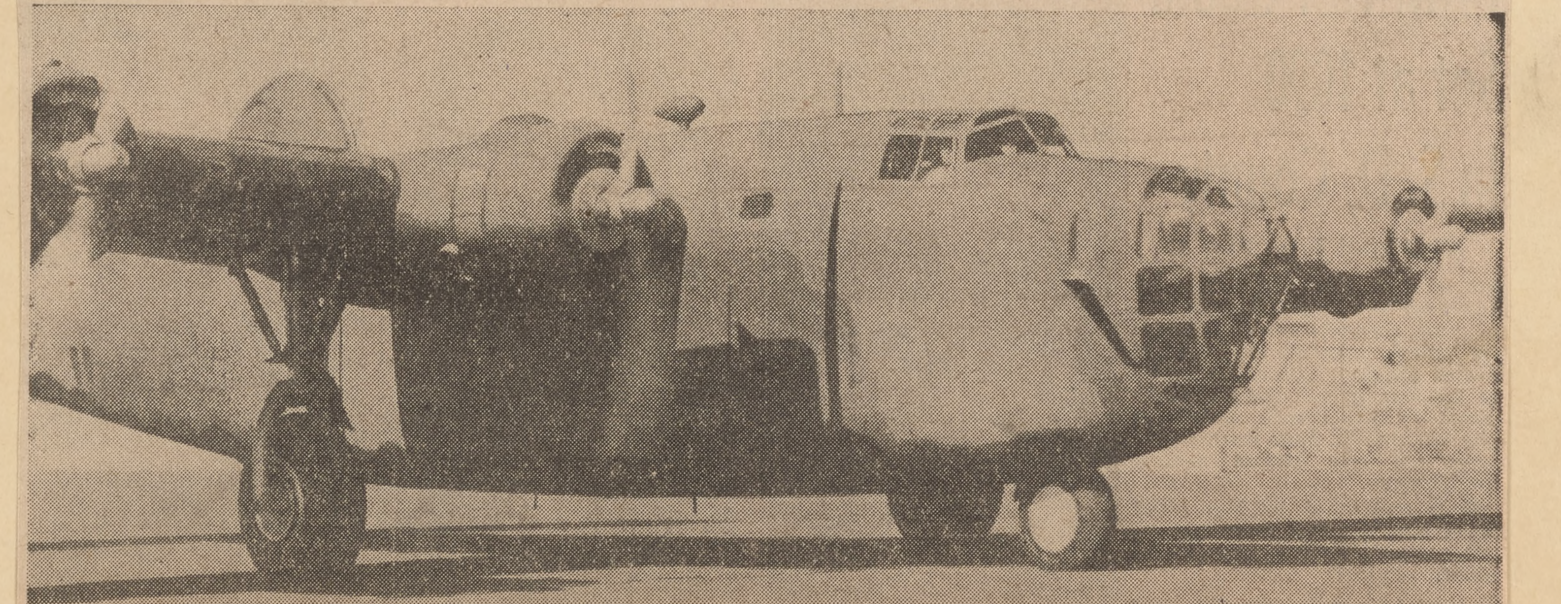
Improvements in design of the Navy's seaplane-type bombers also will permit their use directly with the fleet instead of making them dependent on island or mainland bases. They can land or take off from rough water and be fueled, provisioned and loaded from tenders at sea during bad weather.

The present production schedule calls for delivery of the last of the planes on order by mid-1941. The Navy now has almost three hundred similar bombers which it is using on both Atlantic and Pacific patrol.

All of the Navy's patrol bombers, on hand and on order, have accommodations for maintaining a crew over long periods. They have sleeping and cooking facilities, and as long as supplies are available, ashore or afloat as near as 1,000 to 1,500 miles, have almost complete freedom of operation.

Union 11/8/40

S. D. BOMBER MAY BE USED TO FERRY PILOTS FROM CANADA TO ENGLAND



Great Britain, according to informed sources, soon is to receive seven bombers, of this type, from Consolidated Aircraft Corp. The long-range, four-motored ship was given its initial test last week. The plane, similar to the XB-24 developed by Consolidated for the United States army in February, weighs 20 tons, has a cruising radius of 3000 miles and a speed of 300 miles an hour. Four 1200-hp, 18-cylinder, radial air-cooled Pratt-Whitney engines power the bomber, said to be capable of carrying four tons of bombs. First duty of the plane will be to ferry R.A.F. pilots to England from Canada and to return pilots unsuitable for combat service who in turn will fly combat planes to England. Until pressed into service as a bomber, the plane's armament will be limited to increase speed.

Trib. 11/15/40

New Contract Of 18 Million For Consair

Coming within five days of a large order which skyrocketed the firm's backlog above the $300,000,000 mark, the navy yesterday announced award of a contract for $18,529,500 to Consolidated Aircraft Corp. for planes and parts, The Associated Press reported from Washington, D. C.

As with the previous order, no delivery dates or other details were made public.

The new order raises the Consolidated backlog to an estimated $324,500,000. Last Saturday the firm was awarded a navy department contract for $75,313,000, which raised the backlog to approximately $306,000,000.

Consair Plane Leaves N. Y. for Nova Scotia

Union 12/3/40

NEW YORK, Dec. 2 (I.N.S.) — A 14-ton Consolidated seaplane bomber from San Diego, Calif., first of a large order destined for the British Royal Air force—left Port Washington airport today, bound for Halifax, N. S.

S. D. Union - November 30, 1940

First S.D.-N.Y. Sleeper Plane Service Starts

With 21 passengers aboard, the San Diego Continental, big two-motored Douglas transport, lifted its silver wings at 5:50 p.m. yesterday at Lindbergh field on the maiden voyage of a San Diego to New York sleeper service. The plane is scheduled to arrive in New York at 2:03 p.m. today.

The flight followed christening ceremonies at the field, at which Mrs. Edgar N. Gott, wife of Consolidated Aircraft Corp.'s vice president, broke a bottle of champagne on the nose of the Western Air Express mainliner, officially naming it the San Diego Continental.

GUESTS TAKE BOW

Speaking from a platform before the huge plane, Earl Prudden, vice president of Ryan Aeronautical Co., introduced distinguished guests to an audience of 150 for whom seats had been provided in a near-by hangar. More than 200 spectators crowded close to the airfield to view the plane and witness the christening ceremony.

Guest speakers included Tom Bomar, chamber of commerce, who reviewed air progress in San Diego; Thomas Wolfe, airlines vice president of traffic; Maj. Gen. William P. Upshur, commander, fleet marine force; Maj. Gott, Hampton Macomber, Los Angeles, airlines district traffic manager; Tom Glassford, San Diego district traffic manager, and Leo H. Dwerlkotte, first vice president of Western Air Express.

SAN DIEGO PILOT

Herb Richards, popular San Diego flier, was at the controls as the plane took off. It rose gracefully from the runway at the take-off signal from Councilman Louis F. Weggenman, circled out over Ocean Beach and flew back over the field, flashing its landing lights in a farewell salute as it headed for Los Angeles.

A buffet supper was served for guests in the hangar after the christening. Numerous chamber of commerce, civic, service and industrial representatives attended the inauguration of the new service, which Maj. Gott termed the "final link in establishing San Diego as a major air terminal."

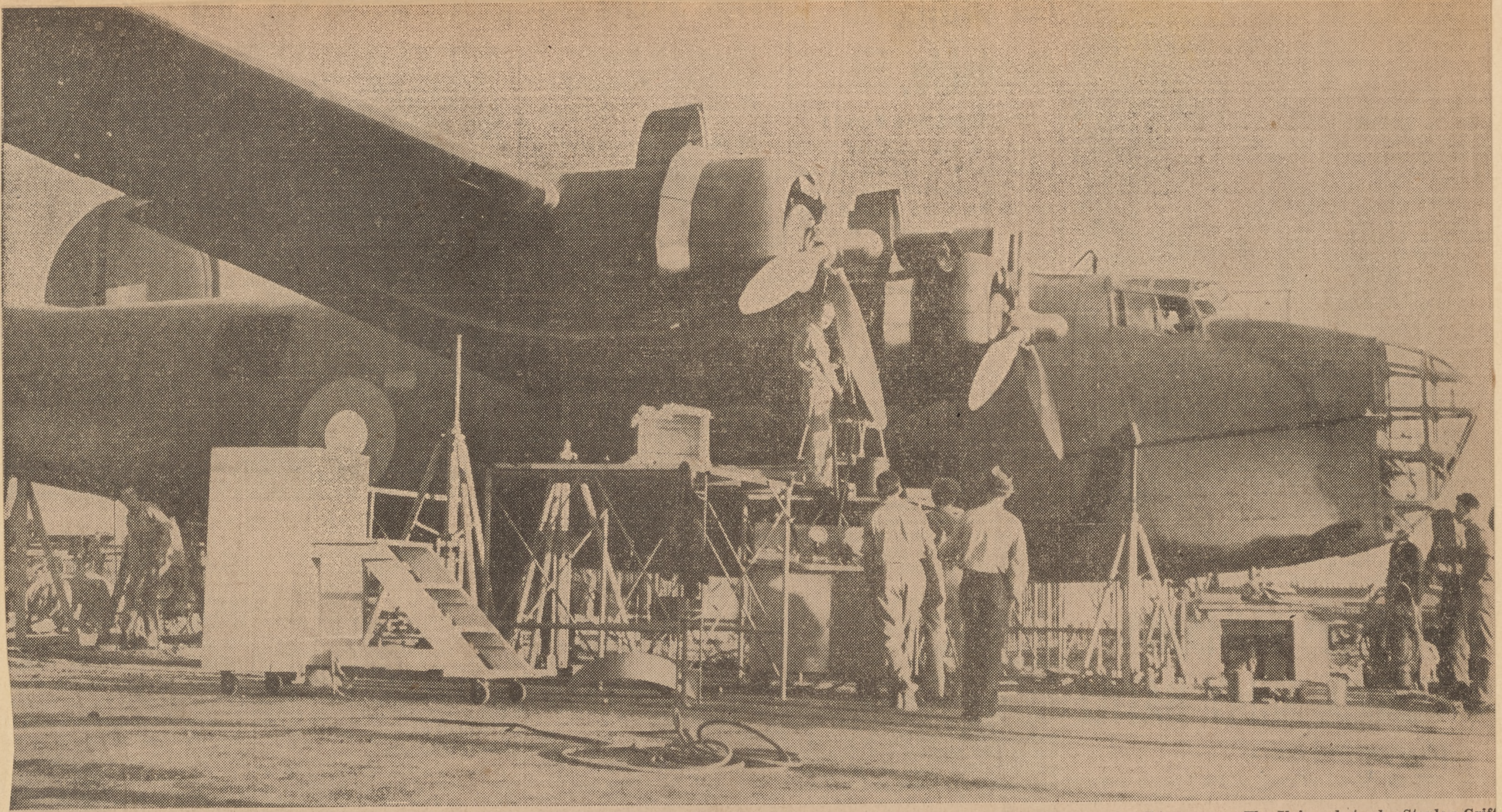
First transcontinental passenger aboard the plane was Lt. C. R. Bender, coast guard, who was returning to Norfolk, Va. Lt. Bender ferried the big plane to San Diego for the inaugural flight.

SAN DIEGO UNION: MONDAY MORNING, DEC. 2,

MAINLINER CHRISTENED FOR NEW RUN

MRS. EDGAR N. GOTT

. . . "I christen thee the San Diego Continental."



This giant bomber, one of the 26 released by the army to England recently, will spread its wings soon and fly across the Atlantic to help Britain answer Germany's threat of aerial domination. It is getting its final touches at Consolidated Aircraft Corp. here. This and others on this page are The Union photos by Stanley Griff and released by the war department, Washington, D. C.

Consair Bomber Off; Second for Britain

Trib Sun 12/3/40

With Doug Kelley, veteran San Diego flier, again at the controls as one of the two pilots, the second Consolidated Model 28 two-engined patrol bomber in a large British order, took off from the bay at dawn today for Halifax, N. S., via Fort Worth, Tex., and Point Washington, N. Y.

Kelley barely had returned from New York after flying the first airboat across the continent last Friday and Saturday when he received orders to ferry another craft today. Co-pilot is Ed Greer, of Tampa, Fla., and a radio operator and flight engineer complete the crew. Elapsed time on the first leg of the cross-country journey, to Fort Worth, is expected to be about seven hours.

One Every Four Days

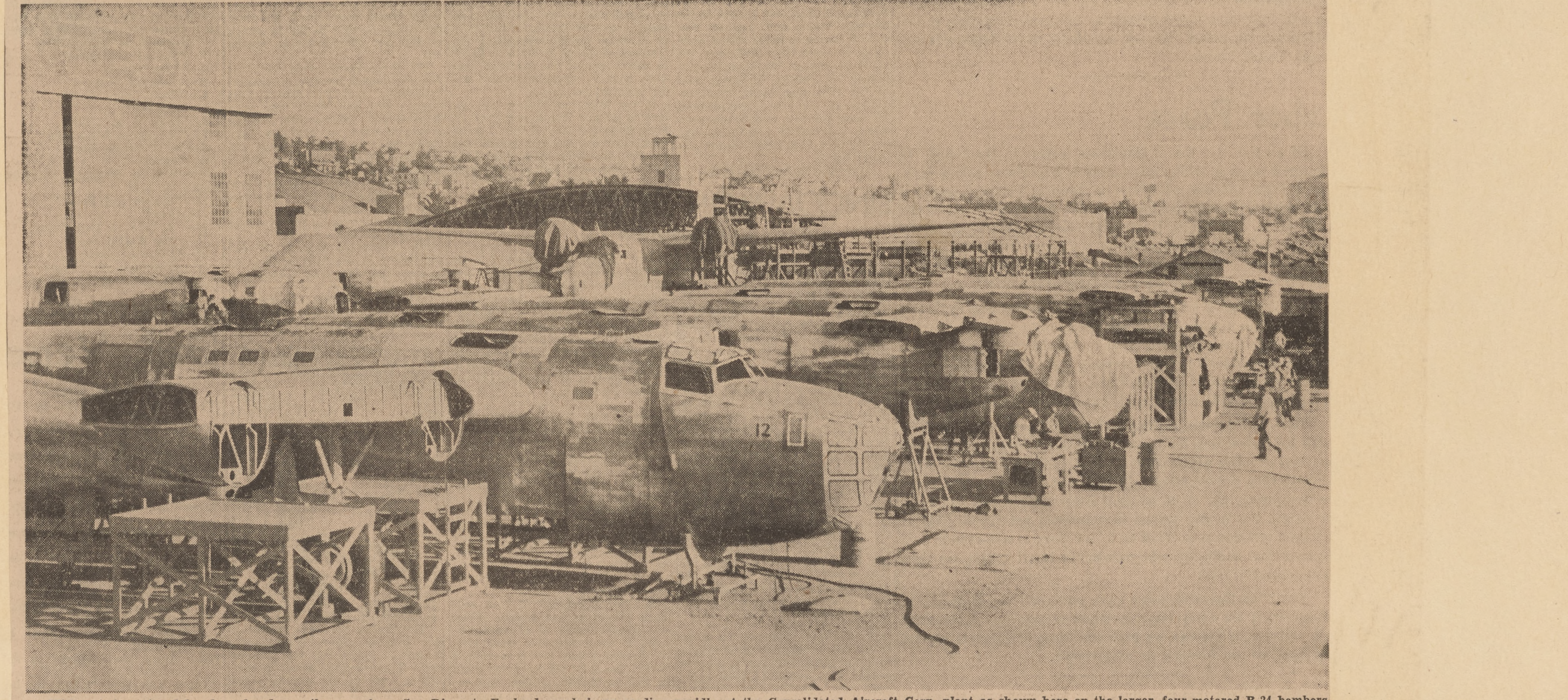
Meanwhile, Lt. W. L. Cleveland, navy reserve flier, who was chief pilot of the first bomber flight, accompanied I. G. Ross, Canadian aviator, from New York to Halifax with the Consolidated seaplane yesterday, and is en route back to San Diego for further assignments, it was reported at the plant.

Schedule of take-offs of the bombers from Halifax across the North Atlantic to Great Britain is confidential.

Departure from San Diego of the airboats, similar to the United States navy's PBY-5, will occur about every four days, with the interval narrowing as production is stepped up in the expanding Consolidated plant.

Consolidated Rushing Work on Four-Motored, Long Range Bombing Planes for Royal Air Force

Trib 11/30/40



With a twin-motored bomber already on the way from San Diego to England, work is proceeding rapidly at the Consolidated Aircraft Corp. plant as shown here on the larger, four-motored B-24 bombers, of which 26 have been released by the army for the Royal Air Force. They are said to be capable of 200 miles an hour, with a cruising radius of 3000 miles and can carry four tons of bombs. They are powered by four 1200-h.p. motors and have accommodations for a crew of nine. When completed the bombers will weigh approximately 40,000 pounds. Their wing span is 110 feet and the fuselage is 64 feet in length. The patrol bomber which left yesterday spent last night at Ft. Worth, Tex. It will be taken over by a Canadian crew on the east coast.—(Photo by Stanley Griffin, Tribune-Sun staff photographer, censored and released by the war department, Washington, D. C.)

S. D. Union - November 30, 1940

Consair Bomber Off for England

Off to reduce the air-strength disparity between England and Germany, a Consolidated patrol bomber seaplane left shortly before dawn yesterday for the east coast and Britain. It made an overnight halt at Ft. Worth, Tex.,

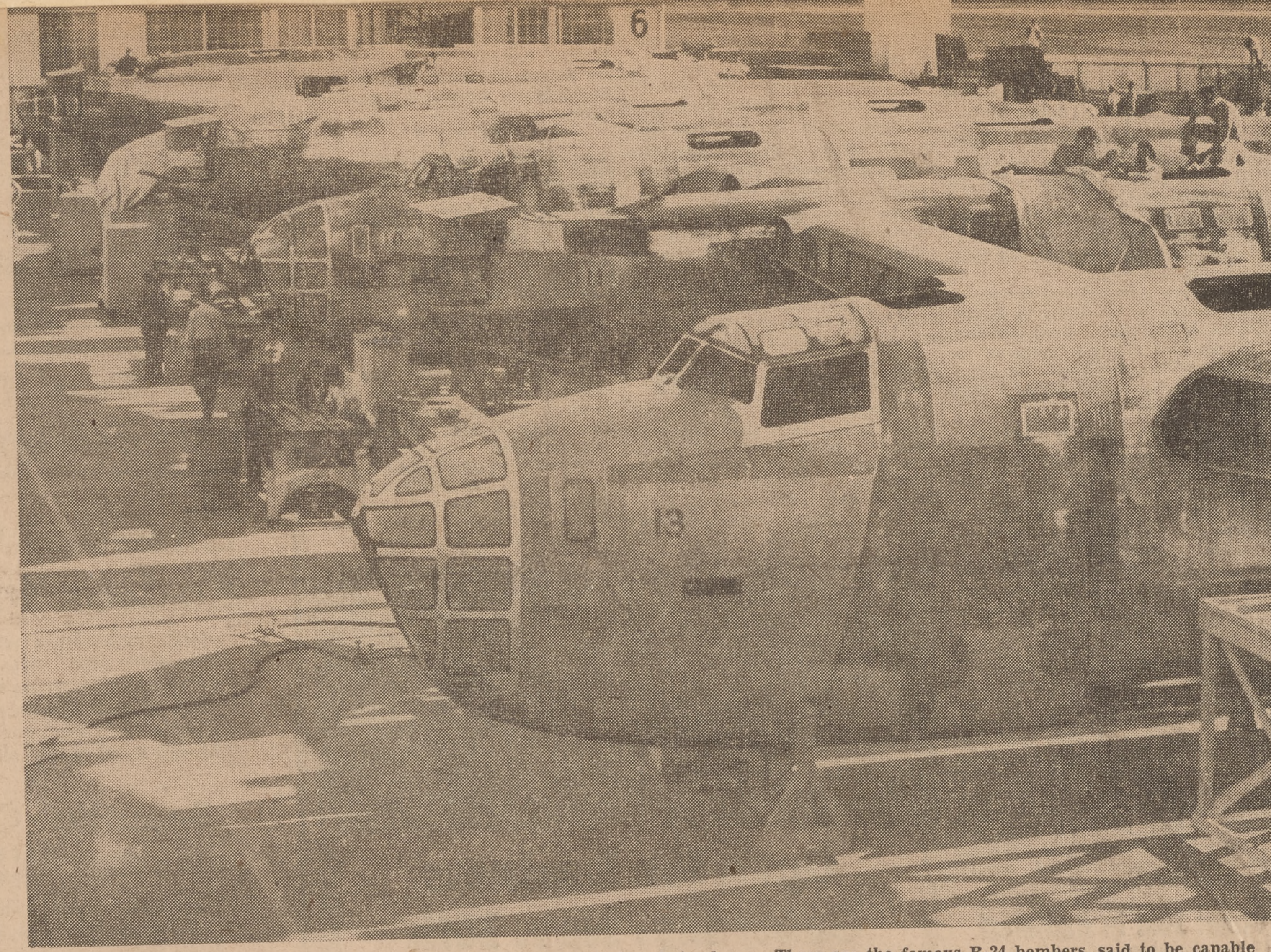
Photos on Page B

and is to continue to the east coast today. It is to be turned over to Canadian Air force officers when it reaches the east coast.

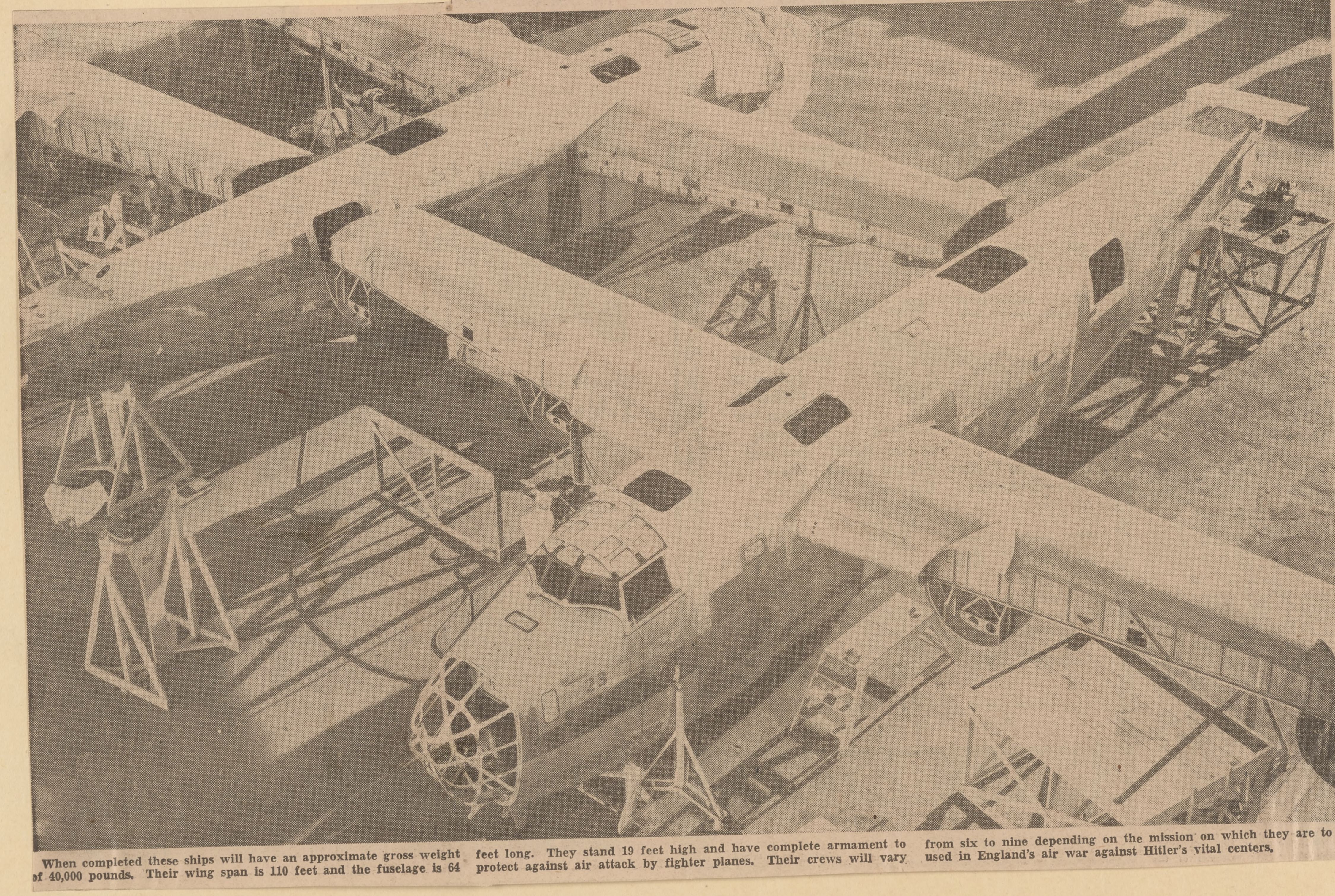
It is the first of a large order placed by England, is powered with two 1000-horsepower engines and is similar to the famous navy PBY's.

Consolidated officials said that planes will be leaving soon at short intervals for delivery to British airmen who will fly them across the Atlantic.

Among those aboard the plane which left yesterday were Lt. W. C. Cleveland, naval reserve, and Douglas Kelley, pilots; Russ Rogers and I. G. Ross, observers.



When the army released bombers it had on order here it didn't just turn over blueprints but ships actually under construction as this photo shows. These are the famous B-24 bombers, said to be capable of 300 miles an hour with a cruising range of 3000 miles and can tuck four tons or more of explosives in their bomb racks. To furnish power there are four 1200-horsepower engines on the wings.



When completed these ships will have an approximate gross weight of 40,000 pounds. Their wing span is 110 feet and the fuselage is 64 feet long. They stand 19 feet high and have complete armament to protect against air attack by fighter planes. Their crews will vary from six to nine depending on the mission on which they are to be used in England's air war against Hitler's vital centers.

Tribune - Sun 12/2/40

County Faces Influx of 100,000, Warning; Housing Crisis Predicted

San Diego county faces a possible increase of 100,000 persons during 1941, The International News Service reported from Sacramento, where further consideration of establishment of a state defense council, authorized by state legislation, was to be given by the senate governmental efficiency committee in a closed session today.

A parade of three state officials, Atty. Gen. Earl Warren, Sam Mays, planning board chairman, and Adjut. Gen. R. E. Mittelstaedt, yesterday appeared before the committee ond urged such a council be approved by the legislature.

Gov. Olson's advisory council on defense is unauthorized by the legislature and the chief executive has asked solons to set up a permanent defense organization molded on the lines of the national defense council.

May declared 'already there are signs of a chaotic condition developing in the matter of housing."

"In San Diego county, for instance," said say, "a possible increase of 100.000 persons is expected within the next year. There is no organization available to coordinate federal and local housing activities, resulting in confusion.

"The same situation confronts Vallejo and other bay area cities."

Warren declared there is a need for a defense council to plan in advance for such possibilities as sabotage of utilities. He pointed out California's water and power comes from long distances, with the necessity for a plan to coordinate activities of enforcement agencies involved.

Trib - Sun 12/4/40

Huge Increase In Plane Orders

An increase of $385,000,000 is reported for the last month in unfilled orders of American aviation manufacturers by Aviation magazine, according to The Associated Press. This brings the total of unfilled orders to $3,500,000,000, while a year ago the backlog of all companies showed a total of $500,000,000, then a record high.

Craft on order are said to include 39,000 fighting planes, of which 25,000 are for the United States and 14,000 for Great Britain.

The various backlogs, given in millions of dollars, follow: Allison (General Motors), 100; Aviation Corp., 20; Beech, 22; Bell, 60; Boeing, 203; Brewster, 100; Cessna, 11; Consolidated, 300; Continental Motors, 35; Curitss-Wright, 520; Douglas, 400; Fairchild, 15; Ford, 122; Grumman, 20; Lockheed, 211; Martin, 322; North American, 225; Northrop, 24; Packard, 217; Republic, 65; Ryan, 12; United Aircraft, 430; Vultee, 95.

Consair Bomber Leaves For Halifax, N. Y. Report

The Consolidated bombers which flew from San Diego to New York last week, took off today for Halifax, N. S., The Associated Press reported. The plane, first of several to be sent from here to England is en route to the "Royal Air Force, British Air Ministry, London," but whether the craft, which carried an American crew of five from San Diego, would be flown from Canada to England could not be learned. The plane left here early Friday and arrived at Port Washington, Long Island, Saturday after an overnight stop at Ft. Worth, Tex. Trib - Sun 12/2/40

Aviation - November 1940

Tribune-Sun 12/4/40

Dedicate Continental Airliner at Lindbergh Field Ceremonies

Service and civilian aviation leaders were represented at Lindbergh field yesterday at the christening of the San Diego Continental, Western Air Express mainliner which began direct service from San Diego to New York. The four shown here are, left to right: Earl Prudden, vice president, Ryan Aeronautical Co.; Maj. Gen. William P. Upshur, commanding general fleet marine force and commanding officer of the local marine corps base; Mrs. Edgar N. Gott, who broke a bottle of champagne on the nose of the plane, and Gott, Consolidated Aircraft Corp. vice president.

---

21 Passengers on N. Y. Sleeper Plane In 1st Direct Flight From S. D.

Due at New York at 2:03 p. m. today, the San Diego Continental, big twin-motored Douglas transport christened at Lindbergh field yesterday afternoon, sped eastward with 21 passengers aboard on its maiden flight from San Diego to New York, inaugurating Western Air Express mainliner sleeping service between the two cities. The plane left Lindbergh field at 5:50 p. m.

At the christening ceremonies, Mrs. Edgar N. Gott, wife of a Consolidated Aircraft Corp. vice president, broke a bottle of champagne on the nose of the craft, which was ferried to San Diego for the inaugural flight by Lt. C. R. Bender, coast guard pilot. Bender is returning to Norfolk, Va., aboard the plane.

Speaking from a platform before the huge plane, Earl Prudden, vice president of Ryan Aeronautical Co., introduced distinguished guests to an audience of 150 for whom seats had been provided in a near-by hangar. More than 200 spectators crowded close to the airfield to view the plane and witness the christening ceremony.

Review Air Progress

Guest speakers included Tom Bomar, chamber of commerce, who reviewed air progress in San Diego; Thomas Wolfe, airlines vice president of traffic; Maj. Gen. William P. Upshur, commander, fleet marine force; Maj. Gott, Hampton Macomber, Los Angeles, airlines district traffic manager; Tom Glassford, San Diego district traffic manager, and Leo H. Dwerlkotte, first vice president of Western Air Express.

Herb Richards, popular San Diego flier, was at the controls as the plane took off. It rose gracefully from the runway at the take-off signal from Councilman Louis F. Weggenman, circled out over Ocean Beach and flew back over the field, flashing its landing lights in a farewell salute as it headed for Los Angeles.

A buffet supper was served for guests in the hangar after the christening. Numerous chamber of commerce, civic, service and industrial representatives attended the inauguration of the new service, which Maj. Gott termed the "final link in establishing San Diego as a major air terminal."

Trib-Sun 12/5/40

First Order to Consair From New S. D. Firm

The first order of self-sealing gas cells was delivered to the Consolidated Aircraft Co. recently by the recently organized Heron Manufacturing Co., Percy Heron, president, announced.

Heron said that Consolidated became the first customer of the city's newest aircraft parts manufacturing concern, which has its offices and plant at 2162 Belt st. Other orders are in prospect, Heron said. Heron Co. officers include Heron, president; Mrs. Heron, vice president; Charlotte Heron, secretary, and H. J. Jahries, treasurer.

Aircraft News 11/28/40

BRITAIN GETS FIRST 4000-MI. U.S. BOMBERS

WASHINGTON—The Navy will permit Great Britain to take first deliveries on a new type of long-range patrol bomber now coming off assembly lines of the Consolidated Aircraft plant at San Diego, Cal., it was learned several days ago.

Officials emphasized that the arrangement does not involve formal negotiations or trade such as occurred recently when the Army released its biggest and newest type bombers.

Authoritative quarters said that the huge twin-engined flying boats —PBY-5'S— are being assembled on twin lines, one for the United States and the others for Britain, Australia and Canada. The company is understood to have orders for about 200 planes for the Navy and a similar number for the others. They cost about $100,000 each.

The program envisages deliveries to each nation at an equal rate. The United Press informant said that some delay has been encountered in obtaining sufficient wings to keep the two assembly lines operating. As a result an informal arrangement was worked out.

WILLIAMS, CALIF., FARMER
Cir. 594.
November 22, 1940

WINGS FOR AMERICA

by Don Wiley

MEMBER, AVIATION WRITERS ASS'N

This is the last of a series describing the national defense work of California aircraft factories.

1968

* * *

This may sound like the sort of boastful exaggeration the rest of the nation likes to ascribe to California, but so help me it's the literal truth:

The Consolidated Aircraft Corporation's plant at Lindberg Field, San Diego, is so big the employes use bicycles!

You see the bikes parked in racks at intersections between the factory buildings. You observe dozens of workers pedaling merrily from one building to another, tools or blueprints in wire baskets slung on the handlebars. And every so often you step aside for one of those tricky little motor scooters.

Guess they use the scooters for really long trips—say from one end of the plant to the other.

THEY NEED SPACE

Consolidated needs a big factory, for it builds big ships, and is building them at top speed.

This is the home nest of the famous PBY's, those twin-motored patrol bomber flying boats seen so frequently in the newsreels. The PBY's, have given new eyes to the Navy, which already has more than 200 of them, many of which have made amazing 2500 to 3000-mile non-stop mass flights to such distant points as Pearl Harbor and Coco Solo, Panama. If activities at Consolidated are any criterion, the Navy is going to have a lot more of them in the future.

Inside the factory you see long lines of PBY's in various stages of construction. Outside are more ships, undergoing final assembly. And if Major R. H. Fleet, Consolidated's energetic president, is too busy to go through the factory he has only to step from his office and glance skyward to see how his PBY's are doing. For the sky over San Diego is seldom free of the patrol bombers droning to and from their base on North Island

as president for two consecutive years, an honor rarely bestowed in Kiwanis circles. For the past three years he had operated the Shell Service Station in Arbuckle.

Possessed of a splendid personality of unusual geniality, Harry had a smile and word of cheer for everyone. Children and adults, alike, were his friends and he dispensed good humor on all sides. His generosity was unquestioned, giving freely to those less fortunate. Not only in Arbuckle and Williams, but in the entire coun-y will his cheerfulness and umor be missed and his early de-parture mourned.

Besides his devoted and loving wife, he is survived by the fol-owing brothers and sisters: Her-bert Shrock of Winfield, Kansas, Eva Purdy of Huston, Texas, Aug-sta Drumm of Kansas City, Mis-ouri, and Jennie Christy of Wil-iams, the latter of whom had estowed upon him since his arly boyhood, the devotion of a other. There also several nieces nd nephews surviving.

Mr and Mrs. Tully Harmeson of hico visited over Thanksgiving ith relatives

---

This article also appeared in:

1. San Juan Mission News - 11/22/40
2. Maxwell Calif. News - 11/20/40
3. Merced Calif. Express - 11/21/40
4. Los Gatos Times 11/22/40
5. King City Rustler-Herald 11/21/40
6. Hollister Free Lance 11/18/40
7. Gustine, Calif Standard 11/21/40
8. Garberville Record 11/21/40
9. Boulder Creek Journal 11/22/40
10. Auburn Journal Reporter 11/21/40
11. Alameda Times-Star 11/20/40
12. Atascadero News 11/22/40
13. San Francisco Polk Street Shopper 11/19/40
14. Truckee, Cal. Sun + Rep. 11/21/40
15. Santa Clara News 11/29/40
16. San Jose County News 11/26/40
17. S.F. Organized Labor 11/23/40
18. Escalon Times 11/28/40

Aircraft News 11/28/40

HUGE NEW AIR BATTLESHIP IN 1ST TEST FLIGHT

SAN DIEGO.—Test flights on the first of six four-motored 25-ton "battleships of the air," most powerful bombers in the Navy, were started this week by a Consolidated Aircraft Corp. crew, with delivery to a Navy trial board due next month.

Equipped with a supercharger enabling operations at extremely high altitudes, the craft will be assigned to the recently commissioned Patrol Squadron 13, commanded by Lieut. Comdr. Stephen B. Cooke, at the San Diego naval air station.

CARRIES MACHINE GUNS

All six, the first group of a Navy mass production order, are expected to be delivered to the 100-man squadron by February or March, it was indicated.

Capable of flying 5000 miles nonstop, the air Leviathan has two machine-driven revolving turrets, one in the bow and another topside, mounting heavy caliber machine guns. Additional protection from fighter planes is afforded by manually operated gun stations.

The engines are 1200 h.p. Pratt & Whitney radial air-cooled, housed in a 115-foot wing.

NONSTOP FLIGHTS

The plane is similar to the $1,000,000 experimental prototype flagship of the Aircraft Scouting Force, used to transport Secretary of the Navy Frank Knox across the Pacific to Hawaii and back on his recent inspection trip. This airboat last year made two nonstop flights across the continent, from San Diego to Anacostia, D.C., and return.

Cost of each of the six bombers, the first four-motored patrol planes in the Navy, will be about $300,000, including engines, it was reported authoritatively.

Industry Backlog

Unfilled orders of the aircraft industry are now in excess of $3,000,000,000, an increase of nearly one billion dollars in the past month. A year ago the industry was boasting of a $400,000,000 record backlog—the greater portion of which consisted of British and French war orders. While the Army's aircraft purchasing program is completed, less than half of the 7,000 planes authorized for the Navy have been contracted, although negotiations for the remainder are under way. Brewster, Fairchild and Grumman are among those who are expected to share in the new Navy orders. Meanwhile Great Britain is negotiating repeat orders with several companies. The following table gives the latest approximate unfilled orders of 23 prominent producers of planes or aircraft engines.

Allison	$60,000,000
Aviation Corp.	20,000,000
Beech	22,000,000
Bell	60,000,000
Boeing	190,000,000
Brewster	60,000,000
Cessna	11,000,000
Consolidated	220,000,000
Continental	15,000,000
Curtiss-Wright	550,000,000
Douglas	400,000,000
Fairchild	15,000,000
Ford	9,000,000
Grumman	20,000,000
Lockheed	225,000,000
Martin	220,000,000
North American	225,000,000
Northrop	20,000,000
Packard	187,000,000
Republic	65,000,000
Ryan	10,000,000
United Airc.	450,000,000
Vultee	90,000,000
	$3,144,000,000

Union 12/5/40

Risk From Planes Slight, Says Gott

Hazard from planes flying low over buildings adjacent to Lindbergh field is "more mental than actual," Edgar N. Gott, Consolidated Aircraft Corp. vice president, advised Joe Dryer by letter yesterday.

Dryer and Austin W. Cordtz complained to the city council that planes skim low over their buildings on approaching the municipal airport, and asked for relief. The council referred their communications to the harbor commission.

In a copy of Gott's letter to Dryer that was received by Walter W. Cooper, city manager, the aircraft executive reported that it is not possible to make a change in the method of approaching the field, and advised Dryer that his building is in a direct line with one of the prevailing runways, and that pilots must use judgment and not overshoot the field.

However, he said that when the runways are extended, for each 1000 feet added, pilots will be able to fly 100 feet higher over Dryer's 2368 Kettner blvd. building.

UNION - 12-26-40

1940

Plane Backlogs Pass Billion Mark

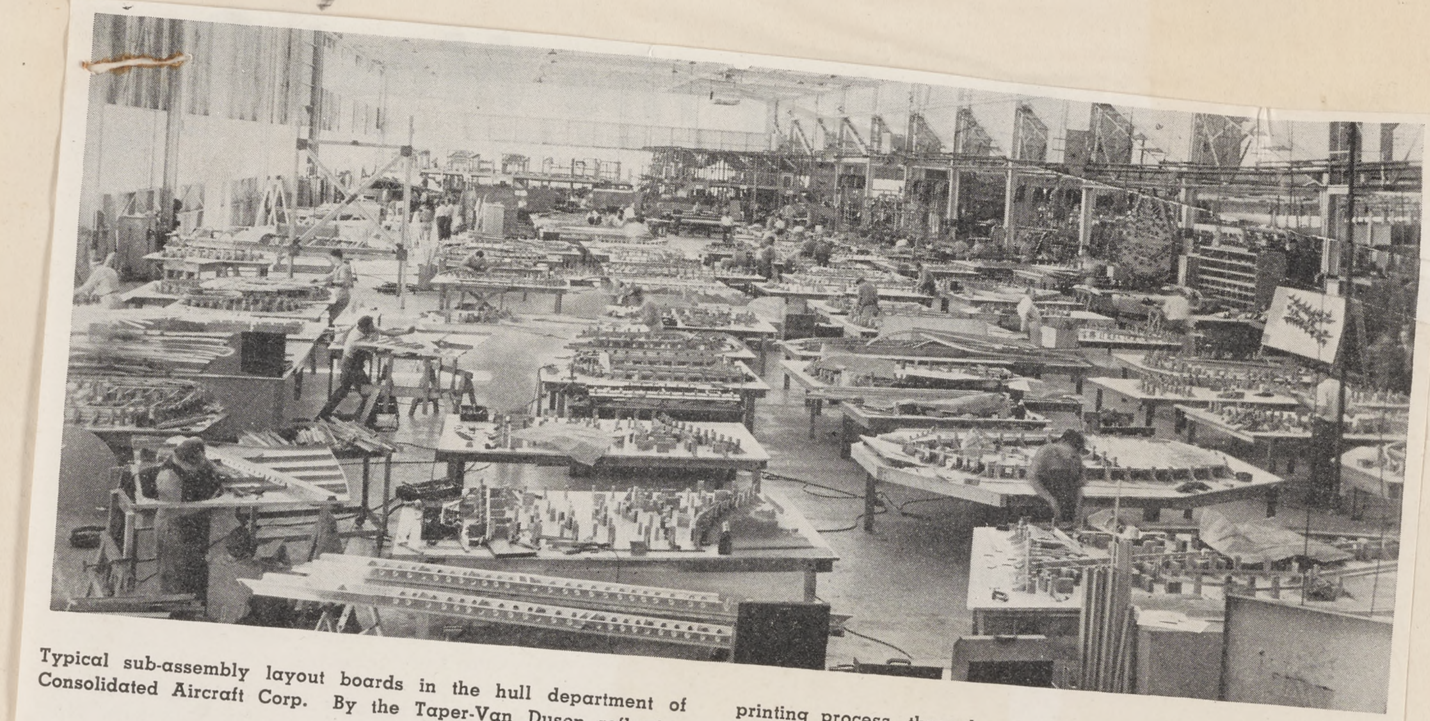
Backlogs of southern California aircraft factories, working on military planes for Great Britain and the United States, total $1,287,352,586 a United Press survey showed yesterday.

The aviation committee of the Los Angeles chamber of commerce revealed that Los Angeles and San Diego factories employ 71,236 workers and have monthly payrolls of more than $10,000,000.

At San Diego, Consolidated reported $323,000,000 and Ryan $10,800,000.

NVD

AVIATION - November 1940

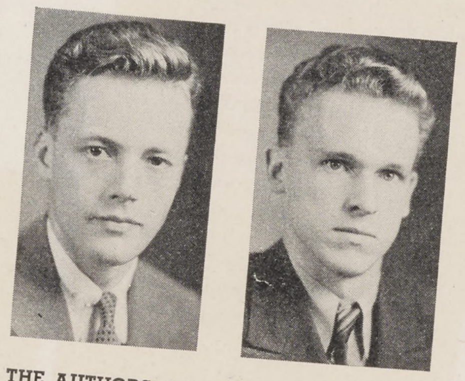


Typical sub-assembly layout boards in the hull department of Consolidated Aircraft Corp. By the Taper-Van Dusen reflection printing process, these boards are all laid out for attachment of form blocks without pencil markings or hand operations.

Multiple Duplication of Assembly Fixtures by the Taber-Van Dusen Method

"SPEED UP!" That is the cry which is driving the entire aircraft industry to superhuman efforts in meeting present national defense needs for more and better aircraft. It has become apparent that the most vital factor in the present situation is not money, or men, but time. We must build airplanes much faster than anything we have yet accomplished. And what is of equal importance, we must shorten the time interval between development of the design and translation of the design drawings into completed airplanes coming off the assembly line. The tooling-up interval must be reduced. One day saved in tooling may be worth ten airplanes. And ten airplanes may be the difference between winning or losing a battle of world importance.

A great problem of tooling has been the construction of assembly fixtures for shaping the many frames and subassemblies which go into the complex structure of the completed airplane. Construction of such fixtures has been a tedious process which amounted to a serious bottleneck in the production scheme. We are all familiar with the wide application of ship lofting methods to aircraft production.



THE AUTHORS: left, Philip Taber, engineering department, Consolidated Aircraft, and instructor in lofting, San Diego State College; right, L. W. Van Dusen, production department, Consolidated Aircraft Corp.

It has been the practice of all major aircraft builders to lay out hull lines and other contours of the airplane full scale on loft boards. These full-scale layouts are made with extreme accuracy and from them it is possible to scale off various dimensions for the construction of fixtures and assembly jigs. This process of working from full-scale layouts has made interchangeability of parts practical and so has speeded production materially, once the jigs and fixtures were available.

But there has been a big time lag, usually of many weeks, between completion of the full-scale loft layouts and the completion of production fixtures. Such fixtures are usually of wood, in the form of a flat plate, or table, with form blocks located on it for positioning the parts to be assembled into a frame or structural unit. Each such table has to be laid out with the greatest accuracy with reference to the original full-scale loft lines in order to insure the all-important interchangeability of parts. For production purposes a group of six, ten, or more identical fixtures is often provided for simultaneous production of multiples of a given assembly, such as a rib, hull frame, etc. Yet even under the most favorable conditions it

(*Turn to page 120*)

SAN DIEGO, CALIFORNIA, NOVEMBER 28, 1940

Aircraft Mechanic

Consair Wage Rate Decision on Dec. 10

Consair Management in a conference with the Union Shop Committee Monday states their willingness to accede to Union demands that a new employee receive an automatic increase in pay after three months of employment.

Both Consolidated and the Union have marshaled their facts and figures in preparation for final negotiation on amount of initial increase. For Consolidated the figures show that they have hired 7,691 men since Jan. 1, 50 percent of them are married and the average pay rate for the entire group at this time is slightly over 53c per hour.

The Union's facts and figures show that since Jan. 1st the cost of living, particularly rents, have advanced some 20 per cent and that due to rapid expansion in the personnel the matter of promotion in work and pay according to skill has not kept pace with the former Company policy, and that the Company policy developed around the Wage Review Board, has been not to consider the cases of the men hired in less than ninety days before a Review period, and then hold them over until another four months rolled around, with the result that the average man working in the shop more than three months, feels that he is not being rewarded for increased skill and productiveness.

Wage Review Notes

Late news on the coming Wage Review is that the newly certified group of employees, namely, the Timekeepers, will be up in the front of the Wage Review because of the fact that to date they, along with the Inspectors have been left out of the picture when Wage Board started to jack up the wage rates for the workers on actual production.

Janitors are to have a Committeeman of their own choosing to set in on the Wage Board in an effort by the Union to see that no group of employees can feel that they are not being properly represented.

Reviewing of employee's records is to be divided, so that the night shift men will have their own representative and their own Foreman, for their records, and the day shift will likewise have theirs.

Men on temporary transfer to the Final Assembly Dept. will be reviewed with their own Dept. when it comes up, and therefore will have more and better consideration at the coming Wage Review.

Aviation - November 1940

PLANES ORDERED FOR AIR CORPS UNDER 1940–41 APPROPRIATIONS

850	Heavy four-engine bombers		
		500	Boeing
		350	Consolidated
2,550	Medium two-engine bombers		
		1,150	Martin
		1,400	Douglas
400	Two-engine attack fighters		
		400	Douglas
600	Two-engine pursuit		
		600	Lockheed
5,250	Single-engine pursuit		
		1,750	Curtiss
		1,800	North American
		1,000	Republic
		700	Bell
9,650	Total combat		
170	Transport		
		50	Curtiss
		20	Beech
		100	Douglas
5,700	Advanced trainers		
		2,000	Curtiss
		3,000	North American
		700	Beech
500	Basic trainers		
		500	Vultee
2,950	Primary trainers		
		800	Ryan
		800	Fairchild
		1,360	Stearman
9,320	Total non-combat		
18,970	Total all types		
18,640	Official total		

San Diego Bombers to See Service in Egypt

The navy will permit Great Britain to take first deliveries on the long-range patrol bombers now coming off assembly lines of the Consolidated Aircraft Corp. plant at San Diego, the United Press reported today from Washington, D. C. The planes are expected to be used on flights from England to Egypt.

Consolidated officials made no statement, but officials at Washington emphasized that the arrangement does not involve formal negotiations or trade, such as occurred recently when the army released its biggest and newest type bombers.

Authoritative quarters said the huge twin-engined flying boats—PBY-5s—are being assembled on twin lines, one for the United States and the other for Britain, Australia and Canada. The company is understood to have orders for about 200 planes for the navy and a similar number for the others. They cost about $100,000 each.

Priority in Deliveries

The program envisages deliveries to each nation at an equal rate. The United Press informant said some delay has been encountered in obtaining sufficient wings to keep the two assembly lines operating. As a result, an informal arrangement was worked out whereby the British will get the first of the new planes until the wing supply situation is corrected.

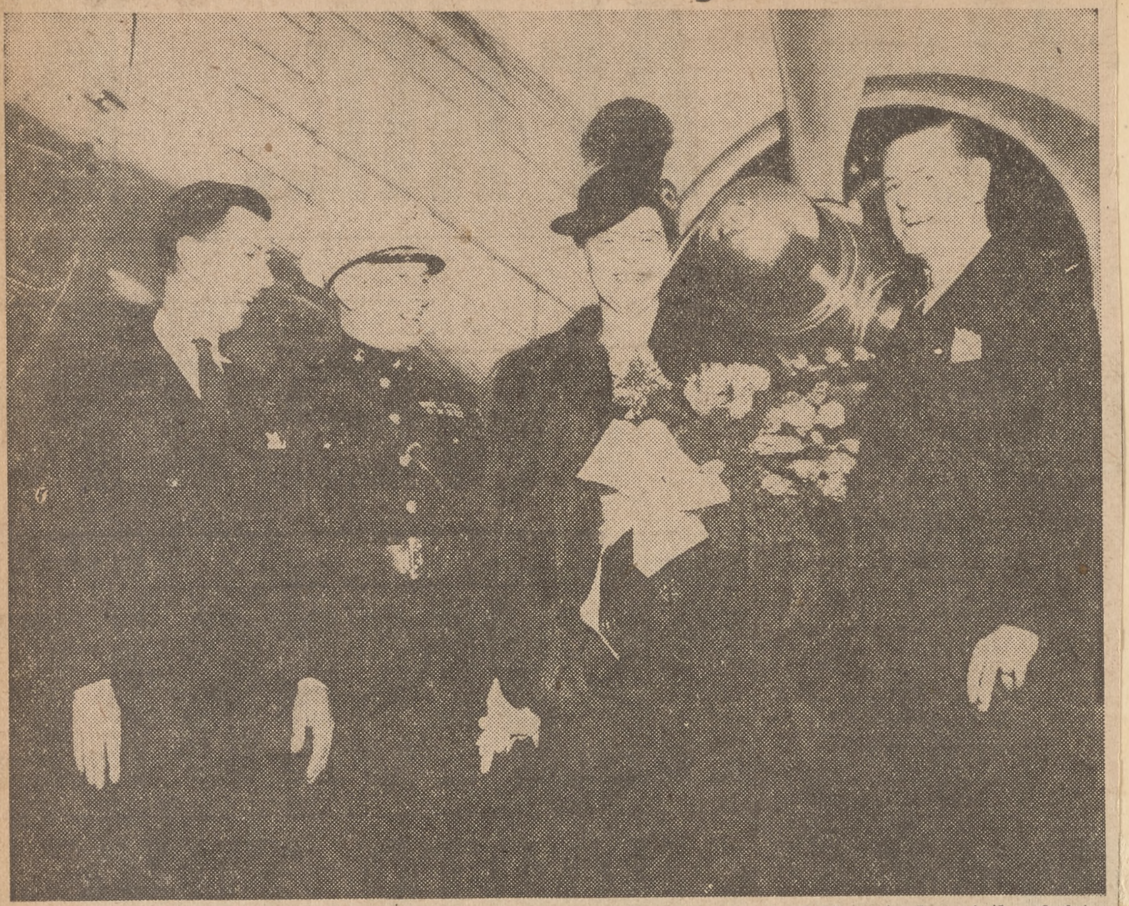
The PBY-5s weigh 15 tons, carry a crew of five, have a reputed range of 4000 miles and a speed of about 300 miles an hour.

Aviation experts said the British easily could fly them from the British Isles to Egypt; that their long cruising range would make them especially valuable in the Mediterranean and far eastern areas. They can be serviced by tenders, making land bases unnecessary.—Union-Tribune.

Aviation - November, 1940

Tribune-Sun 12/2/40

Dedicate Continental Airliner at Lindbergh Field Ceremonies



Service and civilian aviation leaders were represented at Lindbergh field yesterday at the christening of the San Diego Continental, Western Air Express mainliner which began direct service from San Diego to New York. The four shown here are, left to right: Earl Prudden, vice president, Ryan Aeronautical Co.; Maj. Gen. William P. Upshur, commanding general fleet marine force and commanding officer of the local marine corps base; Mrs. Edgar N. Gott, who broke a bottle of champagne on the nose of the plane, and Gott, Consolidated Aircraft Corp. vice president.

---

21 Passengers on N. Y. Sleeper Plane In 1st Direct Flight From S. D.

Due at New York at 2:03 p. m. today, the San Diego Continental, big twin-motored Douglas transport christened at Lindbergh field yesterday afternoon, sped eastward with 21 passengers aboard on its maiden flight from San Diego to New York, inaugurating Western Air Express mainliner sleeping service between the two cities. The plane left Lindbergh field at 5:50 p. m.

At the christening ceremonies, Mrs. Edgar N. Gott, wife of a Consolidated Aircraft Corp. vice president, broke a bottle of champagne on the nose of the craft, which was ferried to San Diego for the inaugural flight by Lt. C. R. Bender, coast guard pilot. Bender is returning to Norfolk, Va., aboard the plane.

Speaking from a platform before the huge plane, Earl Prudden, vice president of Ryan Aeronautical Co., introduced distinguished guests to an audience of 150 for whom seats had been provided in a near-by hangar. More than 200 spectators crowded close to the airfield to view the plane and witness the christening ceremony.

Review Air Progress

Guest speakers included Tom Bomar, chamber of commerce, who reviewed air progress in San Diego; Thomas Wolfe, airlines vice president of traffic; Maj. Gen. William P. Upshur, commander, fleet marine force; Maj. Gott, Hampton Macomber, Los Angeles, airlines district traffic manager; Tom Glassford, San Diego district traffic manager, and Leo H. Dwerlkotte, first vice president of Western Air Express.

Herb Richards, popular San Diego flier, was at the controls as the plane took off. It rose gracefully from the runway at the take-off signal from Councilman Louis F. Weggenman, circled out over Ocean Beach and flew back over the field, flashing its landing lights in a farewell salute as it headed for Los Angeles.

A buffet supper was served for guests in the hangar after the christening. Numerous chamber of commerce, civic, service and industrial representatives attended the inauguration of the new service, which Maj. Gott termed the "final link in establishing San Diego as a major air terminal."

Tribune-Sun 12/5/40

First Order to Consair From New S. D. Firm

The first order of self-sealing gas cells was delivered to the Consolidated Aircraft Co. recently by the recently organized Heron Manufacturing Co., Percy Heron, president, announced.

Heron said that Consolidated became the first customer of the city's newest aircraft parts manufacturing concern, which has its offices and plant at 2162 Belt st. Other orders are in prospect, Heron said. Heron Co. officers include Heron, president; Mrs. Heron, vice president; Charlotte Heron, secretary, and H. J. Jahries, treasurer.

Aircraft News 11/29/40

BRITAIN GETS FIRST 4000-MI. U.S. BOMBERS

WASHINGTON—The Navy will permit Great Britain to take first deliveries on a new type of long-range patrol bomber now coming off assembly lines of the Consolidated Aircraft plant at San Diego, Cal., it was learned several days ago.

Officials emphasized that the arrangement does not involve formal negotiations or trade such as occurred recently when the Army released its biggest and newest type bombers.

Authoritative quarters said that the huge twin-engined flying boats —PBY-5'S— are being assembled on twin lines, one for the United States and the others for Britain, Australia and Canada. The company is understood to have orders for about 200 planes for the Navy and a similar number for the others. They cost about $100,000 each.

The program envisages deliveries to each nation at an equal rate. The United Press informant said that some delay has been encountered in obtaining sufficient wings to keep the two assembly lines operating. As a result an informal arrangement was worked out.

WILLIAMS, CALIF., FARMER
Cir. 594.
November 22, 1940

WINGS FOR AMERICA

by Don Wiley

MEMBER, AVIATION WRITERS ASS'N

This is the last of a series describing the national defense work of California aircraft factories.

1968

* * *

This may sound like the sort of boastful exaggeration the rest of the nation likes to ascribe to California, but so help me it's the literal truth:

The Consolidated Aircraft Corporation's plant at Lindberg Field, San Diego, is so big the employes use bicycles!

You see the bikes parked in racks at intersections between the factory buildings. You observe dozens of workers pedaling merrily from one building to another, tools or blueprints in wire baskets slung on the handlebars. And every so often you step aside for one of those tricky little motor scooters.

Guess they use the scooters for really long trips—say from one end of the plant to the other.

THEY NEED SPACE

Consolidated needs a big factory, for it builds big ships, and is building them at top speed.

This is the home nest of the famous PBY's, those twin-motored patrol bomber flying boats seen so frequently in the newsreels. The PBY's, have given new eyes to the Navy, which already has more than 200 of them, many of which have made amazing 2500 to 3000-mile non-stop mass flights to such distant points as Pearl Harbor and Coco Solo, Panama. If activities at Consolidated are any criterion, the Navy is going to have a lot more of them in the future.

Inside the factory you see long lines of PBY's in various stages of construction. Outside are more ships, undergoing final assembly. And if Major R. H. Fleet, Consolidated's energetic president, is too busy to go through the factory he has only to step from his office and glance skyward to see how his PBY's are doing. For the sky over San Diego is seldom free of the patrol bombers droning to and from their base on North Island

EVEN BIGGER SHIPS

Consolidated is also speeding production of two new types, bigger even than the PBY's, which ought to prove sturdy bulwarks of American defense.

One type is a regular aerial battleship—a four-motored monster designated the PB2Y — about which the Navy hasn't yet released any performance or armament figures. The PB2Y is described as a patrol bomber ("PB" stands for patrol bomber) but someone has very aptly called it a "flying battleship." Visitors to the San Francisco Exposition may recall seeing the first PB2Y resting on the Treasure Island lagoon last Fall.

NEW ARMY BOMBER

The other big fellow is a 40,000 pound (gross weight) land bomber now in production for the Army. Known by the Air Corps as the B-24, this high-wing monoplane has a wing span of 110 feet, will carry a crew of six to nine men and tote a four-ton bomb load.

The Army admits the speed of the B-24 is "more than 300 miles per hour." After a glimpse of the four 1200-horsepower radial motors and the "clean" design of the ship, our guess would be that figure is mild, to say the least.

Consolidated is busy on big orders of PB2Y's and B-24's.

IT OPENED HIS EYES

Your correspondent happened to tour Consolidated recently with a group of aeronautical executives from the East. One of them glanced at the long lines of aircraft being completed in the open air and exclaimed:

"God Lord, look at that! Imagine being able to do all that work outdoors . . . "

For this gentleman came from a part of the nation where winter confines aircraft production to tightly-built, heated factories. And it was a shock to him to realize that Consolidated, which has 867,000 square feet of covered factory space(and is constructing an additional 700,000 square feet) has an almost equal amount of uncovered but paved working space and is able to do 30 per cent of its assembly work outdoors.

Looks like there is something to this California sunshine after all!

This article also appeared in:

1. San Juan Mission News - 11/22/40
2. Maxwell Calif. News - 11/20/40
3. Merced Calif. Express - 11/21/40
4. Los Gatos Times 11/22/40
5. King City Rustler-Herald 11/21/40
6. Hollister ~~Free~~ Free Lance 11/18/40
7. Gustine, Calif Standard 11/21/40
8. Garberville Record 11/21/40
9. Boulder Creek Journal 11/22/40
10. Auburn Journal Reporter 11/21/40
11. Alameda Times-Star 11/20/40
12. Atascadero News 11/22/40
13. San Francisco Polk Street Shopper 11/19/40
14. Truckee, Cal. Sun+Rep. 11/21/40
15. Santa Clara News 11/29/40
16. San Jose County News 11/26/40
17. S.F. Organized Labor 11/23/40
18. Escalon Times 11/28/40

Aircraft News 11/28/40

HUGE NEW AIR BATTLESHIP IN 1ST TEST FLIGHT

SAN DIEGO.—Test flights on the first of six four-motored 25-ton "battleships of the air," most powerful bombers in the Navy, were started this week by a Consolidated Aircraft Corp. crew, with delivery to a Navy trial board due next month.

Equipped with a supercharger enabling operations at extremely high altitudes, the craft will be assigned to the recently commissioned Patrol Squadron 13, commanded by Lieut. Comdr. Stephen B. Cooke, at the San Diego naval air station.

CARRIES MACHINE GUNS

All six, the first group of a Navy mass production order, are expected to be delivered to the 100-man squadron by February or March, it was indicated.

Capable of flying 5000 miles nonstop, the air Leviathan has two machine-driven revolving turrets, one in the bow and another topside, mounting heavy caliber machine guns. Additional protection from fighter planes is afforded by manually operated gun stations.

The engines are 1200 h.p. Pratt & Whitney radial air-cooled, housed in a 115-foot wing.

NONSTOP FLIGHTS

The plane is similar to the $1,000,000 experimental prototype flagship of the Aircraft Scouting Force, used to transport Secretary of the Navy Frank Knox across the Pacific to Hawaii and back on his recent inspection trip. This airboat last year made two nonstop flights across the continent, from San Diego to Anacostia, D.C., and return.

Cost of each of the six bombers, the first four-motored patrol planes in the Navy, will be about $300,000, including engines, it was reported authoritatively.

Union 12/5/40

Risk From Planes Slight, Says Gott

Hazard from planes flying low over buildings adjacent to Lindbergh field is "more mental than actual," Edgar N. Gott, Consolidated Aircraft Corp. vice president, advised Joe Dryer by letter yesterday.

Dryer and Austin W. Cordtz complained to the city council that planes skim low over their buildings on approaching the municipal airport, and asked for relief. The council referred their communications to the harbor commission.

In a copy of Gott's letter to Dryer that was received by Walter W. Cooper, city manager, the aircraft executive reported that it is not possible to make a change in the method of approaching the field, and advised Dryer that his building is in a direct line with one of the prevailing runways, and that pilots must use judgment and not overshoot the field.

However, he said that when the runways are extended, for each 1000 feet added, pilots will be able to fly 100 feet higher over Dryer's 2368 Kettner blvd. building.

Industry Backlog

Unfilled orders of the aircraft industry are now in excess of $3,000,000,000, an increase of nearly one billion dollars in the past month. A year ago the industry was boasting of a $400,000,000 record backlog—the greater portion of which consisted of British and French war orders. While the Army's aircraft purchasing program is completed, less than half of the 7,000 planes authorized for the Navy have been contracted, although negotiations for the remainder are under way. Brewster, Fairchild and Grumman are among those who are expected to share in the new Navy orders. Meanwhile Great Britain is negotiating repeat orders with several companies. The following table gives the latest approximate unfilled orders of 23 prominent producers of planes or aircraft engines.

Allison	$60,000,000
Aviation Corp.	20,000,000
Beech	22,000,000
Bell	60,000,000
Boeing	190,000,000
Brewster	60,000,000
Cessna	11,000,000
Consolidated	220,000,000
Continental	15,000,000
Curtiss-Wright	550,000,000
Douglas	400,000,000
Fairchild	15,000,000
Ford	9,000,000
Grumman	20,000,000
Lockheed	225,000,000
Martin	220,000,000
North American	225,000,000
Northrop	20,000,000
Packard	187,000,000
Republic	65,000,000
Ryan	10,000,000
United Airc.	450,000,000
Vultee	90,000,000
	$3,144,000,000

UNION - 12-26-40

1940

Plane Backlogs Pass Billion Mark

Backlogs of southern California aircraft factories, working on military planes for Great Britain and the United States, total $1,287,352,586 a United Press survey showed yesterday.

The aviation committee of the Los Angeles chamber of commerce revealed that Los Angeles and San Diego factories employ 71,236 workers and have monthly payrolls of more than $10,000,000.

At San Diego, Consolidated reported $323,000,000 and Ryan $10,800,000.

SAN

Consair Wag

NVD

AVIATION - November 1940

Taber-Van Dusen

(*Continued from page 71*)

is not possible for more than a limited few men to work around a loft layout at any one time, and the period required to produce a series of assembly fixtures frequently mounted up to many weeks or months. Various methods have been tried for reducing this time-consuming process, including development of wood or metal templates from the loft lines, such templates then being used for reproduction of a series of assembly fixtures. Another process has involved the use of photography, achieving some time reduction through employment of a monster camera to photograph loft lines and then print duplicate layouts on sensitized table surfaces to which the form blocks are then attached. These various efforts have been an improvement over earlier methods, but they left much to be desired in the way of further reduction of time spent in building fixtures, and in certain other respects such as accuracy and cost of equipment. Development of the Taber-Van Dusen method of duplicating loft lines on assembly fixture layouts has proved so successful under actual production conditions that it is now in use throughout the huge plant of Consolidated Aircraft Corp., San Diego. The process has proved thoroughly satisfactory from the standpoint of absolute accuracy, low cost, and ease of operation with relatively unskilled help, and without the use of elaborate or expensive equipment. Tests have shown a reduction in time of duplicating certain assembly fixtures, in favor of the Taber-Van Dusen method, of from 3,000 man-hours originally required to only 400 man-hours.

By the new method, utilizing the principle of reflection printing, a full-sized negative is made direct from the original lofted layout. This is done by placing the original loft board in a dark-room, laying a full size sheet of a special rigid sensitized translucent material over the board, and exposing it to light. When the sensitized surface is developed the result is a full-sized negative of the original board. From this can be made as many exact prints of duplicate layouts as are desired. These prints are made directly on the fixture tables, in the dark-room, and they are then all available at once for attachment of the positioning blocks. By this method the master pattern for block location on each fixture board can be printed with extreme rapidity on as many boards as are required. The position blocks, in turn, may be provided in any multiples needed and can then be fitted to the lines of the print with great speed and accuracy. The materials for the Taber-Van Dusen method are inexpensive and the only apparatus needed is a dark room. The process is adaptable to any industry requiring accurate reproduction of layout fixtures in considerable numbers.

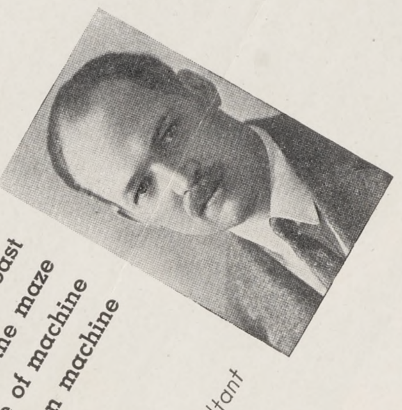
The vital importance of this development to the present problem of speeding aircraft production will be apparent.

Charles F. McReynolds
9121 Dalton Ave., L.A.

Getting the Most Out

As aircraft orders pile up to dizzy heights, an increasing volume of work is turned over to sub-contractors. West Coast factories have found that the only clear way out of the maze of confusion in the small shops is through the use of machine loading charts. This is the first of three articles on machine loading.

By C. W. S. Parsons



M.E., Consultant

A VITAL PART of the aircraft industry is that institution known to airplane manufacturers as "outside production." It is an institution because it began when aircraft making was born in this country more than a quarter of a century ago, and it developed with the industry. It is the creation of enterprising men.

These men in the outside machine shops are master mechanics. Through the years they have stood ready to puzzle out and fashion in metal the intricacies of design that satisfy the souls of aeronautical engineers pursuing the will o' the wisp of least air resistance, and the phantom of new and untried mechanical techniques. They have struggled with odd angular conceptions in three-dimensional space thought out by technical men whose hitherto known propensity was to make everything rectangular, symmetrical, and balanced.

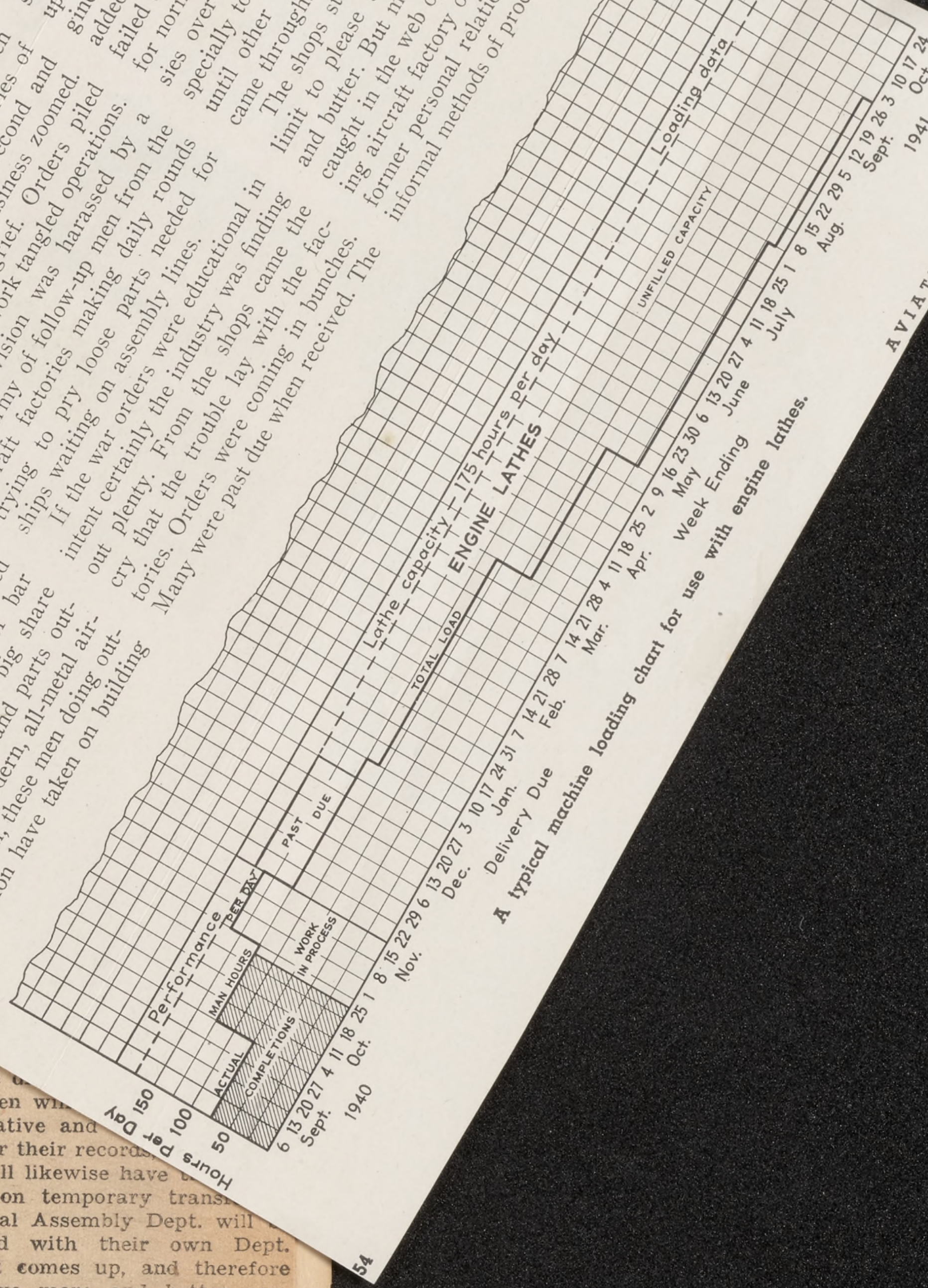
Primarily these men have machined castings, forgings and pieces of bar stock and tubing to make a big share of the twenty odd thousand parts outside of rivets in a modern, all-metal airplane. In addition, these men doing outside production have taken on building sub-assemblies and performing specialized operations such as welding, plating, grinding, heat treating, and to a less extent sheetmetal work. They do production tooling. But mainly these men with job shops have carried perhaps 75 percent of the parts-machining load.

As 1940 broke, the load on the shops was building up fast by reason of French and British airplane contracts. It was no longer a question of hand to mouth operation on one shift with a fraction of the available equipment. By spring the shops were hunting for men capable of coping with the vagaries of dural under cutting tools. Second and third shifts appeared. Business zoomed. But with it came grief. Orders piled up. "Past due" work tangled operations. Shop supervision was harassed by a young army of follow-up men from the aircraft factories making daily rounds trying to pry loose parts needed for ships waiting on assembly lines.

If the war orders were educational in intent certainly the industry was finding out plenty. From the shops came the cry that the trouble lay with the factories. Orders were coming in bunches. Many were past due when received. The factories were not furnishing the material on time to meet the due dates. Nor the tooling! It was costly to build up man power and then lay off men because there was not enough work for them. The temptation was great to take any orders offered, regardless of due dates, to be sure of continuous operation.

In some instances the overload was terrific in spite of certain machines standing idle from time to time. Time wasted tearing down set-ups to run a few parts on "hot orders" became a serious problem. Stop-orders holding up partially fabricated parts while engineers huddled over design changes added to the confusion. Some factories failed to furnish excess parts to provide for normal spoilage, creating controversies over whether to set up machines specially to fill the shortages or to wait until other orders for the same parts came through.

The shops strained themselves to the limit to please their sources of bread and butter. But many found themselves caught in the web of overnight expanding aircraft factory organization, where former personal relationships and more informal methods of procedure no longer



A typical machine loading chart for use with engine lathes.

700
500 Basic tr
500 Vultee
2,950 Primary tra
800 Ryan
800 Fairchild
1,360 Stearman
9,320 Total non-combat
18,970 Total all types
18,640 Official total

Rev

is to be

shift men wi

presentative and

man, for their record

shift will likewise have

Men on temporary trans

the Final Assembly Dept. will

reviewed with their own Dept. when it comes up, and therefore will have more and better consideration at the coming Wage Review.

San Diego Bombers to See Service in Egypt

The navy will permit Great Britain to take first deliveries on the long-range patrol bombers now coming off assembly lines of the Consolidated Aircraft Corp. plant at San Diego, the United Press reported today from Washington, D. C. The planes are expected to be used on flights from England to Egypt.

Consolidated officials made no statement, but officials at Washington emphasized that the arrangement does not involve formal negotiations or trade, such as occurred recently when the army released its biggest and newest type bombers.

Authoritative quarters said the huge twin-engined flying boats—PBY-5s—are being assembled on twin lines, one for the United States and the other for Britain, Australia and Canada. The company is understood to have orders for about 200 planes for the navy and a similar number for the others. They cost about $100,000 each.

Priority in Deliveries

The program envisages deliveries to each nation at an equal rate. The United Press informant said some delay has been encountered in obtaining sufficient wings to keep the two assembly lines operating. As a result, an informal arrangement was worked out whereby the British will get the first of the new planes until the wing supply situation is corrected.

The PBY-5s weigh 15 tons, carry a crew of five, have a reputed range of 4000 miles and a speed of about 300 miles an hour.

Aviation experts said the British easily could fly them from the British Isles to Egypt; that their long cruising range would make them especially valuable in the Mediterranean and far eastern areas. They can be serviced by tenders, making land bases unnecessary.—Union-Tribune.

Trib - Sun 12/4/40

First of 26 Huge Consair Bombers Scheduled for Delivery to Britain Before March 1

Above picture shows one of Consolidated's Model 32 four-engine land bombers destined for Great Britain. Great range, speed, and bomb load are attributes of this huge bomber.

SPEED 300 MILES; CAPACITY LOAD ABOUT FOUR TONS

Delivery to England of the first of 26 Consolidated Model-32 four-engined land bombers, which would have become the United States army's B-24's, is expected before March 1, 1941, according to report at the Consolidated Aircraft Corp. plant. Announcement of the delivery program, planned to benefit both the British purchasers and the United States defense program, came from Washington, D. C., Nov. 20.

These large bombers are similar to the Consolidated prototype Model 32, first flown late in 1939, which marked Consolidated's return to the landplane field. These planes have incorporated in them the latest military features designed to meet the combat requirements learned from the present European conflict.

Predictions Justified

While performance figures are confidential, it is more than likely that these planes equal (and probably exceed) the official statement issued in reference to the prototype, which stated, "This airplane, on preliminary examination, gives evidence of living up to the advancements in aerodynamic and performance characteristics predicted. These include a speed of more than 300 miles an hour; a range of approximately 3000 miles, and a bomb-carrying capacity of approximately four tons."

These planes are capable of carrying from England a full bomb load to almost any sector in the involved European area and return non-stop, or they can operate by shuttling between England and British bases.

Protection Adequate

Their speed, and defense and attack armament give them adequate protection from all angles. The planes are full cantilever, four-engine, all-metal, high-wing monoplanes, with high aspect ratio wings and retractable landing gear. Fowler flaps aid this high-speed aircraft in take-offs and landings. Their landing gear is of the tricycle type, with single wheel forward.

Approximate dimensions are: Wing span, 110 feet; fuselage length, 64 feet; height, 19 feet. The number of the crew varies with the mission to be performed.

Trib.

lifornia, Friday, December 6,

Open Drive To 'Sell' S. D. In Brochures

Initial step in a campaign to exploit San Diego's ideal climatic advantages and waterfront facilities, valuable to year-round production of aircraft, was taken when the chamber of commerce aviation department released the first of 11,500 illustrated brochures.

Designed for distribution to more than 1000 concerns manufacturing aircraft plane parts, the 36-page brochures were produced by the chamber's aviation department in cooperation with Consolidated Aircraft Corp., Ryan Aeronautical Co. and Solar Aircraft Co.

Letters from R. H. Fleet, Consolidated's president; T. Claude Ryan, president of the Ryan firm, and Edmund T. Price, Solar president, stressing advantages found here for aircraft production, serve as a preface to the booklet.

Release of the "sales" documents coincided with an announcement, approved by chamber directors, that various committees of the chamber "all are engaged in work directed toward making San Diego's future secure."

Following distribution of the brochures to firms throughout the United States, the chamber has announced "the same type of consistent follow-up which was successful in selling the Consolidated Aircraft Corp. would be undertaken."

T. F. Bomar, aviation department manager, said no brochures are available for local distribution."

Union 12/5/40

Risk From Planes Slight, Says Gott

Hazard from planes flying low over buildings adjacent to Lindbergh field is "more mental than actual," Edgar N. Gott, Consolidated Aircraft Corp. vice president, advised Joe Dryer by letter yesterday.

Dryer and Austin W. Cordtz complained to the city council that planes skim low over their buildings on approaching the municipal airport, and asked for relief. The council referred their communications to the harbor commission.

In a copy of Gott's letter to Dryer that was received by Walter W. Cooper, city manager, the aircraft executive reported that it is not possible to make a change in the method of approaching the field, and advised Dryer that his building is in a direct line with one of the prevailing runways, and that pilots must use judgment and not overshoot the field.

However, he said that when the runways are extended, for each 1000 feet added, pilots will be able to fly 100 feet higher over Dryer's 2368 Kettner blvd. building.

Union 12-5-40

Consair Gets 1st Heron Self-Sealing Gas Cells

Delivery of its first order of self-sealing gas cells to Consolidated Aircraft Corp. was announced yesterday by the recently-organized Heron Manufacturing Co. through its president, Percy Heron.

Heron said that Consolidated became the first customer of the city's newest aircraft parts manufacturing concern, which has its offices and plant at 2162 Belt st. Other orders are in prospect, Heron said. Heron Co. officers include Heron, president; Mrs. Heron, vice president; Charlotte Heron, secretary, and H. J. Jahries, treasurer.

TRIBUNE-SUN, San Diego, California, Monday, December 9,

RUSH $7,000,000 CONSAIR UNIT; 30,000 ON PAYROLL BY JULY

A huge new parts plant for Consolidated Aircraft Corp., virtually doubling Consolidated's present size and costing nearly $7,000,000, will be built and placed in operation here within the next six and one-half months, according to announcement by Consair officials.

"The new plant will fit solidly into the line production program on Consolidated flying boats and large land bombers," states the announcement, which discloses that the parts plant will be located about one and one-third miles north of the existing factory on Lindbergh field. It will add 1,553,000 square feet of covered manufacturing area, virtually doubling the 10-fold expansion of Consolidated during the last five years.

"With an accelerated construction program, the entire new parts plant is scheduled to be completed and in full operation by June, 1941," it was reported.

Eight Buildings in Plan

"This plant is composed of a group of eight buildings with a total roofed area of 1,553,000 square feet, plus loading platform of 64,000 square feet, with cost to run between $6,500,000 and $7,000,000. The factory site is 52 acres in size, with an adjacent area of 72 acres, which is to be used for parking facilities."

The combined personnel to operate both plants is estimated at 30,000. New buildings will be similar in type to present Consolidated structures. All buildings, including the original and new plant, are entirely of the latest type and design, especially engineered for modern aircraft manufacturing. The oldest factory building at Lindbergh field is less than 5½ years old, making Consolidated's combined facilities probably the most modern and efficient in existence. Equipment for the new plant has been ordered and is in the process of being delivered. To make immediate use of production equipment, many of the machines will be set up and operated under lean-to tents at the Lindbergh field plant site, then transferred to the new buildings as quickly as they are ready for occupancy.

All to Be Roofed

The present plant on Lindbergh field is employing its paved yard areas for some 30 percent of its operations, made possible by the equable climatic conditions of San Diego. The new plant, however, will conduct all of its operations under roof. The new plant will be a highly specialized production unit devoted to the manufacture of component parts and assemblies for wings and tail surfaces construction, with completely independent facilities for all operations requisite to their manufacture. All yard areas will be paved. The spur railroad sidings will be of depressed track construction, for quick car-floor-level loading and unloading.

The largest battery of drop hammers and hydraulic presses under one roof on the Pacific coast will be used in the new drop hammer building, which will also house a complete pattern shop, foundry and die-storage departments. The huge hammers will be mounted on improved shock-proof foundations similar to those now employed under the drop hammers at the Lindbergh field site. While working in complete conjunction with the Lindbergh field plant, the new parts plant will be a complete unit.

Larsen General Contractor

B. O. Larsen, of San Diego, is general contractor for the new project. R. E. Hazard & Sons, of San Diego, have charge of filling and grading of the site, moving in dirt from a hill at the intersection of Midway dr. and West Pt. Loma blvd. Architects are Ellis Gray Taylor and Ellis Wing Taylor.

Consolidated, which is building planes for the army and navy and Great Britain and Australia, has a backlog of approximately $325,000,000. On Labor day, Sept. 2, Consair officials formally dedicated a new addition to its plant on Lindbergh field. Since then, additional buildings at the municipal airport were started by the firm, and these, it is estimated, will be completely occupied by Jan. 15. Included are another final assembly building, 360 by 720 feet in size, and a single building, 200 by 1500 feet, to be devoted to small parts assembly. Consolidated officials state that the previous expansion and the buildings to be completed by Jan. 15 will increase the firm's manufacturing area, over the 1935 plant, by some 10 times, or 1000 percent.

Aircraft News 12/5/40

BRITISH GET CONSOLIDATED BOMBERS SOON

In a move to benefit both the British purchasers and the United States defense program, an announcement from Washington on November 20 disclosed that the first of 26 Consolidated Model 32 4-Engine Land Bombers, which have become the United States Army's B-24's, are to be delivered to the English. Delivery is expected before March 1, 1941.

These large bombers are similar to the Consolidated prototype Model 32, first flown late in 1939, which marked Consolidated's return to the landplane field. These planes have incorporated in them the latest military features designed to meet the combat requirements learned from the present European conflict. While performance figures are confidential, it is more than likely that these planes equal (and probably exceed) the official statement issued in reference to the prototype, which stated, "This airplane, on preliminary examination, gives evidence of living up to the advancements in aerodynamic and performance characteristics predicted. These include a speed of over 300 miles per hour; a range of approximately 3,000 miles; and a bomb-carrying capacity of approximately 4 tons."

These planes are capable of carrying from England a full bomb load to almost any sector in the involved European area and return non-stop, or they can operate by shuttling between England and British bases. Their speed, and defense and attack armament give them adequate protection from all angles. The planes are full cantilever, 4-engine, all-metal, high-wing monoplanes, with high aspect ratio wings and retractable landing gear. Fowler flaps aid this high-speed aircraft in take-offs and landings. Their landing gear is of the trycycle type, with single wheel forward.

Approximate dimensions are: wing span — 110 feet; fuselage length—64 feet; height—19 feet. The number of crew varies with the mission to be performed.

L.A. Times 12/8/40

Consolidated Plans $7,000,000 Parts Plant

SAN DIEGO, Dec. 7. (AP)—Consolidated Aircraft Corp. will double its facilities with construction of a $7,000,000 parts plant, Edgar N. Gott, vice-president, announced today.

Eight new buildings will be erected about a mile north of the present Lindbergh Field plant. Principal units will comprise three huge parts structures and a three-story drop hammer building which will house the largest battery of drop hammers and hydraulic presses on the Pacific Coast, Gott reported.

Combined Consolidated personnel is expected to soar to 30,000 when the new division is put in operation.

Consolidated has a backlog exceeding $325,000,000 for Army and Navy bombers, and warplanes for Britain.

NEW FLYING BOAT FOR CANADA HERE

N.Y. Times 12/1/40

Bomber Alights in Sound After Fast Trip From Coast

Special to THE NEW YORK TIMES.

PORT WASHINGTON, L. I., Nov. 30—The first Consolidated-2C patrol-bomber type flying boat, to be delivered to Great Britain, lay at anchor in Manhasset Bay tonight, under a strong guard of Nassau County police, crew members and private guards. It arrived here this afternoon unexpectedly after a fast one-stop flight from San Diego, Calif. Canadian officials will take delivery of the machine here. Its next port of call is a secret, but it is believed to be somewhere in Canada.

The plane left San Diego early yesterday morning and its only stop was on the waters of Lake Worth, Fort Worth, Texas, where the crew spent the night. Flying time to that point was seven hours.

At 12,000 feet, above an overcast sky, the 1,475 miles from Fort Worth to this port were made in 7 hours 25 minutes, making the average speed 201 miles an hour. There was a strong helping wind and over one stretch 244 miles an hour was averaged. For four hours no crew member was able to see the ground because of clouds.

Total flying time from the Coast was 14 hours 25 minutes.

Pilots William L. Cleveland and Douglas Kelly set the plane down here at 1:55 P. M. Boats put out from the Gulf Seaplane hangar and

---

LUCE'S PRESS CLIPPING BUREAU
157 CHAMBERS STREET, NEW YORK

CLIPPING FROM
NEW YORK TIMES
Circ. D. 474,277 S. 788,997

DEC 3 - 1940

PLANE FOR BRITAIN LEAVES

Bomber Takes Off for Halifax —4 Others Arrive Here

Bound for Halifax, N. S., where it will be delivered to the British Royal Air Force a Consolidated bomber took off from Port Washington, L. I., yesterday. The big craft, built by the Consolidated Aircraft Corporation of San Diego, Calif., was flown to Port Washington last Saturday. Its only stop en route from San Diego to New York was at Fort Worth, Texas.

Whether the plane would be flown to England or dismantled at Halifax and crated for shipping on surface vessels could not be learned. A five-man crew, headed by Ean Ross and including William L. Cleveland, co-pilot; B. E. Harris, radio operator, and H. P. Jewell and M. Gudloe, flight engineers.

Trib-Sun 12/6/40

DANGER IN FENCE AT MARINE BASE, CONSAIR CHARGES

Protest to plans of marine corps authorities to erect an eight-foot high fence along the boundary between San Diego airport and the marine corps base was received at the harbor commission meeting yesterday afternoon from Consolidated Aircraft Corp. officials and army air corps inspectors at the plant. They declared the proposed fence would be a serious menace to fliers landing or taking off in the huge new four-motored bombers.

The commission filed a communication from Joseph E. Dryer protesting low flying over his business establishment by planes gliding in to a landing at Lindbergh field. An opinion was expressed by Lt. C. G. Bowman, commmanding the coast guard air base here, that there "is no hope of alleviating this condition until a control tower is built and a competent field manager established."

The commission received a communication from Rear Adm. C. A. Blakely, commandant 11th naval district, grandting the city a 20-foot right-of-way through the marine corps base for laying a floodlight cable. Attending the commission meeting was a group of high school students, participating in Civic Affairs day.

WEATHER

Clear today and tomorrow; slightly increasing high cloudiness; little change in temperature; light to gentle variable winds.

Detailed U. S. weather bureau report will be found on Page 6, Section E.

The San Diego

Published daily and Sunday. Entered as second-class matter at the postoffice at San Diego, California, unde

ESTABLISHED 1868—SEVENTY-THIRD YEAR | No. 28,131 | SAN DIEGO, CALIFORNIA, SUNDAY MORNING, D

Consair Plans Expansion to Cost $7,000,000

New Buildings Will Double Size Of Aircraft Plant

A $7,000,000 construction program which virtually will double the size of Consolidated Aircraft Corp. was announced yesterday by Edgar N. Gott, vice president.

Eight new buildings will be erected along Pacific highway, between Barnett ave. and Rosecrans st. Principal units will compose a huge parts plant, and a three-story drop hammer building which will house the largest battery of drop hammers and hydraulic presses on the Pacific coast.

30,000 WORKERS SEEN

Combined Consolidated personnel is expected to soar to 30,000 when the new division is put in operation, officials said.

B. O. Larsen, contractor, reported his organization is ready to start work on a $6,500,000 contract. Consair officials said ground will be broken soon, and the new buildings are scheduled for completion next June.

Gott said the new parts plant will add 1,553,000 square feet of covered manufacturing area, virtually doubling Consolidated's 10-fold expansion since 1935. Recently constructed buildings on the Lindbergh field site, including another final assembly building, were dedicated formally last Sept. 2, making a 1000 percent expansion for the firm in five years.

SITE INCLUDES 52 ACRES

The new buildings north of Lindbergh field will be located on a factory site of 52 acres, with 72 acres of adjacent parking area. They will be similar in type to present Consolidated structures. In addition to the 1,553,000 square feet of roofed area, there will be 64,000 square feet of loading platform.

Larsen reported that of the eight buildings, three large units will be 400 by 750 feet each. The smaller structures will include an office building, 750 by 50 feet; the drop hammer building, 400 to 60 feet; a paint shop, a warehouse and a boiler plant.

COST-PLUS CONTRACT

The contract was awarded through the Defense Plans Corp., Washington, and will be executed on a cost-plus-fee basis, Larsen said.

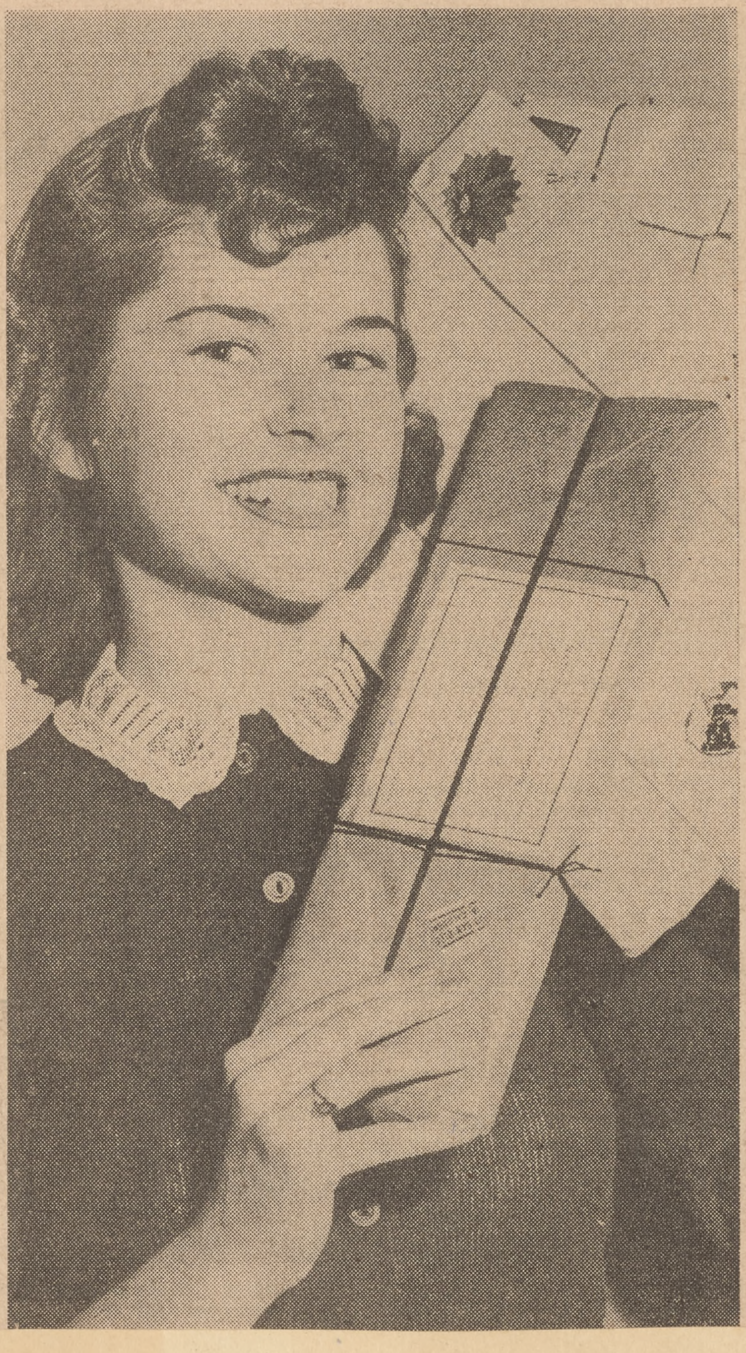
Consolidated's backlog exceeds $325,000,000, and includes the building of bombers for the army, navy and for Britain.

"The new plant will fit solidly into the line production program on Consolidated flying boats and large land bombers," Gott said. "All buildings, including the original and new plant, are entirely of the latest type and design, especially engineered for modern aircraft manufacturing. The oldest factory building is less than 5½ years old,

(Continued on Page A, Col. 4)

(over)

SHE SETS A HOLIDAY EXAMPLE



Scarred Cruiser At Montevideo

Seven Dead Aboard British Auxiliary; Nazi Raider Said Severely Damaged

MONTEVIDEO, Uruguay, Dec. 7 (I.N.S.)—The British auxiliary cruiser Carnarvon Castle, scarred by several shell hits limped into Montevideo late today from the scene of a battle with a speedy German naval raider which was declared to have been even "more heavily damaged." The bodies of seven members of the converted cruisr's complment were reported taken ashore, but the 20,122-ton vessel's wounded had been transferred at sea to a British warship which was understood to be rushing them to Britain's Falkland islands naval base aff southern Argentina.

CASUALTIES SECRET

Casualties suffered by the Carnarvon Castle in the long-range, 90 minute battle off the Brazilian coast Thursday were not disclosed officially.

Water Main Breaks in Bay

Navy Divers Seek Leak in Big Pipe

San Diego temporarily has lost one of its heaviest water consumers, as navy divers sought to find—and repair—a break in the 16-inch cast-iron main extending under the bay from the foot of Market st. to North Island.

The break, according to Fred Rhodes, city public works director, occurred at night, and the extensive naval establishments on North Island immediately turned to the California Water & Telephone Co for water.

LINE BUILT BY U. S.

This utility serves Coronado, National City, Chula Vista and other South Bay communities and unt

---

Union 12/15/40

WOMEN AIRCRAFT WORKERS NOT NEEDED, ASSERTS GOTT

Although women eventually may be needed in industry to assist in the nation's defense program, the present limited national emergency does not warrant serious consideration of such a plan now, Maj. Edgar N. Gott, Consolidated Aircraft Corp vice president, said yesterday.

The aircraft firm has no intention of employing women at present, other than in clerical capacities, Gott said.

PRODUCTION MAY LAG

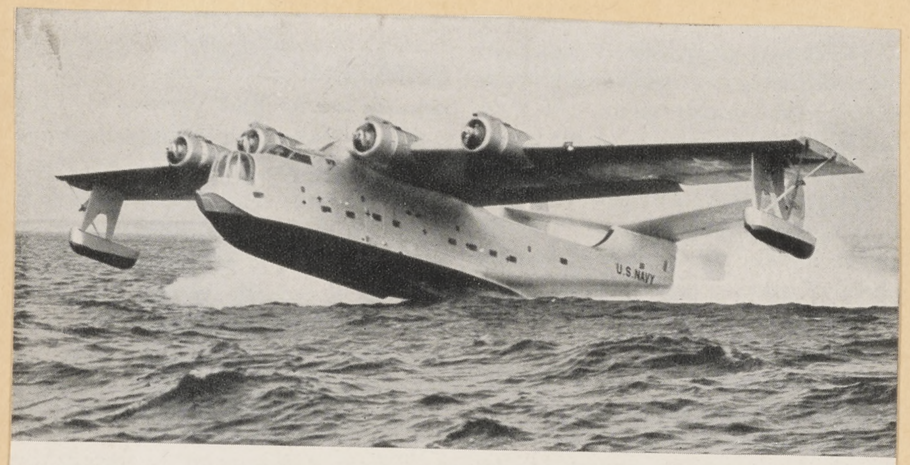
"It is possible production may be slowed down by the wholesale conscripting of men from plane plants, in which more than a third of San Diego's draft registrants are employed," Gott said. "On the other hand, should general or widespread deferment of aircraft workers become an established policy, the rush for jobs in that industry, at the expense of other essential activities, would be overwhelming.

"Instances where men have given up well-paying jobs in non-defense industries to take employment in local aircraft plants at lower pay in hope of avoiding the draft already have been reported.

NO DRAFT ALARM YET'

"I don't doubt that some men have gone into the aircraft industry in the hope of being deferred," Gott remarked, "but they probably do not realize that employment in an aviation plant will not exempt them from military service unless they are key, essential employes.

"Our company is not asking deferment for any men other than those who cannot readily be replaced. There is no alarm in the aircraft industry over key men being drafted, at least at present."



U. S. Navy patrol bomber PB2Y caught at instant of take-off. This powerful Consolidated Model-29 flying boat uses gasoline to power its four ignition engines.

(Official U.S. Navy Photograph)

December 1940

RUSH $7,000,000 CONSAIR UNIT; 30,000 ON PAYROLL BY JULY

A huge new parts plant for Consolidated Aircraft Corp., virtually doubling Consolidated's present size and costing nearly $7,000,000, will be built and placed in operation here within the next six and one-half months, according to announcement by Consair officials.

"The new plant will fit solidly into the line production program on Consolidated flying boats and large land bombers," states the announcement, which discloses that the parts plant will be located about one and one-third miles north of the existing factory on Lindbergh field. It will add 1,553,000 square feet of covered manufacturing area, virtually doubling the 10-fold expansion of Consolidated during the last five years.

"With an accelerated construction program, the entire new parts plant is scheduled to be completed and in full operation by June, 1941," it was reported.

Eight Buildings in Plan

"This plant is composed of a group of eight buildings with a total roofed area of 1,553,000 square feet, plus loading platform of 64,000 square feet, with cost to run between $6,500,000 and $7,000,000. The factory site is 52 acres in size, with an adjacent area of 72 acres, which is to be used for parking facilities."

The combined personnel to operate both plants is estimated at 30,000. New buildings will be similar in type to present Consolidated structures. All buildings, including the original and new plant, are entirely of the latest type and design, especially engineered for modern aircraft manufacturing. The oldest factory building at Lindbergh field is less than 5½ years old, making Consolidated's combined facilities probably the most modern and efficient in existence. Equipment for the new plant has been ordered and is in the process of being delivered. To make immediate use of production equipment, many of the machines will be set up and operated under lean-to tents at the Lindbergh field plant site, then transferred to the new buildings as quickly as they are ready for occupancy.

All to Be Roofed

The present plant on Lindbergh field is employing its paved yard areas for some 30 percent of its operations, made possible by the equable climatic conditions of San Diego. The new plant, however, will conduct all of its operations under roof. The new plant will be a highly specialized production unit devoted to the manufacture of component parts and assemblies for wings and tail surfaces construction, with completely independent facilities for all operations requisite to their manufacture. All yard areas will be paved. The spur railroad sidings will be of depressed track construction, for quick car-floor-level loading and unloading.

The largest battery of drop hammers and hydraulic presses under one roof on the Pacific coast will be used in the new drop hammer building, which will also house a complete pattern shop, foundry and die-storage departments. The huge hammers will be mounted on improved shock-proof foundations similar to those now employed under the drop hammers at the Lindbergh field site. While working in complete conjunction with the Lindbergh field plant, the new parts plant will be a complete unit.

Larsen General Contractor

B. O. Larsen, of San Diego, is general contractor for the new project. R. E. Hazard & Sons, of San Diego, have charge of filling and grading of the site, moving in dirt from a hill at the intersection of Midway dr. and West Pt. Loma blvd. Architects are Ellis Gray Taylor and Ellis Wing Taylor.

Consolidated, which is building planes for the army and navy and Great Britain and Australia, has a backlog of approximately $325,000,000. On Labor day, Sept. 2, Consair officials formally dedicated a new addition to its plant on Lindbergh field. Since then, additional buildings at the municipal airport were started by the firm, and these, it is estimated, will be completely occupied by Jan. 15. Included are another final assembly building, 360 by 720 feet in size, and a single building, 200 by 1500 feet, to be devoted to small parts assembly. Consolidated officials state that the previous expansion and the buildings to be completed by Jan. 15 will increase the firm's manufacturing area, over the 1935 plant, by some 10 times, or 1000 percent.

OHIO GOAL TODAY OF BIG BOMBER HERE SUNDAY

Due to arrive at Dayton, O., today for vibration tests there, a 325-mile-an-hour Douglas A20A attack bomber left North Island Sunday, piloted by Maj. E. R. McReynolds, army air corps inspector in the San Diego area and assistant chief inspector for the west coast. McReynolds flew the plane here Saturday from the Douglas plant at Santa Monica. The craft, of a type originally ordered by France and now being manufactured for Great Britain, is powered by two 1650-horsepower Wright engines, and has a landing speed of 110 miles an hour.

In another Douglas plane, a B18A, Capt. H. W. Bowman, assistant executive officer in the air corps chief's office at Washington, and Capt. F. M. S. Miller, in charge of public relations in the same office, left Lindbergh field for Florida after an overnight stay.

The officers are surveying public relations problems for the air corps chief. While here, they saw aircraft industry and army officials.

A B10B bomber left for Sacramento from Lindbergh field, piloted by Lt. William Miller, former San Diego athlete, and Lt. E. E. Garnett jr., son of a San Diegan. On board was a load of freight from North island.

Union 12/16/40

Compton Begins Naval Inspection Here Today

Inspection of local naval activities by Lewis Compton, assistant secretary of the navy, is scheduled to begin today, with Consolidated Aircraft Corp. first on the list.

The secretary yesterday completed inspection of the navy's San Pedro activities.

This afternoon, following his first day's round of San Diego stations, he will be the guest of Rear Adm. and Mrs. C. A. Blakely at a reception at naval air station.

Tomorrow the destroyer base, naval training station, and the naval radio station on Pt. Loma will be visited; luncheon will be served at the training station and the day will be concluded with calls at the naval fuel depot and the marine corps base.

Wednesday, the secretary will inspect headquarters of the 11th naval district. That noon he will be the guest of honor at a joint chamber of commerce, Advertising club and Realty board luncheon at the Plata Real, U. S. Grant hotel, and inspection of the naval hospital and of marine activities at La Jolla and Camp Elliott will end the day.

Compton will leave for Washington, D. C., late in the afternoon.

Union 12/13/40

Gen. Upshur to Study Airport Fence Plan

Protests of Consolidated Aircraft Corp. and other aircraft organizations using the municipal airport against navy plans to construct a fence along the easterly boundary of the marine corps base brought a reply to the harbor commission yesterday from Maj. Gen. William P. Upshur, commander fleet marine force.

Taking cognizance of the protests that the fence would constitute a hazard in the operation of aircraft, Gen. Upshur notified the commission that "before any action is taken careful thought will be given to the hazards involved and the civil aeronautics administration will be consulted."

Union 12/12/40

15 Patrol Bombers On Mystery Sea Hop

HONOLULU, Dec. 11 (A.P.)—Squadron VP-26, comprising about 15 long-range navy patrol bombers, left Pearl Harbor at dawn Tuesday for an unannounced destination, it was learned today.

Navy officers declined comment but unofficial sources indicated the planes might be bound for Manila.

Tulsa Offered As Consair Site

Trib-Sun 12/17/40

Reportedly seeking to interest Consolidated Aircraft Corp. in establishing an assembly plant in Tulsa, W. G. Skelly, oil executive, and Russell Rhodes, chamber of commerce official of the Oklahoma city, arrived in the city yesterday for an indefinite stay.

A Consolidated spokesman said he had no comment to offer on the reported proposal other than that Skelly and Rhodes had visited the plant. The Oklahoma men would not discuss the nature of their business here. Fort Worth and Dallas, among others, have contacted Consolidated officials on similar proposals.

Consolidated will have reached its limit of expansion here when recently announced plans to double the firm's facilities with construction of a $7,000,000 parts plant, the Consair spokesman indicated, adding that any additional building in San Diego or elsewhere would be undertaken by the war department and not the corporation.

Union 12/17/40

Tulsa Men Seek Consair Branch

W. G. Skelly, Oklahoma oil executive and Russell Rhodes, Tulsa chamber of commerce official, came here yesterday reportedly to interest the Consolidated Aircraft Corp. in establishment of an assembly plant in Tulsa.

Neither Skelly nor Rhodes would discuss the nature of their business here, and a Consolidated spokesman said he had no comment other than to confirm that Skelly visited the plant. Various cities previously have contacted Consolidated officials on similar proposals, including Ft. Worth and Dallas, Tex.

The Consair spokesman said the company had probably reached the limit of its expansion here in recently announced plans to double the firm's facilities with construction of a $7,000,000 parts plant. A company official said any additional building here or elsewhere probably would be undertaken by the war department and not the corporation.

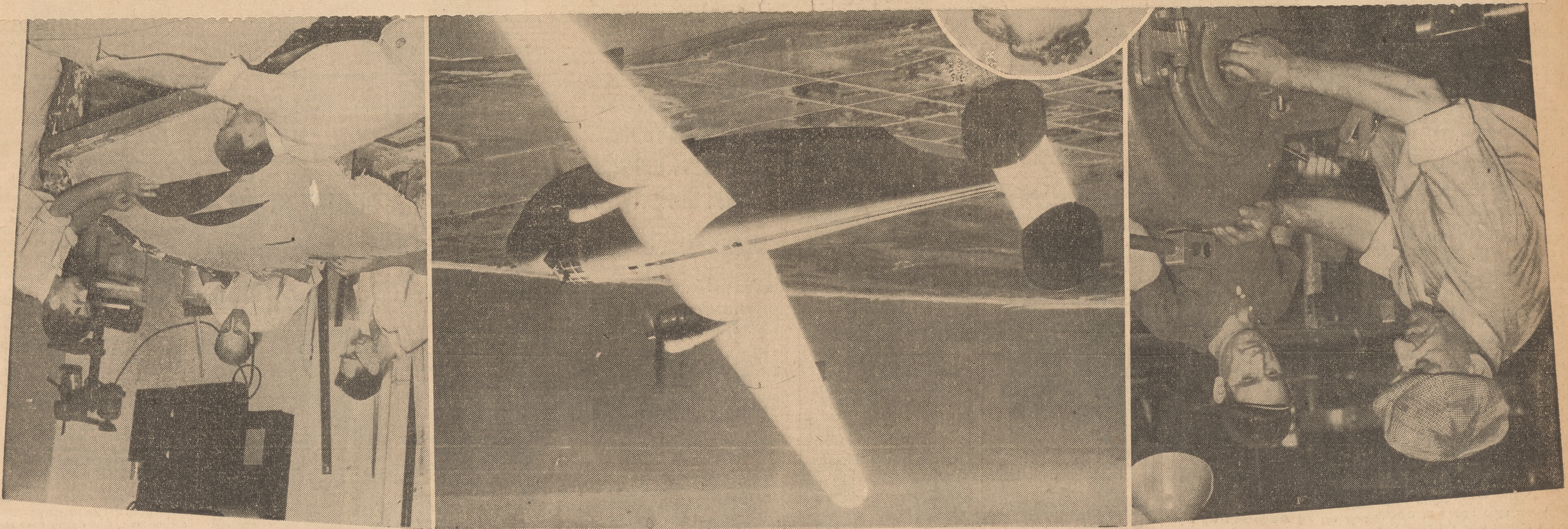
GENERAL NEWS
Local, State, National

The San Diego Union

GENERAL NEWS
Fraternal Organizations

SAN DIEGO, CALIFORNIA, SUNDAY MORNING, SEPT. 24, 1939 SECTION B

SKILLED WORKMEN IN WIDE VARIETY OF CRAFTS ARE BEING KEPT BUSY AT SAN DIEGO'S LARGEST MANUFACTURING PLANT



concrete floor.

SANDBAGS COST $5000

The actual loading was accomplished with 5, 10, and 20-pound sandbags specially made. Thousands of these were necessary, and their cost alone amounted to $5000. They were made locally under contract. The sand to fill these bags came from Oceanside. It had first to be carefully washed and dried to remove the salt. Had it not been washed, the salt would have absorbed moisture on a damp day, the sand would have gained weight, and the accuracy of the tests would have been destroyed.

For loading and unloading the sandbags for the various tests, timber platforms were erected alongside the huge wing. Enough lumber was used in these to build four medium-sized houses. The ¾-inch planking used over the wing to protect it during the loading and unloading would have built a two-car garage for each of the four houses!

There seems to be little limit to the tasks undertaken by the skilled artisans employed in the building of these airplanes, and the most difficult problem generally finds one or more persons fully qualified to lend expert knowledge or aid in its solution. Should you require an old-time blacksmith who knows the art of welding by hand forging, you'll find one in the welding department, assisting in the most modern methods of welding. If it's a deep sea diver you want, one qualified for 300-foot depths is to be found in the final assemply beaching gear crew, or if it's a cable or wire maker you can soon locate

Hernia? **The New Dobbs Truss Is Different!**
Bulbless, Beltless and Strapless

Washable and sanitary. Can be placed on body in 5 seconds. **Dr. H. F. Schreiber, D. C., Dis., 3709 Fifth ave. Phone Jackson 0697.** Hours 9 a.m. to 6 p.m. Sundays and evenings by appointment only. Write for free literature.—Adv.

establishing several records as it did so, and arrived once more in San Diego in excellent condition. Only minor overhaul and checkup was necessary, though the plane had covered approximately 25,000 miles on its return trip from New Guinea alone.

A third plane of this type was flown from San Diego to Felixstowe, England. This was the first flight delivery of a military airplane across the Atlantic. Because the airplane arrived in such a clean and tidy condition after its long flight, one British correspondent remarked that perhaps the clever crew wiped the spots off before the photographers arrived!

TRIPS HOME PLANNED

COPENHAGEN, Sept. 23 (A.P.)—Lucien Memminger, United States consul-general, and his staff today completed arrangements for the return home of the last of some 1500 Americans, mostly tourists stranded in Denmark by European hostilities. More than 1000 got away aboard Scantic Line ships.

MONEY-BACK GLAND TABLET
Restores Vigorous Health

We guarantee to bring you back to health and happiness or we refund every cent. That's how sure we are that we have the best gland tablet known. Thousands of tests have proved this to our full satisfaction. Now WITHOUT RISK you can prove it to yours.

Glendage in convenient tablet form is considered the best in modern science. It contains the extracts from the glands of healthy animals, and its purpose is to stimulate all the glands to healthy activity. The effect is astonishing, almost magical. The entire body takes on a normal condition. Vigorous health is necessary for success in all activity today.

Asthma, Diabetes, Rheumatism, Constant Tiredness, Low Blood Pressure, Nervousness, etc., are ailments frequently caused by gland disorders. You owe it to yourself and family to try this new gland tablet. Glendage is entirely unlike others. It is a real gland product and carries an unlimited Money Back guarantee if it does not give complete satisfaction. 30-day treatment, $3.00. At Owl and other drug stores.—Adv.

blown in next week, bringing to 26 the number of the corporation's furnaces active in the Pittsburgh district.

"unsettled conditions," increasing the cost of raw materials. There have been no increases in the price of rifles and shotguns.

SPECIAL! 15 Dick Merrill (1937) Coronation Covers (England Return). $3.00 each. FRED DIETZ, 135 West 42nd St., N. Y. C.—Adv.

SPECIAL OFFER—ALL THIS WEEK
NO MONEY DOWN-ON ALL DR. CAMPBELL'S BEAUTIFUL DENTAL PLATES-ON EASY CREDI

Don't Pay Me One Penny Until You Have Worn My Dental Plates 30 Days
BY USING MY NO MONEY DOWN PLAN

Now at DR. CAMPBELL'S

THE NEW TRANSPARENT DENTAL PLATE MATERIAL

DR. CAMPBELL'S BEAUTIFUL
DENTAL PLATES

Are made from the new REALISTIC DENTAL PLATE MATERIAL, also the new TRANSPARENT LUCITONE, ACRYLENE, and other ACRYLIC materials that most dentists are using and proclaiming as one of the greatest advancements in modern dentistry. Recommended for those who do not want anyone to know they are wearing artificial teeth—SALESLADIES, SALESMEN, ACTORS, ACTRESSES, or anyone who must be BEFORE THE PUBLIC, will find these DENTAL PLATE MATERIALS very desirable.

NOTE NEW LOW PRICES ALL THIS WEEK
10 Easy Payments

SETTING OF TEETH

In making dental plates, first of all the Proper Shape, Size, Color and Shade of Teeth are Selected to Suit the Individual . . . then the Teeth are Set as Near Like One's Own Teeth as Possible . . . A False Appearance is Avoided by Not Setting the Teeth Too Even, etc.

WRINKLES, ETC.

Great Care is Taken Not to Cause Wrinkles . . . Drooping Mouth . . . Unnecessary Lines . . . Unnatural Expression, etc., when making Dental Plates.

PHONE MAIN 4509
OFFICE HOURS: 9 A.M. to 6:00 O'CLOCK
Saturdays 9 a.m. to 6 p.m.•Closed Sundays

DR. CAMPBELL

now using THE NEW BEAUTIFUL TRANSPARENT DENTAL PLATE MATERIAL that scientists have given the dental profession. This new material is so transparent that you can read a newspaper through it. . . . Can be fitted right over your own gums or can be so beautifully tinted to match the color of your natural gums that we defy you to detect any false appearance whatever.

SAVE 50%

By having Dr. Campbell set your present teeth in a plate. Now half the price of Dr. Campbell's finest plates.

DR. J. C. CAMPBELL ★ Dentist
965 SEVENTH AVENUE SAN DIEGO

Ocean Beach is San Diego's playground. Relax on the sand in health-giving sun, swim, fish, sail and play 15 minutes from San Diego's Business Center.

52 YEARS IN SAN DIEGO - - - - - - - - - - - - - - A. G. Bruce AUCTIONEER

A. G. Bruce **AUCTION** Subject to owner's approval. Five minutes from San Diego business center.

TUESDAY AFTERNOON
SEPTEMBER 26th—2:30 P. M.—100 WALNUT ST.

15-ROOM HOUSE

Lot 100x135—15 Ft. Alley CORNER 1ST AND WALNUT

CHOICE APARTMENT HOUSE SITE

Frontage—100 Ft. on First St., 135 Ft. on Walnut St.

SAN DIEGO'S POPULATION WILL BE

A MILLION OR MORE

FIVE YEARS FROM TODAY

Every Grain of San Diego's Dirt Is a Grain of Gold.

"More fortunes have been made from rise in prices of Real Estate than from all other causes combined." Andrew Carnegie.

Profit by Andrew Carnegie's conclusion, one of the world's richest men.

52 YEARS IN SAN DIEGO - - - - - -

A. G. Bruce AUCTIONEER
In San Diego since 1887—Nationally Known

WOMEN FACING CALL FOR AIRCRAFT JOBS

Aircraft Mechanic 12/5/40

Consolidated Bomber is Formidable

In a move planned to benefit both the British purchasers and the United States defense program, an announcement from Washington on Nov. 20 disclosed that the first of 26 Consolidated Model 32 4-engine Land Bombers, which have become the United States Army's 8-24's, are to be delivered to the English. Delivery is expected before March 1, 1941.

These large bombers are similar to the Consolidated prototype Model 32, first flown late in 1939, which marked Consolidated's return to the landplane field. These planes have incorporated in them the latest military features designed to meet the combat requirements learned from the present European conflict. While performance figures are confidential, it is more than likely that these planes equal (and probably exceed) the official statement issued in reference to the prototype, which stated, "This airplane, on preliminary examination, gives evidence of living up to the advancements in aerodynamics and performance characteristics predicted. These include a speed of over 300 miles per hour, a range of approximately 3000 miles, and a bomb-carrying capacity of approximately 4 tons."

These planes are capable of carrying from England a full bomb load to almost any sector in the involved European area and return non-stop or they can operate by shuttling between England and British bases. Their speed, and defense and attack armament give them adequate protection from all angles. The planes are full cantilever, 4-engine, all-metal, high-wing monoplanes, with high aspect ratio wings and retractable landing gear.

Approximate dimensions are: wing span, 110 feet; fuselage length, 64 feet; height, 19 feet. The number of the crew varies with the mission to be performed.

Union 12/5/40

U. S. Plane Backlog Totals 3½ Billions

An increase of $385,000,000 is reported for the last month in unfilled orders of American aviation manufacturers by Aviation magazine, according to The Associated Press. This brings the total of unfilled orders to $3,500,000,000, while a year ago the backlog of all companies showed a total of $500,000,000, then a record high.

Craft on order are said to include 39,000 fighting planes, of which 25,000 are for the United States and 14,000 for Great Britain.

The various backlogs, given in millions of dollars, follow: Allison (General Motors), 100; Aviation Corp., 20; Beech, 22; Bell, 60; Boeing, 203; Brewster, 100; Cessna, 11; Consolidated, 300; Continental Motors, 35; Curitss-Wright, 520; Douglas, 400; Fairchild, 15; Ford, 122; Grumman, 20; Lockheed, 211; Martin, 322; North American, 225; Northrop, 24; Packard, 217; Republic, 65; Ryan, 12; United Aircraft, 430; Vultee, 95.

Burrelle's
EST. 1888
PRESS CLIPPING
BUREAU
NEW YORK

NEW YORK CITY, TIMES
DECEMBER 3, 1940

PLANE FOR BRITAIN LEAVES

Bomber Takes Off for Halifax —4 Others Arrive Here

Bound for Halifax, N. S., where it will be delivered to the British Royal Air Force a Consolidated bomber took off from Port Washington, L. I., yesterday. The big craft, built by the Consolidated Aircraft Corporation of San Diego, Calif., was flown to Port Washington last Saturday. Its only stop en route from San Diego to New York was at Fort Worth, Texas.

Whether the plane would be flown to England or dismantled at Halifax and crated for shipping on surface vessels could not be learned. A five-man crew, headed by Ean Ross and including William L. Cleveland, co-pilot; B. E. Harris, radio operator, and H. P. Jewell and M. Gudloe, flight engineers, flew the plane here from the West Coast and continued with it on the trip to Halifax.

Five other bombing planes detined for use in the British Royal Air Force also arrived in New York yesterday from factories on the West Coast. They were four Lockheed "Hudson" bombers and one twin-engine Douglas DB-7.

12/6/40 Union

Consair, Boeing Bombers British Hope for Success in Attacking Axis

WASHINGTON, Dec. 5 (I.N.S.)—America's major contribution to Great Britain in her war for survival will be long-range, four-engine bombers bristling with fire power, a high-ranking army officer stated tonight.

Special emphasis upon production of such an air dreadnaught is now being placed, with a view to participation of waves of these bombers in a blitzkrieg upon Germany and Italy next spring.

Consolidated and Boeing bombers were revealed as the war plane now most eagerly sought from the United States by the British, though they also want Curtiss, Bell, Lockheed and lighter types of 400-mile-an-hour fighters.

Production of Consolidated and Boeing bombers has yet to reach large volume, but by spring they will be rolling out of the factories in substantial numbers. About 25 Boeing "flying fortresses" a month are now being turned out, it was learned, and the Consolidated Aircraft Corp., has just produced its first super-bomber for the American and British governments.

26 CONSAIRS TO BE DELIVERED BY MARCH

War department officials privately resented reports that the United States is slow getting under way in war plane production. Their argument was that the United States did not swing into gigantic national preparedness until about six months ago; that facilities for designing and testing prior to that time were negligible, appropriations small and there was no great urge to aid Britain.

With about $60,000,000 in research laboratories now going up, and private manufacturers settled upon several types of fighting planes for quantity production, the army high command was far from apologetic for progress being made.

On the Consolidated and Boeing long-range bombers they said they must be very good or the British would not be so eager to have a lot of them. Pursuant to the deal with Britain recently announced by Gen. George C. Marshall, army chief of staff, 20 Boeing "flying fortresses" are to be rushed to Britain. Twenty-six Consolidated bombers are to be delivered by March. All of these bombers are being equipped with the famous Sperry bombsight, long a jealously guarded U.S. military secret.

In focusing upon the bomber as the weapon to do the damage to Germany and Italy, when the British are prepared to launch their great offensive, military experts pointed out the long-range plane is a weapon also peculiarly desirable for defense of the United States.

The bombers would be depended upon to scuttle enemy warships and transports at sea in cooperation with surface warships, should the United States be attacked, it was pointed out.

PLANES SENT TO BRITAIN TOTAL 70 MILLIONS

From official department of commerce records it was learned that 948 powered land planes had been exported to Great Britain during the 12 months ended last Oct. 31. To Canada during the same period went 360 land planes and six seaplanes.

Thus, a total of 1314 powered planes were exported in the 12-month period to Britain and Canada in America's aid "short of war." In addition, there were exported to Canada 61 partial planes for assembly in Canada, while 72 partial planes went to Britain. Also, 24 planes without engines were exported to Britain.

Value of all the planes exported to Britain was given by the commerce department as $70,522,570, including those already powered, those without engines and the partial planes for assembly abroad. The corresponding total value for plane shipments to Canada was $14,403,946.

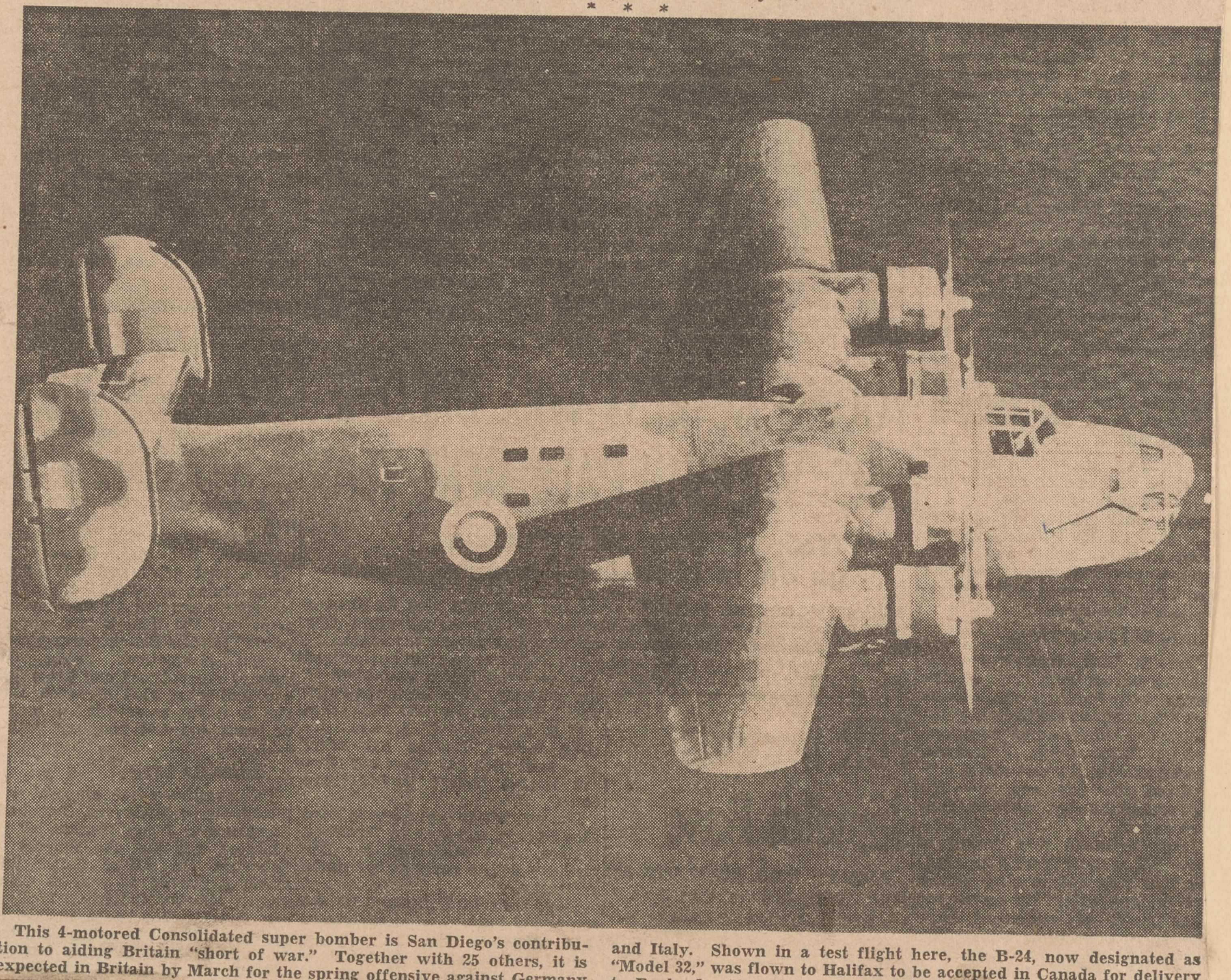
During the year 1053 airplane engines were exported to Great Britain and 929 to Canada having a total value of $19,000,000. Small quantities of engine parts, instruments and accessories were also shipped.

Col. John H. Jouett, president of the Aeronautical Chamber of Commerce revealed that, to take care of U.S. and foreign needs, American manufacturers had spent $83,356,580 on plant expansion and plan an additional $232,188,472 worth of facilities by next June.

Payrolls have expanded from 60,000 last January to 164,920 now. By June, he estimated, the industry will have 382,000 shop employes, plus other thousands employed by sub-contractors. Estimates were that 500,000 persons would be employed in the aircraft industry by June.

Deliveries of equipment for 1940 were estimated at $625,000,000, against $225,000,000 last year.

* * *



This 4-motored Consolidated super bomber is San Diego's contribution to aiding Britain "short of war." Together with 25 others, it is expected in Britain by March for the spring offensive against Germany and Italy. Shown in a test flight here, the B-24, now designated as "Model 32," was flown to Halifax to be accepted in Canada for delivery to England. (Associated Press photo.)

Trib-Sun 12/14/40

May Force Cut In San Diego Draft Quota

Possible effect of the draft on the ranks of skilled aircraft workers was discussed at a meeting here yesterday of personnel directors of San Diego's three major plane plants with Lt.-Comdr. Maurice Sparling, southern California selective service coordinator.

Should a national crisis develop in which a great amount of manpower would be immediately required for the armed services, it may be necessary for aircraft factories to hire women, one employment manager declared.

Not Necessary Now

It was stressed, however, that the present limited national emergency does not warrant serious consideration of such a plan now.

Local aircraft executives at the meeting were J. D. Larimer and B. Waterbury, of Consolidated; M. Marco, of Ryan, and William Gilbert, of Solar.

A two-headed dilemma faced both draft officials and aircraft factories, it was pointed out.

On the one hand is the possible slowing down of production in case of wholesale conscripting of men from plane plants, in which more than a third of San Diego's draft registrants are employed.

On the other hand, should general or widespread deferment of aircraft workers become an established policy, the rush for jobs in that industry, at the expense of other essential activities, would be overwhelming, draft officials said.

Lower Pay Accepted

Instances where men have given up well-paying jobs in non-defense industries to take employment in local aircraft plants at lower pay in hope of avoiding the draft already have been reported.

"I don't doubt that some men have gone into the aircraft industry in the hopes of being deferred," Maj. E. N. Gott, Consolidated Aircraft Corp, vice president, commented today. "They probably do not realize that employment in an aviation plant will not exempt them from military service unless they are key, essential employes.

"Our company is not asking deferment for any men other than those who cannot readily be replaced. There is no alarm in the aircraft industry over key men being drafted, at least at present."

Arranged by Lipton

Yesterday's meeting was arranged by Lewis Lipton, secretary of Draft Board 161, at the request of Sparling, who has been here for several days from Los Angeles headquarters, to assist in coordinating policies of local boards, especially in the matter of deferment of necessary men.

The aircraft executives were assured that nothing would be done by th [illegible] rupt the work of

---

Labor Racketee

When Alf M. Landon, Rep
in 1936, made his appeal to capi
Washington, he referred specifica
temporary sacrifices in order to
sacrifices may be said to have to
tions of labor especially.

But there is another, and si
uation which has developed alo
nities provided by the national
tice of demanding what in many
exorbitant union fees from worke

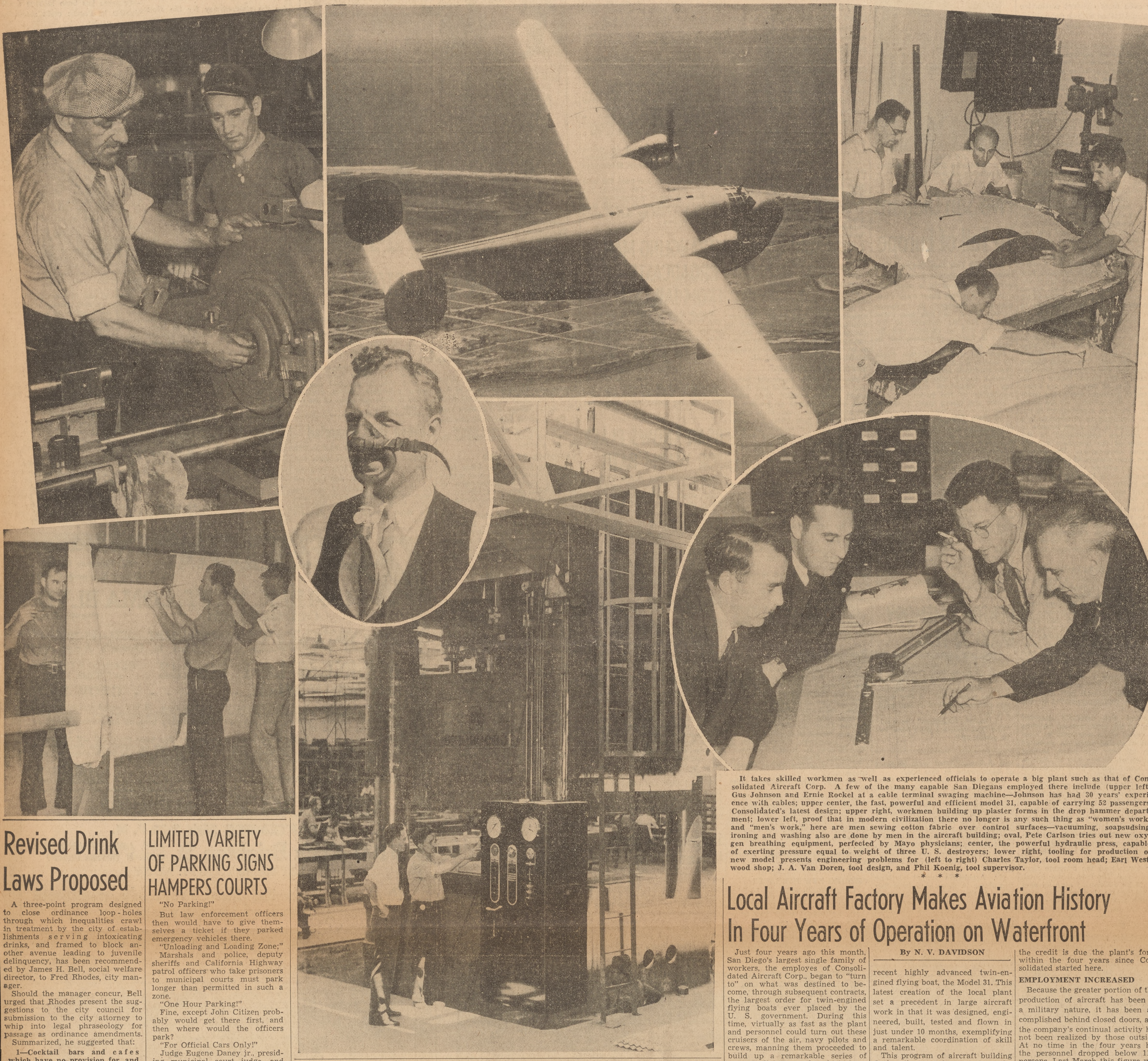
Representative John Taber,
charged in the House that "Prod
is behind schedule. The defense
union fees as high as $400 or $5
seeking jobs."

Now it can be understood
urally is active in employment
program; but legitimate activi
racketeerng are two different
ing element within the ranks
more public goodwill than cons
this undoubtedly will be the re
aders demand and personally

The San Diego Union

SAN DIEGO, CALIFORNIA, SUNDAY MORNING, SEPT. 24, 1939 SECTION B

SKILLED WORKMEN IN WIDE VARIETY OF CRAFTS ARE BEING KEPT BUSY AT SAN DIEGO'S LARGEST MANUFACTURING PLANT



It takes skilled workmen as well as experienced officials to operate a big plant such as that of Consolidated Aircraft Corp. A few of the many capable San Diegans employed there include (upper left) Gus Johnson and Ernie Rockel at a cable terminal swaging machine—Johnson has had 30 years' experience with cables; upper center, the fast, powerful and efficient model 31, capable of carrying 52 passengers, Consolidated's latest design; upper right, workmen building up plaster forms in the drop hammer department; lower left, proof that in modern civilization there no longer is any such thing as "women's work" and "men's work," here are men sewing cotton fabric over control surfaces—vacuuming, soapsudsing, ironing and washing also are done by men in the aircraft building; oval, Pete Carlson tries out new oxygen breathing equipment, perfected by Mayo physicians; center, the powerful hydraulic press, capable of exerting pressure equal to weight of three U. S. destroyers; lower right, tooling for production of new model presents engineering problems for (left to right) Charles Taylor, tool room head; Earl West, wood shop; J. A. Van Doren, tool design, and Phil Koenig, tool supervisor.

* * *

Revised Drink Laws Proposed

A three-point program designed to close ordinance loop-holes through which inequalities crawl in treatment by the city of establishments serving intoxicating drinks, and framed to block another avenue leading to juvenile delinquency, has been recommended by James H. Bell, social welfare director, to Fred Rhodes, city manager.

Should the manager concur, Bell urged that Rhodes present the suggestions to the city council for submission to the city attorney to whip into legal phraseology for passage as ordinance amendments.

Summarized, he suggested that:

1—Cocktail bars and cafes which have no provision for, and which do not permit, dancing, be licensed to provide entertainment.

2—Minors be prohibited from entering dine-dance halls in hotels regardless of size of the hotels.

3—Organizations sponsoring nonprofit dances for school children be exempt from payment of $3 dance-permit fees.

Striking at the root of the problem that the first recommendation is designed to correct, Bell reported that strolling musicians frequent

(Continued on Page 2, Col. 3)

LIMITED VARIETY OF PARKING SIGNS HAMPERS COURTS

"No Parking!"

But law enforcement officers then would have to give themselves a ticket if they parked emergency vehicles there.

"Unloading and Loading Zone;"

Marshals and police, deputy sheriffs and California Highway patrol officers who take prisoners to municipal courts must park longer than permitted in such a zone.

"One Hour Parking!"

Fine, except John Citizen probably would get there first, and then where would the officers park?

"For Official Cars Only!"

Judge Eugene Daney jr., presiding municipal court judge, and Chester E. Cleator, marshal, yesterday asked the city council to authorize painting such a reserved strip on the courthouse curb to solve the problem created by moving municipal courts into the building.

But, according to Fred Sick, city clerk, existing ordinances first would have to be amended as there is no provision under which the city council could solve the current emergency created by inability of emergency cars to find emergency parking places.

RELIGIOUS EDUCATION EVENT TODAY

The seventh annual program in Balboa park opening Religious Education week here will be held at 3:30 this afternoon. Preceding the program a one-hour organ recital by Royal A. Brown will include religious music.

Dr. Walter Hepner, State college president, will speak on "Use of Religion in Education." Other speakers will be Ralph Grover, Christian Youth council president, and the Rev. Orno E. Tyler, San Diego Ministerial association president. Helen Donofrio Borgens will sing, and Homer Grimes will lead a young people's chorus.

Sponsored by San Diego County Council of Religious Education, with ministerial association cooperation, the observance which begins today will be continued through next Sunday in a home, church and community program.

The home program will stress the hope that every home in San Diego may give one evening a week to "family fellowship," when all members of the family remain at home in a program of mutual enjoyment and understanding; and that each member of the family will establish a home-worship period.

Sunday school teachers will visit homes of pupils next week and Bible teacher-training classes will be established in some of the churches. The community program will include store window displays downtown.

U. S. Funds Denied For Vicente Dam

Abolition of public works administration and defeat of the President's lend-spend program have blocked, at least temporarily, San Diego's hopes for federal funds to aid in construction of San Vicente dam, Fred D. Pyle, city hydraulic engineer, said yesterday.

Formal notification of denial by PWA of the city's request for a $1,575,000 grant just has been received, and Pyle said now the only apparent alternative would be a bond issue.

A total of $3,500,000 would be necessary to build the dam to the 190-foot level, which would permit the impounding of more than 24,000,000,000 gallons to make it second only in size to El Capitan reservoir, which has a 38,000,000,000-gallon capacity, said Pyle. The municipal water commission is on record favoring submission of a San Vicente bond issue when an opportune time arises, said the engineer, but he expressed belief that should a special city election be called soon, the proposal would not be offered then.

Pyle said $630,000 remains in the Sutherland dam fund, and that by vote of the people this could be used to nick the needed sum.

CLUBHOUSE PLANS TO BE IRONED OUT

San Diego Women's club's plans to construct a clubhouse on the southwest corner of Third ave. and Maple st. have hit another technical snag that is expected to be ironed out at a city planning commission meeting Thursday.

The building as now proposed, said Harry Haelsig, assistant city planning engineer, would cover 70 percent of the lot, 10 percent in excess of the permissable 60-percent coverage. The club's petition for an exception was on the planning commission's docket for consideration last Thursday, but has been put over until this week because the commission was unable to muster a quorum for its meeting last week.

Previously, the commission and women's club's representatives negotiated for several weeks before an agreement was reached on a building setback for the improvement.

Buildings' Removal Expected Soon

Immediate removal of two old buildings adjacent to the new Market st. police headquarters, on land acquired by the city through condemnation, appeared probable yesterday when Fred Rhodes, city manager, reported the city attorney's office had advised him the way is clear to tear them down.

Addison Housh, councilman, last week attacked the delay in removing the structures, but was advised by John Thornton, supervisor of public proceedings, that the period for appeal from the judgment under which the city acquired title had just expired.

Rhodes said he will ask the harbor department to tear the structures down for the material the department can salvage.

Vets Select San Diego

San Diego was chosen as the 1940 convention city of the Regular Veterans' association as that body closed its third annual convention in New York yesterday. The Associated Press reported. Corp. Carl Gardner, retired marine officer of Morristown, N. J., was elected association commander.

Local Aircraft Factory Makes Aviation History In Four Years of Operation on Waterfront

By N. V. DAVIDSON

Just four years ago this month, San Diego's largest single family of workers, the employes of Consolidated Aircraft Corp., began to "turn to" on what was destined to become, through subsequent contracts, the largest order for twin-engined flying boats ever placed by the U. S. government. During this time, virtually as fast as the plant and personnel could turn out these cruisers of the air, navy pilots and crews, manning them proceeded to build up a remarkable series of massed flight records which have received acclaim throughout the world as an outstanding achievement.

Some 209 of these twin-engined Consolidated Model 28s (designated by the navy as PBYs), have poured forth from the productive efforts of the artisans and engineers working together under the roof of San Diego's largest manufacturing plant. In addition, during the four short years, the remainder of the army contract for 50 "two-seater" pursuit airplanes, the PB2As, was completed and delivered.

Others built included a group of twin-engined P2Y-3As for the Argentine government; a model 82-5 for the British air manistry, which became the first military airplane ever to be flight-delivered across the Atlantic; another model 28, which was purchased by the Russian government and flown over 19,000 miles of Arctic wastes in search of the lost transpolar fliers; Mr. Archbold's famous Guba, and a special survey plane for transatlantic work for the American Export Airlines.

EXPERIMENTAL SHIPS BUILT

As though this were not enough, from behind the carefully guarded doors of the experimental building emerged two large experimental projects. These were the huge four-engined "flying battleship," the XPB2Y-1, upon which was expended in engineering, building and testing nearly $1,000,000, and the recent highly advanced twin-engined flying boat, the Model 31. This latest creation of the local plant set a precedent in large aircraft work in that it was designed, engineered, built, tested and flown in just under 10 months, exemplifying a remarkable coordination of skill and talent.

This program of aircraft building during the past four years at the local plant has given Consolidated a unique distinction among large aircraft builders. Taking as an arbitrary measure of "bigness" any airplane of a wing span of 100 feet or more, and including the airplane equivalent of spread furnished, Consolidated has constructed more than three times as many such airplanes as all other manufacturers combined. This includes those built during the World war period.

Consolidated came into existence after the war, in 1923, and figuring from that time, has constructed approximately four times as many as all other U. S. manufacturers combined. Since a good share of these have been the navy's PBYs, much of the credit is due the plant's force within the four years since Consolidated started here.

EMPLOYMENT INCREASED

Because the greater portion of this production of aircraft has been of a military nature, it has been accomplished behind closed doors, and the company's continual activity has not been realized by those outside. At no time in the four years has the personnel dropped below 1120 persons. Last March this figure was reached when it was difficult to obtain materials because of huge quantities being ordered by the whole industry. During the intervening months a steady increase has swelled the figure to about 1900. Former employes, of course, are given the first opportunity of employment as the total is increased. Based upon the present backlog of work, which is well over $17,000,000, the personnel will probably level off at around 2000 persons.

Taking advantage of a brief breathing spell just prior to the receipt of the latest contracts, a considerable program of rearrangement and placing of new equipment

(Continued on Page 2, Col. 1)

WASHINGTON ST. EXTENSION SET

Acquired for $16,071, all or part of 19 parcels of land have been obtained by the city for the 100-foot right-of-way for Washington st. extension from Fifth to Eighth aves., and the state division of highways daily is expected to advertise for bids for the 425-foot bridge that will be stretched across Sixth ave. canyon.

John Thorton, city supervisor of public proceedings, and E. H. Brooks, right-of-way agent, already have acquired three of nine additional parcels which must be obtained before the extension can be carried on through to Tenth ave.

This second unit will involve construction of another bridge and an extensive fill, and no tentative date has been set for start of the second span. When the long-discussed improvement finally is completed, a new east-west thoroughfare will have been opened and will, according to officials, relieve materially traffic congestion in the Fifth and University aves. district.

Despite the magnitude of the task, title to all of the land needed

(Continued on Page 2, Col. 7)

WOMEN FACING CALL FOR AIRCRAFT JOBS

Aircraft Mechanic 12/5/40

Consolidated Bomber is Formidable

In a move planned to benefit both the British purchasers and the United States defense program, an announcement from Washington on Nov. 20 disclosed that the first of 26 Consolidated Model 32 4-engine Land Bombers, which have become the United States Army's 8-24's, are to be delivered to the English. Delivery is expected before March 1, 1941.

These large bombers are similar to the Consolidated prototype Model 32, first flown late in 1939, which marked Consolidated's return to the landplane field. These planes have incorporated in them the latest military features designed to meet the combat requirements learned from the present European conflict. While performance figures are confidential, it is more than likely that these planes equal (and probably exceed) the official statement issued in reference to the prototype, which stated, "This airplane, on preliminary examination, gives evidence of living up to the advancements in aerodynamics and performance characteristics predicted. These include a speed of over 300 miles per hour, a range of approximately 3000 miles, and a bomb-carrying capacity of approximately 4 tons."

These planes are capable of carrying from England a full bomb load to almost any sector in the involved European area and return non-stop or they can operate by shuttling between England and British bases. Their speed, and defense and attack armament give them adequate protection from all angles. The planes are full cantilever, 4-engine, all-metal, high-wing monoplanes, with high aspect ratio wings and retractable landing gear.

Approximate dimensions are: wing span, 110 feet; fuselage length, 64 feet; height, 19 feet. The number of the crew varies with the mission to be performed.

Union 12/5/40

U. S. Plane Backlog Totals 3½ Billions

An increase of $385,000,000 is reported for the last month in unfilled orders of American aviation manufacturers by Aviation magazine, according to The Associated Press. This brings the total of unfilled orders to $3,500,000,000, while a year ago the backlog of all companies showed a total of $500,000,000, then a record high.

Craft on order are said to include 39,000 fighting planes, of which 25,000 are for the United States and 14,000 for Great Britain.

The various backlogs, given in millions of dollars, follow: Allison (General Motors), 100; Aviation Corp., 20; Beech, 22; Bell, 60; Boeing, 203; Brewster, 100; Cessna, 11; Consolidated, 300; Continental Motors, 35; Curitss-Wright, 520; Douglas, 400; Fairchild, 15; Ford, 122; Grumman, 20; Lockheed, 211; Martin, 322; North American, 225; Northrop, 24; Packard, 217; Republic, 65; Ryan, 12; United Aircraft, 430; Vultee, 95.

Burrelle's
EST. 1888
PRESS CLIPPING BUREAU
NEW YORK

NEW YORK CITY, TIMES
DECEMBER 3, 1940

PLANE FOR BRITAIN LEAVES

Bomber Takes Off for Halifax —4 Others Arrive Here

Bound for Halifax, N. S., where it will be delivered to the British Royal Air Force a Consolidated bomber took off from Port Washington, L. I., yesterday. The big craft, built by the Consolidated Aircraft Corporation of San Diego, Calif., was flown to Port Washington last Saturday. Its only stop en route from San Diego to New York was at Fort Worth, Texas.

Whether the plane would be flown to England or dismantled at Halifax and crated for shipping on surface vessels could not be learned. A five-man crew, headed by Ean Ross and including William L. Cleveland, co-pilot; B. E. Harris, radio operator, and H. P. Jewell and M. Gudloe, flight engineers, flew the plane here from the West Coast and continued with it on the trip to Halifax.

Five other bombing planes detined for use in the British Royal Air Force also arrived in New York yesterday from factories on the West Coast. They were four Lockheed "Hudson" bombers and one twin-engine Douglas DB-7.

Consair, Boeing Bombers British Hope for Success in Attacking Axis

12/6/40 Union

WASHINGTON, Dec. 5 (I.N.S.)—America's major contribution to Great Britain in her war for survival will be long-range, four-engine bombers bristling with fire power, a high-ranking army officer stated tonight.

Special emphasis upon production of such an air dreadnaught is now being placed, with a view to participation of waves of these bombers in a blitzkrieg upon Germany and Italy next spring.

Consolidated and Boeing bombers were revealed as the war plane now most eagerly sought from the United States by the British, though they also want Curtiss, Bell, Lockheed and lighter types of 400-mile-an-hour fighters.

Production of Consolidated and Boeing bombers has yet to reach large volume, but by spring they will be rolling out of the factories in substantial numbers. About 25 Boeing "flying fortresses" a month are now being turned out, it was learned, and the Consolidated Aircraft Corp., has just produced its first super-bomber for the American and British governments.

26 CONSAIRS TO BE DELIVERED BY MARCH

War department officials privately resented reports that the United States is slow getting under way in war plane production. Their argument was that the United States did not swing into gigantic national preparedness until about six months ago; that facilities for designing and testing prior to that time were negligible, appropriations small and there was no great urge to aid Britain.

With about $60,000,000 in research laboratories now going up, and private manufacturers settled upon several types of fighting planes for quantity production, the army high command was far from apologetic for progress being made.

On the Consolidated and Boeing long-range bombers they said they must be very good or the British would not be so eager to have a lot of them. Pursuant to the deal with Britain recently announced by Gen. George C. Marshall, army chief of staff, 20 Boeing "flying fortresses" are to be rushed to Britain. Twenty-six Consolidated bombers are to be delivered by March. All of these bombers are being equipped with the famous Sperry bombsight, long a jealously guarded U.S. military secret.

In focusing upon the bomber as the weapon to do the damage to Germany and Italy, when the British are prepared to launch their great offensive, military experts pointed out the long-range plane is a weapon also peculiarly desirable for defense of the United States.

The bombers would be depended upon to scuttle enemy warships and transports at sea in cooperation with surface warships, should the United States be attacked, it was pointed out.

PLANES SENT TO BRITAIN TOTAL 70 MILLIONS

From official department of commerce records it was learned that 948 powered land planes had been exported to Great Britain during the 12 months ended last Oct. 31. To Canada during the same period went 360 land planes and six seaplanes.

Thus, a total of 1314 powered planes were exported in the 12-month period to Britain and Canada in America's aid "short of war." In addition, there were exported to Canada 61 partial planes for assembly in Canada, while 72 partial planes went to Britain. Also, 24 planes without engines were exported to Britain.

Value of all the planes exported to Britain was given by the commerce department as $70,522,570, including those already powered, those without engines and the partial planes for assembly abroad. The corresponding total value for plane shipments to Canada was $14,403,946.

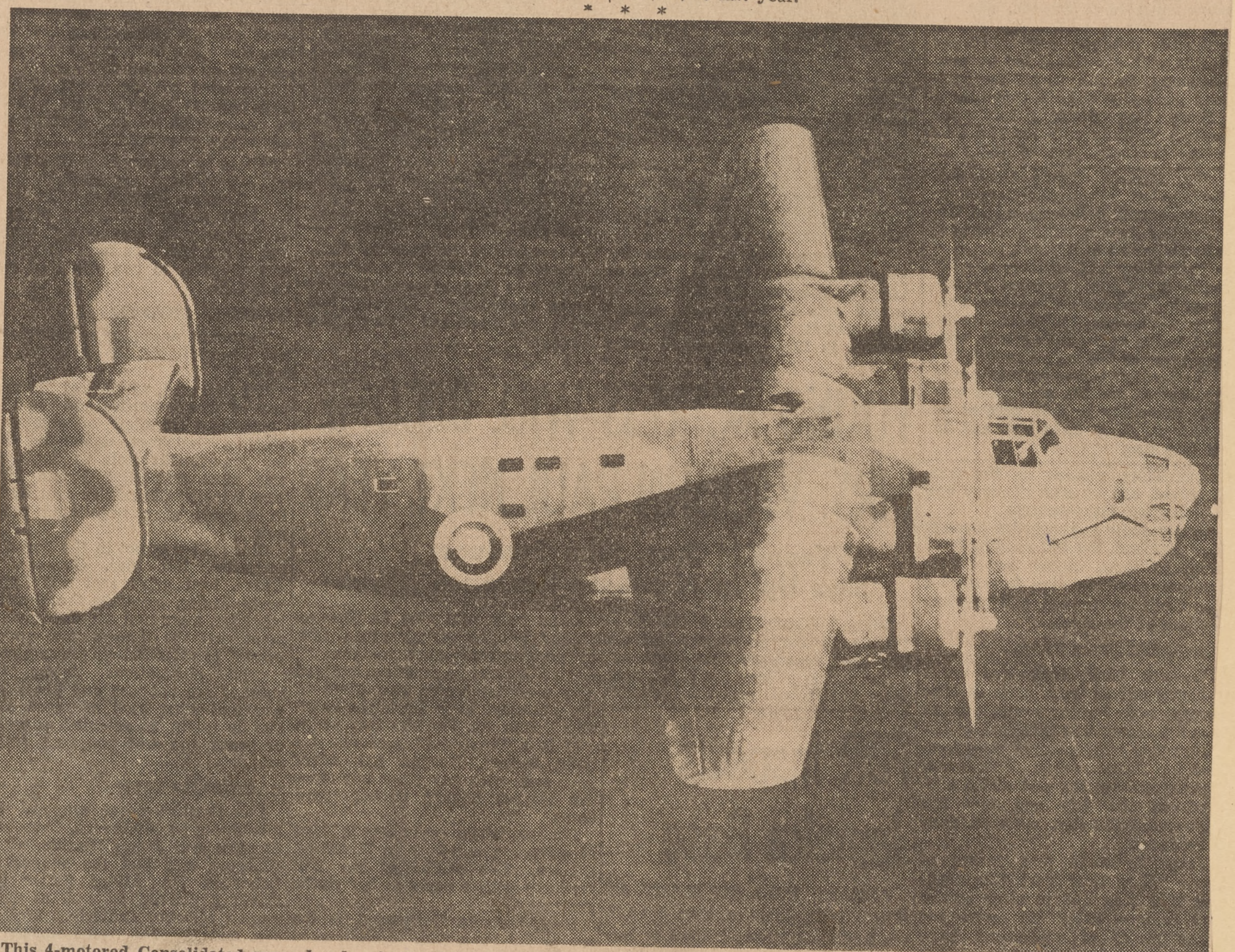
During the year 1053 airplane engines were exported to Great Britain and 929 to Canada having a total value of $19,000,000. Small quantities of engine parts, instruments and accessories were also shipped.

Col. John H. Jouett, president of the Aeronautical Chamber of Commerce revealed that, to take care of U.S. and foreign needs, American manufacturers had spent $83,356,580 on plant expansion and plan an additional $232,188,472 worth of facilities by next June.

Payrolls have expanded from 60,000 last January to 164,920 now. By June, he estimated, the industry will have 382,000 shop employes, plus other thousands employed by sub-contractors. Estimates were that 500,000 persons would be employed in the aircraft industry by June.

Deliveries of equipment for 1940 were estimated at $625,000,000, against $225,000,000 last year.

* * *



This 4-motored Consolidated super bomber is San Diego's contribution to aiding Britain "short of war." Together with 25 others, it is expected in Britain by March for the spring offensive against Germany and Italy. Shown in a test flight here, the B-24, now designated as "Model 32," was flown to Halifax to be accepted in Canada for delivery to England. (Associated Press photo.)

Trib-Sun 12/14/40

May Force Cut In San Diego Draft Quota

Possible effect of the draft on the ranks of skilled aircraft workers was discussed at a meeting here yesterday of personnel directors of San Diego's three major plane plants with Lt.-Comdr. Maurice Sparling, southern California selective service coordinator.

Should a national crisis develop in which a great amount of manpower would be immediately required for the armed services, it may be necessary for aircraft factories to hire women, one employment manager declared.

Not Necessary Now

It was stressed, however, that the present limited national emergency does not warrant serious consideration of such a plan now.

Local aircraft executives at the meeting were J. D. Larimer and B. Waterbury, of Consolidated; M. Marco, of Ryan, and William Gilbert, of Solar.

A two-headed dilemma faced both draft officials and aircraft factories, it was pointed out.

On the one hand is the possible slowing down of production in case of wholesale conscripting of men from plane plants, in which more than a third of San Diego's draft registrants are employed.

On the other hand, should general or widespread deferment of aircraft workers become an established policy, the rush for jobs in that industry, at the expense of other essential activities, would be overwhelming, draft officials said.

Lower Pay Accepted

Instances where men have given up well-paying jobs in non-defense industries to take employment in local aircraft plants at lower pay in hope of avoiding the draft already have been reported.

"I don't doubt that some men have gone into the aircraft industry in the hopes of being deferred," Maj. E. N. Gott, Consolidated Aircraft Corp, vice president, commented today. "They probably do not realize that employment in an aviation plant will not exempt them from military service unless they are key, essential employes.

"Our company is not asking deferment for any men other than those who cannot readily be replaced. There is no alarm in the aircraft industry over key men being drafted, at least at present."

Arranged by Lipton

Yesterday's meeting was arranged by Lewis Lipton, secretary of Draft Board 161, at the request of Sparling, who has been here for several days from Los Angeles headquarters, to assist in coordinating policies of local boards, especially in the matter of deferment of necessary men.

The aircraft executives were assured that nothing would be done by the draft to interrupt the work of the assembly lines now rushing manufacture of airplanes and parts.

Sparling quoted C. A. Dykstra, national selective service director, as saying that defense-production needs would be given priority over the army's call for manpower to train in the draft camps. No men will be drafted from the defense industries unless they can be reasonably replaced, he said.

This would mean, the officer explained, that skilled mechanics, of whom there is said to be a shortage, would not be called to camp as long as the need exists for their services in making airplanes or for doing other essential defense work.

Broad employment problems also were discussed at the meeting. The personnel directors pointed out that it costs $200 to fit each new worker into plant operations and this is a considerable expense if men so employed are to be drafted in a short time.

Change Welcome

In exploring the probability that the county's draft quota might be lowered, especially for local boards where defense workers make up a majority of registrants, Lipton said that the quotas as announced are subject to revision. He pointed out that under Director Dykstra's ruling some boards may find more than half their registrants listed as men necessary for production of munitions. To expect these boards to furnish the same proportion of their registrants for the army as boards having few or no defense workers is obviously unfair, he noted. For this reason he said he anticipated drastic reductions in the quotas of such boards.

Following yesterday's meeting, Sparling gave a brief outline of his activities here. He said he has been visiting various local boards in an effort to prevent wide variations in deferment matters. Otherwise, he said, some boards might put all defense workers in Class 1-A if they are single or without dependents, while another might classify such registrants as necessary men and defer them. He said the selective service is being administered to defer anyone with dependents, provided there is real and not fake dependency.

For employers who fear inroads of the draft into their concerns, he suggested they consider a yardstick evolved by selective service headquarters.

"Such employers should find out which of their men are within the draft age," he said. "Then they should deduct those with dependents and those physically unfit for army service. The draft call for the next year may then be computed [illegible] 5 percent of [illegible]

MANILA GOAL IN 'SECRET' FLIGHT OF NAVY BOMBERS

Trib-Sun 12/13/40

Subs on Way With Consair Ships From S.D.

HONOLULU, Dec. 13 (U.P.)—Twelve naval patrol bombers and a division of submarines which left Honolulu under strict official secrecy are en route to the Philippine islands, it was revealed today.

The bombers, which took off from here last Monday were due at Manila Sunday or Monday, it was learned. Normal arrival time there would be today, but navy officers explained the flight had been scheduled in unusually "easy stages."

The bombers, it was understood, were of the latest type of San Diego-made Consolidated patrol bombers, carrying twin engines of 1500 horspower each.

A submarine division usually is made up of six craft.

The bombers' schedule called for stops at Midway, Wake and Guam islands en route to Manila. They were to have rested last night at Guam before hopping for Manila.

The submarines have been en route to the Philippines since Dec. 7, it was learned. It was understood navy officials expected them to arrive simultaneously at Manila without advance publicity.

Daily Mirror (London) 11-21-41

U.S. SEES WITH R.A.F.

U.S. observers are flying in British warplanes over Britain and the Channel.

General Marshall, U.S. Army Chief of Staff, revealed this in Washington last night.

He said that so far the observers had not flown over Germany.

The U.S. Army High Command last night gave Britain priority on delivery of twenty-six four-engined bombers being manufactured by the Consolidated Aircraft Company.

At the same time, they announced negotiations to give Britain twenty more four-engined bombers already completed by the Boeing Aircraft Company.

One of the two United States "high accuracy" bomb sights has been released to Britain.

It is the "Sperry" sight which U.S. planes no longer use. The U.S. retains the "Norden" sight.

Britain has released to the United States sufficient engines to equip forty-one Boeing "Flying Fortress" bombers.—Associated Press.

THE NEW YORK TIMES,

December 4, 1940

2,500 U. S. PLANES IN USE IN BRITAIN

Communiques Are Silent on Performance of Most of Craft in War Service

TESTS SHOW WEAKNESSES

Improvements in Design and Armor Suggested—British Develop Air Cannon

LONDON, Dec. 3 (UP)—An estimated 2,500 United States-built aircraft of all types have already been delivered here and are taking part in the Battle of Britain. Nearly half are Harvard trainer non-combat ships.

The British generally praise the quality and performance of American planes, but except for the Lockheed Hudsons, whose merits frequently are mentioned in communiqués, official silence is maintained about the performance of the types in service here.

Received coolly at first, the Hudsons now are rated ace-high by the Coastal Command, which uses them, and are considered as effective as Great Britain's prized all-purpose Blenheims.

Need of Improvement Shown

War experience, however, has hsown the need for improvements in design and armor in American planes.

At first the Hudsons were considered good for improvised civilian craft, but they since have been used for long-range reconnaissance and bombing, and even dive-bombing, and have passed all tests successfully, British pilots report. One pilot who used a Hudson to dive-bomb ships said it was something like entering an auto race with an omnibus and winning.

Pilots have expressed a liking also for Brewster single-engined fighters, which they described as so easily manoeuvrable that they can turn on a dime. The presence of Brewsters and Douglas Boston BB-7s here was confirmed when the Duke of Kent inspected them last September.

Other Types Now in Service

Other types of American planes whose delivery has been reported in the press locally are the Curtiss Hawk 75-A, known in the United States as the PT-36 single-seater fighter; the Curtiss Hell-Diver two-seater scout bomber and the Northrup A-17 attack bomber.

Reports from British representatives or manufacturers describe describe delivery of other types including the Grumman fighter, Bell Airacobra fighter, Consolidated flying-boat and Consolidated four-motored bombers, Lockheed P-38 twin-motored interceptor, Vought-Sikorsky naval dive bombers and the Flying Fortress.

Many British fighting planes are being equipped with cannon and armor plating, it was revealed today.

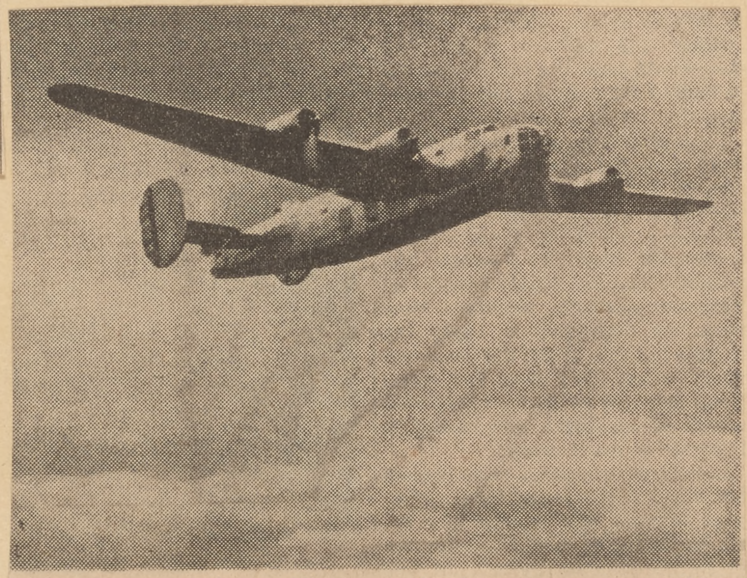
The British cannot are said to be better than the German, which fire 300 three-quarter-inch shells a minute.

A British export is said to have altered the fighting plane designs to povide for the cannon without loss of speed or manoeuvreability. Details of the new plane are secret, but it is known that experts have been trying to develop an airplane cannon that can easily hit an enemy plane at 1,000 yards.

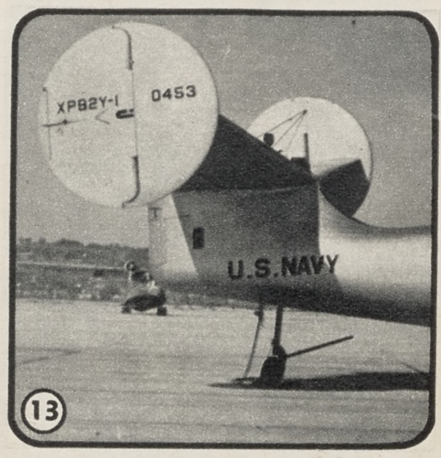
BOMBERS FOR BRITAIN AWAITING SHIPMENT FROM BROOKLYN

Craft of various types lined up at Floyd Bennett Field preparatory to crating. In contrast to the camouflaged war planes is the silver Lockheed Lodestar transport destined for service on a South African airline.

Times Wide World



Said to be one of the world's largest bombers, the new Consolidated four-engine land plane, designated by the Army as the B-24, is powered with four Pratt & Whitney 14-cylinder radial engines.



In these times of aerial blitzkrieg, you should know that this is the tail of a:

(a) pursuit plane
(c) trainer
(b) fighter
(d) patrol bomber

'LOOK - 12/17/40

LONG-RANGE BOMBERS BUILDING FOR BRITAIN

Consolidated Says Planes Will Carry Four Tons 3,000 Miles

Special to THE NEW YORK TIMES.

SAN DIEGO, Calif., Dec. 3—A new plan of offensive for British airmen was pictured today by the Consolidated Aircraft Corporation in a statement that its new four-engined bombers for Britain would "probably exceed" these specifications: 300 miles per hour speed, 3,000-mile range, four-ton bomb-carrying capacity.

"These planes are capable of carrying from England a full bomb load to almost any sector in the involved European area and return non-stop, or they can operate by shuttling between England and British bases," the statement added. "Their speed and defense and attack armament give them adequate protection from all angles."

Delivery of the twenty-six consolidated ships which are said to corespond generally in performance to the Boeing "flying fortress," another plane ordered by Britain, is scheduled before March 1. The planes, measuring 110 feet across their "high aspect ratio wing," which was designed to give maximum lift with minimum drag, will be flown directly to England from Canada. The first of these twenty-ton, sixty-four-foot planes is expected to fly east about Dec. 15.

Consolidated Air

Romeike & Curtice Ld

Telephone
CENTRAL 2781
(2 Lines)

35. Shoe Lane.
LONDON.
E.C.4.

EXTRACT FROM
DAILY TELEGRAPH,
Fleet Street, E.C.4

Date 19 NOV 1940

BIG BOMBERS FOR BRITAIN

NEARLY READY IN U.S.

From Our Own Correspondent

NEW YORK, Monday.

It is reported from San Diego, California, to-day, that work on an undisclosed number of bombers for the R.A.F. has reached an advanced stage at the Consolidated Aircraft Corporation's factory.

Known as B-24, this 20-ton four-engined machine is believed to be the most powerful long-range bomber in the United States, and incorporates many improvements on the so-called Flying Fortress type.

The same firm are making 600 twin-engine seaplane bombers for Britain.

L.A. Times - 12-6-40

Flat Plane Motor Hailed

'Pancake' Type of Engine to Be Lighter, More Powerful, Inventor Says

SAN DIEGO, Dec. 5. (AP)—J. L. Weaver said today his aircraft concern will start work next week on a recently designed "pancake" type plane engine which will be given the Army for laboratory tests next spring.

Weaver, formerly a Consolidated Aircraft Corp. inspector, began developing the motor eight years ago as a hobby with the intention of creating an engine with fewer parts and more power. Weaver said the engine could be produced at a cost from 65 to 75 per cent less than standard engines now in use.

NEW OILING SYSTEM

Some of the features incorporated in the engine, which derives its name from its general flat appearance, include cylinders which Weaver said would not wear out and a streamlined oiling system which the inventor stated would require neither oil pumps nor oil lines and would permit lubricant to remain clean for the life of the motor, thus minimizing frequent overhaul and adjustment.

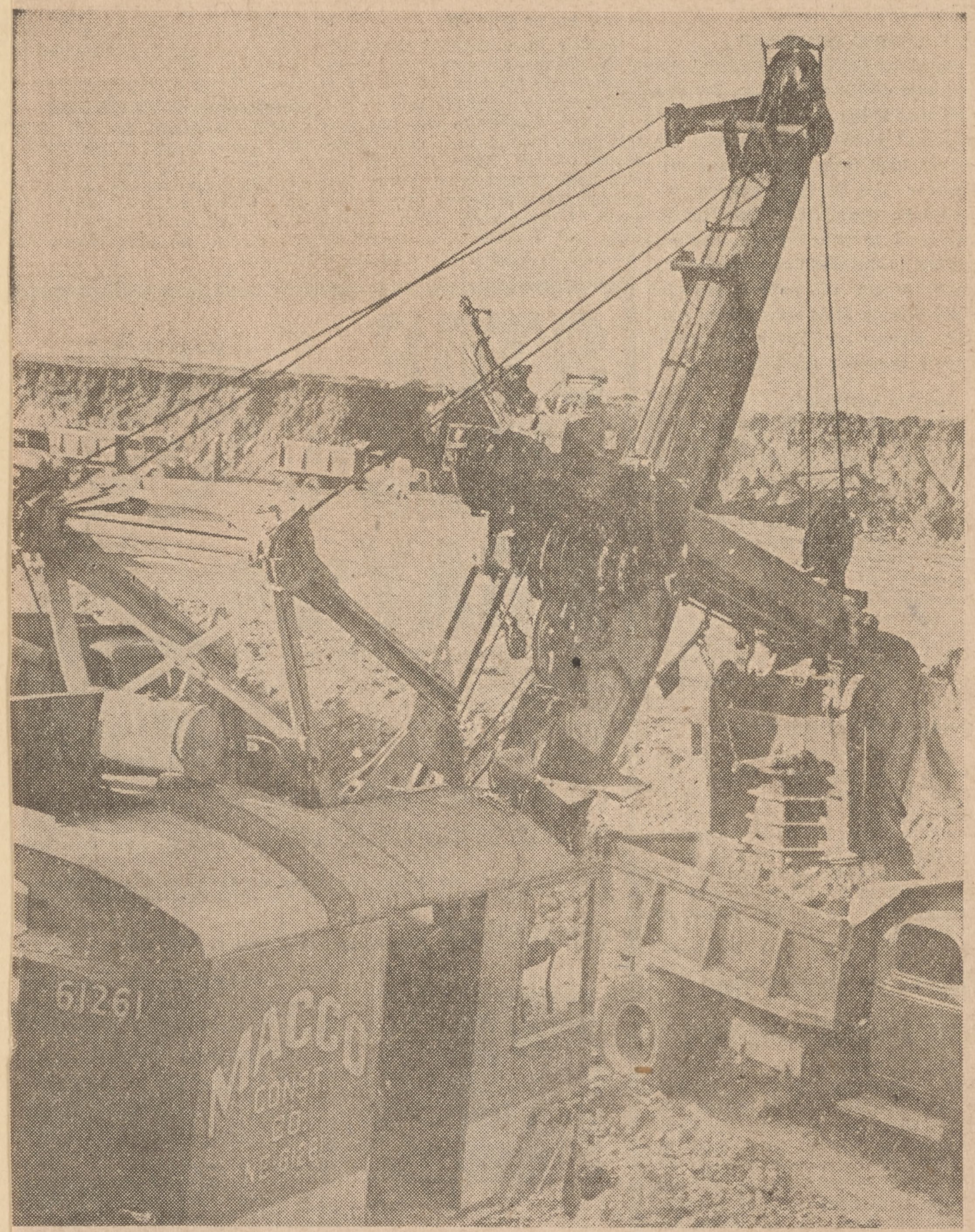
Weaver said this type power unit would lend its compact shape ideally for mounting directly into the wing section, permitting the wing itself to act as the engine cowling. He said mounting of large engines on the loading edge of wings had given designers trouble in perfecting streamlining.

'CONTINUOUS GLIDING'

Weaver believes he has worked out the problem of dynamic balance or vibration to a smoothness that will give a plane the effect of continuous gliding.

He said a four-cylinder engine weighing only 115 pounds and designed to develop 100 horsepower at 3600 revolutions at 30,000 feet would be especially suited for military training planes. For larger planes the horsepower would be increased by installing 12 or more cylinders. Weaver said engines in most training ships, developing 125 horsepower, weighed from 350 to 375 pounds.

Faith Moves Mountains; S. D. Defense Workers Do Pretty Good Job Too



It doesn't take long for one of these huge steam shovels to fill a truck. Big hills rapidly are disappearing in a cacaphonic symphony of power shovels and trucks on San Diego's navy housing job.

Power Shovels Biting Away Eastern Pt. Loma

Faith, they say, can move mountains, but so can the drive for national defense.

All you have to do to prove this is to go out to Ingraham st. and W. Pt. Loma blvd. and watch the eastern end of Pt. Loma melt away in the mouths of giant power shovels.

FOR HOUSING PROJECT

The hill is going by the truckload to the navy's new housing project between Rosecrans st. and Barnett ave. near the Naval Training station, and to Consolidated Aircraft's new factory site bounded by Pacific highway, Rosecrans st., Barnett ave. and the Santa Fe tracks.

First nibbling on this hill was done several years ago and the dirt went to make the Mission bay causeway. When the people who move the earth got contracts for filling in lands for the housing and aircraft jobs, they turned again to the promontory.

EASY DIGGING

Roads were built to the top of the hill and giant power shovels were dragged up. With their engines roaring in a symphony of power, the shovels began to feed the seemingly insatiable maws of scores of trucks. Some of the shovels snatch up more than two yards of earth at a clip.

It is considered fairly easy "digging ground for the shovels as there is no rock formation in the hill.

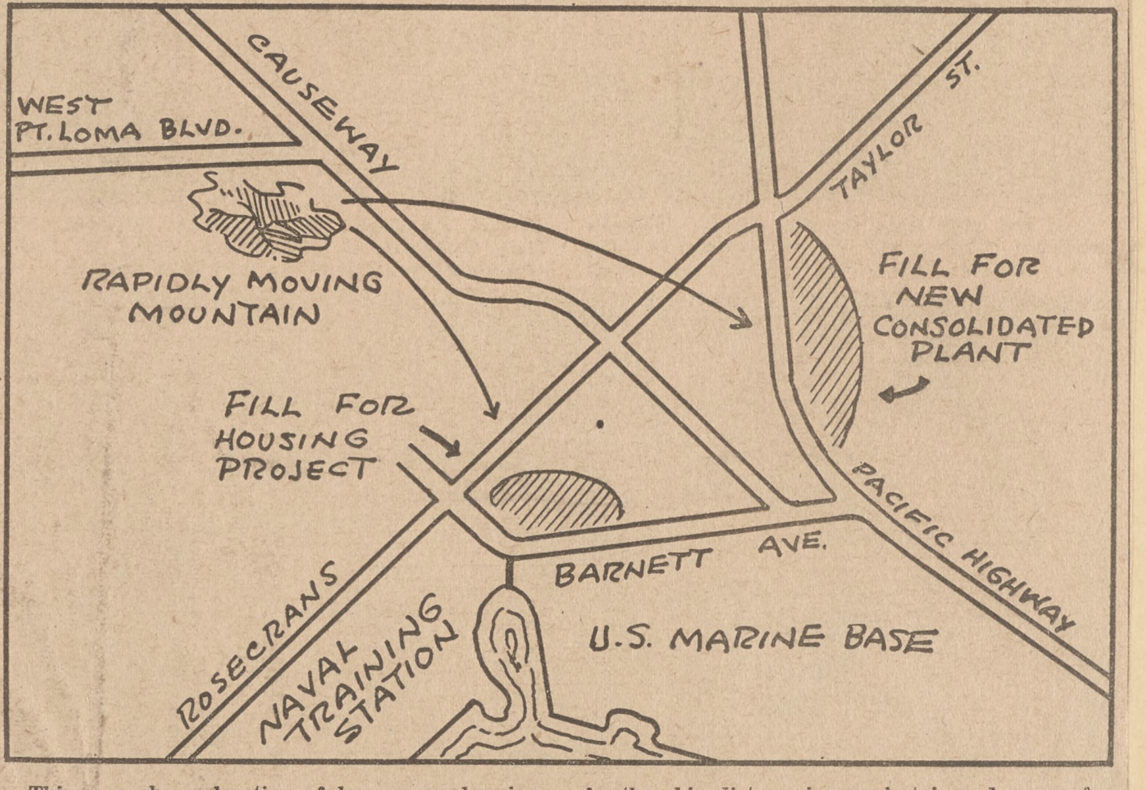
The old right-of-way of the street car company's abandoned Mission Beach line is being used as a truck road for the Consolidated job.

TRAFFIC DIRECTED

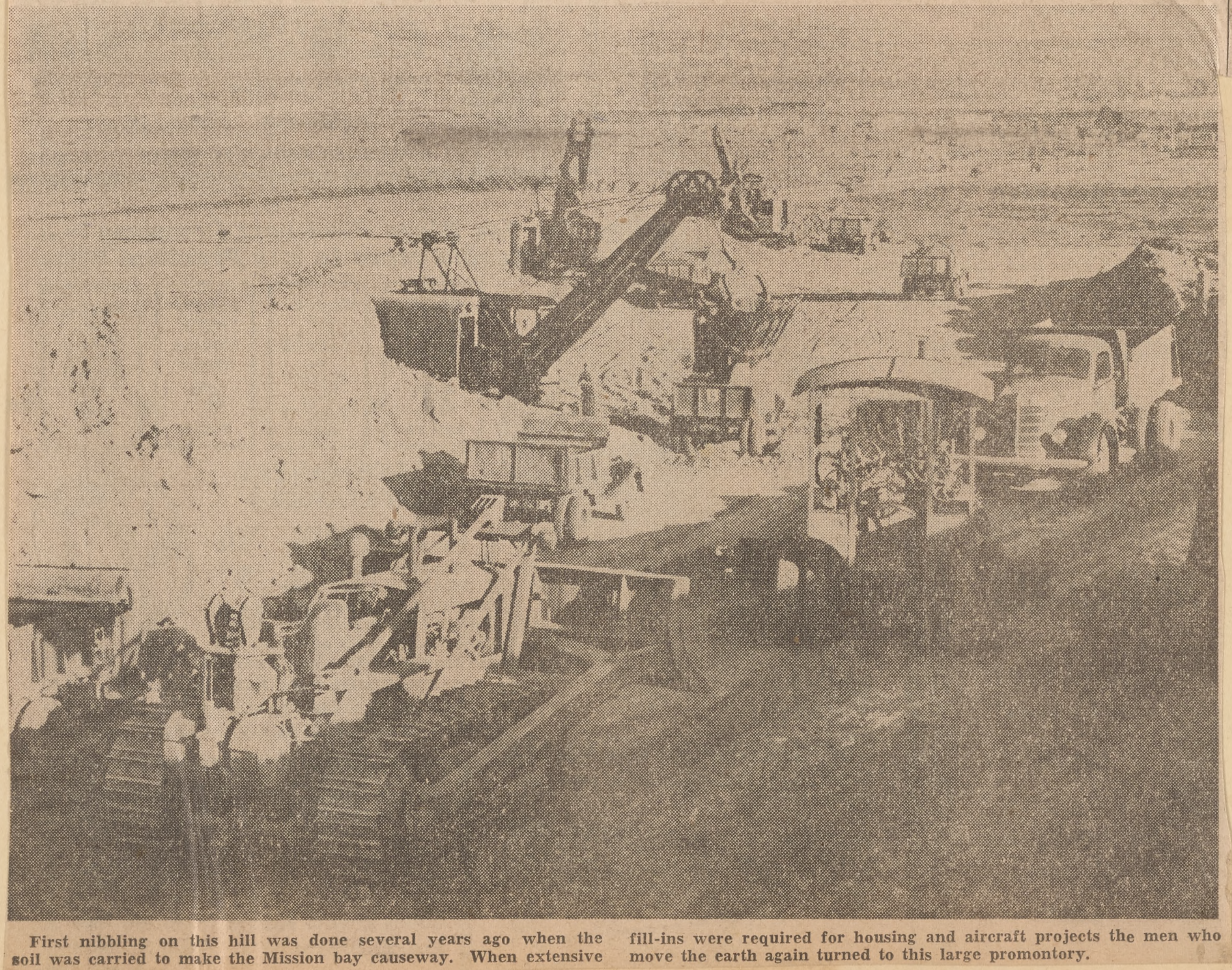
Special traffic men have been posted where the trucks make their turns across Pacific highway and Ingraham st., and also at Ingraham and Rosecrans so hurrying trucks

(Continued on Page 2-B, Col. 7)

Mohammed and Uncle Sam may use different methods, but the result of moving mountains is the same. Here are some of the steam shovels employed on the defense housing project near Ingraham st. and Pt. Loma blvd., where residences will be built for the navy.



This map shows location of huge navy housing project near Ingraham st. and W. Pt. Loma blvd.



First nibbling on this hill was done several years ago when the soil was carried to make the Mission bay causeway. When extensive fill-ins were required for housing and aircraft projects the men who move the earth again turned to this large promontory.

Another big dirt-moving project is under way for the navy adjacent to the foot of Thirty-second st.

Trib - Sun 12-24-40

Basket Fund Goes Over With Bang When Consair Workers 'Chip In'

There will be Christmas cheer and enough to eat in the homes of 140 San Diego families tomorrow because other San Diegans, a little more fortunately blessed, opened their hearts bountifully to the appeal of the Christmas Basket Fund.

In the behalf of those to whom the day might otherwise have been an empty mockery, The Tribune-Sun and Fighting Bob post, American Legion, sponsors of the annual fund, wish to thank the many who contributed, in money and in food, to make the baskets possible. The newspaper and Al Fern, post basket fund chairman, wish to thank also the post and auxiliary members who trudged faithfully through rain and storm last night and again today, distributing the baskets.

Consolidated Aircraft night-shift workers of the welding, draw-bench, metal, hull and machine shop departments put the fund over with a bang at almost the last minute. In a movement started by the workers themselves, members of the five departments, from apprentices and office boys on up, began "chipping" in for a basket contribution. When they had finished, there was $66.58! And then the fixed equipment department brought in another $6.25.

Other cash contributions continued to come in right to the last, too. And Mrs. Mary Treadway, 908 A st., made up a large quantity of jams and jellies to be added to the baskets.

As the fund closed today, its cash status (not including the large amounts of foodstuffs turned in) stood as follows:

Previously	$247.42
Consair Workers	66.58
Ethel M. Smith	10.00
Girl Scout Troop 25	1.50
Friend	1.00
Anonymous	1.00
Consair Workers	6.25
Total	$333.75

Consolidated Air

Romeike & Curtice Ltd
Telephone CENTRAL 2781 (2 Lines.)
R&C
35. Shoe Lane. LONDON. E.C.4.

EXTRACT FROM
NEWS CHRONICLE,
Chronicle Hse, 72-78 Fleet St., E.C.4

Date 21.11.40

U.S. Releases Heavy Bombers

No plane ever used in active operations is comparable to 26 machines which the U.S. Army has released for Britain.

They are four-engined Consolidated bombers, built for the U.S. Air Force, it was announced yesterday in Washington.

Similar to the "Flying Fortresses," they have a loaded range of at least 3,000 miles, and are due for delivery this month and next month.

The U.S. is anxious to see results of the bombers in action, General Marshall said at Washington.—B.U.P.

American Aircraft Mech. 12/12/40

Seven Million Dollars for Expansion at Consair

Consair Building Eight New Units; One Building to House Gigantic Drop Hammer

Exemplifying democracy at work in the National Defense Program, Consolidated Aircraft Corporation disclosed today that plans had been made and ground will be broken soon for the construction of a huge new Parts Plant at San Diego, which will virtually double Consolidated's present size. The new plant will fit solidly into the line production program on Consolidated flying boats and large land bombers.

On Labor Day, September 2nd last, Consolidated officials formally dedicated the new buildings on the Lindbergh Field site, making a step in the 1939-40 construction program. Meanwhile additional buildings at Lindbergh Field, though not officially announced, were started. These, it is estimated, will be completely occupied by January 15th. Included are another Final Assembly Building, 360x720 feet in size, and a single building, 200x1500 feet, to be devoted to small parts assembly. The previous expansion and the buildings to be completed by Janpary 15th will increase Consolidated's manufacturing area (over the original 1935 plant) by some 10 times, or more than 1,000 percent—a phenomenal growth of five years!

The new announcement discloses that a huge parts plant will be located about one and one-third miles north of the Lindbergh Field site, and will add 1,553,000 square feet of covered manufacturing area, virtually doubling the tenfold expansion which is nearing completion at this time. With an accelerated construction program, the entire new parts plant is scheduled to be completed and in full operation by June, 1941. This plant is composed of a group of eight buildings with a total roofed area of 1,553,000 square feet, plus loading platform of 64,000 square feet. Cost is to run between six and one-half and seven millions of dollars. The factory site is 52 acres in size, with an adjacent area of 72 arces which is to be used for parking facilities. Combined personnel to operate both plants is estimated at 30,000. New buildings will be similar in type to present Consolidated structures. All buildings, including the original and new plant, are entirely of the latest type and design, especially engineered for modern aircraft manufacturing. The oldest factory building is less than five and a half years old, making Consolidated's combined facilities probably the most modern and efficient in existence. The equipment for the new plant has been ordered and is in the process of being delivered. To make immediate use of production equipment, many of the machines will be set up and operated under lean-to tents at the Lindbergh Field plant site, then transferred to the new buildings as quickly as they are ready for occupancy. The present plant on Lindbergh Field is employing its paved yard areas for some 30 percent of its operations, made possible by the equable climatic conditions of San Diego. The new plant, however, will conduct all of its operations under roof. This new plant will be a highly specialized production unit devoted to the manufacture of component parts and assemblies for wings and tail surfaces construction, with completely independent facilities for all operations requisite for their manufacture. All yard areas will be paved. The spur railroad sidings will be of depressed track construction, for quick car-floor-level loading and unloading.

The largest battery of droy hammers and hydraulic presses under one roof on the Pacific Coast will be used in the new drop hammer building, which will also house a complete pattern shop, foundry and die-storage departments. The huge hammers will be mounted on improved shock-proof foundations similar to those now employed under the drop hammers at the Lindbergh Field site. While working in complete conjunction with the Lindbergh Field plant, the new parts plant will be a complete unit.

B. O. Larsen, San Diego, is general contractor.

R. E. Hazard & Sons, San Diego, filling and grading of site.

Ellis Cray Taylor and Ellis Wing Taylor, architects.

12-11-40

NEW YORK WORLD-TELEGRAM,

Consol. Aircraft Votes $2 Share On Common Stock

First Since 1938, When $1 Was Paid; Other Companies Act

Consolidated Aircraft Corp. declared a $2 common dividend, payable Dec. 26 to holders of record Dec. 20. The previous payment was $1 in December, 1938.

American Brake Shoe & Foundry Co. voted an extra of 60 cents along with an interim 40-cent common payment, both due Dec. 28 on stock of record Dec. 19. Payments for 1940 come to $2.10, against $1.25 in 1939.

Federation Bank & Trust Co. voted a 60-cent dividend, payable Dec. 26 on stock of record Dec. 16. The previous payment was 40 cents July 2, this year.

Skenandoa Rayon Corp. declared an initial 25-cent common dividend, payable Dec. 27 to holders of record Dec. 16.

E. W. Bliss Co. declared $1.50 on 6 per cent preferred, and $1.25 on 5 per cent preferred, on account of arrears both payable Dec. 27, record Dec. 18. Similar payments were made Sept. 6.

Marshall Field & Co. declared a $1 year-end common dividend, payable Dec. 31 to holders of record Dec. 21. Also voted regular common quarterly of 10 cents, payable Jan. 31 on stock of record Jan. 15.

Mahoning Coal Railroad Co. assigned a $15 dividend on the common shares, payable Dec. 30 to holders of record Dec. 23. This brings 1940 payments to $37.50, against $32.75 in 1939.

Wheeling & Lake Erie Railway Co. voted an extra of $1.50 in addition to the regular quarterly of $1 on the common, both payable Dec. 23 to holders of record Dec. 21. This puts 1940 payments at $5.50, against $4 in 1939.

Air Reduction Co. declared the

San Diego Gains as Defense Millions Swell Population

L.A. Times 12-16-40

Estimates Say 45,530 New Civilians Expected by July 1, to Say Nothing of 16,000 in Uniform

BY ED AINSWORTH

San Diego—the first city established in California—1769.

San Diego—the "first city" of California in size—before long now!

That's the time table of the most ambitious community in the State today as it expands like a champion in a county fair pie-eating contest. So amazing has been the growth of San Diego in the last few months, with the movement apparently just getting started, that some of the city's rabid boosters are crying:

"Out of our way, San Francisco and Los Angeles! Give us a clear track. We're going to pass you both!"

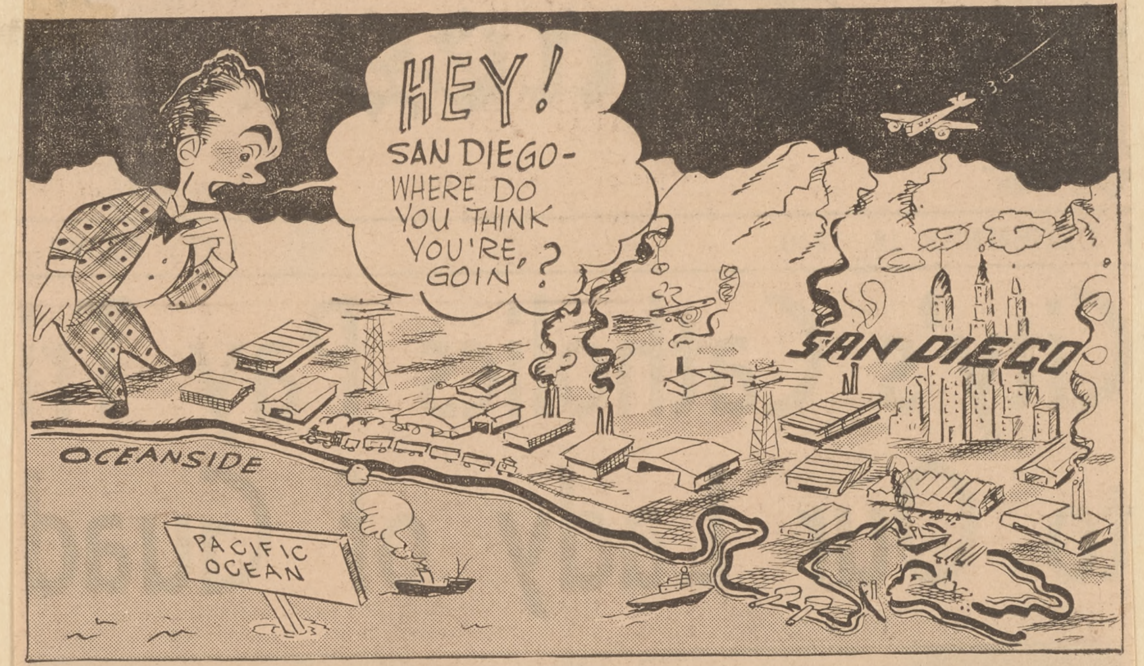
Maybe this sounds fantastic.

But San Diego has historic foundation for hoping to be the "first" city of the Golden West in more ways than one.

It got a head start on all the others. But it had a lapse. It took a nap. It drowsed in its "million-dollar sunshine." And before it woke up those two upstarts, first San Francisco and then Los Angeles, had outdistanced it.

Even so, it took a jealous saint and the State of Iowa to bring about such a result. When Father Serra and Don Gaspar de Portola established the pueblo of San Diego in 1769, Portola went on up the coast to locate Monterey Bay. But no Monterey Bay could he discover. As a result he

Turn to Page 2, Column 2



San Diego, California's 'First City,' Steps Ahead as Defense Millions Swell Population

Continued from First Page

blundered on up the coast, found San Francisco Bay. Later on, superstitious Spaniards said that St. Francis had "passed a miracle" and caused Monterey Bay to vanish temporarily so his own bay could be found.

IOWA MIGRATION

Thus, San Francisco got under way with a saintly boost.

And, of course, when Iowa moved in on Los Angeles how could San Diego help but fall behind?

For a while, though, there wasn't much difference, at that.

In 1860 San Diego with 731 population was only one-sixth the size of Los Angeles, which had 4385 inhabitants, while magnificent San Francisco had 56,802. by 1870 San Diego had grown to be almost half as large as Los Angeles—the score being 2300 to 5278, while San Francisco had mushroomed to 149,473.

picious gulls are preparing to move north — there isn't wing room any more.

As for the southern city's population: San Diego zoomed upward as noted from a paltry 147,995 in 1930 to its 202,038 in 1940, which was just the start. T. C. Macaulay, secretary-manager of the Chamber of Commerce, refuses to estimate the growth since April (when the census was taken) for fear of being considered untruthful, but refers all questions to City Planning Director Glenn Rick (who, by the way, is being stolen by a startled Los Angeles to become its planning director Jan. 1.) Rick says his charts and things show San Diego now has about 220,000 civilian population.

Consolidated Aircraft, however, is planning to add 18,000 employees by July 1, 1941; Ryan Aeronautical Co. will put on another 1000, and Solar and Rohr will increase their personnel by some 650. With their families

marines is being established near Camp Kearney. A marine rifle range of 400 acres near Torrey Pines means an outlay of $1,000,000. A Coast Artillery camp being established at Torrey Pines on about 800 acres will take care of 10,000 men. Ft. Rosecrans is having some $800,000 spent on it.

The Army in the area is spending about $4,000,000 on sites and cantonments, about double that on armament. Navy and defense housing projects in various parts of the city mean an expenditure of some $15,000,000. These will provide literally thousands of living units in duplex and quadruple home establishments.

Building permits in San Diego up to the end of November were $12,950,016, as compared with $8,241,862 for all of 1939.

County Assessor Crowell D. Eddy reported yesterday that store and warehouse buildings are being partitioned off to pro-

---

VOLUME 1 SAN DIEGO, CALIFORNIA, DECEMBER 12, 1940 NUMBER 9

American Aircraft Mechanic

WAGE REVIEW UNDER WAY AT CONSAIR

Again proving that wages and working conditions can be better adjusted by arbitration and discussion, with no loss of time and without interference with production, the Wage Review Board, meeting with Consolidated officials have tentatively agreed upon an increase in the starting rate for the employees in the lower wage brackets. The tentative increases agreed upon are as follows:

At time of going to press the Aircraft Mechanic was unable to secure an official verification of the following wage rates but they are believed official and if agreed upon the below increases will become effective on Friday, December 13, 1940.

Employees hired on or before

22 June 1940 ...... per hour 60c
26 July 1940 ...... per hour 58c
30 Sept. 1940 .... per hour 54c
4 Nov. 1940 .... per hour 52c
Starting wage 50c

The tentative order of departments to be reviewed will be as follows:

1. Tool Room and Wood Shop
2. Machine Shop
3. Timekeepers
4. Welding
5. Sheet Metal
6. Hull Department
7. Drop Hammer
8. Tank
9. Wing Department
10. Metal Bench
11. Final Assembly
12. Finish Paint Shop
13. Inspection
14. Maintenance
15. Janitor
16. Draw Bench
17. Heat Treat. and Spotweld.
18. Tubing
19. Experimental
20. Engineering Department
21. Production Department
22. Shipping & Receiving.

December Wage Review

Tackling the bookkeeping end of the Review first, W. J. Chudleigh and V. L. Parker, permanent members of the Wage Board, have employed a full time stenographer to assist them in making up the individual employee wage rate lists for the various Depts. prior to the actual reviewing.

It is estimated that this method of handling the book work will shorten the Review by two weeks and thus bring increases into the men's hands much earlier than was formerly experienced.

S. D. Possible Lighter-Than-Air Base, Compton Indicates on Visit Here

Trib-Sun 12-17-40

Experiments now are under way in this naval area in the use of speedy "mosquito boats" with a view toward developing them and suitable crews to augment protection of fleet and shore, while at the same time this area is among several in the United States being studied as a possible base for lighter-than-air craft.

This is the statement today of Lewis Compton, assistant secretary of the navy, who with a party, made an inspection of local naval and defense bases.

Most of the "mosquito boats" mentioned by the official now are said under remodeling here and soon will be tried out as their tactical use.

Pleased With Progress

The secretary accompanied by Mrs. Compton, Comdr. Ralph Riggs, naval aid, and Capt. Lew Atkins, naval construction engineer, his personal aid, arrived in San Diego this morning, and with local naval officials began inspection of projects in this area. The official party was met here by Rear Adm. C. A. Blakeley, commandant, 11th naval district Comdr. J. T. Mathews, (CE-C) public works department of the local district, and Lt. W. S. Hays, aid to Blakeley and T. C. Macaulay, executive secretary of the chamber of commerce.

Rosendahl on Board

Senior member of the board which is studying location of lighter-than-air bases is Capt. C. E. Rosendahl, former commander of naval dirigibles for which a mooring mast was established on Torrey Pines mesa.

Asked concerning possible development of United States bases at Cocos and Galapagos islands, he said he had no information on the subject other than that the navy department always was interested in possible base positions, especially in strategic locations. He denied having heard rumors of a trade of United States ships for base positions off the Mexican coast.

As to how long the center of fleet activities would be in the Hawaiian area, Compton stated that this activity must change to meet the strategic positions as they arose.

Disavows Alarm

He ascribed no significance to the fact that as soon as the west coast shipping strike was settled and shipping of lumber for defense projects made possible, the lumber supply was tied up by a strike.

"I do definitely view with alarm, however, anything that will tend to stop or delay any of the national defense programs," he said.

The visiting party today were to inspect Consolidated Aircraft Corp. plant and tonight will be guests in the commissioned officer's mess at the air station, at which Adm. and Mrs. Blakeley will be hosts.

Continuing their inspections tomorrow and Wednesday, they will entrain Wednesday afternoon for the return to Washington.

Turkey Money For Consair Workers' Yule

Trib-Sun 12-20-40

Maj. R. H. Fleet, president, Consolidated Aircraft Corp., today announced his company will follow its usual practice of giving each person employed prior to Dec. 15, 1940, from the president to the office boy, a $5 Christmas check to cover the cost of a holiday turkey with all trimmings. This, said Fleet, probably will create a boom market of considerable proportions for turkeys, as Consolidated's 14,000 employes will receive $70,000 in Christmas checks.

"We cannot allow the holiday season to pass without an expression of appreciation on the part of the company for the splendid cooperation it has received from employes throughout the year," said Fleet.

In addition, the company's pre-Christmas payroll disbursements the week ending Dec. 21 was $550,000.

100,000 PLANES WILL BE BUILT

Consolidated Will Build Bombers

11/8/40

Although not yet announced officially, Consolidated Aircraft of San Diego will build 2,000 4-engined B-24 bombers, which is by far the largest contract ever placed for twin-engined airplanes.

The Consolidated factory, now being expanded to double its present size, will employ 35,000 men within 6 months.

12,000 More For Britain; Many Here

11/8/40.

In connection with the decision of President Roosevelt to permit American manufacturers to build 12,000 additional airplanes for Great Britain, it became known yesterday that a large portion of this contract will go to the Glenn L. Martin Company in Baltimore.

Contracts for the balance of the bombers will go to Douglas at Santa Monica, Consolidated at San Diego and Boeing at Seattle.

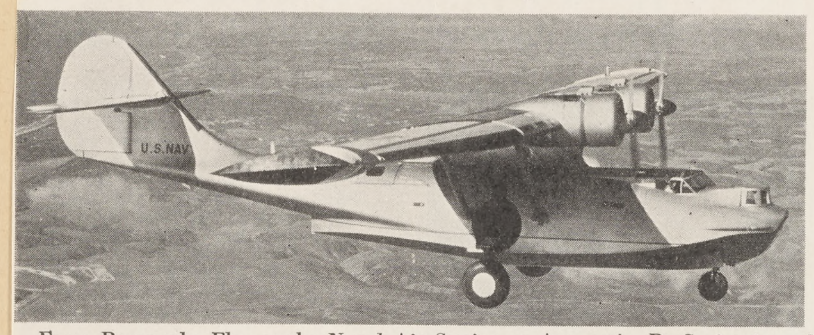
The new light bomber to be produced by the Martin company will be known as the "Baltimore."

The "Baltimore" is still a secret ship, but it is admitted it has been designed to meet the definite needs of the British, as revealed by tactical experience in the European War. Already in production at the Martin company in the meanwhile is a large order of 167-B4's — the same type of high-speed attack bomber built in quantity last year for the French.

It is under a unique form of contract that the "Baltimore" will be built for the Royal Air Force. The British Government has agreed to take all the ships of this type which Martin can produce before the end of next year. The limiting factor would be the requirements of the United States air forces.

Originally, it had been intended that the new bomber would be called the "Montreal," but Commodore Baker explained the name would have little meaning and the decision was made to change it to "Baltimore" to honor the city whence it is to come. With engineering work virtually complete on the craft, it will be placed in production shortly, according to Martin officials.

Largest Amphibian Ready for Trials



From Pensacola, Fla., to the Naval Air Station at Anacostia, D. C., in six and one-half hours, the Navy's new long-range patrol ship, the XPBY-5A now will undergo a series of performance trials which will test her qualities as the world's largest amphibian. Leaving San Diego, Cal., where the ship was built by Consolidated Aircraft Corp., the plane made a trans-continental flight in easy stages, making overnight stops at Randolph Field, Tex., and at Pensacola, arriving at Anacostia on Dec. 16.

Crew members on the flight were Lt. Carl E. Giese, pilot; Lt. Roy Jackson, co-pilot; K. L. Frye, machinist mate, first class; S. C. Dills, machinist mate, second class; J. R. Wilson, chief radioman, and G. R. Tibbs, machinist of the Consolidated corporation. American Aviation 1-1-40

Consolidated 28, Developed as Amphibian, Is Successful in Rough Water Attempts

Having undergone company tests at Consolidated Aircraft Corp., San Diego, Cal., the world's largest amphibian plane arrived at Naval Air Station, Anacostia, D. C., on Dec. 16 to begin trials under the eye of the Navy. Designated by Consolidated as the model 28-5A, basically the model 28 flying boat, the new long-range patrol plane is known to the Navy as the XPBY-5A.

The new plane is equipped with a tricycle landing gear, fully retractable. Side wheel and supporting mechanism, complete with oleo shock struts, retract into wells in the side of the hull. Nose wheel in the bow is completely closed over in the retracted position by automatically operated hatches so that no resistance to planing is encountered.

Powered by two Pratt & Whitney Wasps, the XPBY-5A has a span of 104 ft. and measures 65 ft. in length. Technical information and performance details are under wraps. A Consolidated statement indicated that flight characteristics of the model 28 flying boat have been unaffected by the incorporation of the landing gear. "There was found no loss of speed with the landing gear in the retracted position," the statement said.

For rough water taxiing the extended gear serves as a sea anchor and assists in control on rough open water, and in making an approach for mooring or ramp with an adverse wind. More engine power may be applied for short turns without undue acceleration, it was reported. Turns on the water are said to be achieved with far less skidding, and the danger of scraping the keel on the ramp is eliminated. There is no necessity for a beaching crew, as the ship can climb a ramp or beach under its own power, or descend in the same manner, completely controlled by the brakes. The ship also may operate from remote sand beaches without benefit of special ramps or facilities for handling.

This feature is believed to be of value in making the XPBY-5A adaptable for use in areas such as the new naval bases in Alaska and the west Indies, where another routine requirement is rough water landings and take-offs.

Side wheels are above water when the ship rises on the step in making a take-off, and automatic means have been provided to eject all water in the closed bow wheel hatch before the plane is in the air.

"In action the huge amphibian alights with a smooth absorption of its descending velocity, exhibiting no tendency to bounce or porpoise," the Consolidated statement said. "When alighting on land, the ship's tendency in a side landing is to straighten out; and the brakes may be applied to the utmost without adverse effect. This technique simply increases the load on the nose wheel," it continued.

"No special procedure is needed for take-off or landing. The wheels may be locked, elevators pulled full back and both engines given full take-off throttle without the possibility of the nose wheel rising from the ground," it added.

L.A. Times 12/19/40

HUGE AIRCRAFT PLANT TO RISE

SAN DIEGO, Dec. 18. (Exclusive)—The Federal government will erect a $14,446,929.27 aircraft parts plant here, to be leased by Consolidated Aircraft Corp. from the Defense Plant Corporation, an R.F.C. subsidiary ,company officials announced today.

In addition to this project, the Navy Department also informed Consolidated authorities that another agreement had been reached to expend $3,090,000 for improvements at the present factory.

Location of the huge new plant addition in San Diego has put at rest recurring rumors of Consolidated's establishment of a branch plant in the Midwest or South, caused by visits here of delegations from Tulsa, Dallas, Houston and Ft. Worth.

The new parts factory will be situated only a mile from the present plant.

ORIGINS

OF LEADING COMPANIES

National Aircraft Counsellor 11/8/40

NO. 5

CONSOLIDATED AIRCRAFT

By DEREK WHITE

Just 40 minutes by air south of Los Angeles, on San Diego Bay, is the plant of Consolidated Aircraft Corporation, builders of giant Naval Patrol flying boats and four-engined Bombers. The company is now engaged in an expansion to end all expansions, in expectation of additional orders which may dwarf their present backlog of more than $225,000,000.

Less than eight months ago, plant area was 447,332 square feet. This was increased by 87 per cent, which brought total floor space to 843,332 square feet. The company recently announced plans to double existing plant size which means that Consolidated will soon have a factory which covers nearly 2,000,000 square feet.

STARTS WITH $25,000

Consolidated Aircraft has been built from an initial capital of only $25,000, mainly through the efforts of Major Reuben H. Fleet, president. The company, largest builders of commercial and Naval flying boats in the world, was organized in 1923 in East Greenwich, Conn., and first operations were carried on in rented space only 100 ft. by 150 ft. in size.

First order ever received was for 50 two-place tandem trainers. Quarters then occupied were too small to permit construction of these ships, so the company moved to Buffalo, N. Y., where 28,000 square feet of space was rented in an empty factory building which contained plenty of additional room for expansion. As the company grew, additional space was added, until by February, 1934, plant area covered 197,298 square feet.

During first years of operations the company devoted much time to the development of large flying boats, one of these early types being the Commodore, the prototype of which was the first monoplane flying boat in the world. Fourteen Commodores were built, of which 13 are still flying, one having been burned in a hangar fire. These first boats were built so strongly that one, having occasion to make a forced landing on the island of Cuba, landed safely without injuring a passenger, and was easily repaired.

NAVY MODEL DEVELOPED

From the Commodore series was evolved the Navy model P2Y. By 1935 the company's principal business was the building of large flying boats for the U. S. Navy. Testing of these boats at Buffalo was almost impossible during six months of the year, because of ice on Lake Erie, and it was for this reason that Consolidated moved to San Diego. This decision was one of the most important ones made by company executives.

Southern California weather conditions made year-round testing possible, and at the same time the move gave the company the opportunity to build a modern plant to fit their business, rather than continue to fit their business to existing buildings which prevented economical and fast production.

The first San Diego factory had floor area of 246,841 square feet, and was the newest and most modern airplane plant in existence. Manufacturing operations were started in San Diego in 1936, and during that year the Consolidated company built and sold $4,085,978 worth of airplanes, as compared to sales of $593,000 just ten years before.

In December of last year the company received a Government contract for $20,016,099 worth of airplanes, a single order larger than total business done by the corporation during the first 12 years of its existence.

MANY RECORD FLIGHTS

Consolidated flying boats have made many extraordinary flights, but to company officials and to the U. S. Navy, they appear on the records as "routine." Among the more spectacular trips have been a number of transcontinental flights, the first of which was by Richard Archbold, from San Diego to New York in a flying boat, 2700 miles in 17 hours, 3 minutes. Archbold made two later transcontinental flights in Consolidated boats, both being from San Diego to Miami, Florida, 2300 miles non-stop. Other sensational overland flights were made by Commander Andrew Crinkley, who flew a four-engined Consolidated Patrol Boat from San Diego, via Salt Lake City, to Anacostia Naval Air Station, in 13 hours, then flew back to San Diego via Texas.

Many routine Naval flights deserve mention, including a formation flight of 48 boats to Pearl Harbor, Hawaii, 2553 miles in 25 hours; another formation flight of 15 boats to Pearl Harbor in the record time of 16 hours; flights totaling 19,000 miles over the Arctic regions, and a 24,130 mile flight in a twin-engined flying boat from New Guinea to San Diego, by way of Australia, the Indian Ocean, Africa, across the Atlantic, and overland to San Diego.

MILLIONS OF MILES

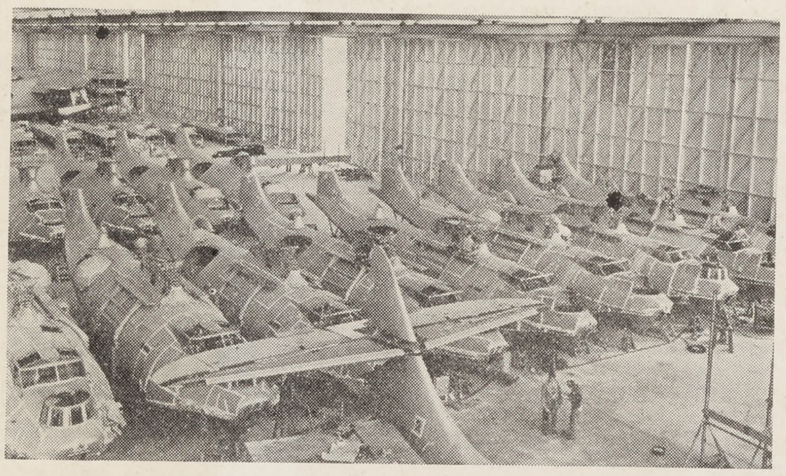
Consolidated flying boats can truthfully be called "the eyes of the Navy" as those now based and in use at various Atlantic and Pacific stations control 60,000,000 square miles of land and sea, an area equal to more than one-third the surface of the earth. These Naval Patrol boats have flight ranges of 4000 miles, more than sufficient for round-trip, nonstop, flights across the Atlantic. Twin-engined boats have wing spans of 104 feet and weigh 15 tons when fully loaded. Top speed is 199 miles per hour.

The latest Consolidated Naval flying boat, now in quantity production, is a four-engined ship, specifications of which have not been released by the U. S. Navy. A new commercial model recently tested at San Diego, but not yet in production, was the first airplane of any kind, land or sea, to be fitted with the new 18 cylinder, 2000 h. p. Wright Cyclone engines. This two-engine ship has a wing span of only 110 feet, but weighs 50,000 pounds loaded. The hull contains two complete decks with accommodations for 52 passengers for day operations, or sleeping accommodations for 28 persons. Speed is approximately 250 miles per hour.

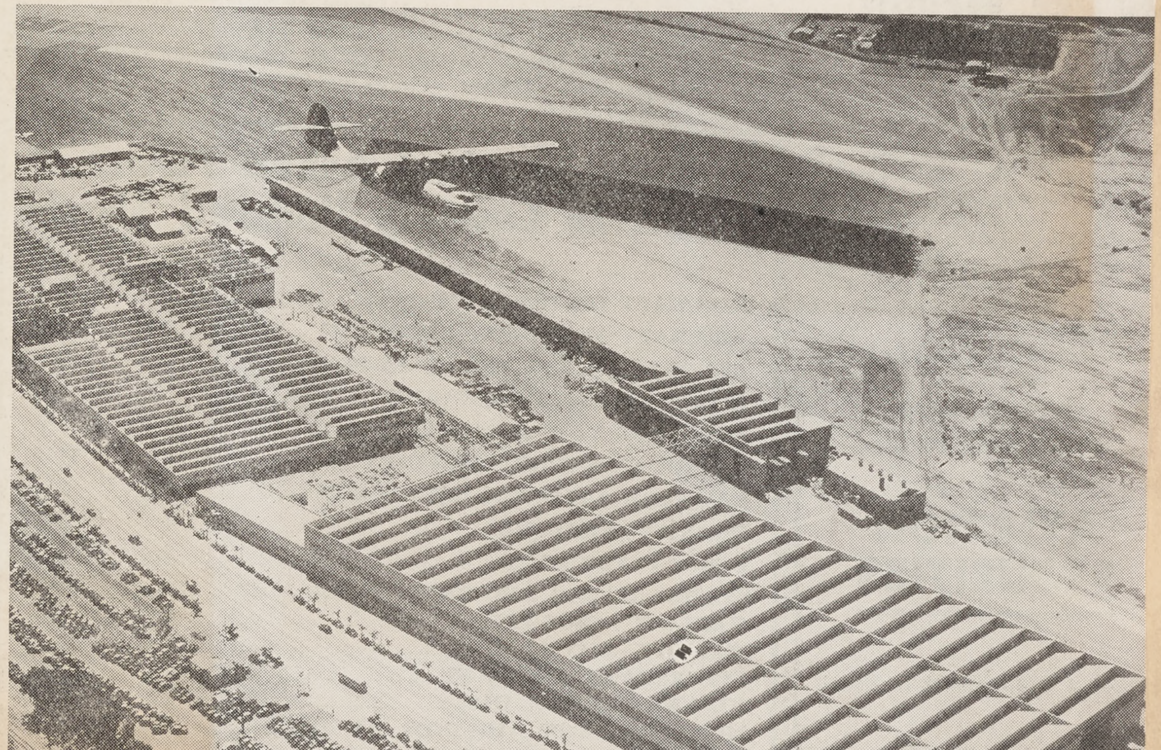
NEW BOMBER

A new U. S. Air Corps Bombardment airplane has recently been put into production, marking Consolidated's first entry into the four-engined bomber field. This model, known as the XB-24, has a wing span of about 125 feet, a gross weight of 40,000 pounds, and a speed of nearly 400 miles per hour with fuel for 300 miles and 8000 pounds of bombs.

Present Consolidated backlog exceeds $225,000,000, and more than 12,000 men are now employed. Major Fleet has announced that before present and expected contracts are completed, a total of 35,000 employees will be on the payroll.



Above is shown a corner of the Consolidated assembly floor with 15 PBY long range patrol boats nearing completion. In addition to these models, the company is building a large quantity of 4-engined bombers and other models of flying boats.



This is an air view picture of the Consolidated plant at San Diego where more than 225 million dollars' worth of naval and military airplanes are now under construction. The present plant shown above will shortly be doubled in size, and within 6 months, a total of 35,000 employees will be on the payroll.

THE SAN DIEGO UNION: WEDNESDAY MORNING, DEC. 4, 1940

British Financial Resources Topic Of Army, Navy, Defense Leaders

WASHINGTON, Dec. 3 (A.P.)—The whole question of British financial resources and ability to buy war materials in this country was reported authoritatively to have been the cause and chief topic of a meeting today of nine of the most important government officials.

According to this source, it was not a meeting to decide whether the United States should lend money to Great Britain, but more to take an accounting of the situation resulting from British contracts, now aggregating more than $2,500,000,000 and expected to rise to $4,000,000,000 in the next year. Another source, who seemed to have the same idea, said he understood all British purchases, present and prospective, were tabulated and analyzed.

CONTROVERSY RESULTS

It was, one indicated, the aftermath of the controversy stirred up by the recent statement of Lord Lothian, British ambassador, that Britain was running out of the means of buying American products and needed financial as well as material aid.

The reported nature of the meeting also seemed to fit the news that came out here Saturday that the British soon would send an official mission to this country to survey the financing problem. A possible explanation of today's gathering was that the United States was setting up a committee to join this British mission in the study—a study which is expected to develop vital information of the very nature for which a number of congressmen are demanding investigations.

ATTENDANCE SIGNIFICANT

The only certain thing about today's meeting was the attendance, which alone was significant because nearly every time a similar gathering of so many high officials has occurred in recent months, some important action in the "aid-to-Britain" policy has been announced very soon afterwards. Such meetings preceded the trade of navy destroyers for Atlantic bases, the announcement that Britain would be allowed to order 12,000 more warplanes, and the release of four-motored bombers to England.

"These people don't get together to talk about peanuts," is the way one conferee put it.

KNUDSEN ATTENDS

Attending were Henry Morgenthau jr., secretary of the treasury; Henry L. Stimson, secretary of war; Frank Knox, secretary of the navy; Jesse H. Jones, secretary of commerce and federal loan administrator; Sumner Welles, under-secretary of state; James V. Forrestal, under-secretary of the navy; Gen. George C. Marshall, chief of staff of the army; William S. Knudsen, production member of the national defense commission; Robert P. Patterson, assistant secretary of war, and Herbert Feis, economic adviser of the state department.

The Lothian controversy, it was learned, has created a great demand among officials, congressmen, manufacturers and bankers to know just what the British purchasing situation is now.

Manufacturers, particularly of planes, it was pointed out, want to know whether the millions of dollars they have spent to work on British orders will be repaid, or whether it is financially safe to accept more orders.

3000 Planes Received

NEW YORK, Dec. 3 (I.N.S.)—England has received directly or indirectly more than 3000 American military planes and is now getting between 75 and 90 percent of the output of major American plane and engine factories engaged in war and defense manufacture, it was learned from authoritative sources tonight.

The majority of the American planes already in England are trainers or suited for only limited war duties, because of the pre-war preoccupation of American factories with commercial plane construction.

EQUAL TO EUROPE CRAFT

Some of the new types now beginning to roll slowly from the assembly lines are reported to be equal to if not better than anything yet flown in the European battle skies.

Typical of these new planes are the Boeing B-17S, the Consolidated B-24S and the Martin B-26S, all giant bombers capable of high speed and with sufficient armament to defend themselves if intercepted even when unaccompanied by fighter escorts.

SEEKS MOSTLY BOMBERS

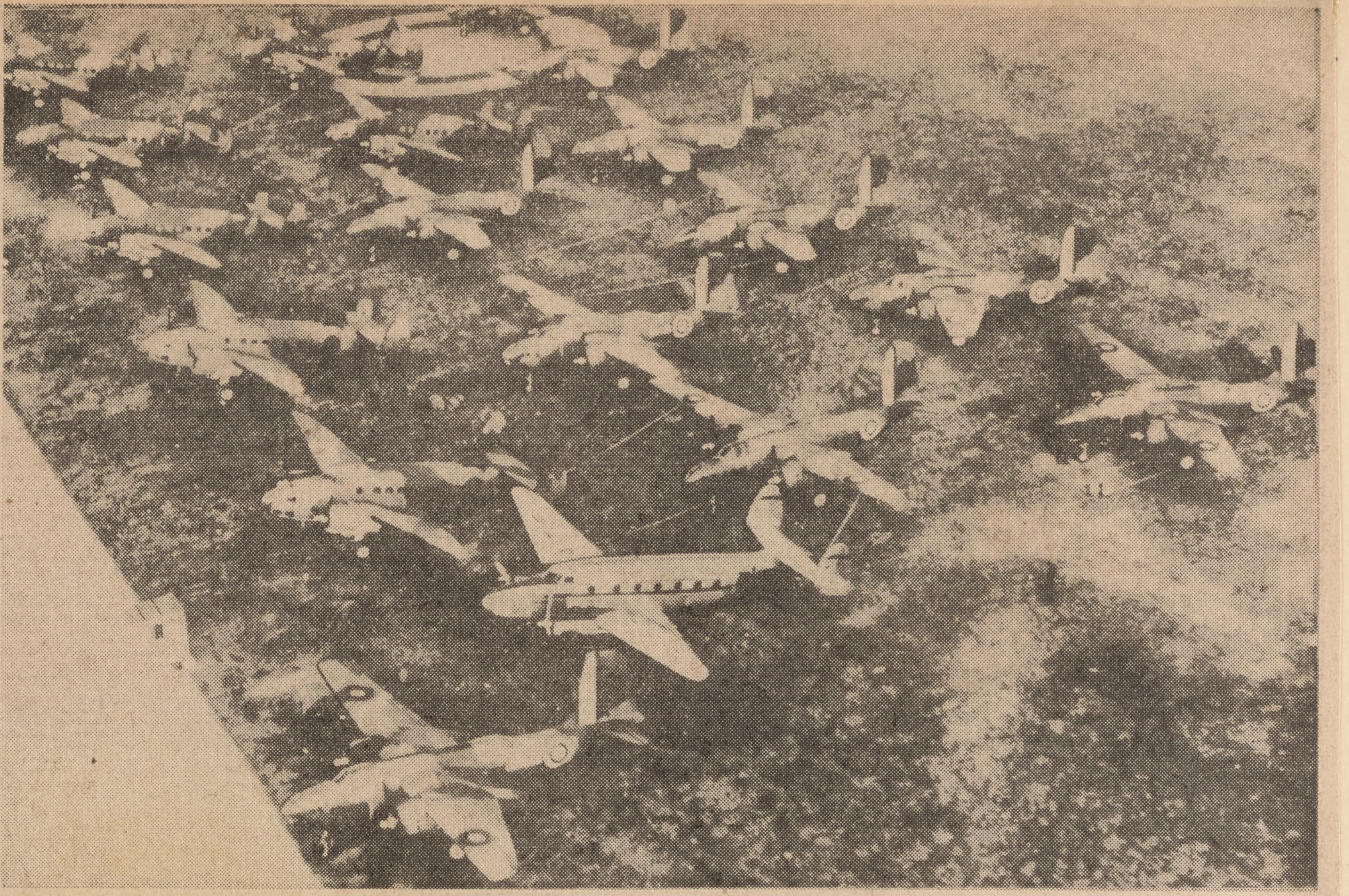
Officials in the aviation industry interpret the present trend to indicate that England will continue to place prime emphasis on her own Hurricanes and Spitfires for fighter planes, and to depend more and more on American factories for her long-range bombers.

Edgar N. Gott, vice president of the Consolidated Aircraft Corp. at San Diego, Calif., reported that work in that factory was proceeding "according to schedule." The schedule, as announced Nov. 20 by Gen. George Marshall, army chief of staff, was for delivery to England of three Consolidated B-24S, four-engined bombers comparable in size and purpose to the flying fortresses, in November, three in December, and 20 more by March 1.

26,000 Craft on Order

LONDON, Dec. 3 (I.N.S.)—Of 26,000 American warplanes ordered by the British, between 1500 and 2000 have reached the combat area and approximately another 1000 have been distributed to empire stations it was learned tonight.

CALIFORNIA WARBIRDS READY FOR SHIPMENT TO BRITAIN



Speed-up in production of U. S. warplanes for Britain brought this array of bombers to Floyd Bennett field, New York, yesterday. Planes were flown from California and will be dismantled for shipment. Single-tail planes are Douglas DB7A bombers; two-tail ships are Lockheed-Hudsons. Uncamouflaged plane in foreground is to go into commercial airline service in South America. (Associated Press wirephoto.)

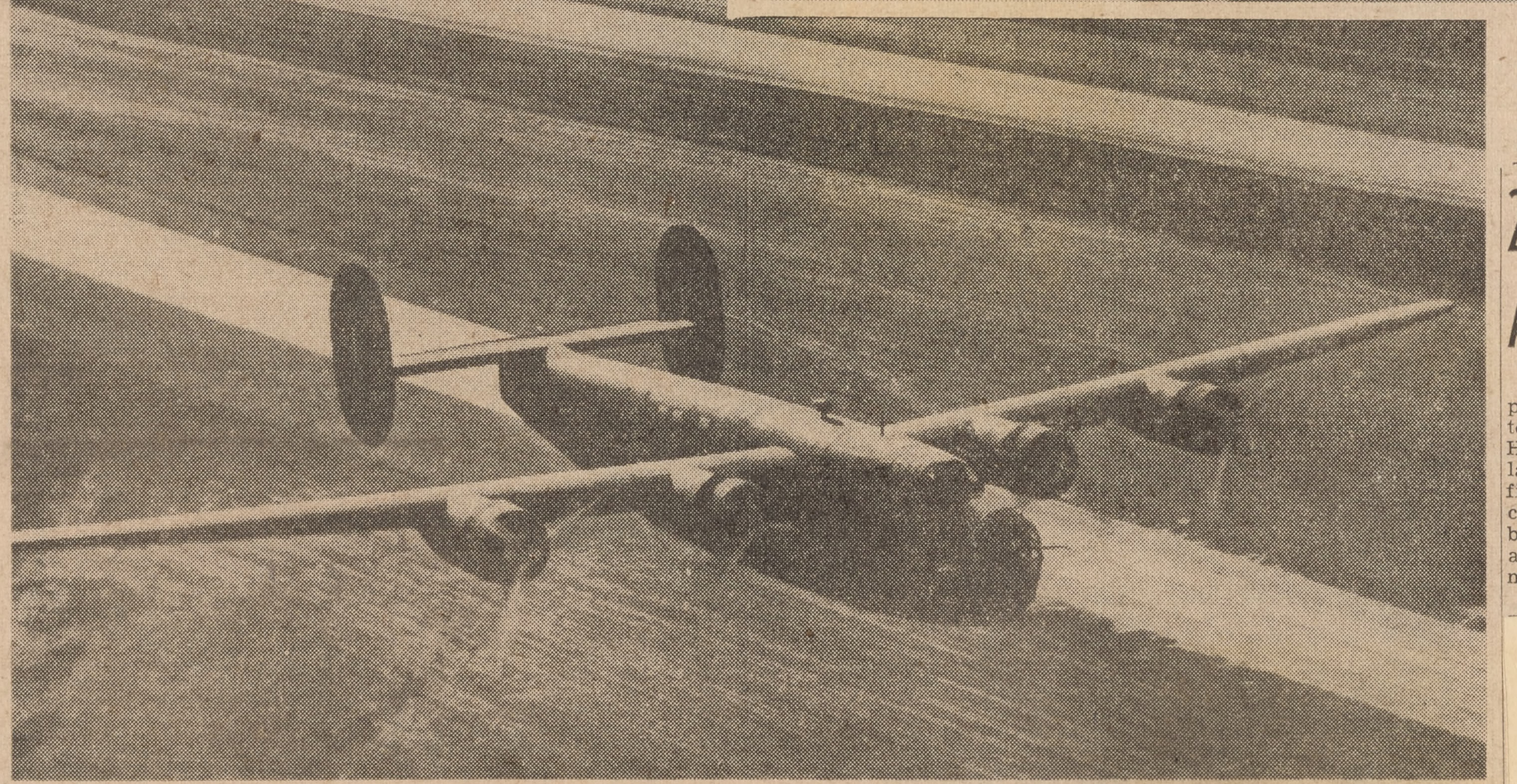
2ND CONSAIR BOMBER ARRIVES AT FT. WORTH ON HALIFAX HOP

Second of the Consolidated-built patrol bombers flown for delivery to the British Royal Air force at Halifax, Nova Scotia, arrived early last night at Ft. Worth, Tex., its first stop. It was refueled and anchored for the night. It left Lindbergh field at 5:10 a.m. yesterday and is expected to take off this morning for Port Washington, N. Y.

Douglas Kelley, San Diegan who assisted in ferrying the first bomber across the continent last week, was at the controls leaving San Diego. His co-pilot was Ed Greer, a veteran flier of Tampa, Fla.

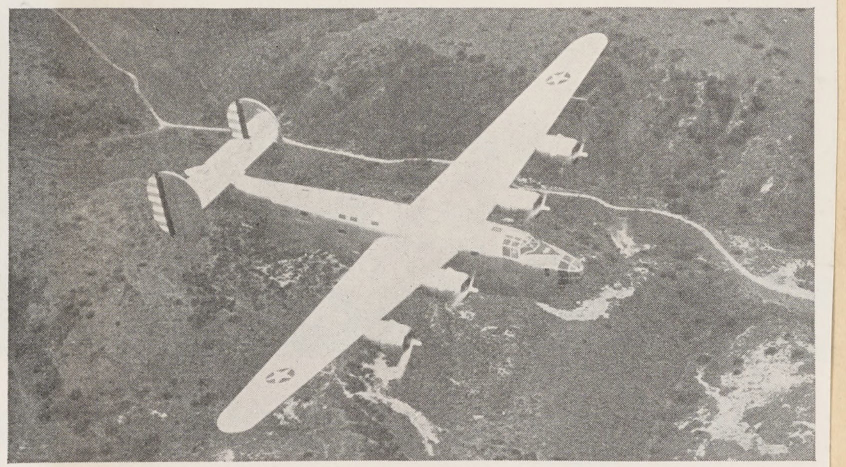
Lt. W. L. Cleveland, naval reserve airman, who was chief pilot of the first bomber flight, is reported en route here from Halifax to ferry the third plane across the continent.

Consolidated authorities said the R.A.F. bombers will be delivered at the rate of one every four days.



A Consolidated-built bomber for Britain makes a practice flight here as a preliminary to its overseas jaunt. It is one of the 26 B-24's released by the army to England recently. With its speed of more than 300 miles an hour and big fuel capacity it can carry a full load of bombs from England to almost any place in Europe and fly back again. Its speed and armament give protection against attack.

Consair's Bomber Released for Export



Above is one of the first flight pictures of the new Consolidated model 32 four-engined land bomber which is undergoing tests at San Diego, Cal. Designated by the Army as the XB-24, the plane marks Consolidated Aircraft Corp.'s re-entry into the landplane manufacturing field. The bomber has been released for export by the State Dept. and has been tagged the "Liberator."

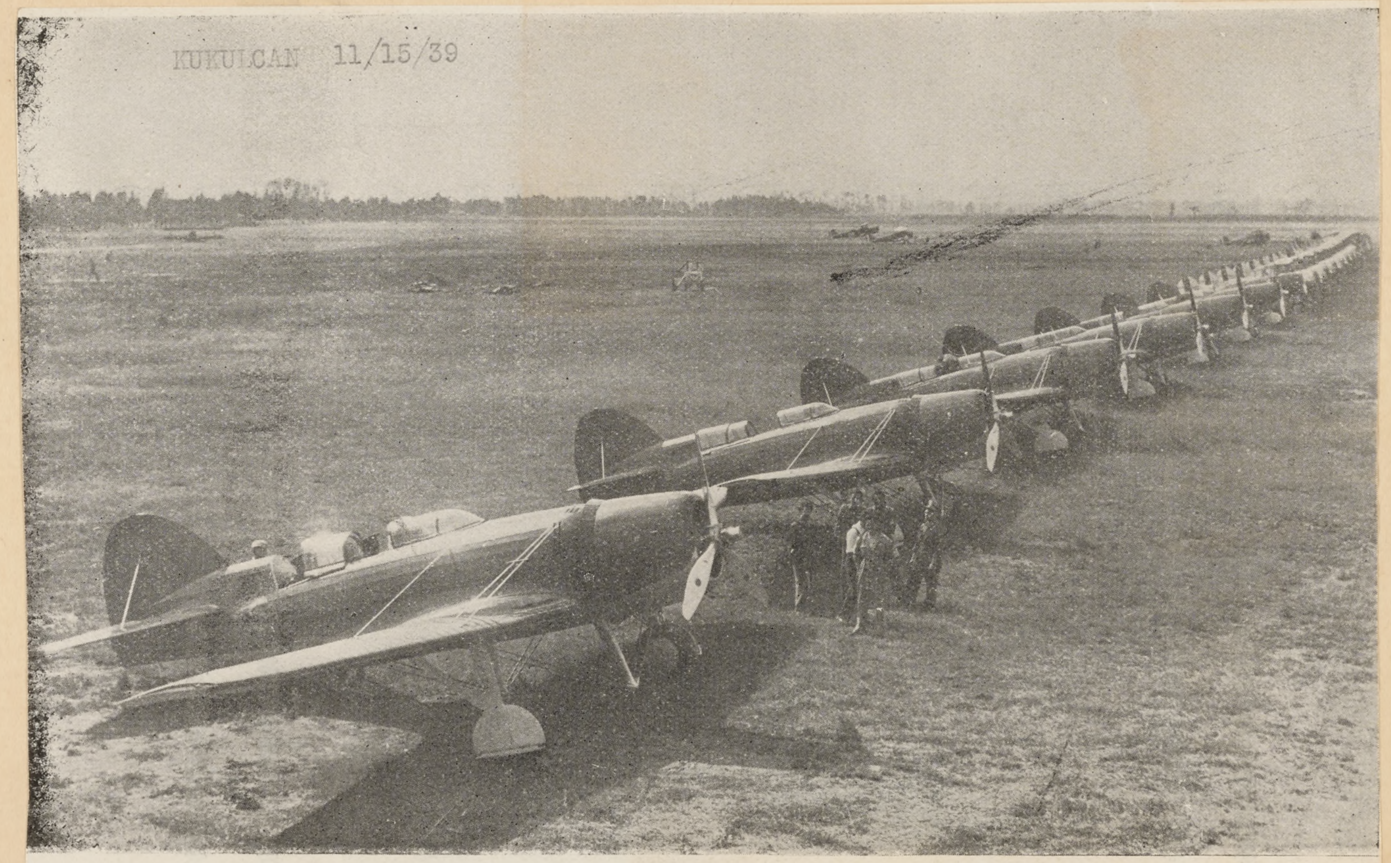
Model 32 is a full cantilever, all-metal plane, powered by four Pratt & Whitney 14-cylinder twin-row aircooled engines rated at 1,200 hp. each. Propellers are Hamilton Standards, 12 feet in diameter. Fowler flaps extend inboard of the ailerons in the wing of high aspect ratio, with engine nacelles mounted flush with the upper surface of the center section.

Approximate gross weight of the plane is 40.000 lbs.; wing span, 110 ft.; length of fuselage, 64 ft.; over-all height, 19 feet. Tactical requirements are for a crew of from six to nine.

Control surfaces are fabric covered and fully counterweighted. A full cantilever horizontal stabilizer has twin fins and rudders mounted at the tips. All-metal stressed skin fuselage is equipped with hatches and windows in the nose, tail, turtledeck, back and bottom. Landing gear is of the tricycle type with single wheel forward which retracts into the fuselage. Main landing wheels retract into wing wells.

While performance figures are strictly confidential, an official release states: "This airplane, from preliminary examinations, gives evidence of living up to the advancements in aerodynamic and performance characteristics predicted. These include a speed of over 300 mph., a range of approximately 3,000 miles and a bomb carrying capacity of approximately four tons."

American Aviation 6-1-40



KUKULCAN 11/15/39

Formación de Aviones Bellanca, Corsarios y Consolidada, en el Campo Militar de Balbuena, el día del vuelo de un segundo Bellanca, 13 de octubre de 1939.

Wall St. Journal 12-6-40

Consolidated Aircraft Corp.

Additional details on delivery of 26 Consolidated Aircraft model 32 four-engined bombers for the British are made available here by company officials, who said that all deliveries can be made before March 1 next. The original announcement that the bombers would be released by the United States Army to the British was made from Washington two weeks ago.

These large bombers are similar to the Consolidated prototype model 32, first flown late in 1939, which marked the company's return to the landplane field. The original model was given a speed of over 300 miles an hour, a range of approximately 3,000 miles and bomb-carrying capacity of four tons.

These planes are capable of carrying from England a full bomb load to almost any sector in the involved European area, and returning without stop; or they can operate by shuttling between England and the British bases. Speed, defense and attack armament give them adequate protection from all angles, it is claimed.

PLAN 3000 NEW HOMES FOR MESA; CONSOLIDATED DOUBLING PLANT

Hillcrest Star-News 12-13-40

LOCAL FACTORY WILL EMPLOY 3,000 MEN WHEN BUILDINGS ARE FINISHED NEXT JUNE

From all sectors of San Diego's "prosperity front" news announcements came tumbling this week to heighten the constantly-growing pile of evidence that good times are here — and not only here but in a degree that even the most optimistic never dared dream as short a time as a year ago. Aircraft factories continued their dizzy pace of preparation to turn out the monsters of the sky for both war and peacetime uses, the list of national defense projects under way continued to swell, and retailers watched with satisfaction as sales showed sharp increases over the corresponding period of a year ago.

"Finest Plant" in World

San Diego was assured probably the most modern and efficient aircraft factory in existence this week when Consolidated Aircraft Corp. announced a seven million dollar construction program which will double its size and boost employment to a total of 30,000.

Eight new buildings will be erected along Pacific highway, and with the general contract already awarded to B. O. Larsen, ground is to be broken at an early date. The new structures are scheduled for completion next June.

Principal units will compose a huge parts plant, and a three-story drop hammer building which will house the largest battery of drop hammers and hydraulic presses on the Pacific Coast.

Consolidated, which now has a backlog of orders in excess of $325,000,000, including the building of bombers for the army, navy and Britain, has expanded its plant 1000 per cent since 1935.

The new plant has been designed to fit into the line production program of Consolidated flying boats and large land bombers, company officials said. Latest designs, especially engineered for modern aircraft manufacturing, have been employed.

Housing Project Huge

Government plans for a housing project on Kearney mesa across the valley from Hillcrest and Mission Hills contemplate construction of 2000 permanent dwellings, 1000 temporary dwellings and barracks to accommodate 750 unmarried men.

Occupants of the proposed buildings will be principally workers in local aircraft factories, it was learned.

The project has been a favorite topic of conversation and conjecture in this part of the city, as well it might, for the Hillcrest-Mission Hills business centers are nearer by about two miles to the housing project site than any other business section of the city, and a tremendous boost in local retail business is in sight when the construction is carried out.

The proposed temporary dwellings will probably be of the prefabricated type, so that at a later date they can be dismantled and moved as necessary, a city official reported.

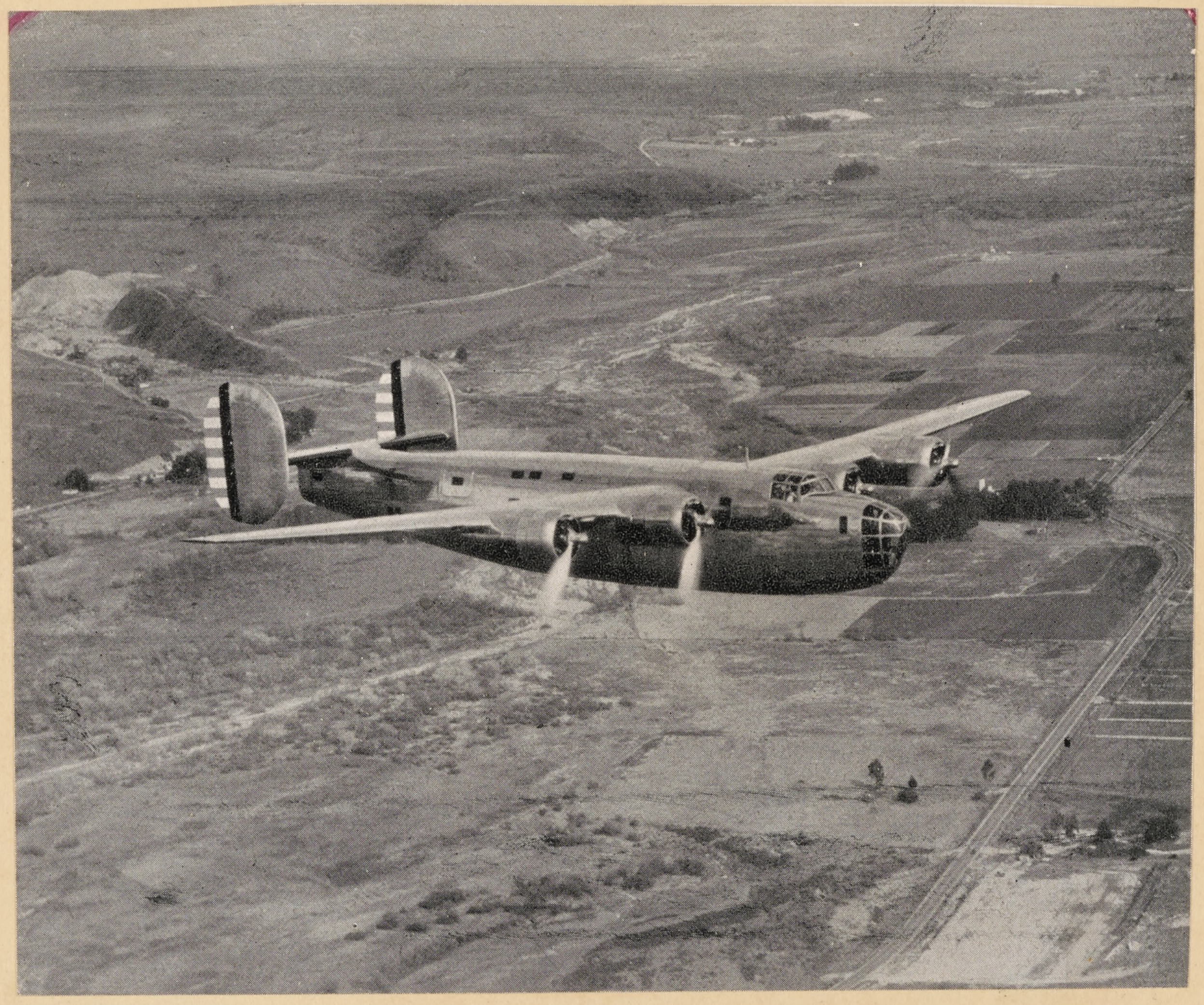
The city has written the public building administration architect in Washington asking an opportunity of reviewing the projected construction plans. Since the development is within the city limits, the city is interested in plans for street design, lot size and arrangement, and gradients of streets.

City officials said they had no authoritative information on the project, but reported they understood unofficially that the government is negotiating for land owned by Dan Danciger on the north rim of Mission valley.

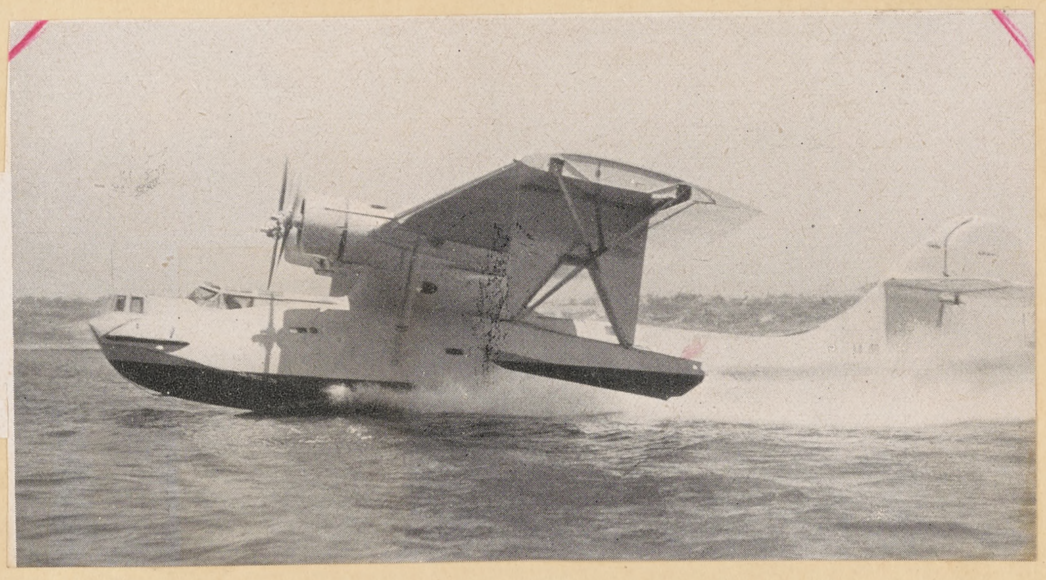
This bears out information which apepared exclusively in The Star-News two weeks ago that Danciger had gone to Washington in connection with this project.

It is believed on the basis of reports received here that the new community for defense housing centers on the intersection of Sixth ave. extension and Linda Vista rd., and that the whole community will cover an area about two miles in length and averaging one mile wide.

Within a week after the signing of the contract, power equipment is expected to be on the job to clear the land. Temporary houses for workers will be erected, followed by field offices and storage facilities.

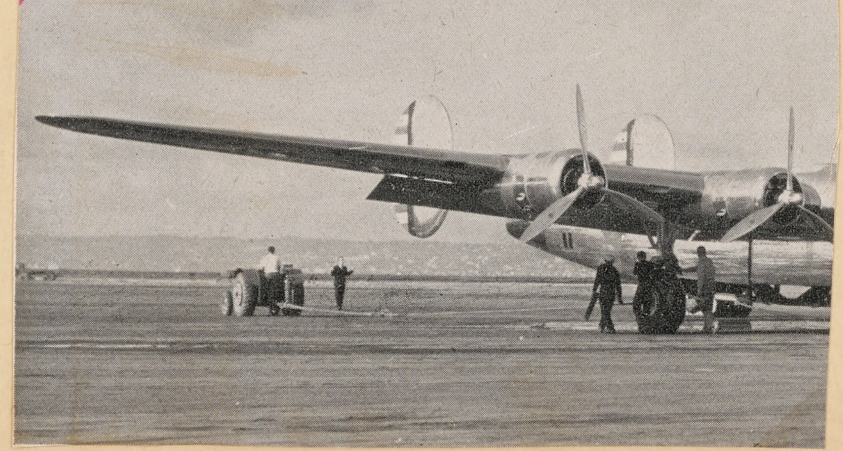


The Consolidated PBY. with retractable wing tip floats. Top speed 206 m.p.h. Weight loaded 27,080 lb. →



↓A four-engined Consolidated XB-24 bomber.

Aeronautics, Sept 1940



with showers late this afternoon and tonight; Thursday partly cloudy; little change in temperature; moderate southerly wind.

YESTERDAY'S HIGH. TODAY'S LOW

San Diego	69	52	Denver	32	22
Los Angeles ...	69	53	Kansas City ...	31	24
San Francisco .	66	56	Chicago	33	28
Portland	41	34	Boston	42	20
Seattle	53	42	New York	44	26
Salt Lake City .	37	24	Washington ...	43	29

San Diego rainfall: To 4:30 a.m., 0.00; season, 3.56; seasonal excess, 1.23.

Complete weather data on inside page.

INTERNATIONAL NEWS

THE TRIBUNE-SUN

FINAL HOME

Evening Tribune—Established 1895

Published daily except Sunday. Entered as second-class matter at the post office at San Diego, California, under the act of March 3, 1879.

San Diego Sun—Established 1881

No. 14687 46 PAGES—2 SECTIONS SAN DIEGO, CALIFORNIA, WEDNESDAY, DECEMBER 18, 1940 SECTION A 5 CENTS—90c PER MONTH

S. D. GETS $17,536,963 FOR WAR PLANTS

Ridicules Fears of Rumored 'Let-Down'

Predicting a bright business future for San Diego, Philip Norton, defense housing expert, scrutinizes plans for the wide expansion of military home units here.

'TRADE BOOM SURE AFTER WAR; HOUSING NEEDED,' CITY TOLD

Residents of San Diego and other Pacific coast communities which are expanding rapidly because of defense activities need have no fear of the rumored "let-down" which many predict will follow the present emergency. This is the declaration of Philip Norton, special consultant for the defense housing coordinator for the western portion of the United States, who is in San Diego to confer with officials of local aircraft firms, bankers, business men and members of defense councils.

"With termination of the present emergency," he said, it is expected that China, victorious in her war with Japan, will open to the United States and the west coast in particular, one of the world's greatest markets, in her work of restoration.

"Heretofore our main business has been with Japan which in turn handled the trade of China. In the future, there is no reason why we cannot trade directly with the countries of the orient, eliminating the 'middle man' and at the same time obtain much of that trade which has been going to European nations.

Huge Stores in China

"China even now has huge stores of tung oil and other oils which are needed badly by this country and our exchange trading will be of no little magnitude."

Speaking of the local housing situation in regard to defense activities, Norton said: "One of the pressing needs in San Diego is a central registration office where householders in all parts of the city may register available rooms for rent in their homes.

"This does not apply only to rooming and lodging houses but to the so-called better homes. Renters and owners in all parts of the city should make available spare rooms to defense workers and their families as a practical and patriotic duty. The rapid influx of skilled and unskilled workers makes housing a problem and one which should be given immediate attention."

Norton stated that plans for such a registration bureau would be formulated here in the near future, probably by the local defense council, though no moves have been made yet in that direction.

"I have heard rumors that there will be up to 6000 or more housing units built by the government and this is not so," Norton said. "The government is building 3000 family units on Kearny mesa for civilian defense workers. There also will be 750 dormitory units for single men.

No Other Units Planned

"In addition the navy is building 1200 family units for naval personnel. These are being built near the Destroyer base and Naval Training station.

"Reports of other vast projects financed by the government for housing purposes are harmful in that they make private capital, on which the government is depending for a lot of new housing, fearful to invest. Also exaggerated reports of the number that will be brought here by defense industries are harmful. They tend, for one thing, to bring many more here than are needed."

The exaggerated reports on housing projects may have come, Norton said, by adding the number given in various surveys that have been made of local requirements. The surveys now are being coordinated to prevent such an erroneous impression from again being given.

"It seems that almost every one who has even a bicycle for transportation has made a housing survey," Norton commented smilingly.

Constructed To Sell

The housing consultant said he was recommending great care in construction of houses built by the government.

"I am urging that the future use of the houses be considered," he said. "After the present emergency the government will want to get out of the housing business and will no doubt try to sell the buildings as soon as possible. People who come to southern California and San Diego and buy houses expect them to have certain refinements. These must be put into the housing units if the government expects to sell them. A temporary barrack-type house will find no market. They'll have to be houses that people will want to own."

Charles F. Palmer, defense housing coordinator, may visit southern California and San Diego early next year to inspect progress of housing projects, Norton added.

CONSAIR WORKERS ADD THEIR BIT

-:- -:- -:- -:- -:- -:-

Giving 45 Baskets; Christmas Fund Growing

It looked for awhile as if there wouldn't be enough baskets to go around. But . . .

Consolidated Aircraft sheet metal department workers had a benefit dance. They decided to devote the proceeds to the Christmas Basket Fund. So they're going to make up 45 baskets and deliver them personally to worthy families whose names will be provided by Al Fern, Basket Fund chairman.

A man phoned the city editor. He inquired carefully about all details of operation of the fund. "All right," he said, "I shall send in a check for $25. Please don't mention my name. Just call me 'Well Wisher.' "

The Speechmistress' club decided at its last meeting to do something to help make Christmas happier for someone. They took up a collection. There was $8 in dollars, quarters, dime and nickels. They turned it over to the Christmas Basket Fund.

Yes, more contributions of food and money can be used by the fund, sponsored annually by The Tribune-Sun and Fighting Bob post, American Legion, to provide Christmas dinners for men, women and children in want. There are many still in need. So you still can help by sending or bringing contributions to City Editor, The Tribune-Sun, Second ave. and Broadway, or letting him know if you would like offers of foodstuffs picked up at your home. Fighting Bob members will see that the baskets go to genuinely worthy families.

But the outlook for a happy Christmas for those who might otherwise be actually hungry is much better today. Here's the status of the fund:

Consair Sheet Metal Dept.	45 Baskets
Previously Contributed	$78.42
Well Wisher	25.00
Speechmistress club	8.00
Anonymous	2.00
W. L. B.	1.00
A Friend	1.00
C. F. Hurd	5.00
"We Three"	3.00
Total......	45 baskets plus $123.42

Union 12-19-40

U. S. to Finance $17,000,000 Consair Addition

Federal financing of $17,536,973.96 in an expansion program of Consolidated Aircraft Corp. was announced by the navy department at Washington yesterday.

Of this total $14,446,929.27 will be spent by the Defense Plant Corp., a Reconstruction Finance Corp. auxiliary, to finance Consair's big new parts factory near Old Town. This plant, now under construction, is approximately a mile and a half north of the company's Lindbergh field factory.

Another $3,090,044.99 will be spent by the navy for improvements at the Lindbergh field plant.

8 NEW UNITS PLANNED

Announcement of plans for the new parts factory was made recently, Edgar N. Gott, Consair vice president, reported.

Eight new units will be erected to house the parts unit, Gott said. Principal buildings will be three huge factory structures and a three-story drop-hammer building. Contract of $6,500,000 for construction of the plant has been awarded to B. O. Larsen, contractor.

EQUIPMENT INCLUDED

The rest of the Defense Plant Corp. money will be used in preparing the site, driving piles for the foundation, constructing approaches and equipping the new plant, which Gott said would be "a highly specialized production unit devoted to the manufacture of component parts and assemblies for wing and tail surface construction, with completely independent facilities for all operations requisite to their manufacture."

396-4M-6-39

DEC 13 1940

A SCRIPPS-HOWARD NEWSPAPER

SCRIPPS—HOWARD

12/9/40

The attached clipping from the New York World-Telegram may be of interest to you

MURRAY R. SCHWERENS
DIRECTOR
BUSINESS - FINANCE - INDUSTRY
PROMOTION

Plant to Double Bomber Capacity

New Cons. Aircraft Unit Due Next June

By the United Press.

SAN DIEGO, Cal., Dec. 9.—A $7,000,000 plant which will be erected here by the Consolidated Aircraft Corp. will virtually double the company's facilities to produce long range bombers, it was announced today.

The new plant "will be a highly specialized production unit devoted to manufacture of component parts and assemblies for wings and tail surface construction," a company announcement said.

The largest battery of drop hammers and hydraulic presses under one roof on the Pacific coast will be installed. The plant will be erected on a 52-acre site about a mile north of the present factory. There will be eight buildings, of a total roof area of 1,553,000 square feet.

By next June the new unit will be in operation, and Consolidated's personnel will be boosted from 14,000 to 30,000 to staff it.

Consolidated has a $323,000,000 backlog of orders for huge flying boats being built for the Navy and large bombers for the Army Air Corps and Great Britain.

---

8 Big Units In Separate Parts Factory

More than $17,000,000 will be spent for further expansion and improvement of the Consolidated Aircraft Corp. plant, under agreements announced today by the navy department, The Associated Press reports from Washington, D. C.

Of the total, $14,446,929.27 will be expended by the Defense Plant Corp., an RFC subsidiary, for constructing and equipping a huge parts factory along the east side of Pacific highway, 1½ miles north of the present plant. Both contracts total $17,536,963.

Navy to Spend $3,090,044

Another $3,090,044.69 will be spent by the navy department for improvements at the present factory, Edgar N. Gott, Consolidated vice president, revealed.

Eight new units will be erected to house the parts unit, Gott said. Principal buildings will be three huge factory structures and a three-story drop-hammer building. Contract of $6,500,000 for construction of the plant has been awarded to B. O. Larsen, contractor.

The structures will contain a covered manufacturing area of 1,553,000 square feet.

Equipment Included

The rest of the Defense Plant Corp. money will be used in preparing the site, driving piles for the foundation, constructing approaches and equipping the new plant, which Gott said would be "a highly specialized production unit devoted to the manufacture of component parts and assemblies for wing and tail surface construction, with completely independent facilities for all operations requisite to their manufacture."

Gott said the combined Consolidated payroll was expected to soar to 30,000 when the new division is placed in operation. The firm has a backlog of national defense orders and order for warplanes for Britain totaling in excess of $325,000,000.

Union 12-22-40

* * *

We were reminded by a young man that he works in a place where ribbing is no joke—the Consolidated Airplane plant.

L.A. Times 12/22/40

Bomber Assembly Plant Sites Chosen

WASHINGTON, Dec. 21. (U.P.) The War Department today announced that Tulsa, Okla., has been chosen as a site for a heavy-bomber assembly plant to be operated by Consolidated Aircraft Corp., San Diego.

The plant is one of four which will assemble bomber parts to be manufactured by the automotive industry.

The department selected Omaha, Neb., as the site for a medium-bomber assembly plant to be operated by Glenn L. Martin Co., Baltimore, Md., and a similar establishment at Kansas City, Kan., to be operated by North American Aviation Corp., Inglewood, Cal.

Pacific Coast Edition
THE WALL STREET JOURNAL

DOW-JONES
ELECTRIC PAGE NEWS PRINTERS

623 CENTRAL BUILDING
LOS ANGELES
PHONE TRINITY 0881

Press Clipping
FROM
ALBERT F. COUDERC

DEC 12 1940

Aircraft Industry Prepares

Consolidated Achieves "Line" Production On Giant Planes; Floor Space Increased

Aircraft manufacturers currently are engaged in the most spectacular program of expansion ever undertaken in the industrial history of this nation.

To obtain a first hand picture of this program—the progress, triumphs, and troubles—The Wall Street Journal's aviation editor, Gaston E. Marque, currently is making a survey of vital units in the industry. He is inspecting plants, interviewing top executives, not only of plane and engine manufacturers, but of leading supplies of parts, accessories and instruments.

His findings are being reported in a series of articles, of which the following is the sixth.

By Gaston E. Marque

SAN DIEGO, Calif.—This is the home of the giants of the air.

In its immense plant adjacent to Lindbergh Field on San Diego Bay, Consolidated Aircraft Corp. is turning out huge flying boats and landplanes weighing from 27,000 to 65,000 pounds and costing upward of $200,000 each.

Consolidated always has specialized in building large airplanes. The company claims the distinction of having built, since its inception in 1923, four times as many ships with a wing span of 100 feet or more as all other United States aircraft manufacturers combined.

A tour through its plant impresses on the visitor the fact that the company deals in great size. Huge mechanical and hydraulic presses, including one of 4,500 tons, large hydraulic drop hammers and hulls for the twin-engined PBY patrol bomber lined up 50 strong on the final assembly line, all convey the idea of great size.

And while the company is turning out only large airplanes it appears to have made about as much progress toward attaining line production as almost any other unit in the industry. The appearance of confusion in so many of the aircraft plants today, resulting from the constant rearrangement going on as new facilities are added in the course of preparing for production in larger volume than ever before, seems to be lacking in Consolidated's plant.

One reason for that probably is the fact that while most companies are just getting into production on entirely new models Consolidated is turning out an airplane, the PBY, which is much similar to that it has been manufacturing for several years. Furthermore, the climate in San Diego is such that the company can do a substantial part of its final assembly work outdoors the year around. Consequently when its ships reach the cumbersome stage they can be moved out to paved areas alongside the plant where big parts are fitted and the finishing touches put on the interior.

Consolidated has a further advantage in that its plant is relatively new, the first unit built only five years ago. As a result its original plant incorporated some of the more modern ideas in arrangement and was so designed as to allow orderly expansion.

When Consolidated transferred its activities to this city from Buffalo, N. Y., in 1935 it had about $6,000,000 of business on its books. It started operations with some 300 employes in a plant containing roundly 200,000 square feet of floor space. Today the company has an order backlog of approximately $320,000,000 and by February 1 next year expects to have roughly 1,500,000 square feet of covered floor area, plus a substantial paved but uncovered area suitable for final assembly work, and between 15,000 and 16,000 employes. This, however, will not complete Consolidated's expansion program.

The company has just announced a $7,000,000 addition which will approximately double its present floor area. So far Consolidated has financed its own expansion, having previously spent or committed itself to spend this year approximately $6,000,000 for enlargement of manufacturing facilities. The latest addition, however, it is understood will be financed by the Government and leased by the company.

The new addition, according to present plans, will be devoted to the manufacture of parts and minor assemblies with existing facilities turned almost entirely to final assembly work. This does not mean, however, that Consolidated is not planning to sub-contract some of its work. It is already doing considerable sub-contracting and plans to do more as it swings into increased production on its present orders.

Although Consolidated has greatly enlarged its plant this year and increased the number on its pay roll from about 3,200 on January 1, to almost 14,000 at present, its deliveries for 1940 probably will show relatively little improvement over last year when its shipments aggregated a little more than $3,600,000. This because, through most of the year, the company has been engaged principally in tooling up for production in increased volume and in turning out parts and sub-assemblies. Furthermore its deliveries have been held up somewhat by the failure of at least one sub-contractor to make deliveries on schedule and the inability to get engines in numbers required. As a result Consolidated today has an estimated $25,000,000 worth of parts and planes in various stages of production which should begin flowing off the final assembly line in steadily increasing numbers from now out.

On the basis of the present schedule deliveries from existing facilities, against contracts now on the books, should attain their peak around March or April. The latest addition should be completed by about June 1 and reach its peak employment of roughly 12,000 by November of next year.

Consolidated currently is working two ten-hour shifts five days a week. Like most other manufacturers it could undoubtedly enlarge its output by either working an additional day or adding another shift. This, however, has not proved feasible as yet as production of the airframe manufacturers naturally must be geared to that of their suppliers and sub-contractors, as well as that of the engine producers.

At this time Consolidated is in production on three models but actually is making deliveries in any quantity on only one type. It is manufacturing a twin-engined flying boat for the Navy and the British, a four-engined flying boat, the PB2Y, for the Navy, and a four-engined land bomber, the model 32 or B-24, for the Army and British. This bomber, the prototype of which was first flown in 1939, marks Consolidated's return to the landplane field. It is a high-wing ship, with a tri-cycle landing gear, which, according to available information, has a speed of over 300 miles per hour, a range of approximately 3,000 miles and a bomb-carrying capacity of approximately four tons.

Consolidated's $320,000,000 backlog which, incidentally, is equivalent to more than five times its aggregate deliveries for the past 17 years, includes about $80,000,000 of foreign business. Approximately $100,000,000 of the total was obtained on cost plus fixed fee contracts while the balance was taken on a fixed price basis.

No estimate of probable earnings results for 1940 can be made at this time because actual deliveries this month, which cannot be forecast accurately as yet, will have an important bearing on the final showing. Last year Consolidated earned $1,104,327, equal after preferred dividends, to $1.79 a share on the common. Indications are the excess profits tax will be quite burdensome to the company. Whether it will choose the average earnings or return on invested capital method for determining its excess profits tax exemption is not quite clear as yet as its credit under either bases would be approximately the same or roundly $850,000.

Union 12/1940

200 Children To Get Present From Shoe Fund

THE UNION SHOE FUND

Previously reported	$587.32
Consolidated Employes	70.00
Old Timer	5.75
Glass Cashbox	20.30
World War Veteran	5.00
Friend	7.00
W. H. M.	3.00
Satella J. Penman	10.00
Louise S. Wilson	10.00
Nattie B. Roe	5.00
Kate C. Hale	5.00
Mabel A. Vickers	5.00
Friend	1.00
Total	$734.37

The Union Shoe Fund's Christmas gift to 200 needy school children will be a pair of new shoes. The first 50 of the 200 will be fitted Saturday morning at the Universal Boot shop, 1154 Fifth ave., where all repairing of cast off shoes is done at cost.

After Consolidated Aircraft Corp. employes collected $70 yesterday, the Shoe Fund manager decided on 200 pairs as the Christmas quota.

MAY RAISE 'ANTE'

Another group of Consolidated workers intimated yesterday that they might "raise the ante of $70. All of which goes to show that the Christmas spirit often works wonders, especially when a child, cold and wet feet and sickness are involved.

"We are getting ready to fill a lot of Christmas baskets Saturday," said J. W. Kelly of Consolidated, "and we had heard about the great good the Shoe Fund is doing for the children. So we just dug down some more, and $70 was the result."

CAMPAIGN 2 WEEKS OLD

Can you picture 200 boys and girls being fitted out with new shoes, with Christmas just around the corner?

While yesterday's total was $734.37—amount donated since the Shoe Fund began this year's work two weeks ago—more than half of that sum already has been spent for new shoes. Last Saturday's quota was 100 pairs.

Yesterday when Mrs. Ellen Sweeney, secretary of the Catholic Welfare bureau, and Mrs. Elsa Lester, of the P.-T. A., were told of the decision to give 200 pairs of shoes before Christmas, both were overjoyed.

BETTER THAN MEDICINE

"To many a child a pair of warm shoes is worth more than a bottle of the best medicine or cough syrup," said Mrs. Sweeney.

If the Shoe Fund Yuletide spirit keeps up until Christmas like it did yesterday, there will be enough to pay the shoe bills and give several hundred boys and girls a happy Christmas with warm feet that they would not have had if the Shoe Fund had not come to their assistance.

Won't you please mail a check RIGHT NOW or send cash to the business office of The Union?

CONSAIR JOINS DEFENSE AGAINST COLD

J. W. KELLY G. V. HARRISON
. . . happy as they turned over $70 to Shoe Fund from Consolidated Aircraft Corp. workers.

Wall St. Journal - 12-9-40

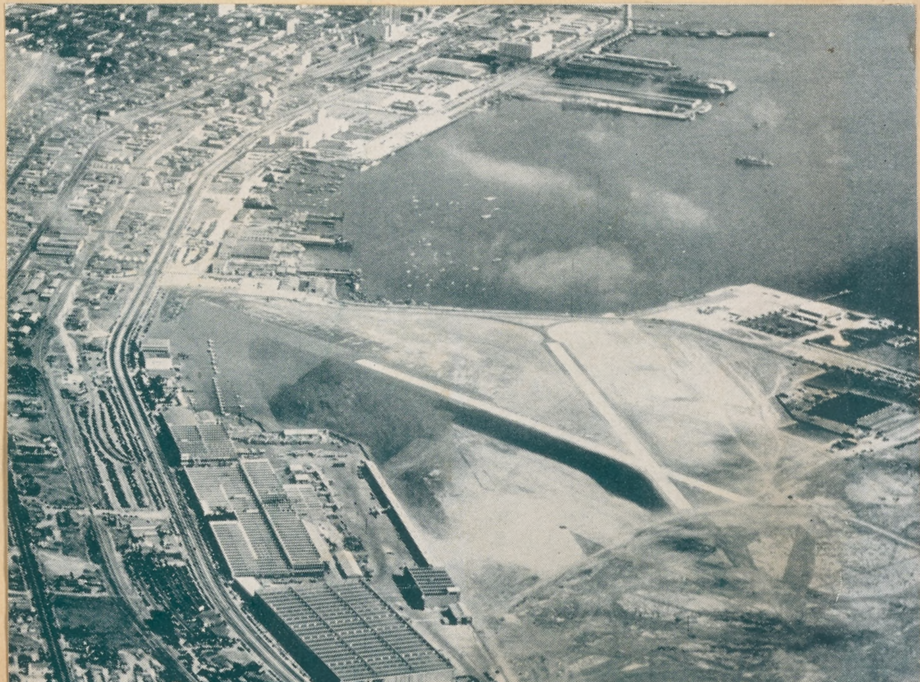
Consolidated Aircraft Plant To Be Expanded at San Diego

SAN DIEGO—Consolidated Aircraft Corp. has announced plans for additional expansion to round out its San Diego plant facilities, involving construction of a parts plant consisting of eight buildings at a cost of $7,000,000, which will practically double present manufacturing space under roof. The new plant, to be located a little more than a mile north of the present main unit at Lindbergh Field, will fit solidly into the line production program for Consolidated flying boats and large bombers, according to company officials.

The new parts plant will add 1,553,000 square feet of manufacturing space under roof, just about doubling the present roofed area including recent expansion which is nearing completion. With an accelerated construction program, the plant should be completed and in full operation by June 1, 1941, according to present plans, which should bring the company's employment roster to around 30,000.

This new plant will be a highly specialized production unit devoted to the manufacture of component parts and assemblies for wings and tail surfaces, with completely independent facilities for all operations needed for their manufacture.

The new factory site is 52 acres with an adjacent controlled area of 72 acres, part of which will be used for parking facilities. The equipment for the new plant has been ordered, and some of it is already coming to the company. To make immediate use of production equipment as delivered, many machines will be installed and operated in tents, then transferred to the new buildings as they are completed.



The News Meter 12/1940

The Consolidated Aircraft Corporation as it appeared when new units were dedicated last Labor Day. Additional buildings to be completed by January 15 will increase Consolidated's manufacturing area (over the original 1935) by more than 1,000 per cent!

Pacific Coast Edition
THE WALL STREET JOURNAL

DOW-JONES NEWS TICKERS

415 BUSH STREET
SAN FRANCISCO
EXBROOK 1271

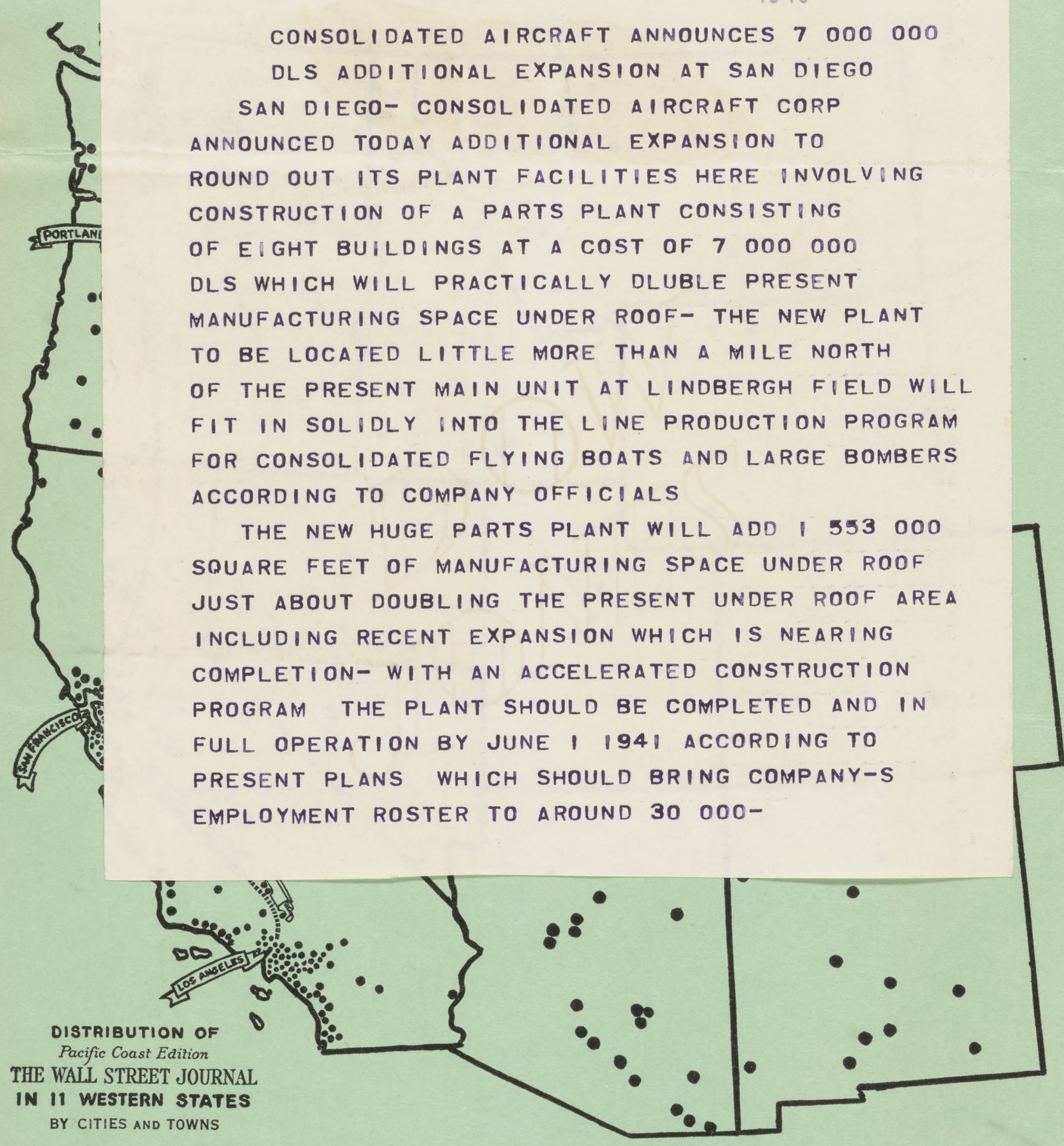
News Clipping
FROM
ALBERT COUDERC
108 W. 6TH ST., LOS ANGELES
TRINITY 0881

DEC 9 - 1940

CONSOLIDATED AIRCRAFT ANNOUNCES 7 000 000 DLS ADDITIONAL EXPANSION AT SAN DIEGO

SAN DIEGO- CONSOLIDATED AIRCRAFT CORP ANNOUNCED TODAY ADDITIONAL EXPANSION TO ROUND OUT ITS PLANT FACILITIES HERE INVOLVING CONSTRUCTION OF A PARTS PLANT CONSISTING OF EIGHT BUILDINGS AT A COST OF 7 000 000 DLS WHICH WILL PRACTICALLY DLUBLE PRESENT MANUFACTURING SPACE UNDER ROOF- THE NEW PLANT TO BE LOCATED LITTLE MORE THAN A MILE NORTH OF THE PRESENT MAIN UNIT AT LINDBERGH FIELD WILL FIT IN SOLIDLY INTO THE LINE PRODUCTION PROGRAM FOR CONSOLIDATED FLYING BOATS AND LARGE BOMBERS ACCORDING TO COMPANY OFFICIALS

THE NEW HUGE PARTS PLANT WILL ADD 1 553 000 SQUARE FEET OF MANUFACTURING SPACE UNDER ROOF JUST ABOUT DOUBLING THE PRESENT UNDER ROOF AREA INCLUDING RECENT EXPANSION WHICH IS NEARING COMPLETION- WITH AN ACCELERATED CONSTRUCTION PROGRAM THE PLANT SHOULD BE COMPLETED AND IN FULL OPERATION BY JUNE 1 1941 ACCORDING TO PRESENT PLANS WHICH SHOULD BRING COMPANY-S EMPLOYMENT ROSTER TO AROUND 30 000-



DISTRIBUTION OF
Pacific Coast Edition
THE WALL STREET JOURNAL
IN 11 WESTERN STATES
BY CITIES AND TOWNS

DOW-JONES NEWS TICKERS
Pacific Coast Edition
THE WALL STREET JOURNAL
415 BUSH STREET, SAN FRANCISCO
EXBROOK 1271

TICKER CLIPPING
FROM
ALBERT COUDERC
108 W. 6TH ST., LOS ANGELES
TRINITY 0881

United States and Canadian Cities Directly Connected with the Dow-Jones News Wire System

REG CONSOLIDATED AIRCRAFT PREFERRED DIV

SAN DIEGO- CONSOLIDATED AIRCRAFT CORP DECLARED REGULAR QUARTERLY PREFERRED DIVIDEND OF 75 C PAYABLE DECEMBER 31 TO STOCK OF RECORD DECEMBER 14-

DEC 11 1940

LOS ANGELES- RESUMPTION OF DIVIDENDS ON THE COMMON STOCK BY CONSOLIDATED AIRCRAFT CORP WITH A 2 DLR PAYMENT ORDERED AFTER A TWO YEAR INTERIM IS ACCOMPANIED BY UNOFFICIAL ESTIMATES THAT THE COMPANY IN THE LAST HALF OF THE YEAR EARNED SOMETHING ON THE 571 560 SHARES OF COMMON STOCK OUTSTANDING TO SHOW FOR THE FULL YEAR SOMEWHERE BETWEEN 1 DLR AND 2 DLS A SHARE DEPENDING ON ACCOUNTING POLICIES

THE FIRST HALF OF THIS YEAR WAS CONSUMED LARGELY IN PREPARATORY WORK TO GET INTO LARGE SCALE PRODUCTION ON THE HUGE BACKLOG OF ORDERS WHICH HAD PILED UP - IT WAS ONLY LAST AUGUST THAT THE COMPANY BEGAN TO TURN OUT SHIPS IN QUANTITY- SINCE THEN OUTPUTHAS STEADILY INCREASED TO A POINT WHERE THE HUGE 4 ENGINE BOMBERS AND PBY- NAVY PATROL BOMBERS ARE BEING TURNED OUT ON A PRODUCTION LINE

DELIVERIES IN THE FIRST HALF OF THIS YEAR YEAR WERE LESS THAN 500 000 DLS INDICATING A SUBSTANTIAL OPERATING DEFICIT FOR THAT PERIOD- CONSOLIDATED-S HUGE BACKLOG OF 320 000 000 DLS IS LARGELY FOR ACCOUNT OF UNITED STATES DEFENSIVE NEEDS AND THE BRITISH GOVERNMENT- INCLUSION OF A SUBSTANTIAL AMOUNT OF BRITISH WORK WITH ITS RELATIVELY HIGHER PROFIT MARGIN OBVIOUSLY HELPS TO OFFSET THE SMALL PROFIT MARGIN ON UNITED STATES GOVERNMENT WORK-

---

Trib. 12/21/40

Consair Assembly Plant at Tulsa, Army Plan; 'News' to S. D. Heads

WASHINGTON, Dec. 21 (U.P.)—The war department announced today that Tulsa, Okla., has been chosen as a site for a heavy bomber assembly plant to be operated by Consolidated Aircraft Corp., of San Diego.

Consolidated officials had no comment to offer on the fact that a "branch" factory would be operated in Tulsa. "Things come out so fast and frequently from the war department that news of that kind often is news to us," a Consolidated spokesman said.

Two representatives from Tulsa, W. G. Skelley and Russell Rhodes, visited the Consolidated plant and conferred with officials of the aircraft company this week.

The plant is one of four which will assemble bomber parts to be manufactured by the automotive industry.

The department selected Omaha, Neb., as the site for a medium bomber assembly plant to be operated by Glenn L. Martin Co., Baltimore, Md., and a similar establishment at Kansas City., Kan., to be operated by North American Aviation Corp., Inglewood.

The department did not disclose the sizes of the projected plants, explaining that final negotiations for construction and operation are not yet concluded.

Authoritatve sources said, however, the medium bomber plants would turn out about 100 planes monthly, while those making the larger craft would produce about 50 monthly. Cost of the plants probably will be about $7,000,000 to $10,000,000 each.

---

bation. 12-21- UNION

CONSAIR PAYS $5 YULE BONUS TO EACH EMPLOYE

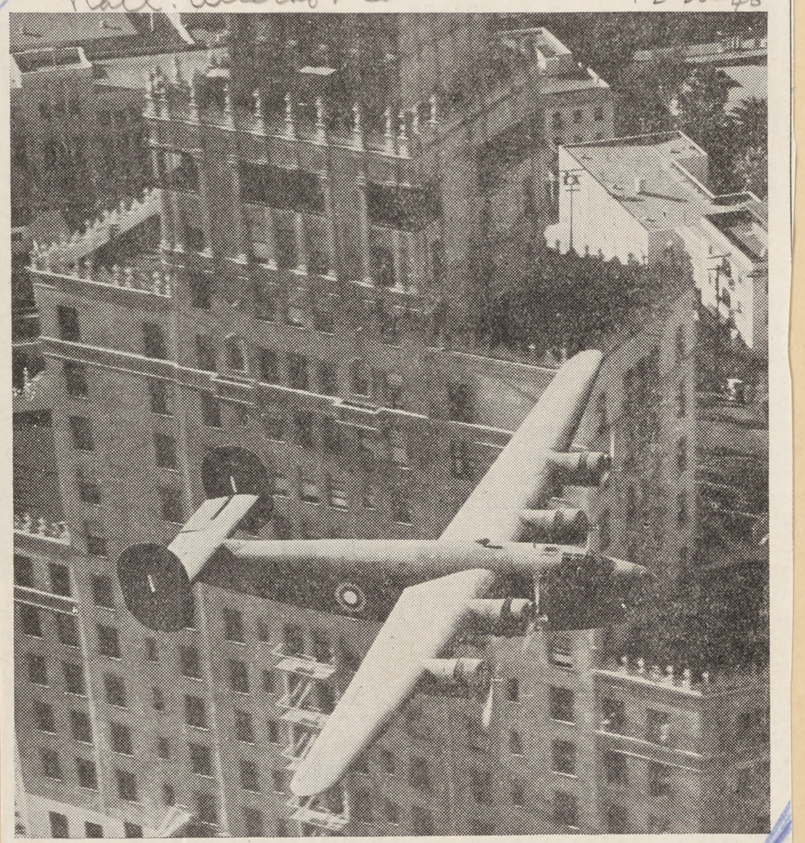
The problem of a turkey dinner with all the trimmings has been solved—at least for Consolidated Aircraft Corp. employes.

Maj. R. H. Fleet, Consolidated Aircraft president, yesterday announced that each person employed prior to Dec. 15 would receive a $5 Christmas check to cover expense of the holiday feast.

Which should be good news to poultry dealers as Consolidated's 14,000 employes will receive $70,000 in Christmas checks.

"We cannot allow the holiday season to pass without an expression of appreciation on the part of the company for the splendid cooperation it has received from employes throughout the year," said Maj. Fleet.

Natl. Aircraft Counsellor 12-20-40



The above picture shows one of the Consolidated Model 32 4-engine Bombers. A large quantity of these ships are destined for Great Britain as well as the U. S. Air Corps. The Consolidated company has recently broken ground for plant expansion which will double their present size.

NEW CONSOLIDATED PLANT TO COST SEVEN MILLION

Natl. Aircraft Counsellor 12-20-40

Consolidated Aircraft Corporation announces that ground will immediately be broken for the construction of a huge new Parts Plant at San Diego, which will virtually double Consolidated's present size. The new plant will fit solidly into the line production program on Consolidated flying boats and large land bombers.

The new huge Parts Plant will be located about 1 and 1/3 miles north of the Lindbergh Field site, and will add 1,553,000 square feet of covered manufacturing area, virtually doubling the tenfold expansion which is nearing completion at this time. With an accelerated construction program, the entire new Parts Plant is scheduled to be completed and in full operation by June, 1941. This plant is composed of a group of eight buildings, plus loading platform of 64,000 square feet. Cost is to run between $6,500,000 and $7,000,000. The factory site is 52 acres in size, with an adjacent area of 72 acres. Combined personnel to operate both plants will reach 35,000. New buildings will be similar in type to present Consolidated structures.

The equipment for the new plant has been ordered and is in the process of being delivered. To make immediate use of production equipment, many of the machines will be set up and operated under lean-to tents at the Lindbergh Field plant site, then transferred to the new buildings as quickly as they are ready for occupancy.

The largest battery of drop hammers and hydraulic presses under one roof on the Pacific Coast will be used in the new Drop Hammer Building, which will also house a complete pattern shop, foundry and die-storage departments.

---

3 Killed in Crash of S. D. Plane at Mexican Ranch

LORAN KNOWLES GRISWOLD
. . . well known here.

HERBERT LEROY MARTIN
. . . leaves widow.

L. E. SINCLAIR JR.
. . . pilot on ship.

Consair Workers Victims; Craft Burns on Field

A week-end aerial holiday ended in flaming death for two young San Diegans and a Calipatria resident when their plane crashed and burned at the Hamilton dude ranch in Lower California, 200 miles south of here.

The dead were Herbert Leroy Martin, 27, of 4062 Vermont st., Loran Knowles Griswold, 27, of 4386 Highland ave., and L. E. Sinclair jr., pilot, 28, of Calipatria.

TAKE-OFF DISASTROUS

Gerald Mokma, American vice consul at Tijuana and a witness of the accident, brought the first news of the crash when he returned to his office yesterday.

Mokma said the plane took off and while circling the field something fell off, apparently part of the engine or cowling. The plane spun in tail down and burst into flames.

The plane, a Cessna cabin model, cleared from Lindbergh field Saturday with the three young men aboard and Sinclair at the controls. His two passengers were employed at the Consolidated Aircraft Corp. here. Sinclair, son of a Calipatria rancher, was the owner of the plane.

TWO LEAVE WIDOWS

The San Diego victims were married. Griswold, a former Herbert Hoover High school football player, leaves his wife, Inez, his parents, Mr. and Mrs. H. L. Griswold, a sister, Mrs. Mary Killeson, all of this city, and his grandparents, Mr. and Mrs. C. M. Knowles of El Cajon.

Martin is survived by his wife, Helen and a 2-month-old daughter, both of this city, and a sister, Mrs. Don Geir, of Brawley. Martin, born in Hemet, lived in Brawley until March when he came here to work.

BODIES STILL IN SOUTH

The young men were in the experimental department at Consair.

Relatives sought to have the bodies of the victims brought back from Mexico by plane but weather conditions had halted flying operations. Mokma was expected to return to the scene of the accident today to assist in making arrangement for return of the victims.

---

* Union 12-22-40

Tulsa Chosen As Site for New Consair Plant

WASHINGTON, Dec. 21 (U.P.)—The war department announced today that Tulsa, Okla., has been chosen as a site for a heavy bomber assembly plant to be operated by Consolidated Aircraft Corp., of San Diego.

The plant is one of four which will assemble bomber parts to be manufactured by the automotive industry.

The department selected Omaha, Neb., as the site for a medium bomber assembly plant to be operated by Glenn L. Martin Co., Baltimore, Md., and a similar establishment at Kansas City., Kan., to be operated by North American Aviation Corp., Inglewood.

The department did not disclose the sizes of the projected plants, explaining that final negotiations for construction and operation are not yet concluded.

Authoritatve sources said, however, the medium bomber plants would turn out about 100 planes monthly, while those making the larger craft would produce about 50 monthly. Cost of the plants probably will be about $7,000,000 to $10,000,000 each.

No Consair Comment

Consolidated officials had no comment to offer on the fact that a "branch" factory would be operated in Tulsa.

"Things come out so fast and frequently from the war department that news of that kind often is news to us," a Consolidated spokesman said.

Two representatives from Tulsa, W. G. Skelley and Russall Rhodes, visited the Consolidated plant and conferred with officials of the aircraft company last week.

Natl. Aircraft Counsellor 12-20-40

AIRCRAFT STOCKS

By HARRY J. MOFFETT

DEFENSE ORDERS: Rumors of multi-million dollar orders for aircraft engines and parts have confused the minds of many persons as to what was actually taking place in the way of definite concrete orders. All veils drawn aside and eliminating repetition, it can be safely stated that more than $1,750,000 for defense has already been allotted the Pacific Coast, with by far the greater share of these expenditures going for aircraft and engines. During the past few months, actual orders amounting to more than one billion dollars have been given Boeing, Consolidated, Douglas, Lockheed, Vultee and Northrop alone. These orders, all for the United States Army and Navy, range from training to long range bombing planes. It is now estimated that total orders in Southern California for domestic and foreign account exceed one and one-half billion dollars. Most plants are operating, or are about to operate, on a 3-shifts per day basis and expansion programs will be completed early next year.

Pacific Coast Edition
THE WALL STREET JOURNAL

DOW-JONES
ELECTRIC PAGE NEWS PRINTERS

623 CENTRAL BUILDING
LOS ANGELES
PHONE TRINITY 0881

DEC 12 1940

CONS. AIRCRAFT VOTES DIVIDEND

Will Pay $2 on Common, First in Two Years; Year's Net Between $1 and $2

LOS ANGELES — Resumption of common stock dividends by Consolidated Aircraft Corp., with a $2 payment, after a two-year interim is accompanied by unofficial estimates that the company in the last half of this year had a common share profit and for the full year will show between $1 and $2 a share depending on accounting policies.

The first half year was devoted largely to preparatory work for large scale production and it was only last August that quantity output was achieved. Since, production has increased steadily.

Deliveries in the first half were less than $500,000, indicating a substantial operating deficit for that period. Consolidated's backlog of $320,000,000 is largely for U. S. defensive needs and the British government. Inclusion of a substantial amount of British work, which carries a relatively higher profit margin obviously helps to offset the small profit return on U. S. orders.

Net $1.79 a Share in 1939

For all of 1939 Consolidated had sales of only $3,603,240, an abnormally low volume, and net profit was $1,104,327, or $1.79 on common. The substantial profit in relation to gross reflected the policy that profit on any contract was not taken into earnings until final completion of contract, although actual deliveries may have started in prior years. There is a good chance that this policy may be changed in computing this year's results.

Consolidated recently announced plans to construct a parts and assembly plant at San Diego. When complete with tools and machinery the plant probably will cost more than $10,000,000. This cost will be defrayed by the Government, but the plant will be operated by Consolidated on a ten-year lease basis with an option of purchase at the end of the period.

Line Production Achieved

Having completed another major phase of expansion last September, Consolidated is now in high gear production and output should continue to increase steadily. The company has achieved considerable success toward a production line for its four-engined bombers weighing 30 tons.

The $2 dividend on common declared yesterday is payable December 26 to stock of record December 20. The last previous payment was $1 in December, 1938.

Directors also declared the regular quarterly preferred dividend of 75 cents, payable December 31 to stock of record December 14.

BUREAU
NEW YORK

NEW YORK CITY, HERALD-TRIB
DECEMBER [illegible], 1940

Aircraft Plant Planning $14,000,000 Addition

Consolidated to Erect Eight Buildings on Coast

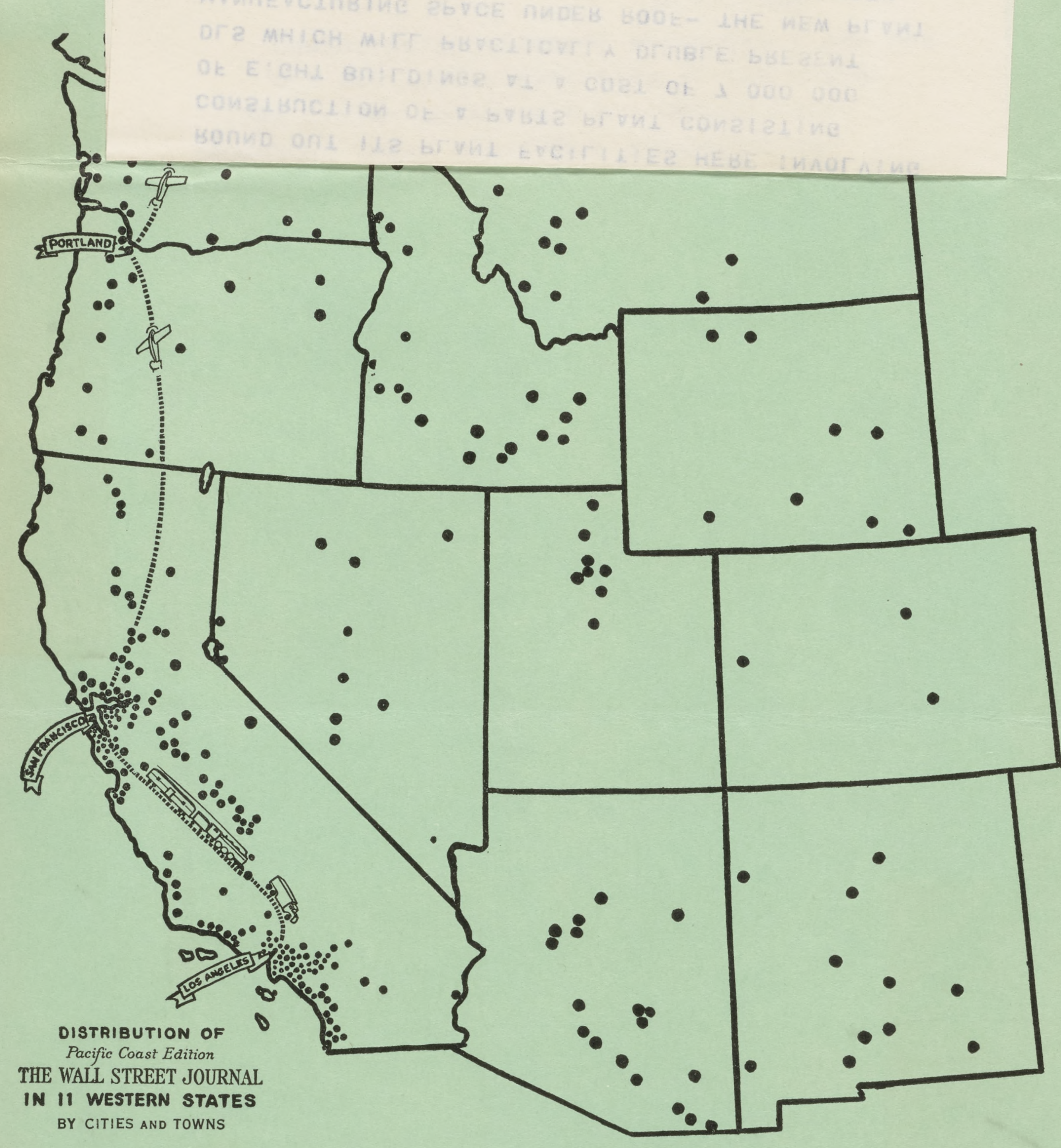
SAN DIEGO, Calif., Dec. 18 (AP).—Consolidated Aircraft Corporation officials said an agreement with the Defense Plant Corporation announced in Washington today involved a $14,000,000 plant addition project. Edgar N. Gott, vice-president, said eight new buildings would be constructed, virtually doubling the company's ten-fold expansion since 1935.

The new plant will be a highly specialized unit devoted to the manufacture of component parts and assemblies for wings and tail surface construction, with independent facilities for all operations requisite to their manufacture.

THE WA

DOW-JO

41



DISTRIBUTION OF
Pacific Coast Edition
THE WALL STREET JOURNAL
IN 11 WESTERN STATES
BY CITIES AND TOWNS

DOW-JONES NEWS TICKERS

Pacific Coast Edition
THE WALL STREET JOURNAL
415 BUSH STREET, SAN FRANCISCO
EXBROOK 1271

TICKER CLIPPING

FROM
ALBERT COUDERC
108 W. 6TH ST., LOS ANGELES
TRINITY 0881

United States and Canadian Cities Directly Connected with the Dow-Jones News Wire System

Westwood Village

TED STATES
ORK
nx
oklyn
alo
ey Island
ira
nt Vernon
Rochelle
New York City
Poughkeepsie
Rochester
White Plains
LAND (N. Y.)
ing
Cove
Neck
pstead
ica
Island City
nnati
eland
on
lay
do
and
ISLAND
idence
IA
olk
mond
IGTON
le

CANADA

TA
ary
onton
H COLUMBIA
couver
oria
OBA
nipeg
IO
ilton
wa
onto
C
ntreal

DEC 11 1940

CONSOLIDATED AIRCRAFT

LOS ANGELES- RESUMPTION OF DIVIDENDS ON THE COMMON STOCK BY CONSOLIDATED AIRCRAFT CORP WITH A 2 DLR PAYMENT ORDERED AFTER A TWO YEAR INTERIM IS ACCOMPANIED BY UNOFFICIAL ESTIMATES THAT THE COMPANY IN THE LAST HALF OF THE YEAR EARNED SOMETHING ON THE 571 560 SHARES OF COMMON STOCK OUTSTANDING TO SHOW FOR THE FULL YEAR SOMEWHERE BETWEEN I DLR AND 2 DLS A SHARE DEPENDING ON ACCOUNTING POLICIES

THE FIRST HALF OF THIS YEAR WAS CONSUMED LARGELY IN PREPARATORY WORK TO GET INTO LARGE SCALE PRODUCTION ON THE HUGE BACKLOG OF ORDERS WHICH HAD PILED UP - IT WAS ONLY LAST AUGUST THAT THE COMPANY BEGAN TO TURN OUT SHIPS IN QUANTITY- SINCE THEN OUTPUTHAS STEADILY INCREASED TO A POINT WHERE THE HUGE 4 ENGINE BOMBERS AND PBY- NAVY PATROL BOMBERS ARE BEING TURNED OUT ON A PRODUCTION LINE

DELIVERIES IN THE FIRST HALF OF THIS YEAR YEAR WERE LESS THAN 500 000 DLS INDICATING A SUBSTANTIAL OPERATING DEFICIT FOR THAT PERIOD- CONSOLIDATED-S HUGE BACKLOG OF 320 000 000 DLS IS LARGELY FOR ACCOUNT OF UNITED STATES DEFENSIVE NEEDS AND THE BRITISH GOVERNMENT- INCLUSION OF A SUBSTANTIAL AMOUNT OF BRITISH WORK WITH ITS RELATIVELY HIGHER PROFIT MARGIN OBVIOUSLY HELPS TO OFFSET THE SMALL PROFIT MARGIN ON UNITED STATES GOVERNMENT WORK-

---

Trib. 12/21/40

Consair Assembly Plant at Tulsa, Army Plan; 'News' to S. D. Heads

WASHINGTON, Dec. 21 (U.P.)—The war department announced today that Tulsa, Okla., has been chosen as a site for a heavy bomber assembly plant to be operated by Consolidated Aircraft Corp., of San Diego.

Consolidated officials had no comment to offer on the fact that a "branch" factory would be operated in Tulsa. "Things come out so fast and frequently from the war department that news of that kind often is news to us," a Consolidated spokesman said.

Two representatives from Tulsa, W. G. Skelley and Russell Rhodes, visited the Consolidated plant and conferred with officials of the aircraft company this week.

The plant is one of four which will assemble bomber parts to be manufactured by the automotive industry.

The department selected Omaha, Neb., as the site for a medium bomber assembly plant to be operated by Glenn L. Martin Co., Baltimore, Md., and a similar establishment at Kansas City., Kan., to be operated by North American Aviation Corp., Inglewood.

The department did not disclose the sizes of the projected plants, explaining that final negotiations for construction and operation are not yet concluded.

Authoritatve sources said, however, the medium bomber plants would turn out about 100 planes monthly, while those making the larger craft would produce about 50 monthly. Cost of the plants probably will be about $7,000,000 to $10,000,000 each.

---

bation. 12-21- UNION

CONSAIR PAYS $5 YULE BONUS TO EACH EMPLOYE

The problem of a turkey dinner with all the trimmings has been solved—at least for Consolidated Aircraft Corp. employes.

Maj. R. H. Fleet, Consolidated Aircraft president, yesterday announced that each person employed prior to Dec. 15 would receive a $5 Christmas check to cover expense of the holiday feast.

Which should be good news to poultry dealers as Consolidated's 14,000 employes will receive $70,000 in Christmas checks.

"We cannot allow the holiday season to pass without an expression of appreciation on the part of the company for the splendid cooperation it has received from employes throughout the year," said Maj. Fleet.

---

1 Lou & Nash 3½s 50 104⅞ 104⅞ 104
5 L & N So Mon 4s... 88¼ 88 88

Natl. Aircraft Counsellor 12-20-40

The above picture shows one of the Consolidated Model 32 4-engine Bombers. A large quantity of these ships are destined for Great Britain as well as the U. S. Air Corps. The Consolidated company has recently broken ground for plant expansion which will double their present size.

NEW CONSOLIDATED PLANT TO COST SEVEN MILLION

Natl. Aircraft Counsellor 12-20-40

Consolidated Aircraft Corporation announces that ground will immediately be broken for the construction of a huge new Parts Plant at San Diego, which will virtually double Consolidated's present size. The new plant will fit solidly into the line production program on Consolidated flying boats and large land bombers.

The new huge Parts Plant will be located about 1 and 1/3 miles north of the Lindbergh Field site, and will add 1,553,000 square feet of covered manufacturing area, virtually doubling the tenfold expansion which is nearing completion at this time. With an accelerated construction program, the entire new Parts Plant is scheduled to be completed and in full operation by June, 1941. This plant is composed of a group of eight buildings, plus loading platform of 64,000 square feet. Cost is to run between $6,500,000 and $7,000,000. The factory site is 52 acres in size, with an adjacent area of 72 acres. Combined personnel to operate both plants will reach 35,000. New buildings will be similar in type to present Consolidated structures.

The equipment for the new plant has been ordered and is in the process of being delivered. To make immediate use of production equipment, many of the machines will be set up and operated under lean-to tents at the Lindbergh Field plant site, then transferred to the new buildings as quickly as they are ready for occupancy.

The largest battery of drop hammers and hydraulic presses under one roof on the Pacific Coast will be used in the new Drop Hammer Building, which will also house a complete pattern shop, foundry and die-storage departments.

---

3 Killed in Crash of S. D. Plane at Mexican Ranch

LORAN KNOWLES GRISWOLD
. . . well known here.

HERBERT LEROY MARTIN
. . . leaves widow.

L. E. SINCLAIR JR.
. . . pilot on ship.

Consair Workers Victims; Craft Burns on Field

A week-end aerial holiday ended in flaming death for two young San Diegans and a Calipatria resident when their plane crashed and burned at the Hamilton dude ranch in Lower California, 200 miles south of here.

The dead were Herbert Leroy Martin, 27, of 4062 Vermont st., Loran Knowles Griswold, 27, of 4386 Highland ave., and L. E. Sinclair jr., pilot, 28, of Calipatria.

TAKE-OFF DISASTROUS

Gerald Mokma, American vice consul at Tijuana and a witness of the accident, brought the first news of the crash when he returned to his office yesterday.

Mokma said the plane took off and while circling the field something fell off, apparently part of the engine or cowling. The plane spun in tail down and burst into flames.

The plane, a Cessna cabin model, cleared from Lindbergh field Saturday with the three young men aboard and Sinclair at the controls. His two passengers were employed at the Consolidated Aircraft Corp. here. Sinclair, son of a Calipatria rancher, was the owner of the plane.

TWO LEAVE WIDOWS

The San Diego victims were married. Griswold, a former Herbert Hoover High school football player, leaves his wife, Inez, his parents, Mr. and Mrs. H. L. Griswold, a sister, Mrs. Mary Killeson, all of this city, and his grandparents, Mr. and Mrs. C. M. Knowles of El Cajon.

Martin is survived by his wife, Helen and a 2-month-old daughter, both of this city, and a sister, Mrs. Don Geir, of Brawley. Martin, born in Hemet, lived in Brawley until March when he came here to work.

BODIES STILL IN SOUTH

The young men were in the experimental department at Consair.

Relatives sought to have the bodies of the victims brought back from Mexico by plane but weather conditions had halted flying operations. Mokma was expected to return to the scene of the accident today to assist in making arrangement for return of the victims.

---

* Union 12-22-40

Tulsa Chosen As Site for New Consair Plant

WASHINGTON, Dec. 21 (U.P.)—The war department announced today that Tulsa, Okla., has been chosen as a site for a heavy bomber assembly plant to be operated by Consolidated Aircraft Corp., of San Diego.

The plant is one of four which will assemble bomber parts to be manufactured by the automotive industry.

The department selected Omaha, Neb., as the site for a medium bomber assembly plant to be operated by Glenn L. Martin Co., Baltimore, Md., and a similar establishment at Kansas City., Kan., to be operated by North American Aviation Corp., Inglewood.

The department did not disclose the sizes of the projected plants, explaining that final negotiations for construction and operation are not yet concluded.

Authoritatve sources said, however, the medium bomber plants would turn out about 100 planes monthly, while those making the larger craft would produce about 50 monthly. Cost of the plants probably will be about $7,000,000 to $10,000,000 each.

No Consair Comment

Consolidated officials had no comment to offer on the fact that a "branch" factory would be operated in Tulsa.

"Things come out so fast and frequently from the war department that news of that kind often is news to us," a Consolidated spokesman said.

Two representatives from Tulsa, W. G. Skelley and Russall Rhodes, visited the Consolidated plant and conferred with officials of the aircraft company last week.

Natl. Aircraft Counsellor 12-20-40

AIRCRAFT STOCKS

By HARRY J. MOFFETT

DEFENSE ORDERS: Rumors of multi-million dollar orders for aircraft engines and parts have confused the minds of many persons as to what was actually taking place in the way of definite concrete orders. All veils drawn aside and eliminating repetition, it can be safely stated that more than $1,750,000 for defense has already been allotted the Pacific Coast, with by far the greater share of these expenditures going for aircraft and engines. During the past few months, actual orders amounting to more than one billion dollars have been given Boeing, Consolidated, Douglas, Lockheed, Vultee and Northrop alone. These orders, all for the United States Army and Navy, range from training to long range bombing planes. It is now estimated that total orders in Southern California for domestic and foreign account exceed one and one-half billion dollars. Most plants are operating, or are about to operate, on a 3-shifts per day basis and expansion programs will be completed early next year.

Pacific Coast Edition
THE WALL STREET JOURNAL

DOW-JONES
ELECTRIC PAGE NEWS PRINTERS

623 CENTRAL BUILDING
LOS ANGELES
PHONE TRINITY 0881

DEC 12 1940

CONS. AIRCRAFT VOTES DIVIDEND

Will Pay $2 on Common, First in Two Years; Year's Net Between $1 and $2

LOS ANGELES — Resumption of common stock dividends by Consolidated Aircraft Corp., with a $2 payment, after a two-year interim is accompanied by unofficial estimates that the company in the last half of this year had a common share profit and for the full year will show between $1 and $2 a share depending on accounting policies.

The first half year was devoted largely to preparatory work for large scale production and it was only last August that quantity output was achieved. Since, production has increased steadily.

Deliveries in the first half were less than $500,000, indicating a substantial operating deficit for that period. Consolidated's backlog of $320,000,000 is largely for U. S. defensive needs and the British government. Inclusion of a substantial amount of British work, which carries a relatively higher profit margin obviously helps to offset the small profit return on U. S. orders.

Net $1.79 a Share in 1939

For all of 1939 Consolidated had sales of only $3,603,240, an abnormally low volume, and net profit was $1,104,327, or $1.79 on common. The substantial profit in relation to gross reflected the policy that profit on any contract was not

---

Burrelle's
EST. 1888
PRESS CLIPPING BUREAU
NEW YORK

NEW YORK CITY, HERALD-TRIB
DECEMBER [illegible], 1940

Aircraft Plant Planning $14,000,000 Addition

Consolidated to Erect Eight Buildings on Coast

SAN DIEGO, Calif., Dec. 18 (AP).—Consolidated Aircraft Corporation officials said an agreement with the Defense Plant Corporation announced in Washington today involved a $14,000,000 plant addition project. Edgar N. Gott, vice-president, said eight new buildings would be constructed, virtually doubling the company's ten-fold expansion since 1935.

The new plant will be a highly specialized unit devoted to the manufacture of component parts and assemblies for wings and tail surface construction, with independent facilities for all operations requisite to their manufacture.

A

THE W

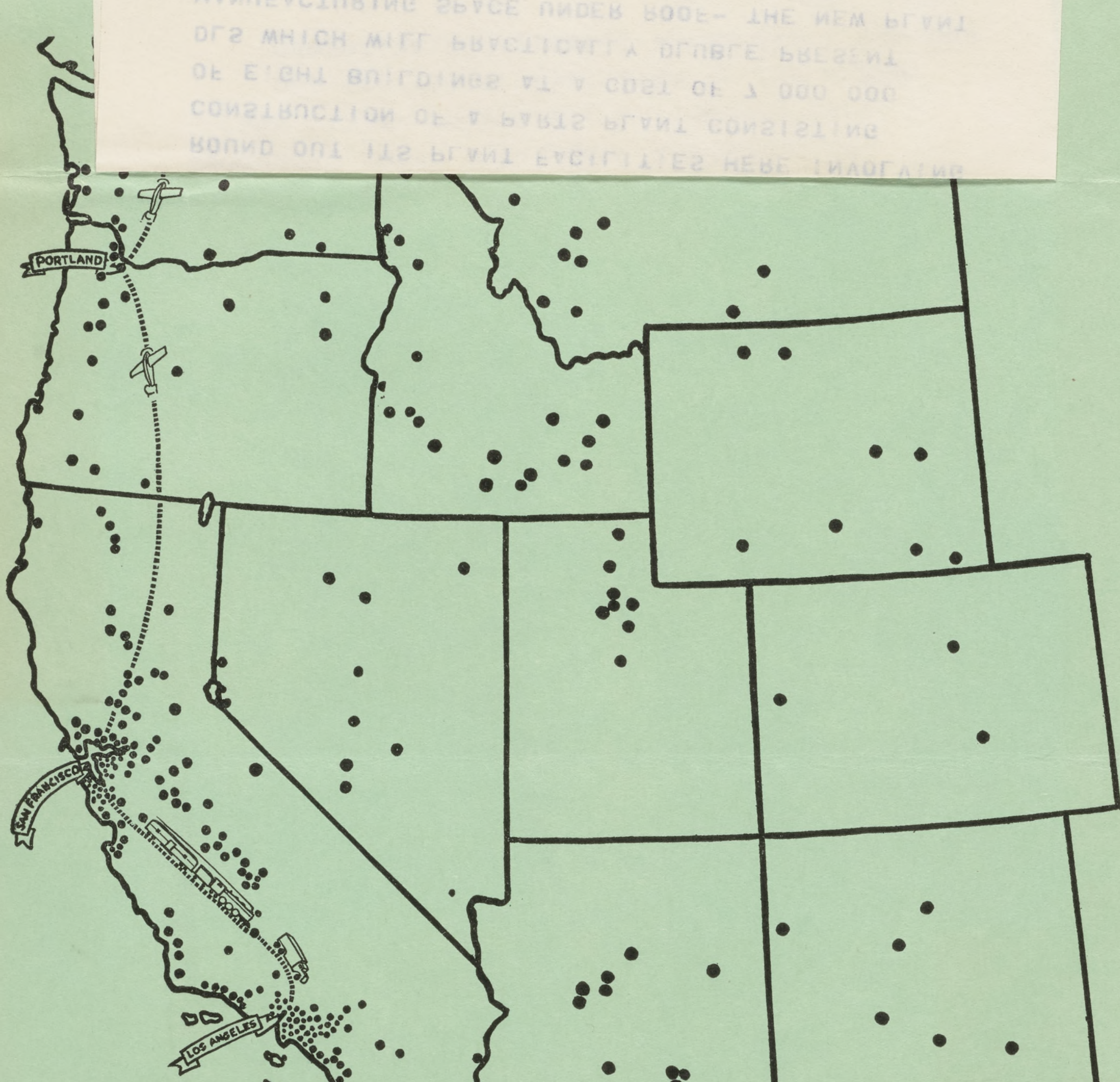
DOW-JO

41

ing

c

LES



DISTRIBUTION OF
Pacific Coast Edition
THE WALL STREET JOURNAL
IN 11 WESTERN STATES
BY CITIES AND TOWNS

DO

PPING

DERC

ANGELES

31

U

cted with

U

CA

CON
I
I
C
F
N
S
V

DELA
W

DISTRICT OF COLUMBIA
Washington

ILLINOIS
Chicago

KENTUCKY
Louisville

MARYLAND
Baltimore

MASSACHUSETTS
Boston
Fall River
Springfield

MICHIGAN
Detroit
Jackson

MINNESOTA
Minneapolis
Saint Paul

MISSOURI
Kansas City
St. Louis

NEW JERSEY
Allenhurst
Asbury Park
Atlantic City
Hackensack
Jersey City
Newark
Perth Amboy

PENNSYLVANIA
Philadelphia
Scranton
Wilkes Barre

TED STATES

ORK
nx
oklyn
alo
ey Island
ira
nt Vernon
Rochelle
York City
ghkeepsie
ester
e Plains
ers

LAND (N. Y.)
ing
Cove
t Neck
pstead
ica
Island City

Cincinnati
Cleveland
Dayton
Findlay
Toledo

OREGON
Portland

RHODE ISLAND
Providence

VIRGINIA
Norfolk
Richmond

WASHINGTON
Seattle

CANADA

ALBERTA
Calgary
Edmonton

BRITISH COLUMBIA
Vancouver
Victoria

MANITOBA
Winnipeg

ONTARIO
Hamilton
Ottawa
Toronto

QUEBEC
Montreal

Trib. 12/21/40

Consair Assembly Plant at Tulsa, Army Plan; 'News' to S. D. Heads

WASHINGTON, Dec. 21 (U.P.)—The war department announced today that Tulsa, Okla., has been chosen as a site for a heavy bomber assembly plant to be operated by Consolidated Aircraft Corp., of San Diego.

Consolidated officials had no comment to offer on the fact that a "branch" factory would be operated in Tulsa. "Things come out so fast and frequently from the war department that news of that kind often is news to us," a Consolidated spokesman said.

Two representatives from Tulsa, W. G. Skelley and Russell Rhodes, visited the Consolidated plant and conferred with officials of the aircraft company this week.

The plant is one of four which will assemble bomber parts to be manufactured by the automotive industry.

The department selected Omaha, Neb., as the site for a medium bomber assembly plant to be operated by Glenn L. Martin Co., Baltimore, Md., and a similar establishment at Kansas City., Kan., to be operated by North American Aviation Corp., Inglewood.

The department did not disclose the sizes of the projected plants, explaining that final negotiations for construction and operation are not yet concluded.

Authoritatve sources said, however, the medium bomber plants would turn out about 100 planes monthly, while those making the larger craft would produce about 50 monthly. Cost of the plants probably will be about $7,000,000 to $10,000,000 each.

---

bation. 12-21- Union

CONSAIR PAYS $5 YULE BONUS TO EACH EMPLOYE

The problem of a turkey dinner with all the trimmings has been solved—at least for Consolidated Aircraft Corp. employes.

Maj. R. H. Fleet, Consolidated Aircraft president, yesterday announced that each person employed prior to Dec. 15 would receive a $5 Christmas check to cover expense of the holiday feast.

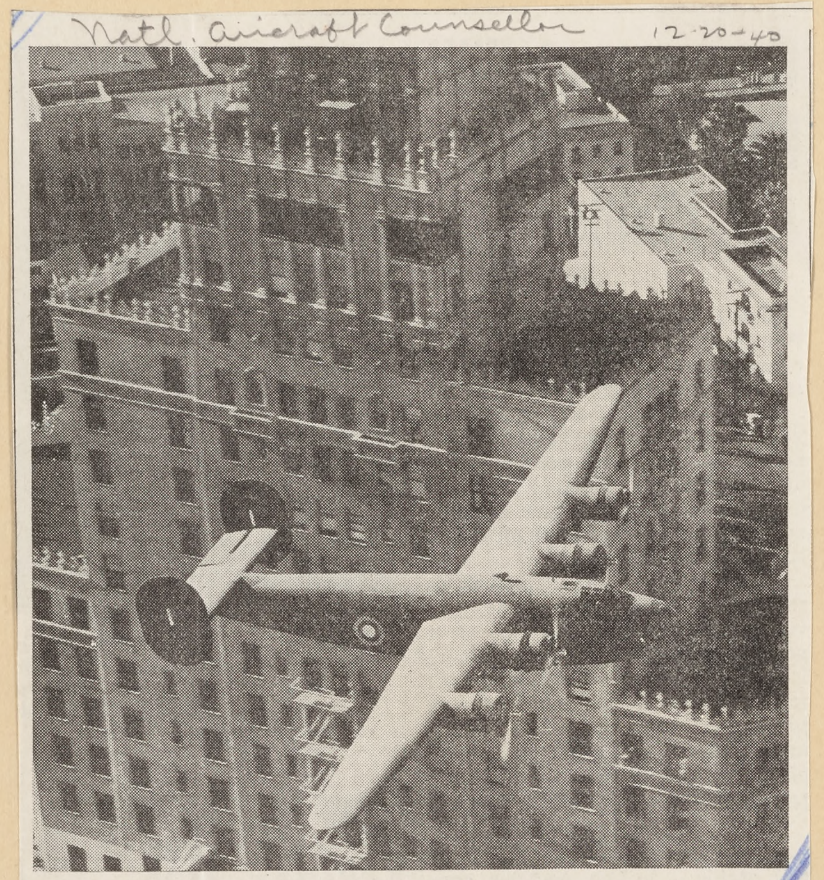
Which should be good news to poultry dealers as Consolidated's 14,000 employes will receive $70,000 in Christmas checks.

"We cannot allow the holiday season to pass without an expression of appreciation on the part of the company for the splendid cooperation it has received from employes throughout the year," said Maj. Fleet.

---

2 1 Lou & Nash 3½s 50 104⅞ 104⅞ 104⅞
8 5 L & N So Mon 4s... 88¼ 88 88

Natl. Aircraft Counsellor 12-20-40



The above picture shows one of the Consolidated Model 32 4-engine Bombers. A large quantity of these ships are destined for Great Britain as well as the U. S. Air Corps. The Consolidated company has recently broken ground for plant expansion which will double their present size.

NEW CONSOLIDATED PLANT TO COST SEVEN MILLION

Natl. Aircraft Counsellor 12-20-40

Consolidated Aircraft Corporation announces that ground will immediately be broken for the construction of a huge new Parts Plant at San Diego, which will virtually double Consolidated's present size. The new plant will fit solidly into the line production program on Consolidated flying boats and large land bombers.

The new huge Parts Plant will be located about 1 and 1/3 miles north of the Lindbergh Field site, and will add 1,553,000 square feet of covered manufacturing area, virtually doubling the tenfold expansion which is nearing completion at this time. With an accelerated construction program, the entire new Parts Plant is scheduled to be completed and in full operation by June, 1941. This plant is composed of a group of eight buildings, plus loading platform of 64,000 square feet. Cost is to run between $6,500,000 and $7,000,000. The factory site is 52 acres in size, with an adjacent area of 72 acres. Combined personnel to operate both plants will reach 35,000. New buildings will be similar in type to present Consolidated structures.

The equipment for the new plant has been ordered and is in the process of being delivered. To make immediate use of production equipment, many of the machines will be set up and operated under lean-to tents at the Lindbergh Field plant site, then transferred to the new buildings as quickly as they are ready for occupancy.

The largest battery of drop hammers and hydraulic presses under one roof on the Pacific Coast will be used in the new Drop Hammer Building, which will also house a complete pattern shop, foundry and die-storage departments.

---

3 Killed in Crash of S. D. Plane at Mexican Ranch

LORAN KNOWLES GRISWOLD
. . . well known here.

HERBERT LEROY MARTIN
. . . leaves widow.

L. E. SINCLAIR JR.
. . . pilot on ship.

Consair Workers Victims; Craft Burns on Field

A week-end aerial holiday ended in flaming death for two young San Diegans and a Calipatria resident when their plane crashed and burned at the Hamilton dude ranch in Lower California, 200 miles south of here.

The dead were Herbert Leroy Martin, 27, of 4062 Vermont st., Loran Knowles Griswold, 27, of 4386 Highland ave., and L. E. Sinclair jr., pilot, 28, of Calipatria.

TAKE-OFF DISASTROUS

Gerald Mokma, American vice consul at Tijuana and a witness of the accident, brought the first news of the crash when he returned to his office yesterday.

Mokma said the plane took off and while circling the field something fell off, apparently part of the engine or cowling. The plane spun in tail down and burst into flames.

The plane, a Cessna cabin model, cleared from Lindbergh field Saturday with the three young men aboard and Sinclair at the controls. His two passengers were employed at the Consolidated Aircraft Corp. here. Sinclair, son of a Calipatria rancher, was the owner of the plane.

TWO LEAVE WIDOWS

The San Diego victims were married. Griswold, a former Herbert Hoover High school football player, leaves his wife, Inez, his parents, Mr. and Mrs. H. L. Griswold, a sister, Mrs. Mary Killeson, all of this city, and his grandparents, Mr. and Mrs. C. M. Knowles of El Cajon.

Martin is survived by his wife, Helen and a 2-month-old daughter, both of this city, and a sister, Mrs. Don Geir, of Brawley. Martin, born in Hemet, lived in Brawley until March when he came here to work.

BODIES STILL IN SOUTH

The young men were in the experimental department at Consair. Relatives sought to have the bodies of the victims brought back from Mexico by plane but weather conditions had halted flying operations. Mokma was expected to return to the scene of the accident today to assist in making arrangement for return of the victims.

---

* Union 12-22-40

Tulsa Chosen As Site for New Consair Plant

WASHINGTON, Dec. 21 (U.P.)—The war department announced today that Tulsa, Okla., has been chosen as a site for a heavy bomber assembly plant to be operated by Consolidated Aircraft Corp., of San Diego.

The plant is one of four which will assemble bomber parts to be manufactured by the automotive industry.

The department selected Omaha, Neb., as the site for a medium bomber assembly plant to be operated by Glenn L. Martin Co., Baltimore, Md., and a similar establishment at Kansas City., Kan., to be operated by North American Aviation Corp., Inglewood.

The department did not disclose the sizes of the projected plants, explaining that final negotiations for construction and operation are not yet concluded.

Authoritatve sources said, however, the medium bomber plants would turn out about 100 planes monthly, while those making the larger craft would produce about 50 monthly. Cost of the plants probably will be about $7,000,000 to $10,000,000 each.

No Consair Comment

Consolidated officials had no comment to offer on the fact that a "branch" factory would be operated in Tulsa.

"Things come out so fast and frequently from the war department that news of that kind often is news to us," a Consolidated spokesman said.

Two representatives from Tulsa, W. G. Skelley and Russall Rhodes, visited the Consolidated plant and conferred with officials of the aircraft company last week.

Natl. Aircraft Counsellor 12-20-40

AIRCRAFT STOCKS

By HARRY J. MOFFETT

DEFENSE ORDERS: Rumors of multi-million dollar orders for aircraft engines and parts have confused the minds of many persons as to what was actually taking place in the way of definite concrete orders. All veils drawn aside and eliminating repetition, it can be safely stated that more than $1,750,000 for defense has already been allotted the Pacific Coast, with by far the greater share of these expenditures going for aircraft and engines. During the past few months, actual orders amounting to more than one billion dollars have been given Boeing, Consolidated, Douglas, Lockheed, Vultee and Northrop alone. These orders, all for the United States Army and Navy, range from training to long range bombing planes. It is now estimated that total orders in Southern California for domestic and foreign account exceed one and one-half billion dollars. Most plants are operating, or are about to operate, on a 3-shifts per day basis and expansion programs will be completed early next year.

Pacific Coast Edition
THE WALL STREET JOURNAL
DOW-JONES
ELECTRIC PAGE NEWS PRINTERS
623 CENTRAL BUILDING
LOS ANGELES
PHONE TRINITY 0881

DEC 12 1940

CONS. AIRCRAFT VOTES DIVIDEND

Will Pay $2 on Common, First in Two Years; Year's Net Between $1 and $2

LOS ANGELES — Resumption of common stock dividends by Consolidated Aircraft Corp., with a $2 payment, after a two-year interim is accompanied by unofficial estimates that the company in the last half of this year had a common share profit and for the full year will show between $1 and $2 a share depending on accounting policies.

The first half year was devoted largely to preparatory work for large scale production and it was only last August that quantity output was achieved. Since, production has increased steadily.

Deliveries in the first half were less than $500,000, indicating a substantial operating deficit for that period. Consolidated's backlog of $320,000,000 is largely for U. S. defensive needs and the British government. Inclusion of a substantial amount of British work, which carries a relatively higher profit margin obviously helps to offset the small profit return on U. S. orders.

Net $1.79 a Share in 1939

For all of 1939 Consolidated had sales of only $3,603,240, an abnormally low volume, and net profit was $1,104,327, or $1.79 on common. The substantial profit in relation to gross reflected the policy that profit on any contract was not taken into

Federal Reserve Board Chairman Marrine S. Eccles urges that Congress should fix sharpl increased bank reserve requirements in order t reduce excess reserves. This newspaper is hearty accord with the ends he has in vie It believes, however, that merely increasing r serve requirements would not solve the proble because it would not strike at the cause of th present unwieldy excess reserves. In effect, would be similar to attempting to cure th symptoms of a disease rather than the cause of the illness.

Burrelle's
EST. 1888
PRESS CLIPPING BUREAU
NEW YORK

NEW YORK CITY, HERALD-TRIB
DECEMBER 19, 1940

Aircraft Plant Planning $14,000,000 Addition

Consolidated to Erect Eight Buildings on Coast

SAN DIEGO, Calif., Dec. 18 (AP).—Consolidated Aircraft Corporation officials said an agreement with the Defense Plant Corporation announced in Washington today involved a $14,000,000 plant addition project. Edgar N. Gott, vice-president, said eight new buildings would be constructed, virtually doubling the company's ten-fold expansion since 1935.

The new plant will be a highly specialized unit devoted to the manufacture of component parts and assemblies for wings and tail surface construction, with independent facilities for all operations requisite to their manufacture.

hundred faces not about the rent being due, or the insurance or the car payment, but what to give to make someone happy!

Clerks smilingly eager to cooperate. They know the pocketbook isn't always tightly stuffed and that some consideration must be given to it. If the shopper obviously can't spend more than a dollar, well, they show her the nicest things they've got for a dollar!

Who said there wasn't any Santa? Pish and tush, my friends, as long as there a hundred million people wearing their energy down to zero and their pocketbooks almost there just to make someone smile with pleasure on the approaching morning, well, there is a Santa and that's that!

* * *

And what has San Diego got that Hollywood has not? A True Vowkeepers club. That's what. When they get married in San Diego, they do it for keeps. Or if they get married anywhere and come to San Diego just for the sunny weather why, they're sunk anyway if Forrest Warren hears about 'em. He'll sign them up for the club, which makes a specialty of honoring men and women who have loved enough to make a golden wedding anniversary something beside a mouthful of words.

And the smiles on the faces of those who belong! You'd think they'd met a president of something, or a king or two. But you won't get a chance to ask what the reason for the big smile is, they'll show you the button they're earned and tell you what it stands for; loyalty and faith and team-work for 50 years. And the city that is smart He'll remember you with gold and silver emotions.

* * *

Sitting in the Plaza in front of the U. S. Grant hotel just watching the busy crowd go by is a popular idea if the scores who do it daily are any proof. The gentleman on the left is a retired banker from Kansas. The lady across has reared a family and earned the rest and sunning, she's taking. Looking at her calm and tranquil face you'd never guess she wrestled with formulas and didies and spanked the consumers of both. The hands are heavily bejeweled and the eyes have it!

* * *

The white-haired lad with the cane hasn't been inoculated with the Christmas spirit yet. No smile there. But maybe someone has just tripped on that bandaged foot.

* * *

And there to the right, as we live and breathe are a pair of lovers. They know they're being watched, but they can see the kindly smile too. They know the whole world loves lovers!

Has there been a contest going on to see who could outdo Santa at his own game? Because a little bird just whispered the name of the lad who should take all cakes of honor. He is Maj. Fleet of Consolidated Aircraft Corp. Fourteen thousand employes will find a five-dollar bonus stuffed in the toes of their stocking as a Christmas remembrance. Seventy-thousand dollars worth of goodwill, all extended by one man ought to mean something very fine and big! It ought to mean you're a happy man, Major. From the clear skies above we seem to hear the old and familiar words: "'Tis more blessed to give than to receive."

There are also many new private structures. All these would be dangerously in the path of a flood such as we have had at more or less regular intervals in years past."

CITY UNABLE TO PAY

Pointing to the strained condition of the city's purse, the councilman made it clear that "it would be impossible for this community to raise $1,500,000 to supplement an appropriation by the federal government of $2,300,000 at this time."

In support of this he emphasized that municipal resources are "strained to the limit by the large increase in army, navy and marine corps personnel as well as the phenomenal increase in our aircraft factories with thousands of added workers now living in this area. Our police department is undermanned; our fire department is in the same position; we need to extend our water distribution system, our schools and all other like public facilities.

"I respectfully urge that you order another hearing on this very important matter, to be held in San Diego at the earliest possible date."

neer in the development of all-steel bodies, of cars with a low center of gravity, and of the hydraulic brakes which Jimmie Lynch, famous daredevil driver, has called the 'world's finest.'

"Many new features of the 1941 Dodge Luxury Liner give it claim to the title of America's Safety Car," Burger continued. "With the new Dodge safety wheel rims, tires cling to the rim even when flats occur at high speeds. From new and wider 'airplane vision' windshield the highway spreads out before the driver. Dodge rear windows are wider and deeper to give 47 percent more sternward vision. Door handles have to be lifted upward to spring the catch, it's impossible to open them accidentally. The Dodge safety signal speedometer keeps the driver ever mindful of the rate the car is traveling.

"However, we believe one of the most important safety features of the new Dodge Luxury Liner is fluid drive. There is likely to be a film of oil on streets and highways which makes them unusually slippery during the first rains. With the conventional method of driving there is often a sudden application of power which means a skid. The steady smooth power of Dodge fluid drive eliminates this wet weather driving hazard."

tor for San Diego, Imperial and Yuma counties, 1245 Broadway.

because the paint next to the metal is dried first,

WYOMING PUBLISHER, WIFE VISIT S. D.; PREPARING BOOK

Mr. and Mrs. J. E. Hanway, of Casper, Wyo., are making their winter visit to San Diego. They are editors and owners of two daily newspapers in Casper—the Tribune and Herald.

For many years Hanway was a newspaper broker. He was engaged in buying and selling newspaper plants, which became a profitable business. In the days of newspaper contests, Hanway conducted one in Salt Lake City that brought returns of $60,000.

EDITED NEWSPAPER

Thirty-five years ago, when Walter and Floyd Whitcomb, of San Diego, lived in Horton, Kan., Hanway was editor of a weekly newspaper—the Commercial. It was there that Mrs. Hanway had her first newspaper experience—folding papers as they came from an old Campbell press.

The Hanways were married 50 years ago in Topeka, Kan., where, as a boy, he carried newspapers and "it just got in my blood."

WRITING BOOK

Because of the interesting life Hanway has had as a newspaper man, his family prevailed upon him to write a book—enough for distribution among relatives and close friends. During his vacation here and at other places on the Pacific coast, Hanway dictates to his secretary, Anne Casper, who has contributed a column of San Diego observations in today's Union.

Mr. and Mrs. Hanway received with The Union's compliments blue and gold buttons, making them members of the True Vow Keepers club.

Theological Student Here For Christmas

To spend Christmas with his mother, Mrs. Ina Dominy, Arthur Dominy, 19, who is studying for a commission as a navy chaplain at Wheaton college, Wheaton, Ill., arrived yesterday.

Young Dominy was graduated from San Diego High school in 1938. After completing a preliminary theological course at Wheaton, young Dominy will take a post-graduate course at the Philadelphia seminary. He then will apply for a commission in the navy chaplain corps.

Yule Competition Brings Out Variety

(Continued from Page 1)

st.; Mr. and Mrs. Robert Daniel, 2420 Presidio dr.; Charles H. Thompson, 4020 Fourth ave.; Robert Trevino, 3711 Alabama st.; Nathan J. Naiman, 4235 Maryland st.; Mrs. Rose Halbut, 3692½ Georgia st.; Howard Sport, 55 E. Mt. Vernon ave., Lemon Grove; Mr. and Mrs. Alton E. Gallagher, 4028 Hempstead circle; Mrs. Frank Russell, 1800 Upas st.; Wallace Holbeck, 4425 Bancroft st.

Mrs. George Cruze, 4475 Santa Cruz st., Ocean beach; Ada Sheridan, 3524 Boundary st.; A. O. Amundson, 4568 Oregon st.; Mrs. William Guglielmetti, 1522 Twenty-ninth st.; Tony Gerhard, 4559 Maryland st.; Mrs. Anita Hagen, 3104 Lytton st.; Mr. and Mrs. D. L. King, 1844 W. Washington st.; Mrs. James Gayton, 419 S. Twenty-ninth st.; Mrs. Frank Taylor, 3938 Arizona st.

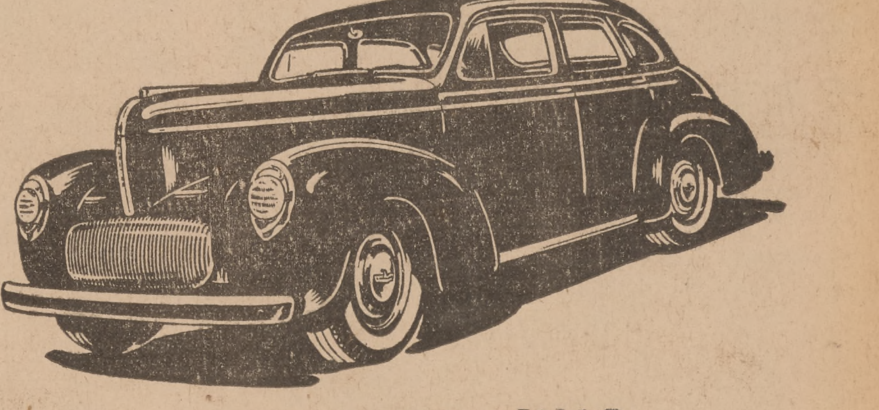
S. F. UTILITIES CHEAPEST

SAN FRANCISCO, Dec. 21 (A.P.)—The San Francisco bay area, the railroad commission announced today, has the lowest utilities charges of any large city in the nation.

Drive-in Special
CAR WASH 50c
Lubrication 75c—Any Car
STAR
SUPER SERVICE
12th & C F-3554

Wishing Everyone
a Very
MERRY
CHRISTMAS
●
RAY COX
"QUALITY AT LOW COST"
1220 2d Ave. Fr. 6925

Phone Main 6812



WILLYS
AMERICAR

Outstanding Features:

1. New KX braced frame three times as stiff torsionally.
2. Hypoid rear axle as in high-priced cars.
3. Two universal joints as in high-priced cars.
4. New quieter insulated exhaust system.
5. New-type rubber body mountings . . . even bolts rubber insulated.
6. Battery easily accessible under hood . . . ample in size.
7. Sturdy wheels. Two inches longer wheelbase.
8. Larger tires, quieter non-skid tread.
9. Engine increased to 63 h.p. at 4000 r.p.m. — lowest tax rating.
10. Four rubber engine mountings.
11. New Carter carburetor with new silencer — insulated.
12. Starter placed near battery for greater power.
13. Packless Water Pump . . . No packing or lubrication required.
14. Silent slap-proof timing chain.
15. High-output generator
16. Air cleaner.
17. Semi-elliptic, parabolic leaf-type springs.
18. Oversize hydraulic brakes.
19. Hydraulic type two-way shock absorbers.

FULL FOUR DOOR
SEDAN
$767
HERE—FULLY EQUIPPED
LOW DOWN PAYMENT—LIBERAL TRADES, THEN
$21.65 Per Month
ON WILLYS' OWN FINANCE PLAN

DAVIES MOTORS, INC.
1437 Broadway Distributors Main 3191
3940 University Ave. JOHN CANTLIN Randolph 1718
OR SEE YOUR NEAREST WILLYS DEALER

Trib-Sun 12-24-40

Bodies of 3 Fliers Held at Ensenada Till Storm Permits Return to S. D.

Efforts are being made today to return to San Diego the bodies of three youths, two of them employes of the Consolidated Aircraft Corp. who were killed Sunday when their plane crashed in a take-off at Ensenada.

The three, badly burned, are being held at Ensenada awaiting removal here either by auto, boat or plane. Because of storm conditions, it is said, it is impossible to fly a large plane to the airport and road conditions are such that a large auto cannot make the trip today.

Gerald Mokma, American vice consul at Tijuana, who, on business at Ensenada Sunday, witnessed the crash, is seeking some means of bringing the bodies here.

The dead are Herbert Leroy Martin, 27, of 4062 Vermont st.; Loran Knowles Griswold, 27, of 4386 Highland ave., and L. E. Sinclair jr., of Calipatria, pilot of the plane.

Mokma stated that the plane had just taken off from the airport and the three headed for home after a day of hunting, when he saw some part of the plane fall into space. The craft then nosed up sharply, went into a tail spin and crashed from about a 400-foot altitude.

Mokma and others attempted to reach the plane, but as it burst into flames upon falling, numerous shotgun shells began exploding from the heat, holding rescuers at a distance.

The plane, a Cessna cabin model cleared from Lindbergh field Saturday with the necessary papers for the hunting trip to Ensenada. The trio stopped at Tijuana to show their papers then proceeded to Ensenada.

Both San Diego victims are survived by widows. Griswold, a former Herbert Hoover high school football player, is survived by his wife, Inez; his parents, Mr. and Mrs. H. L. Griswold, and his grandparents, Mr. and Mrs. C. M. Knowles, of El Cajon. Martin is survived by his wife, Helen, and a two-months-old daughter, both of this city, and a sister, Mrs. Don Geir, of Brawley.

Union 12-25-40

Storm Delays Return of Crash Victims' Bodies

Considerable delay may be experienced in bringing to the United States the bodies of three young aviators killed in a plane crash at the Hamilton ranch in Lower California, 200 miles south of here.

The victims were Herbert LeRoy Martin, 27, of 4062 Vermont st.; Loren Knowles Griswold, 27, of 4396 Highland ave., and L. E. Sinclair jr., of Calipatria.

The San Diegans were employed in the experimental department of Consolidated Aircraft Corp. and Sinclair, owner of the plane, was the son of a Calipatria rancher.

U. S. CONSUL RETURNS

Gerald A. Mokma, U. S. consul at Tijuana, was at Ensenada trying to speed the return of the bodies. Returning last night, he said that the district attorney had left Ensenada with a truck to bring out the bodies from the Hamilton ranch.

How long the trip would take, Mokma could not guess. He said rains have made the roads south of Ensenada difficult to travel.

Mokma said he had been unable to learn any new information as to cause of the accident. He said that soon after a take-off from the field at the Hamilton ranch, something fell from the plane in the vicinity of the engine and the machine went into a spin and crashed in flames.

WIRES TO ENSENADA OUT

Although local pilots had offered to fly to the Hamilton ranch and aid in bringing the bodies to San Diego, Consul Mokma said, however, the bodies would first have to be taken to Ensenada to make legal arrangements for transferring them across the border.

Due to the storm both telegraph and telephone wires were down between Tijuana and Ensenada, the consul said last night.

12-30-40 Union

Maj. Fleet Silent On Branch Plant

Maj. Reuben H. Fleet, Consolidated Aircraft Corp. president, said yesterday that he has received no word from Washington as to whether the proposed Consolidated branch plant will be built at Ft. Worth, Tex., or Tulsa, Okla.

"To be frank," Maj. Fleet said, "I get most of the news regarding Consolidated contracts and proposed plant expansion plans from reading The San Diego Union. And that news is accurate and authentic."

According to Washington reports, government plans to finance a Consolidated branch factory at either Ft. Worth or Tulsa have been held up temporarily, pending a dispute between the two cities over a site best suited for national defense purposes.

AIRCRAFT WORKERS GO LIMIT ON CHRISTMAS SUPPLIES

Employes of Consolidated Aircraft Corp. go the limit when they fill Christmas boxes for the needy. In addition to a ham and a supply of vegetables, 45 pounds of staples go into each box with a Christmas tree to each family listed. Busily engaged in filling the 150 boxes to be distributed are (left to right), L. E. Miller, F. H. Rose, J. W. Kelly and R. L. Clute.

Yule Baskets To Be Given by Consair Group

Consolidated Aircraft Corp. employes decided to go to Santa Claus' aid in supplying Christmas dinners to needy families in this area. So the Consair sheet metal department sponsored a Christmas charity ball at the Eagles hall and raised money to be expended in that cause.

Came the selection of a Christmas dinner menu.

BOUGHT STAPLES

"Why spend the allotment for each family on a turkey and trimmings that would last, at the most only a couple of days?" the Consair boys asked one another. So, they took the money and bought only "substantials."

Each of the 150 boxes to be distributed will contain a ham with plenty of celery, lettuce and apples. Each also will be overflowing with articles which may carry over for weeks. Sacks of flour, bags of potatoes and onions, jars of mayonnaise, glasses of jelly, packages of oatmeal and a variety of canned vegetables are closely packed into each container.

SWEETS SUPPLIED

And the younger members of each family are being remembered with a supply of candy and fruit.

"Gee, it's been lots of fun," said a husky metal worker as he almost staggered under the weight of a Christmas box he just had filled

---

American Aircraft Mechanic 12-19-40

Consair Employees Pay Increased Approximately $1,750,000

New Wage Agreement Being Negotiated by Machinists Union, No. 1125, A. F. of L. Being Completed to Satisfaction of Men and Company

At the regular Tuesday meeting held by Local 1125 the report of the Wage Review Board members was read by W. J. Chudleigh and the wage proposals negotiated with Consolidated affecting the men in the lower wage brackets and starting wage with increase every five weeks, was ratified by a vote of the union so large that it was almost unanimous. The wage rate agreed upon was virtually as reported in last week's Aircraft Mechanic, viz: 50 cents starting rate with an increase each 5 weeks until the rate at the end of six months employment will be 60c per hour. Theincrease effective immediately to apply to those that have been in the employ of Consolidated for six months or fraction thereof. Further increases to be based upon merit of individual employee. The present rule of 5c per hour bonus for the night shift to continue.

The wage review began in the Wing Department as a test and in reviewing the wages of some 2500 employees of this department, increases were granted in practically every case, the average increase being 6 to 7 cents per hour per man.

Increases in pay affecting more than 8000 employees will increase the payroll of Consolidated employees $977,626 annually; the cost of further planned increases to other employees approximate $774,770 or an increase for the present employees of approximately $1,652,396 annually.

On projected new employment during the next six months some $7,000,000 will be expended by the Consolidated.

The Wage Review will proceed as rapidly as possible by departments as scheduled.

---

tions.

Aircraft Mechanic
12-19-40

CONSOLIDATED

More than $17,000,000 will be spent for further expansion and improvement of the Consolidated Aircraft Corp. plant, under agreements announced today by the navy department.

Of the total, $14,446,929.27 will be expended by the Defense Plant Corp., an RFC subsidiary, for constructing and equipping a huge parts factory along the east side of Pacific highway, 1½ miles north of the present plant. Both contracts total $17,536,963.

Navy to Spend $3,090,044

Another $3,090,044.69 will be spent by the navy department for improvements at the present factory, Edgar N. Gott, Consolidated vice president, revealed.

The structures will contain a covered manufacturing area of 1,553,000 square feet.

Equipment Included

The rest of the Defense Plant Corp. money will be used in preparing the site, driving piles for the foundation, constructing approaches and equipping the new plant, which Gott said would be "a highly specialized production unit devoted to the manufacture of component parts and assemblies for wing and tail surface construction, with completely independent facilities for all operations requisite to their manufacture."

Gott said the combined Consolidated payroll was expected to soar to 30,000 when the new division is placed in operation. The firm has a backlog of national defense orders and order for warplanes for Britain totaling in excess of $325,000,000.

Trib. 12/27/40.

Ft. Worth Bids For Consair Factory

WASHINGTON, Dec. 27 (A.P.) — Last-minute pleas by advocates of other sites were said authoritatively today to have delayed the signing of contracts for a new assembly plant at Tulsa, Okla., for long-range army bombers.

The war department announced last week that Tulsa had been selected as the site for such a plant and that it would be operated by the Consolidated Aircraft Corp., of San Diego, Calif.

Officials said today that the contracts had not been signed but declined to state whether there had been an unexpected delay.

Ft. Worth Mentioned

The disclosure came after Sen. Sheppard (D-Tex) conferred with Under-Secretary Robert P. Patterson. Sheppard was said to have urged the claims of Fort Worth.

One of Four Plants

The plant under present plans is to be one of four for the manufacture of bombing planes from parts largely fabricated by the auto industry. Expected to cost from $8,000,000 to $10,000,000, it is to assemble four-motor bombers. Kansas City and Omaha have been chosen as sites for plants to assemble two-motor bombers.

An aid of Sen. Thomas (D-Okla) said the war department had held up signing of the Tulsa plant contract to permit filing of briefs by persons interested in locating the plant in Ft. Worth.

The senator's aid said a final decision on location of the plant would be made by the defense council. He said he was told by a war department official that signing of the contract with Consolidated would be delayed until after Jan. 1.

Trib-Sun 12-31-40

'Aircraft Major U. S. Industry; in Era Of Great Development,' Says Fleet

"The design and manufacture of aircraft now constitutes a major industry in this country, after many lean years of struggle," writes Maj. Reuben H. Fleet, president, Consolidated Aircraft Corp., in the firm's monthly publication, Consolidator. Forecasting a monthly payroll by the company of approximately $5,000,000 for an eventual total of more than 30,000 employes, Fleet's article continues, as follows:

"It is obvious that we are entering upon an era of great aircraft development. This company is maintaining its leadership in the industry and striving willingly to meet all demands upon it by our government.

"Great Efficiency"

"Airplanes have attained great efficiency in speed, range, weight-carrying capacity and safety. Cost of operation has been reduced until it now compares favorably for certain traffic with that of railroads.

"When one realizes that our airlines today are carrying less than

to our plant at Lindbergh field, we shall have reached our limit of expansion on this field and have completed our plans for enlargement when we built our first building in 1935.

"To fill orders on hand, we are now engaged in the construction of a parts plant with a total covered area approximating 1,550,000 square feet on Pacific blvd., about a half-mile from our home factory. When this new plant is completed and operating we shall have more than 30,000 employes, with a payroll of about $5,000,000 a month.

"Taxes Take 62 Percent"

"The regular federal and excess-profit taxes take approximately 62 percent of gross income; but as the two plants should annually produce $150,000,000 of airplanes and parts and we have not had to issue more stock to cover the cost of the added facilities, the net yield to our shareholders should be satisfactory.

"Apparently, until the temperament of mankind changes, world peace cannot be enjoyed in the absence of power capable of forcing and enforcing it. Such power is air power, augmented by naval power and by an army where occupation and policing of territory is necessary. Nothing within its range can stop aircraft; its range is now a continent or an ocean. Let us hope that when this war ends, possession of such aircraft, without its employment, will guarantee 'peace on earth, good will to men.'"

Germans Slay High In Raid on London

BERLIN, Dec. 31 (U.P.)—German bombers attacked London from a great height today, D.N.B., official news agency, reported. It said a German plane dive-bombed an arms factory, northeast of London, causing heavy damage with three direct hits. An entire section of a building was seen to collapse, it said.

Jan. 1, 'Neighbor Day,' Proclamation of Olson

LOS ANGELES, Dec. 31 (A.P.)—

Union 12-28-40

Army Delays Contract for New Consair Plant

WASHINGTON, Dec. 27 (A.P.)—Last-minute pleas by advocates of other sites were said authoritatively today to have delayed the signing of contracts for a new assembly plant at Tulsa, Okla., for long range army bombers.

The war department announced last week that Tulsa had been selected as the site for such a plant and that it would be operated by the Consolidated Aircraft Corp., of San Diego, Calif.

Officials said today that the contracts had not been signed but declined to state whether there had been an unexpected delay.

FT. WORTH SITE URGED

The disclosure came after Sen. Sheppard (D-Tex) conferred with Under-Secretary Robert P. Patterson. Sheppard was said to have urged the claims of Fort Worth.

The plant under present plans is to be one of four for the manufacture of bombing planes from parts largely fabricated by the auto industry. Expected to cost from $8,000,000 to $10,000,000, it is to assemble four-motor bombers. Kansas City and Omaha have been chosen as sites for plants to assemble two-motor bombers.

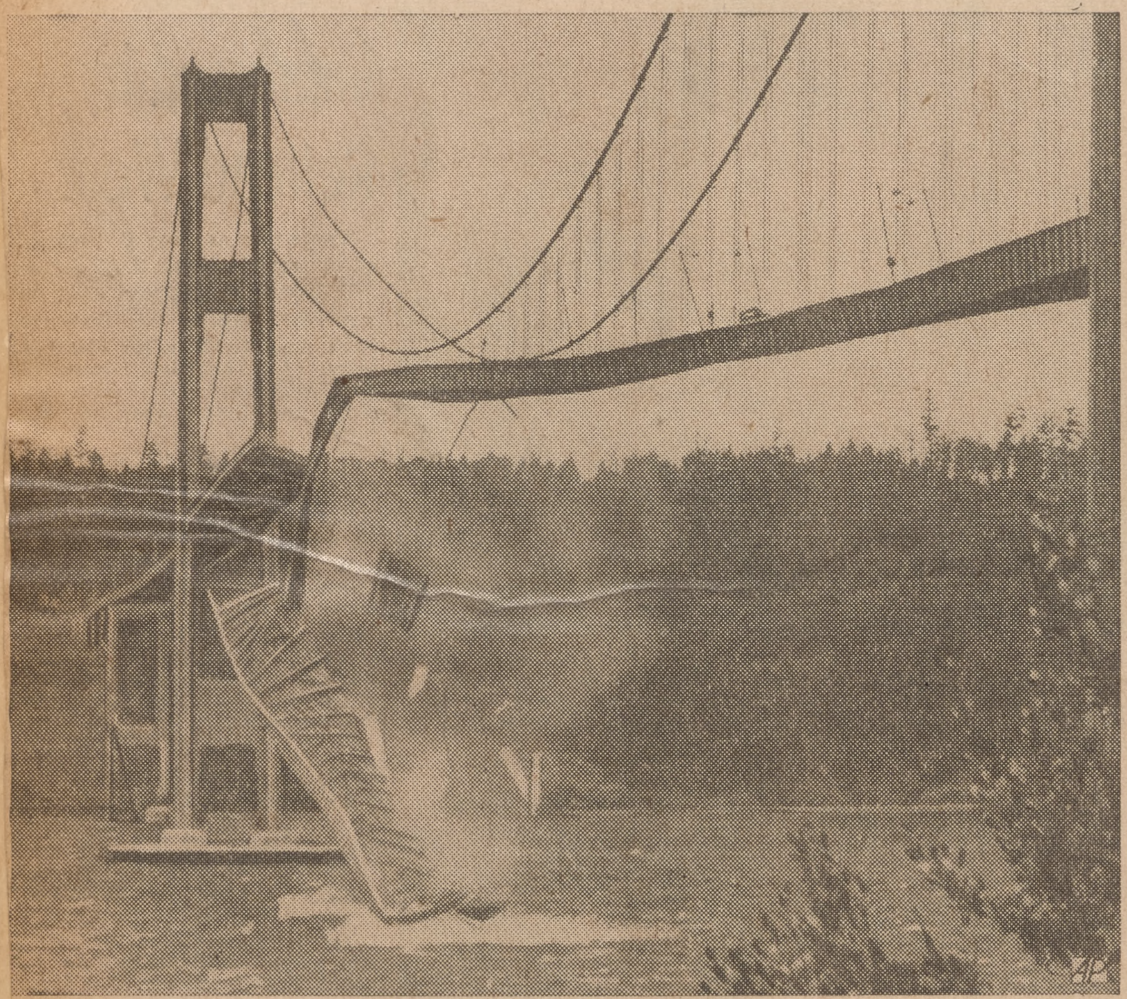
FINAL DECISION DUE

An aid of Sen. Thomas (D-Okla) said the war department had held up signing of the Tulsa plant contract to permit filing of briefs by persons interested in locating the plant in Ft. Worth.

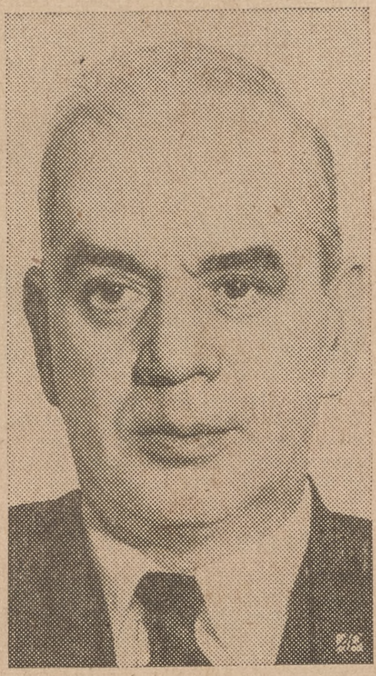
The senator's aid said a final decision on location of the plant would be made by the defense council. He said he was told by a war department official that signing of the contract with Consolidated would be delayed until after Jan. 1.

1940 AMERICA'S NEWS IN A WAR YEAR

An Associated Press Picture Review



'GALLOPING GERTIE' GOES Wind-blamed crackup of 2,800-foot center span of the new $6,400,000 Narrows bridge at Tacoma, Wash.—third longest single suspension in world—put an end Nov. 7 to the shimmying undulations that gave the bridge its nickname, "Galloping Gertie." Nature's fury in 1940 was also responsible for earthquakes: in Turkey (January); Peru (May); Rumania (November).



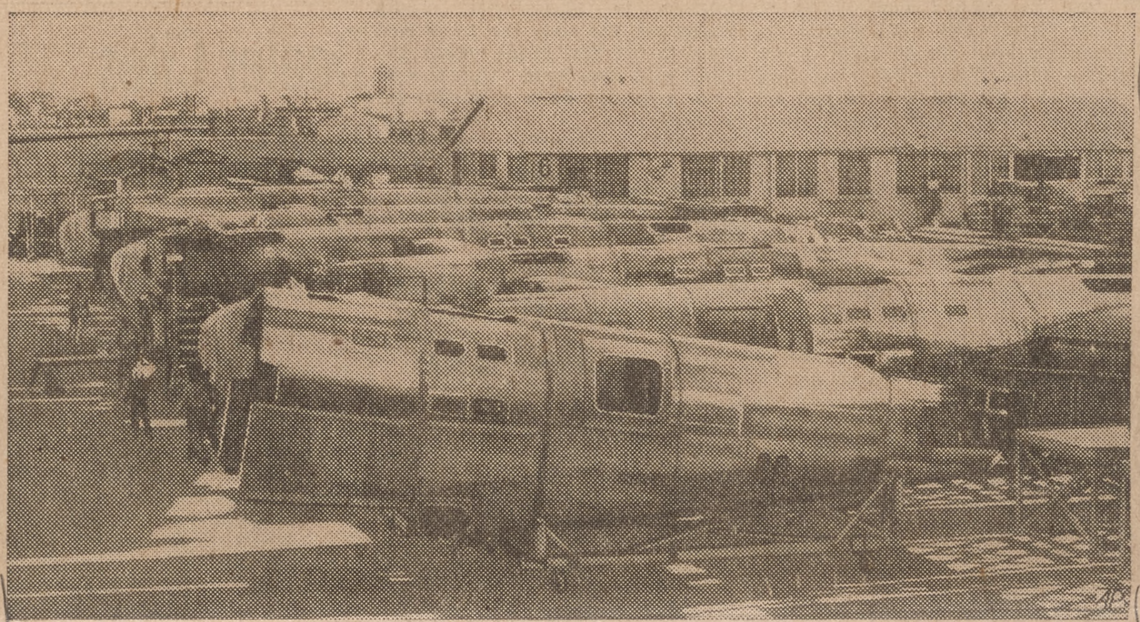
CHANGE Philip Murray (above) became CIO chieftain at Atlantic City convention where John L. Lewis on Nov. 18 formally resigned, sticking to a pre-election pledge that he'd quit if Franklin D. Roosevelt won.

'THIRD TERM' PRESIDENT Victor in a spirited election that broke even the Third Term precedent, President Roosevelt waved greetings from the White House Nov. 7, along with Mrs. Roosevelt (left), Vice President-Elect Henry Agard Wallace, Mrs. Wallace. F.D.R. accepted re-election as an endorsement of policies which in 1940 led to: Huge defense program, peacetime draft, trade of 50 over-age U.S. destroyers for British bases, western hemisphere defense collaboration with South and Central American republics, "all possible aid to the nations that still resist aggression."

THE WAX CASE Deprived by court action of a girl's wax-preserved corpse that he'd kept in his bedroom seven years while busy with life-restoring experiments, Karl van Cosel, 70, studies her death mask. Key West, Fla., commission found him sane, discharged him Oct. 10.

SAFE RETURN But for alert Cecil Wetzel and Ellis Woods, two lumbermen who stumbled onto the kidnaper and boy, there might not have been this reunion between Count and Countess Marc de Tristan and their son, Marc, 3, Sept. 22 at Hillsborough, Cal. Wilhelm Muhlenbroich, an alien, is serving a life sentence at San Quentin on kidnap charge. The little boy was held captive for 48 hours.

GOOD NEIGHBORS Uncle Sam's courtship of western hemisphere nations pushed ahead when Vice President-Elect Henry Agard Wallace traveled to Mexico City for Dec. 1 inaugural of Pres. Avila Camacho, and paused en route for this chat with a Mexican farmer. Also entered in neighborliness ledger is granting by U.S. of millions in credit to Argentina, Brazil, Chile, Peru, Ecuador.



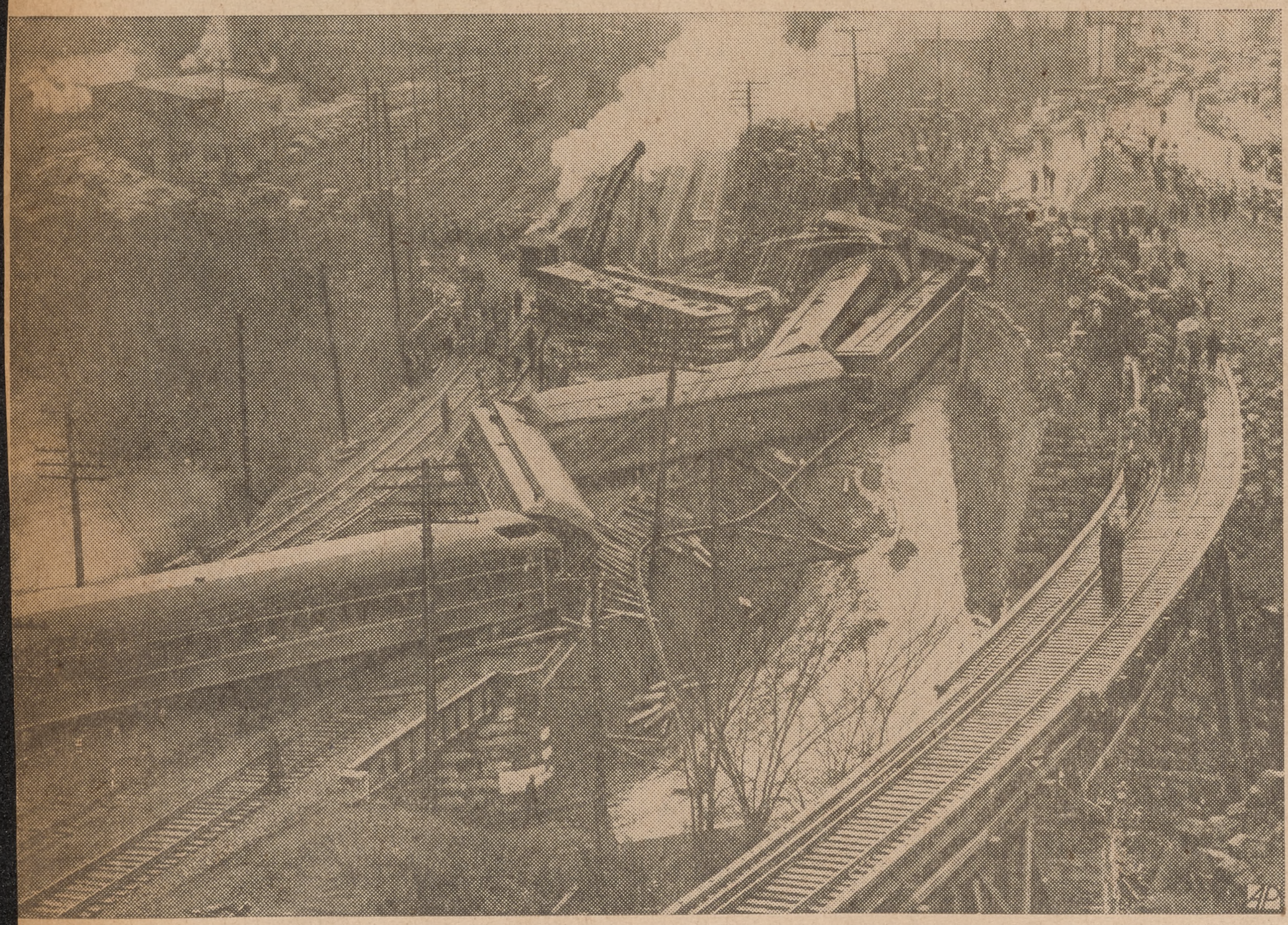
BOMBERS BY THE YARD Symbol of the faster tempo of U.S. production of planes and defense weapons are these four-motored, long-range bombers, so big they're assembled in yard at San Diego plant. Along with Sperry bombsight, planes like these were released to Britain in line with government's policy of giving aid.

HAVEN Foremost among war refugees who reached the Americas' hospitable shores was Crown Princess Juliana (above) of Th Netherlands. U.S. greeted thousands of refugee children an such celebrities as Paderewsk Former Empress Zita of Austria.

© Chicago Daily Times

CAMPAIGN TARGET From this brush with an egg-tossing Chicagoan Oct. 22 Wendell L. Willkie, Republican presidential candidate, emerged to carry on a fight that netted him some 22,000,000 votes in the country's bitterest political battle. The campaign even set a new high for vegetables thrown.

IT'S NO. 158 Eyes of 17,000,000 men who registered on Oct. 16 turned Oct. 29 to above drawing of first number in nation's first peacetime draft, in Washington. It was 158, drawn by blindfolded War Secretary Henry Stimson. Draftees are from 21 to 35, are being called according to drawing of serial numbers issued by local boards.



DEATH AT THE BEND Close to 30 persons were killed when a Chicago-bound express piled up at this bend near Little Falls, N. Y., April 19—the same month in which 212 Negro men and women burned to death in a flaming dance hall at Natchez, Miss. Heavy in death toll was the headon collision of a commuters' train and a freight July 31 at Cuyahoga Falls, Ohio, which killed about 40 persons. Sen. Ernest Lundeen of Minnesota was among 25 killed in Aug. 31 plane crash at Lovettsville, Va. Mine caveins at Bartley, W. Va., St. Clairsville, O., and in Pennsylvania cost the lives of several score miners.

GONE The death in January of Sen. William E. Borah (above), Idaho Republican, took a veteran legislator from Senate's ranks that before 1940 ended were to lose Sen. Ernest Lundeen, Minnesota; Sen. William Bankhead, Alabama; Sen. Key Pittman, Nevada.

SOLDIERS' LIFE FOR THEM Thousands of men shouldered arms as United States, bent on a bigger army, a two-ocean navy, an adequate air force, sent draftees and volunteers to army camps that mushroomed into being. The defense commission named by F.D.R. in May and including such leaders as William Knudsen, Sidney Hillman, Edward Stettinius, Jr., and Ralph Budd helped co-ordinate nation's defense efforts.

Trib-Sun 12-24-40

Bodies of 3 Fliers Held at Ensenada Till Storm Permits Return to S. D.

Efforts are being made today to return to San Diego the bodies of three youths, two of them employes of the Consolidated Aircraft Corp. who were killed Sunday when their plane crashed in a take-off at Ensenada.

The three, badly burned, are being held at Ensenada awaiting removal here either by auto, boat or plane. Because of storm conditions, it is said, it is impossible to fly a large plane to the airport and road conditions are such that a large auto cannot make the trip today.

Gerald Mokma, American vice consul at Tijuana, who, on business at Ensenada Sunday, witnessed the crash, is seeking some means of bringing the bodies here.

The dead are Herbert Leroy Martin, 27, of 4062 Vermont st.; Loran Knowles Griswold, 27, of 4386 Highland ave., and L. E. Sinclair jr., of Calipatria, pilot of the plane.

Mokma stated that the plane had just taken off from the airport and the three headed for home after a day of hunting, when he saw some part of the plane fall into space. The craft then nosed up sharply, went into a tail spin and crashed from about a 400-foot altitude.

Mokma and others attempted to reach the plane, but as it burst into flames upon falling, numerous shotgun shells began exploding from the heat, holding rescuers at a distance.

The plane, a Cessna cabin model cleared from Lindbergh field Saturday with the necessary papers for the hunting trip to Ensenada. The trio stopped at Tijuana to show their papers then proceeded to Ensenada.

Both San Diego victims are survived by widows. Griswold, a former Herbert Hoover high school football player, is survived by his wife, Inez; his parents, Mr. and Mrs. H. L. Griswold, and his grandparents, Mr. and Mrs. C. M. Knowles, of El Cajon. Martin is survived by his wife, Helen, and a two-months-old daughter, both of this city, and a sister, Mrs. Don Geir, of Brawley.

Union-12-25-40

Storm Delays Return of Crash Victims' Bodies

Considerable delay may be experienced in bringing to the United States the bodies of three young aviators killed in a plane crash at the Hamilton ranch in Lower California, 200 miles south of here.

The victims were Herbert LeRoy Martin, 27, of 4062 Vermont st.; Loren Knowles Griswold, 27, of 4396 Highland ave., and L. E. Sinclair jr., of Calipatria.

The San Diegans were employed in the experimental department of Consolidated Aircraft Corp. and Sinclair, owner of the plane, was the son of a Calipatria rancher.

U. S. CONSUL RETURNS

Gerald A. Mokma, U. S. consul at Tijuana, was at Ensenada trying to speed the return of the bodies. Returning last night, he said that the district attorney had left Ensenada with a truck to bring out the bodies from the Hamilton ranch.

How long the trip would take, Mokma could not guess. He said rains have made the roads south of Ensenada difficult to travel.

Mokma said he had been unable to learn any new information as to cause of the accident. He said that soon after a take-off from the field at the Hamilton ranch, something fell from the plane in the vicinity of the engine and the machine went into a spin and crashed in flames.

WIRES TO ENSENADA OUT

Although local pilots had offered to fly to the Hamilton ranch and aid in bringing the bodies to San Diego, Consul Mokma said, however, the bodies would first have to be taken to Ensenada to make legal arrangements for transferring them across the border.

Due to the storm both telegraph and telephone wires were down between Tijuana and Ensenada, the consul said last night.

12-30-40 Union

Maj. Fleet Silent On Branch Plant

Maj. Reuben H. Fleet, Consolidated Aircraft Corp. president, said yesterday that he has received no word from Washington as to whether the proposed Consolidated branch plant will be built at Ft. Worth, Tex., or Tulsa, Okla.

"To be frank," Maj. Fleet said, "I get most of the news regarding Consolidated contracts and proposed plant expansion plans from reading The San Diego Union. And that news is accurate and authentic."

According to Washington reports, government plans to finance a Consolidated branch factory at either Ft. Worth or Tulsa have been held up temporarily, pending a dispute between the two cities over a site best suited for national defense purposes.

AIRCRAFT WORKERS GO LIMIT ON CHRISTMAS SUPPLIES

Employes of Consolidated Aircraft Corp. go the limit when they fill Christmas boxes for the needy. In addition to a ham and a supply of vegetables, 45 pounds of staples go into each box with a Christmas tree to each family listed. Busily engaged in filling the 150 boxes to be distributed are (left to right), L. E. Miller, F. H. Rose, J. W. Kelly and R. L. Clute.

Yule Baskets To Be Given by Consair Group

Consolidated Aircraft Corp. employes decided to go to Santa Claus' aid in supplying Christmas dinners to needy families in this area. So the Consair sheet metal department sponsored a Christmas charity ball at the Eagles hall and raised money to be expended in that cause.

Came the selection of a Christmas dinner menu.

BOUGHT STAPLES

"Why spend the allotment for each family on a turkey and trimmings that would last, at the most only a couple of days?" the Consair boys asked one another. So, they took the money and bought only "substantials."

Each of the 150 boxes to be distributed will contain a ham with plenty of celery, lettuce and apples. Each also will be overflowing with articles which may carry over for weeks. Sacks of flour, bags of potatoes and onions, jars of mayonnaise, glasses of jelly, packages of oatmeal and a variety of canned vegetables are closely packed into each container.

SWEETS SUPPLIED

And the younger members of each family are being remembered with a supply of candy and fruit.

"Gee, it's been lots of fun," said a husky metal worker as he almost staggered under the weight of a Christmas box he just had filled

---

American Aircraft Mechanic 12-19-40

Consair Employees Pay Increased Approximately $1,750,000

New Wage Agreement Being Negotiated by Machinists Union, No. 1125, A. F. of L. Being Completed to Satisfaction of Men and Company

At the regular Tuesday meeting held by Local 1125 the report of the Wage Review Board members was read by W. J. Chudleigh and the wage proposals negotiated with Consolidated affecting the men in the lower wage brackets and starting wage with increase every five weeks, was ratified by a vote of the union so large that it was almost unanimous. The wage rate agreed upon was virtually as reported in last week's Aircraft Mechanic, viz: 50 cents starting rate with an increase each 5 weeks until the rate at the end of six months employment will be 60c per hour. Theincrease effective immediately to apply to those that have been in the employ of Consolidated for six months or fraction thereof. Further increases to be based upon merit of individual employee. The present rule of 5c per hour bonus for the night shift to continue.

The wage review began in the Wing Department as a test and in reviewing the wages of some 2500 employees of this department, increases were granted in practically every case, the average increase being 6 to 7 cents per hour per man.

Increases in pay affecting more than 8000 employees will increase the payroll of Consolidated employees $977,626 annually; the cost of further planned increases to other employees approximate $774,770 or an increase for the present employees of approximately $1,652,396 annually.

On projected new employment during the next six months some $7,000,000 will be expended by the Consolidated.

The Wage Review will proceed as rapidly as possible by departments as scheduled.

---

tions.

Aircraft Mechanic 12-19-40

CONSOLIDATED

More than $17,000,000 will be spent for further expansion and improvement of the Consolidated Aircraft Corp. plant, under agreements announced today by the navy department.

Of the total, $14,446,929.27 will be expended by the Defense Plant Corp., an RFC subsidiary, for constructing and equipping a huge parts factory along the east side of Pacific highway, 1½ miles north of the present plant. Both contracts total $17,536,963.

Navy to Spend $3,090,044

Another $3,090,044.69 will be spent by the navy department for improvements at the present factory, Edgar N. Gott, Consolidated vice president, revealed.

The structures will contain a covered manufacturing area of 1,553,000 square feet.

Equipment Included

The rest of the Defense Plant Corp. money will be used in preparing the site, driving piles for the foundation, constructing approaches and equipping the new plant, which Gott said would be "a highly specialized production unit devoted to the manufacture of component parts and assemblies for wing and tail surface construction, with completely independent facilities for all operations requisite to their manufacture."

Gott said the combined Consolidated payroll was expected to soar to 30,000 when the new division is placed in operation. The firm has a backlog of national defense orders and order for warplanes for Britain totaling in excess of $325,000,000.

Trib-Sun 12-31-40

'Aircraft Major U. S. Industry; in Era Of Great Development,' Says Fleet

"The design and manufacture of aircraft now constitutes a major industry in this country, after many lean years of struggle," writes Maj. Reuben H. Fleet, president, Consolidated Aircraft Corp., in the firm's monthly publication, Consolidator. Forecasting a monthly payroll by the company of approximately $5,000,000 for an eventual total of more than 30,000 employes, Fleet's article continues, as follows:

"It is obvious that we are entering upon an era of great aircraft development. This company is maintaining its leadership in the industry and striving willingly to meet all demands upon it by our government.

"Great Efficiency"

"Airplanes have attained great efficiency in speed, range, weight-carrying capacity and safety. Cost of operation has been reduced until it now compares favorably for certain traffic with that of railroads.

"When one realizes that our airlines today are carrying less than 9 percent of the Pullman traveling public, that in 1940 air mail revenue was less than 5 percent of postal revenue, air express totaled only $1,500,000, and little or no air freight has so far been carried, it will be readily appreciated that, with commercial and private flying steadily increasing, commercial aviation will utilize all the available aircraft manufacturing facilities in our country when military orders are reduced.

"Essential to Security"

"The greatest demand at the present time is for military aircraft. Adequate air power is essential to national security. Down through the ages history has demonstrated that a new weapon, once adopted, has been constantly improved and put to increasing use. Periodically, nations enter into limitation agreements on certain equipment, only to redouble the armament race when agreements expire or are scrapped.

"Here, at the Consolidated Aircraft factory, with a backlog of orders of more than $315,000,000, the volume of orders on hand and in sight assures our employes of work for several years.

"Expansion Limit Nearing"

"With the completion during the next few months of the additions to our plant at Lindbergh field, we shall have reached our limit of expansion on this field and have completed our plans for enlargement when we built our first building in 1935.

"To fill orders on hand, we are now engaged in the construction of a parts plant with a total covered area approximating 1,550,000 square feet on Pacific blvd., about a half-mile from our home factory. When this new plant is completed and operating we shall have more than 30,000 employes, with a payroll of about $5,000,000 a month.

"Taxes Take 62 Percent"

"The regular federal and excess-profit taxes take approximately 62 percent of gross income; but as the two plants should annually produce $150,000,000 of airplanes and parts and we have not had to issue more stock to cover the cost of the added facilities, the net yield to our shareholders should be satisfactory.

"Apparently, until the temperament of mankind changes, world peace cannot be enjoyed in the absence of power capable of forcing and enforcing it. Such power is air power, augmented by naval power and by an army where occupation and policing of territory is necessary. Nothing within its range can stop aircraft; its range is now a continent or an ocean. Let us hope that when this war ends, possession of such aircraft, without its employment, will guarantee 'peace on earth, good will to men.'"

Union 12-28-40

Army Delays Contract for New Consair Plant

WASHINGTON, Dec. 27 (A.P.)—Last-minute pleas by advocates of other sites were said authoritatively today to have delayed the signing of contracts for a new assembly plant at Tulsa, Okla., for long range army bombers.

The war department announced last week that Tulsa had been selected as the site for such a plant and that it would be operated by the Consolidated Aircraft Corp., of San Diego, Calif.

Officials said today that the contracts had not been signed but declined to state whether there had been an unexpected delay.

FT. WORTH SITE URGED

The disclosure came after Sen. Sheppard (D-Tex) conferred with Under-Secretary Robert P. Patterson. Sheppard was said to have urged the claims of Fort Worth.

The plant under present plans is to be one of four for the manufacture of bombing planes from parts largely fabricated by the auto industry. Expected to cost from $8,000,000 to $10,000,000, it is to assemble four-motor bombers. Kansas City and Omaha have been chosen as sites for plants to assemble two-motor bombers.

FINAL DECISION DUE

An aid of Sen. Thomas (D-Okla) said the war department had held up signing of the Tulsa plant contract to permit filing of briefs by persons interested in locating the plant in Ft. Worth.

The senator's aid said a final decision on location of the plant would be made by the defense council. He said he was told by a war department official that signing of the contract with Consolidated would be delayed until after Jan. 1.

Trib. 12/27/40.

Ft. Worth Bids For Consair Factory

WASHINGTON, Dec. 27 (A.P.) — Last-minute pleas by advocates of other sites were said authoritatively today to have delayed the signing of contracts for a new assembly plant at Tulsa, Okla., for long-range army bombers.

The war department announced last week that Tulsa had been selected as the site for such a plant and that it would be operated by the Consolidated Aircraft Corp., of San Diego, Calif.

Officials said today that the contracts had not been signed but declined to state whether there had been an unexpected delay.

Ft. Worth Mentioned

The disclosure came after Sen. Sheppard (D-Tex) conferred with Under-Secretary Robert P. Patterson. Sheppard was said to have urged the claims of Fort Worth.

One of Four Plants

The plant under present plans is to be one of four for the manufacture of bombing planes from parts largely fabricated by the auto industry. Expected to cost from $8,000,000 to $10,000,000, it is to assemble four-motor bombers. Kansas City and Omaha have been chosen as sites for plants to assemble two-motor bombers.

An aid of Sen. Thomas (D-Okla) said the war department had held up signing of the Tulsa plant contract to permit filing of briefs by persons interested in locating the plant in Ft. Worth.

The senator's aid said a final decision on location of the plant would be made by the defense council. He said he was told by a war department official that signing of the contract with Consolidated would be delayed until after Jan. 1.

The San Diego Union
SUNDAY MORNING, DEC. 29, 1940

Greater SAN DIEGO

staffs and clerical help, extension of the post exchange building, auditorium with swimming pool and a motor transport building.

ADDITION COMPLETED

Commissioned recently was the 410,000 seven story addition to the aval supply depot on the embarcadero.

Other storehouses are to built within a short time on the site now ccupied by the fresh fish markets etween E and F sts. on Harbor dr. These will be connected by an arcade with the navy pier at the foot f E st. which is to be lengthened o 1000 feet and widened to 250 feet t a cost of $3,000,000.

Other local outstanding naval developments of the last fiscal year vere a 1000-feet recommissioning pier and a 1200-foot quay wall at he destroyer base, six fuel oil tanks at the La Playa fuel depot; general storehouse at the Naval Air station and additions to the air station shops.

Admirals whose flagships are stationed at San Diego carry out extensive administrative duties along far-flung sectors of the national defense program.

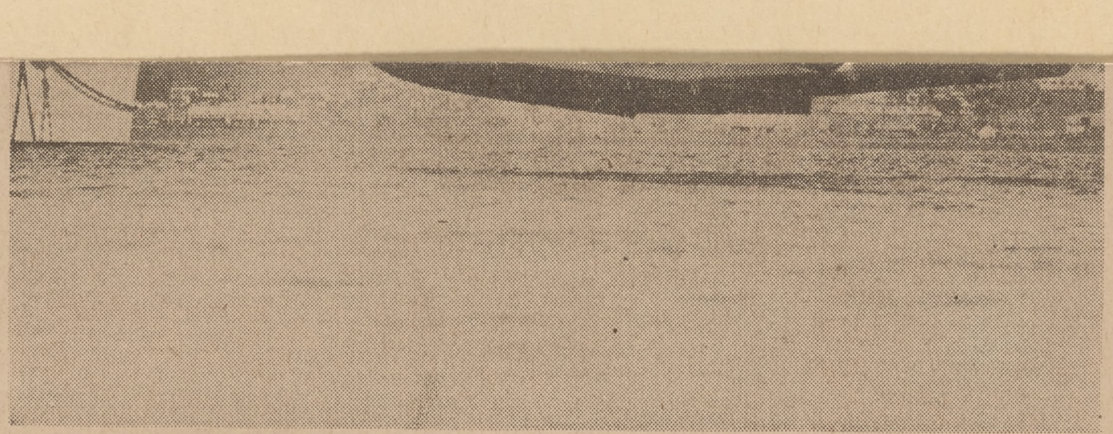
COMMANDS BATTLE PLANES

Vice Adm. William Halsey commands the high seas aircraft battle squadrons including all fighting, scouting and bombing planes operating from the carrier groups.

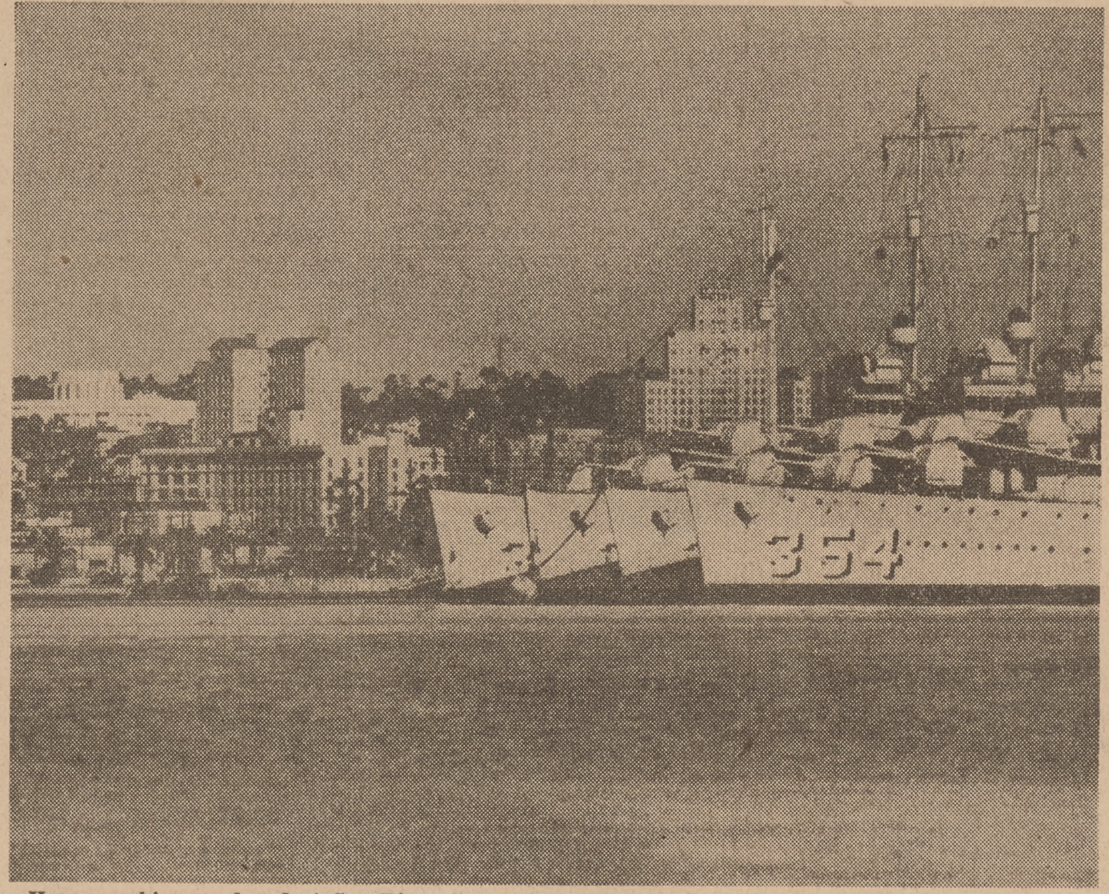
Rear Adm. Arthur Bristol has supervision of the vast network of fleet patrol wings, huge transoceanic bombers that operate over wide areas in the Pacific, Caribbean and Atlantic.

The submarine force commander has jurisdiction over the operations of sub-surface craft operating in he eastern Pacific, Panama and the Atlantic. Other flagships normally based here are those of the battle force destroyer commander; the commander of destroyer flotilla 1, and the commander of cruiser division 3.

Rear Adm. Charles A. Blakely is commandant of the 11th Naval district. His two-starred flag flies from atop the naval administration building at the foot of Broadway.



Known as the "Air Capital of the West," San Diego is the home of some of the nation's best military aviators. Huge navy planes streaking overhead are a common sight for San Diegans.



Huge warships are based at San Diego the year around and at times the harbor is literally packed with battlecraft of all kinds. From plane carriers to submarines, this is their home.

Agricultural Extension Service Established

The Agriculture Extension service is a local branch of the College of College of Agriculture of the University of California and the United States department of agriculture, and maintains a staff of agricultural specialists for San Diego county. The purpose of this organization is to provide information on all agricultural subjects. A city office is maintained at the chamber of commerce, where information and bulletins on the agriculture of the county may be obtained. This service is free to all.

San Diego Important Tuna-Packing Center

San Diego is America's most important tuna-packing center. Fifty-four percent of the tuna catch is canned in San Diego.

The tuna fleet based on San Diego comprises 68 vessels ranging in length from 50 feet to 150 feet, and carrying an average crew of 16 men. These boats are equipped with Diesel engines, refrigerating systems and other modern equipment.

They have a cruising radius of 2500 to 6000 miles, and capacities varying from 25 to 300 tons.

BUSINESS DISTRICT GROWS STEADILY

The business district of San Diego in the last 10 years has spread over an enlarged area, acquiring a more metropolitan atmosphere. Model business sections have also developed rapidly in the various outlying trade areas in the city.

The local stores, which compare favorably with those found in most of the large eastern centers of the country, serve more than 275,000 people living in San Diego's trading area.

Plane Firms Based At Lindbergh Field

Consolidated Aircraft Corp., the second largest airplane manufacturing organization in U. S. A., has its factory on Lindbergh field. The T. C. Ryan Aeronautical Co., and the Solar Aircraft Co., are now building planes and parts at Lindbergh field.

The U. S. Coast Guard has its largest base located on this field. Other important aircraft firms are now negotiating for sites on this airport.

$1,000,000 in barracks, mess halls and other facilities for the army's replacement center on the Torrey pines mesa, comprises a part of the national defense program at San Diego.

The replacement center will accommodate 7500 officers and men who will undergo training every six months. The replacement centers are establishments in which recruits will receive basic training in the branch of the service to which they are assigned after classification at the army's recruit reception centers.

NEW BARRACKS BUILT

At Ft. Rosecrans dozens of barracks will accommodate four new full battalions and a searchlight battery, comprising a total of 17 batteries.

At present the 19th Coast Artillery based at the fort is composed of three batteries to which are attached 400 officers and men under command of Col. Peter H. Ottoson. They man the 12-inch mortar batteries, the 155-millimeter guns and the three-inch anti-aircraft weapons which constitute the seacoast defenses of the port.

Powerful new guns have been assigned to the fort and they probably will be installed before many more months.

Army engineers also have surveyed the San Diego area for possible operation of 16-inch mobile guns to supplement the Ft. Rosecrans defenses.

DREDGING BIG AID

The huge $4,180,000 harbor dredging program has been of material help to the fort in providing additional space along the harbor front. The dredge Tualatin is now operating abeam Ballast Pt. depositing dredged material which will add 20 acres to the Ft. Rosecrans reservation. This acreage is to be used principally as a parade ground.

In addition to the new barracks, storehouses and other facilities essential to accommodate the rapidly expanding coast artillery forces here, the present small hospital is being expanded to house 100 bed patients.

ARMY LEASES LAND

The training center buildings are being constructed on land leased to the army by the city. The group of structures will extend over an area from the famed Torrey pine trees at the top of Torrey Pines grade along the ocean front to the old biological grade near the Scripps Institution of Oceanography at La Jolla.

The national emergency program also brought to San Diego for border patrol duty after an absence of nearly 20 years of a part of the famed 11th cavalry. These troops are now encamped near Morena. Another part of the 11th cavalry, assigned to guard the All-American canal, is encamped at Seeley in the Imperial valley.

Balboa park has many excellent bridle paths, available for riding the year round.

---

ego's climate have been compiled by the U. S. weather bureau and represent the average temperature that may be expected during these weeks:

Name of week—	Temperature Max.	Min.
New Year's, Jan. 1-7	63	46
Washington's Birthday Feb. 19-25	63	48
Memorial Day, May 28-June 5	67	57
Independence Day, July 2-8	71	61
Labor Day Sept. 4-10	73	62
Thanksgiving Day Nov. 20-26	66	50
Christmas Day Dec. 25-31	63	47

Mission San Luis Rey, 18th of the California series, was founded June 13, 1798. It was said to be the most beautiful of the entire group.

---

of its market value, or $2500.

At the rate of $5.95 the taxes on this piece of property would be $148.75.

From these figures it will be seen that the total taxes on a home in San Diego are approximately 2.9 percent of the actual value of the property.

The following property is exempt from taxation under the California law:

1. Personal property of every householder in the amount of $100.
2. The property of Veterans to the amount of $1000, where all of the owner's property has an assessed value of less than $5000.

BOARD SETS RATE

The board of supervisors determines the county tax rate by comparing the need of the county as set forth in the budget with the property values as stated by the assessor and fixing a rate which

All persons having a gross incom of more than $5000 in the taxabl year are required to make return: A single person having a net in come of $1000 must file and marrie persons having a joint net incom of over $2500 must file a report.

The California state income ta was patterned after the federal in come tax and differs very littl from this tax, except for the fac that the rate is but ¼ of that c the federal rate and that Californi does not allow an earned incom exemption. In other words, you ma estimate your California incom tax by taking a federal form, de ducting the exemptions and multi plying by ¼ of the rate that th federal government requires. (Thi tax applies only to residents c California.)

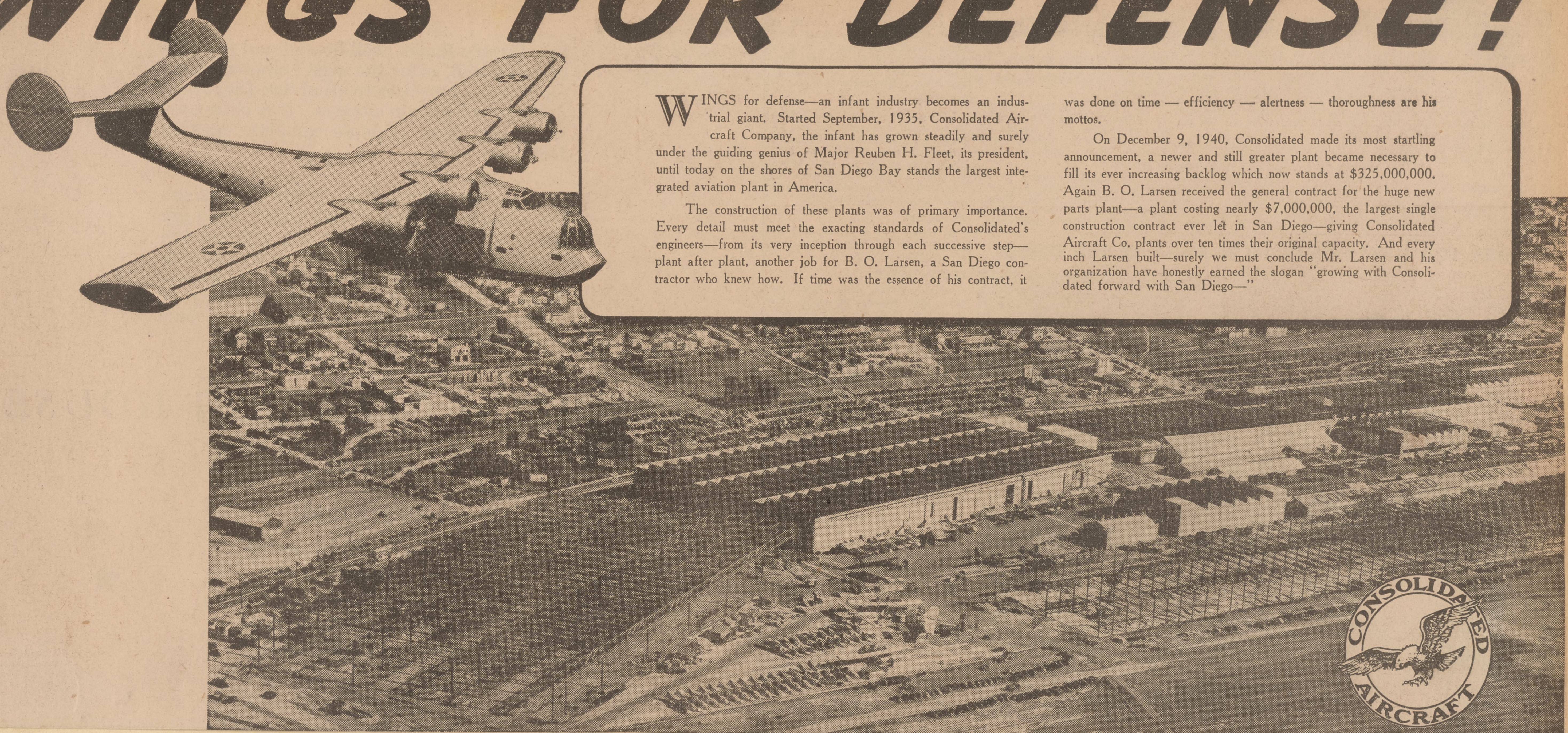
Under the California law—notes debentures, shares of capital stock bonds, foreign mortgages, deeds c trust are no longer taxed as per sonal property.

SPLENDID SPAN OF CABRILLO BRIDGE LEADS TO PARK

Cabrillo bridge, which leads into Balboa park from the west, is a splendid arch over which have passed many thousands of tourists and sightseers on their way to enjoy the park's charm and beaut

Union 12-21-40

WINGS FOR DEFENSE!



WINGS for defense—an infant industry becomes an industrial giant. Started September, 1935, Consolidated Aircraft Company, the infant has grown steadily and surely under the guiding genius of Major Reuben H. Fleet, its president, until today on the shores of San Diego Bay stands the largest integrated aviation plant in America.

The construction of these plants was of primary importance. Every detail must meet the exacting standards of Consolidated's engineers—from its very inception through each successive step—plant after plant, another job for B. O. Larsen, a San Diego contractor who knew how. If time was the essence of his contract, it was done on time — efficiency — alertness — thoroughness are his mottos.

On December 9, 1940, Consolidated made its most startling announcement, a newer and still greater plant became necessary to fill its ever increasing backlog which now stands at $325,000,000. Again B. O. Larsen received the general contract for the huge new parts plant—a plant costing nearly $7,000,000, the largest single construction contract ever let in San Diego—giving Consolidated Aircraft Co. plants over ten times their original capacity. And every inch Larsen built—surely we must conclude Mr. Larsen and his organization have honestly earned the slogan "growing with Consolidated forward with San Diego—"

Consair Employes Forming Social Club

12-28-40 Union

Formation of the Consolidated Employes' club, social organization for Consolidated Aircraft Corp. workers, is under way with a free dance scheduled tonight at club headquarters, 914 Seventh ave.

"A majority of aircraft employes are from out of town and for this reason a club was started," said Mack Tonkins, manager. "Dances are to be held frequently and sports facilities will be available to members and their families."

The club will be open daily from noon until 2 a.m.

Aviation News Features 1-1-41

"Achievements of 1940"

(Release Jan. 1)

From January 1, 1940, to January 1, 1941, 15 airplane factories in the East and on the West Coast accomplished the following:

THE EAST

Curtiss-Wright (including St. Louis division) increased floor space from 799,000 to 949,000 square feet; personnel from 4981 to 11,600.

Republic Aviation increased floor space from 200,000 to 230,000 square feet; personnel from 1350 to 2650.

Bell Aircraft increased floor space from 210,000 to 435,000 square feet; personnel from 1160 to 4300.

Vought-Sikorsky Aircraft increased floor space from 300,000 to 370,000 square feet; personnel from 1600 to 4500.

Glenn L. Martin increased floor space from 1,103,070 to 1,663,000 square feet; personnel from 13,000 to 17,500.

Brewster Aircraft increased floor space from 170,000 to 850,000 square feet; personnel from 960 to 6700.

Fairchild Aircraft increased floor space from 84,000 to 105,000 square feet; personnel from 485 to 1210.

THE WEST

Boeing Airplane Co. (including Stearman division) increased floor space from 921,000 to 1,636,000 square feet; personnel from 6500 to 10,000.

Consolidated Aircraft increased floor space from 961,500 to 1,700,000 square feet; personnel from 3200 to 14,000.

Douglas Aircraft increased floor space from 1,600,000 to 1,875,000 square feet; personnel from 14,100 to 19,200.

Lockheed Aircraft increased floor space from 668,000 square feet to 1,139,205 equare feet; personnel from 7400 to 17,400.

North American Aviation increased floor space from 600,000 to 1,012,680 square feet; personnel from 4800 to 8500.

Northrop Aircraft increased floor space from 13,000 to 516,000 square feet; personnel from 73 to 2600.

Ryan Aeronautical increased floor space from 80,000 to 160,000 square feet; personnel from 600 to 1500.

Vultee Aircraft increased floor space from 281,000 to 720,000 square feet; personnel from 848 to 5400.

THEY LIKE FLYING

There is one airplane pilot for every 80 persons in Lock Haven, Pa., home of the Piper Aircraft Corporation.

Industry Backlog

Aviation December 1940

Unfilled orders of the aircraft industry now approximate $3,500,000,000, an increase of $385,000,000 in the past month consisting mainly of U.S. Navy orders. Only a year ago the industry was expanding its plant capacity to take care of a backlog which had crossed the $500,000,000 mark for the first time. Now that the U.S. Government's current aircraft purchasing program is nearly completed, plans already are being formulated in Washington for a new 20,000 military plane program to be presented to Congress early next year. Meanwhile Great Britain plans to order an additional 12,000 planes and the Dutch East Indies, among other nations, also are shopping around for more war planes. Contracts held by domestic plants come to a grand total of about 39,000 fighting craft; 25,000 for the American military and naval forces, and 14,000 for the British. The following table gives the latest approximate unfilled orders in dollar volume of 23 primary producers of planes or aircraft engines.

Allison (General Motors)	$100,000,000
Aviation Corp.	20,000,000
Beech	22,000,000
Bell	60,000,000
Boeing	203,000,000
Brewster	100,000,000
Cessna	11,000,000
Consolidated	300,000,000
Continental Motors	35,000,000
Curtiss-Wright	520,000,000
Douglas	400,000,000
Fairchild	15,000,000
Ford	122,000,000
Grumman	20,000,000
Lockheed	211,000,000
Martin	322,000,000
North American	225,000,000
Northrop	24,000,000
Packard	217,000,000
Republic	65,000,000
Ryan	12,000,000
United Aircraft	430,000,000
Vultee	95,000,000
	$3,529,000,000

L.A. Times 12-31-40

Two Bombers to Take Off for Great Britain Today

Camouflaged Air Boats, at San Diego, Expected to Take New Route Because of Weather

SAN DIEGO, Dec. 30.—Two heavily camouflaged Consolidated PBY-type long-range patrol bomber seaplanes tentatively are scheduled to take off from San Diego Harbor about 6 a.m. tomorrow on a flight across the continent en-route to Great Britain.

Because of unfavorable weather conditions along the route taken several weeks ago by the first two air boats in a Royal Air Force order of several hundred bombers, the craft are expected to fly to Elizabeth City, N.J., and thence to Bermuda before attempting the long and hazardous trans-Atlantic crossing to England.

PREVIOUS ROUTE

The previous route was to Port Washington, Long Island, by way of Ft. Worth, Tex., and on to Halifax, N.S. Poor operating conditions during winter at Halifax have necessitated the use of Bermuda as an intermediate stop, it was learned. The planes will stop at Ft. Worth again on tomorrow's trip.

Elizabeth City, about 2400 airline miles from San Diego, is the site of the Coast Guard's newest and finest air station.

CRAFT FACE TEST

Bermuda is 725 miles beyond, and the flight to England, 3600 miles, will test almost to the limit the nonstop range of the bombers.

Pilots of the planes are expected to be Doug Kelley, veteran San Diego private aviator, and Rodney Jackson of New York.

Trib-Sun 12-31-40

Planes Leave S. D. On Hop to England

On the first leg of a flight to England, two San Diego-built Consolidated bombers left here at 6 a.m. today, according to report at Lindbergh field. The planes will stop en route to the east coast at Ft. Worth.

Pilots who took the planes from San Diego are Douglas Kelley and Roland Jackson. A few weeks ago the first planes of an order for England left here. The planes are camouflaged an olive green.

International News Service reported that the planes leaving today would go to England by way of Bermuda after stops at Fort Worth and Elizabeth, N. J. Decision to take off from Bermuda was due to reports of unfavorable weather over the north Atlantic.

Unverified rumors at noon were that two more planes might leave before nightfall, followed by one or two planes later in the week.

Consair Bombers To Take Off Today

Scheduled to take off at 6 a.m. today, two Consolidated built bombers of the PBY type will make the first leg of a trip to England. The planes will go to Ft. Worth, Tex., before proceeding to the east coast, where they will be taken across the Canadian border and delivered to the Royal Air force.

At the controls will be Doug Kelley, of San Diego, and Roland Jackson, of New York. The bombers are the third and fourth of a large order being constructed for Britain by the Consolidated Aircraft Corp.

12-31-40 - UNION

BIG BOMBERS FOR BRITAIN

LONDON DAILY TELEGRAPH

NEARLY READY IN U.S.

From Our Own Correspondent

about 11-21-40.

NEW YORK, Monday.

It is reported from San Diego, California, to-day, that work on an undisclosed number of bombers for the R.A.F. has reached an advanced stage at the Consolidated Aircraft Corporation's factory.

Known as B-24, this 20-ton four-engined machine is believed to be the most powerful long-range bomber in the United States, and incorporates many improvements on the so-called Flying Fortress type.

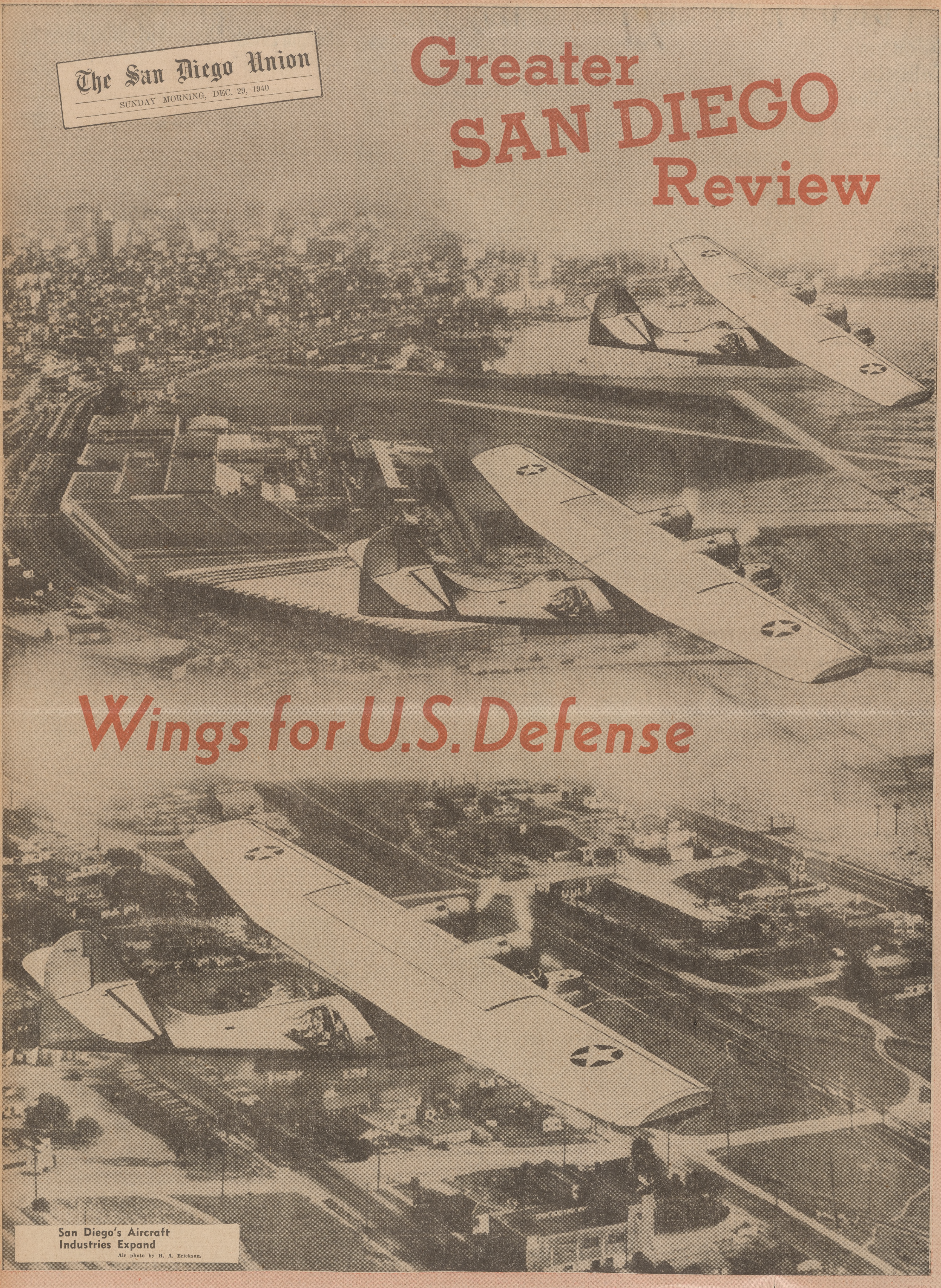
The same firm are making 600 twin-engine seaplane bombers for Britain.

Yesterday two twin-engine Douglas bombers, which are said to be better than anything of the kind yet sent to England, arrived in New York from California. It is understood that these form part of an order originally placed by the French purchasing commission.

The San Diego Union
SUNDAY MORNING, DEC. 29, 1940

Greater SAN DIEGO Review

Wings for U.S. Defense

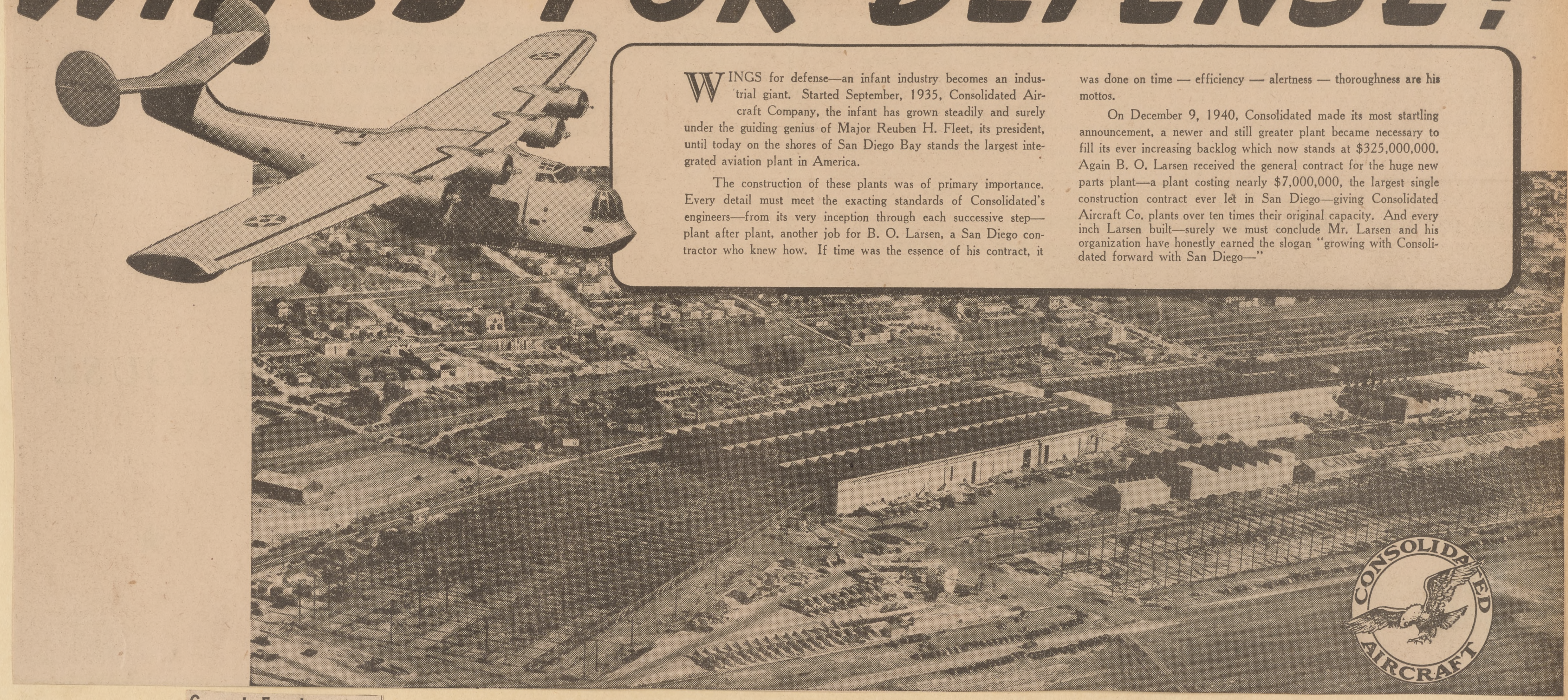


San Diego's Aircraft Industries Expand

Air photo by H. A. Erickson.

Union 12-21-40

WINGS FOR DEFENSE!



WINGS for defense—an infant industry becomes an industrial giant. Started September, 1935, Consolidated Aircraft Company, the infant has grown steadily and surely under the guiding genius of Major Reuben H. Fleet, its president, until today on the shores of San Diego Bay stands the largest integrated aviation plant in America.

The construction of these plants was of primary importance. Every detail must meet the exacting standards of Consolidated's engineers—from its very inception through each successive step—plant after plant, another job for B. O. Larsen, a San Diego contractor who knew how. If time was the essence of his contract, it was done on time — efficiency — alertness — thoroughness are his mottos.

On December 9, 1940, Consolidated made its most startling announcement, a newer and still greater plant became necessary to fill its ever increasing backlog which now stands at $325,000,000. Again B. O. Larsen received the general contract for the huge new parts plant—a plant costing nearly $7,000,000, the largest single construction contract ever let in San Diego—giving Consolidated Aircraft Co. plants over ten times their original capacity. And every inch Larsen built—surely we must conclude Mr. Larsen and his organization have honestly earned the slogan "growing with Consolidated forward with San Diego—"

Consair Employes Forming Social Club

12-28-40 Union

Formation of the Consolidated Employes' club, social organization for Consolidated Aircraft Corp. workers, is under way with a free dance scheduled tonight at club headquarters, 914 Seventh ave.

"A majority of aircraft employes are from out of town and for this reason a club was started," said Mack Tonkins, manager. "Dances are to be held frequently and sports facilities will be available to members and their families."

The club will be open daily from noon until 2 a.m.

Aviation News Features 1-1-41

"Achievements of 1940"

(Release Jan. 1)

From January 1, 1940, to January 1, 1941, 15 airplane factories in the East and on the West Coast accomplished the following:

THE EAST

Curtiss-Wright (including St. Louis division) increased floor space from 799,000 to 949,000 square feet; personnel from 4981 to 11,600.

Republic Aviation increased floor space from 200,000 to 230,000 square feet; personnel from 1350 to 2650.

Bell Aircraft increased floor space from 210,000 to 435,000 square feet; personnel from 1160 to 4300.

Vought-Sikorsky Aircraft increased floor space from 300,000 to 370,000 square feet; personnel from 1600 to 4500.

Glenn L. Martin increased floor space from 1,103,070 to 1,663,000 square feet; personnel from 13,000 to 17,500.

Brewster Aircraft increased floor space from 170,000 to 850,000 square feet; personnel from 960 to 6700.

Fairchild Aircraft increased floor space from 84,000 to 105,000 square feet; personnel from 485 to 1210.

THE WEST

Boeing Airplane Co. (including Stearman division) increased floor space from 921,000 to 1,636,000 square feet; personnel from 6500 to 10,000.

Consolidated Aircraft increased floor space from 961,500 to 1,700,000 square feet; personnel from 3200 to 14,000.

Douglas Aircraft increased floor space from 1,600,000 to 1,875,000 square feet; personnel from 14,100 to 19,200.

Lockheed Aircraft increased floor space from 668,000 square feet to 1,139,205 equare feet; personnel from 7400 to 17,400.

North American Aviation increased floor space from 600,000 to 1,012,680 square feet; personnel from 4800 to 8500.

Northrop Aircraft increased floor space from 13,000 to 516,000 square feet; personnel from 73 to 2600.

Ryan Aeronautical increased floor space from 80,000 to 160,000 square feet; personnel from 600 to 1500.

Vultee Aircraft increased floor space from 281,000 to 720,000 square feet; personnel from 848 to 5400.

THEY LIKE FLYING

There is one airplane pilot for every 80 persons in Lock Haven, Pa., home of the Piper Aircraft Corporation.

Aviation December 6 1940

Industry Backlog

Unfilled orders of the aircraft industry now approximate $3,500,000,000, an increase of $385,000,000 in the past month consisting mainly of U.S. Navy orders. Only a year ago the industry was expanding its plant capacity to take care of a backlog which had crossed the $500,000,000 mark for the first time. Now that the U.S. Government's current aircraft purchasing program is nearly completed, plans already are being formulated in Washington for a new 20,000 military plane program to be presented to Congress early next year. Meanwhile Great Britain plans to order an additional 12,000 planes and the Dutch East Indies, among other nations, also are shopping around for more war planes. Contracts held by domestic plants come to a grand total of about 39,000 fighting craft; 25,000 for the American military and naval forces, and 14,000 for the British. The following table gives the latest approximate unfilled orders in dollar volume of 23 primary producers of planes or aircraft engines.

Allison (General Motors)	$100,000,000
Aviation Corp.	20,000,000
Beech	22,000,000
Bell	60,000,000
Boeing	203,000,000
Brewster	100,000,000
Cessna	11,000,000
Consolidated	300,000,000
Continental Motors	35,000,000
Curtiss-Wright	520,000,000
Douglas	400,000,000
Fairchild	15,000,000
Ford	122,000,000
Grumman	20,000,000
Lockheed	211,000,000
Martin	322,000,000
North American	225,000,000
Northrop	24,000,000
Packard	217,000,000
Republic	65,000,000
Ryan	12,000,000
United Aircraft	430,000,000
Vultee	95,000,000
	$3,529,000,000

L.A. Times 12-31-40

Two Bombers to Take Off for Great Britain Today

Camouflaged Air Boats, at San Diego, Expected to Take New Route Because of Weather

SAN DIEGO, Dec. 30.—Two heavily camouflaged Consolidated PBY-type long-range patrol bomber seaplanes tentatively are scheduled to take off from San Diego Harbor about 6 a.m. tomorrow on a flight across the continent en-route to Great Britain.

Because of unfavorable weather conditions along the route taken several weeks ago by the first two air boats in a Royal Air Force order of several hundred bombers, the craft are expected to fly to Elizabeth City, N.J., and thence to Bermuda before attempting the long and hazardous trans-Atlantic crossing to England.

PREVIOUS ROUTE

The previous route was to Port Washington, Long Island, by way of Ft. Worth, Tex., and on to Halifax, N.S. Poor operating conditions during winter at Halifax have necessitated the use of Bermuda as an intermediate stop, it was learned. The planes will stop at Ft. Worth again on tomorrow's trip.

Elizabeth City, about 2400 airline miles from San Diego, is the site of the Coast Guard's newest and finest air station.

CRAFT FACE TEST

Bermuda is 725 miles beyond, and the flight to England, 3600 miles, will test almost to the limit the nonstop range of the bombers.

Pilots of the planes are expected to be Doug Kelley, veteran San Diego private aviator, and Rodney Jackson of New York.

Trib-Sun 12-31-40

Planes Leave S. D. On Hop to England

On the first leg of a flight to England, two San Diego-built Consolidated bombers left here at 6 a.m. today, according to report at Lindbergh field. The planes will stop en route to the east coast at Ft. Worth.

Pilots who took the planes from San Diego are Douglas Kelley and Roland Jackson. A few weeks ago the first planes of an order for England left here. The planes are camouflaged an olive green.

International News Service reported that the planes leaving today would go to England by way of Bermuda after stops at Fort Worth and Elizabeth, N. J. Decision to take off from Bermuda was due to reports of unfavorable weather over the north Atlantic.

Unverified rumors at noon were that two more planes might leave before nightfall, followed by one or two planes later in the week.

Consair Bombers To Take Off Today

Scheduled to take off at 6 a.m. today, two Consolidated built bombers of the PBY type will make the first leg of a trip to England. The planes will go to Ft. Worth, Tex., before proceeding to the east coast, where they will be taken across the Canadian border and delivered to the Royal Air force.

At the controls will be Doug Kelley, of San Diego, and Roland Jackson, of New York. The bombers are the third and fourth of a large order being constructed for Britain by the Consolidated Aircraft Corp.

12-31-40 - UNION

BIG BOMBERS FOR BRITAIN

London Daily Telegraph

NEARLY READY IN U.S.

From Our Own Correspondent

abt 11-21-40

NEW YORK, Monday.

It is reported from San Diego, California, to-day, that work on an undisclosed number of bombers for the R.A.F. has reached an advanced stage at the Consolidated Aircraft Corporation's factory.

Known as B-24, this 20-ton four-engined machine is believed to be the most powerful long-range bomber in the United States, and incorporates many improvements on the so-called Flying Fortress type.

The same firm are making 600 twin-engine seaplane bombers for Britain.

Yesterday two twin-engine Douglas bombers, which are said to be better than anything of the kind yet sent to England, arrived in New York from California. It is understood that these form part of an order originally placed by the French purchasing commission.

ANNUAL REVIEW THE SAN DIEGO UNION: SUNDAY MORNING, DEC. 29, 194

Aircraft Plants Have $340,000,000 Backlog

Factories Hum With Activity For U.S. Defense

By HOWARD MORIN

San Diego's three major aircraft manufacturing plants, with a total backlog of $340,000,000, are playing an important part in the national defense program.

Consolidated Aircraft Corp. has a backlog of $325,000,000 and is constructing bombers not only for the U. S. war and navy departments but also long range bombing aircraft for the British Royal Air force.

The Ryan Aeronautical Corp. is working night and day on $11,000,000 worth of military contracts. The Solar Aircraft Co., engaged chiefly in the manufacture of manifolds and other aircraft accessories, has a backlog of $4,000,000.

All three companies have been compelled to expand their production facilities by frequent enlargement of their factories at the municipal airport.

EMPLOYES INCREASE

In the early part of December the three aircraft concerns were employing a total of nearly 17,000 men and women. This number will be more than doubled by this spring when new additions to the plants will be in full operation.

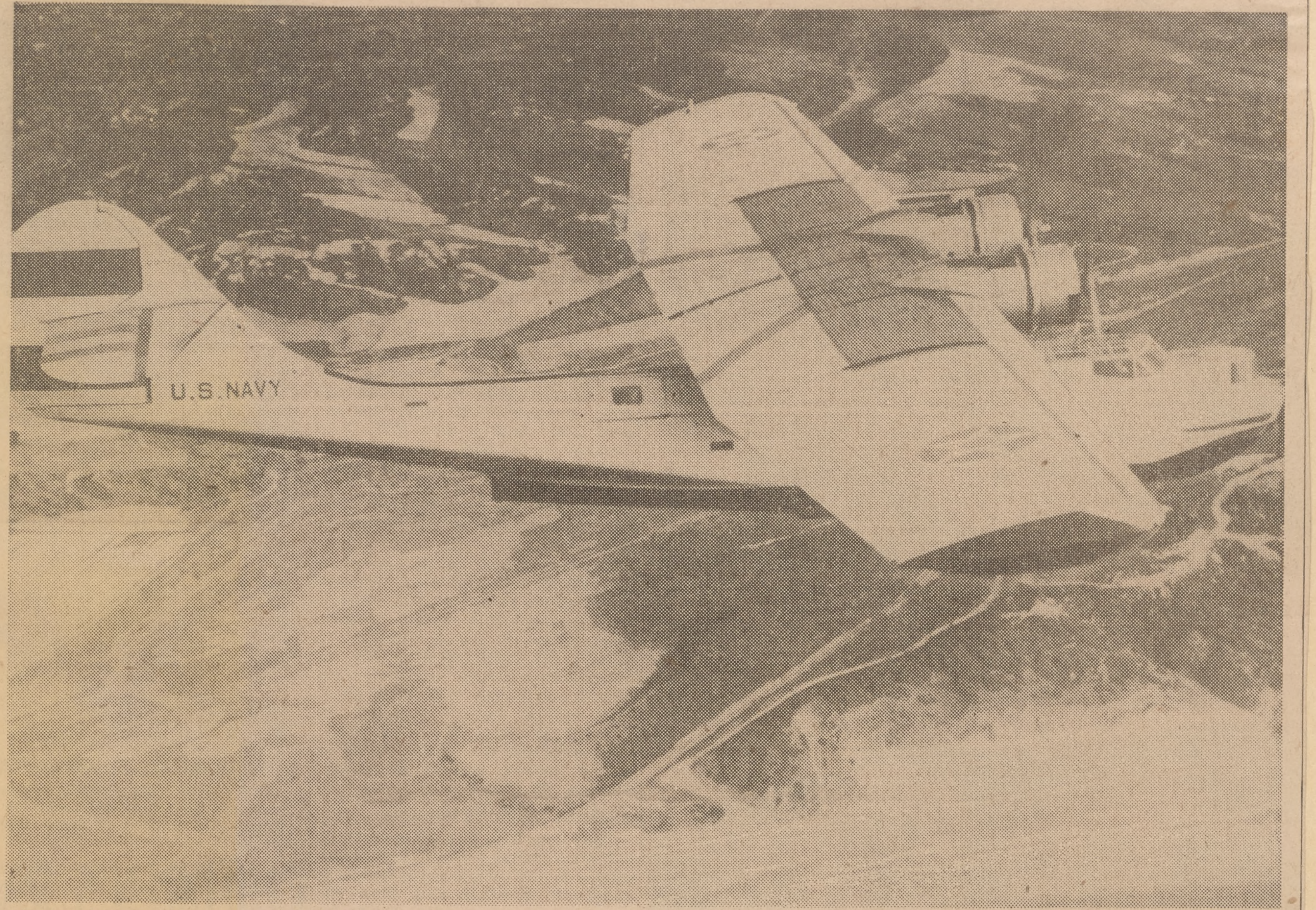
A $7,000,000 construction program which virtually will double the size of Consolidated is now under way. Eight new buildings are being erected along Pacific highway between Barnett ave. and Rosecrans st. Principal units will compose a huge parts plant, and a three-story drop hammer building which will house the largest battery of drop hammers and hydraulice presses on the Pacific coast.

The new buildings are situated on a factory site of 52 acres with 72 acres of adjacent parking area. Each of the three large units will be 400 by 750 feet. The smaller structures will include an office building, 750 by 50 feet; the drop hammer building 400 by 60 feet, a paint shop, a warehouse and a boiler plant.

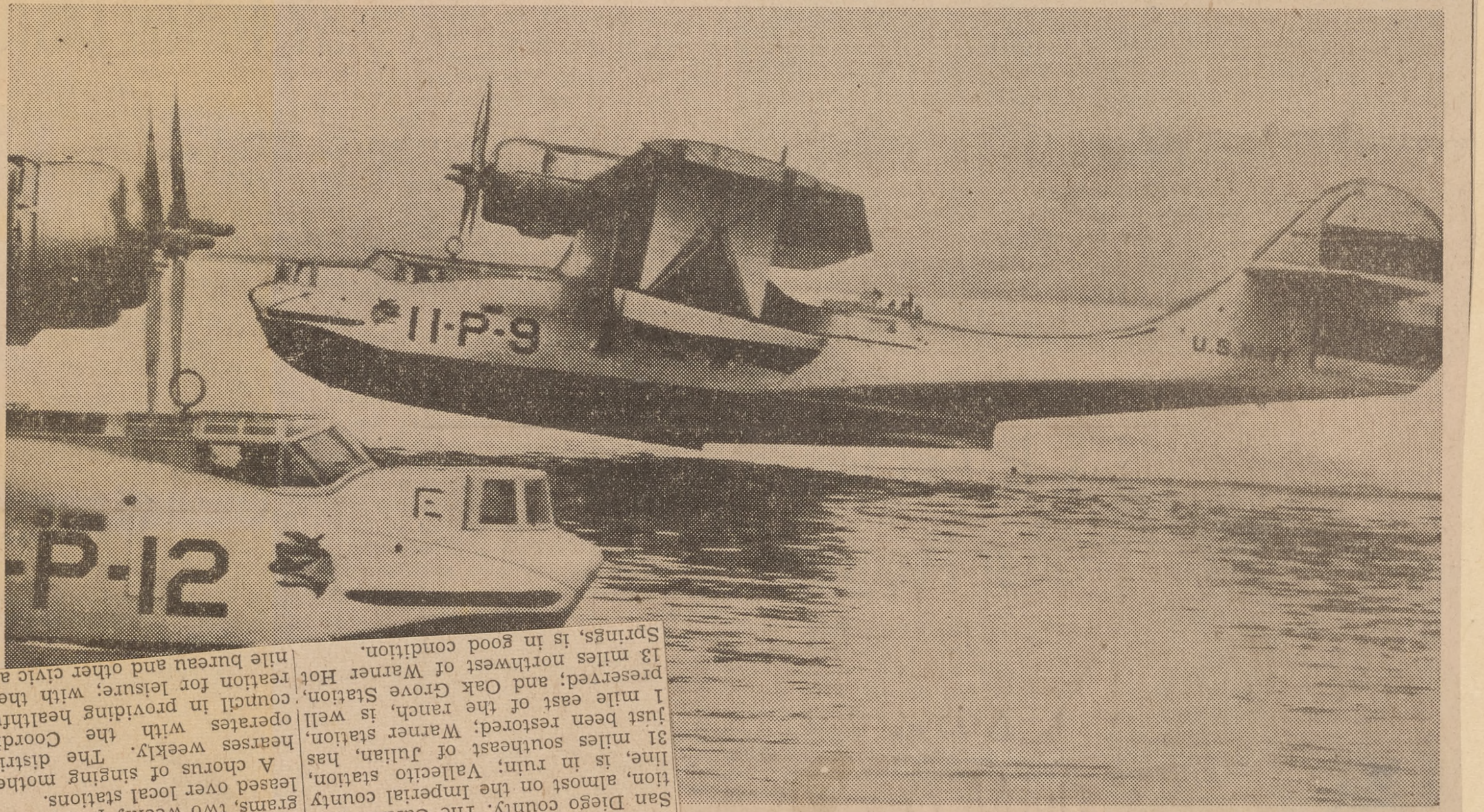
FLOOR AREA EXTENDED

The expansion program will increase the floor area of Consolidated to 1,630,02[illegible] square feet and the paved yard [illegible] to 1,100,141 square feet, a grand total of 2,730,167 square feet, an increase of 1000 percent of manufacturing area since 1935.

Although the Ryan company completed a new factory at Lindbergh field in June, 1939, additional government contracts made



Pictured is the famous Consolidated Model 28 twin-engined flying boat, the latest U. S. navy PBY-5, in flight. The PBYs have made Consolidated the largest manufacturer of flying boats in the world and have brought numerous records to the credit of local engineers.



in massed, non-stop flights over long distances from their San Diego base.

---

of the extensive

CITIZENSHIP STRESSED

There are more than 600,000 Girl Scouts in America today. The purpose of the Girl Scout organization is to develop girls as individuals and as useful active citizens. The program is designed to meet
e needs and interests of three
levels, Brownie Scouts 7 to 10
old, Girl Scouts 10 to 14 years
d Senior Scouts 14 to 18
with 10 fields of interest
doors, homemaking, in-
riendship, arts and
ty life, sports and
health and safety,
d dramatics, music
Each age level carries
to the ability

on will

ticipates in many civic activities, such as providing for the sick, the needy and afflicted.

The membership of the auxiliaries attend to most of the hospital visitations and give their help to needy families, sewing clothes, making pajamas and night clothes for the Crippled Children's Home and other institutions such as the veterans' facilities and hospitals. It is estimated that more than $1200 was spent for cloth and thread alone in 1940 for this splendid work.

Four Stage Stations Established in County

From 1858 to 1861, stages operated over the southern route from San Francisco to Saint Louis. Four stations were established in eastern San Diego county. The Carizzo station, almost on the Imperial county line, is in ruin; Vallecito station, 31 miles southeast of Julian, has just been restored; Warner station, 1 mile east of the ranch, is well preserved; and Oak Grove Station, 13 miles northwest of Warner Hot Springs, is in good condition.

councils: El Trabajo, north end of county; Mt. Helix, east; Sweetwater, south; San Diego-elementary; and Sunset Secondary for high schools. Each association has representation at the annual state convention, which fixes state policies and elects officers.

As suggested in this year's district theme, "Our Homes, Our Schools, Our Children," this vigorous organization has a wide array of activities that engage the interests of its members.

The primary interest being instruction for parents, a strong program of discussion groups and meetings is maintained in cordial cooperation with the city schools; subject matter ranges from views of classroom procedure to family life problems. Citizenship and tolerance are emphasized. In addition to national and state radio programs, two weekly programs are released over local stations.

A chorus of singing mothers rehearses weekly. The district cooperates with the Coordinating council in providing healthful recreation for leisure; with the Juvenile bureau and other civic agencies

clude canned fish, confectionery and olives, onyx, marble, cement pipe, brick and tile, soaps, gas heaters, citrus products, macaroni and numerous other items.

Adobe Ranch Houses Still Standing Here

Several excellent examples of adobe ranch houses remain in San Diego county; many are off the main highways and difficult to reach. Agua Hedionda, known as the Kelly Ranch house, is three miles east of Carlsbad. Guajome, home of Cave J. Couts, three miles northwest of Vista. Osuna, homes of Juan Maria Osuna and Leandro Osuna, both homes at Rancho Santa Fe. Santa Margarita, one of the finest and best preserved adobes in California, is 10 miles northeast of Oceanside on the coast highway, or 7 miles southwest of fallbrook. The Sawday ranch house in the Valle de San Jose is just east of the junction of the Warner Hot Springs and San Felipe highways

---

American Aircraft Mechanic 12-26-40

An Open Letter

Messrs. Fleet and Associates,
Consolidated Aircraft Corp.
City
Gentlemen:

San Diego, Calif.
Dec. 23rd, 1940

I herewith present you with a challenge and a tribute. He who was the very embodiment of truth and the expression of the wisdom of all the ages, said: Render therefore unto Ceasar the things which are Caesar's and unto God the things that are God's.

You by your industrial initiative together with your power and wisdom to organize, have created in and for this city a great industrial enterprise, and for its populace a great opportunity, viz. the opportunity of Work and Progress. In the perpetuation of this great task as embraced in your program for the future we bid you Godspeed and wish you well. For what you have already accomplished and what you will yet achieve, we pay you tribute—for unto you, tribute is due.

Our challenge can best be expressed in the following lines which we have penned and which we now dedicate to you in this most crucial hour.

A. A. Perry,
Employee No. 795,
Consolidated Aircraft

AMERICA AWAKE

★

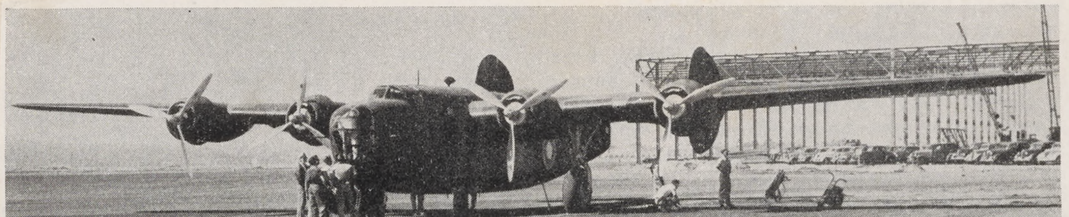
Production is the cry
Production is the need
This message oft repeated
We do well to heed.
Yes! Let us build armaments
And be sure we build them well
Not for aggression's purpose
Nor aught of recompense
But let us build them swiftly
For safety and defense.

Awake ye workers of America
Heed not the subtle power
Of discord and dissension
In this jeopardizing hour.
Today is yours in which to build
Great ships of sea and air
Therein lies supremacy
Here and everywhere.
Eventualities await
For them we must prepare
And to this end not hesitate
On land or sea or air.

Freedom's in the balance
Because of greed and hate
And if Totalitarians had their way
We'd be a vassal state
But this to them we will deny
On land and sea and sky.

Arouse ye builders of this craft
Before it is too late
Lest we like those across the seas
Suffer like terrible fate.
Our country's call we then will heed
Our energies we'll give
That Freedom's Cause, triumphantly
Forever then shall live.

Aviation — December, 1940



Wide World

A NEW FOUR-ENGINED BOMBER built by Consolidated Aircraft for Britain's Air Force. Large numbers of these planes are under construction at San Diego and will probably be flown across the Atlantic. The planes can carry four tons of bombs at 300 m.p.h. for 3,000 miles non-stop. Camouflage and RAF markings are already painted on as the bomber is prepared for test flight.

Agric Consolidated Air

ROMEIKE & CURTICE LTD.

35, Shoe Lane, London, E.C.4

THE PRESS CLIPPING BUREAU

19 NOV 1940

EXTRACT FROM

THE TIMES

FAST BOMBERS FOR BRITAIN

NEW AMERICAN MACHINES

FROM OUR OWN CORRESPONDENT

NEW YORK, Nov. 18

?

The first two of an order for 70 or more Douglas bombers for Britain, superior to any hitherto sent abroad, arrived here on Saturday by air from California. They are similar in design to the D.B. 7-1 bombers now being bought by the United States Army—monoplanes with tricycle landing gears, powered with two 1,050 h.p. Pratt and Whitney engines, which give them a cruising speed of more than 280 miles an hour. In addition to bomb racks they have emplacements for three machine-guns.

It is said that the bombers were ordered originally for France, and were diverted to Britain after the surrender of France.

A report from San Diego says that the Consolidated Aircraft Corporation has nearly completed the first of a number of huge bombers for Britain, which are described as probably the most powerful long-range bombers in the world, superior even to the famous B-17 " flying fortresses." These B-24 aeroplanes are four-engined craft weighing 20 tons each. They have a cruising range of more than 3,000 miles, and a speed of more than 300 miles an hour, and can carry 8,000lb. of bombs.

(21st Nov.)

21/11/40

"Daily Telegraph"

LONDON, ENGLAND

U.S. SENDING NEW TYPE 'PLANE

BOMB SIGHT FOR BRITAIN

FROM OUR OWN CORRESPONDENT

WASHINGTON, Wednesday.

Gen. Marshall, United States Chief of Staff, announced to-day that 26 heavy four-engined bombers, equipped with the Sperry bomb-sight, had been released by the Priorities Board for despatch to Britain.

The bombers, which are being manufactured by the Consolidated Aircraft Co., are very similar in effectiveness to the famous Flying Fortresses, with a range of 3,000 miles. They are the first machines equipped with the Sperry bomb sight to be released to Britain. The United States is retaining for her own use the more modern Norden bomb sight.

Three of the new machines are due to be delivered this month and three in December, while 20 more are due to be delivered before March. Gen. Marshall pointed out that no comparable 'plane had ever been used in active operations, and the United States was anxious to see the results.

BRITISH EQUIPMENT

He also stated that Britain, in consideration of the release of the bombers, had agreed to supply to the United States sufficient engines to equip 41 Flying Fortresses.

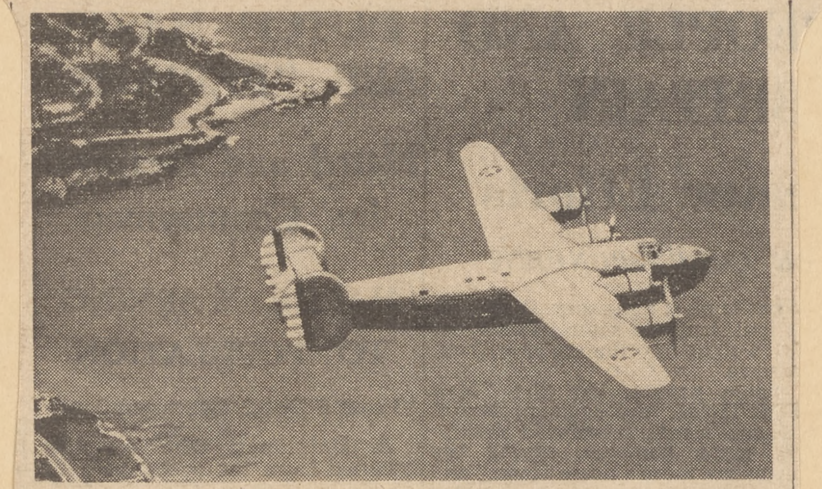
He disclosed that the United States Army has observers in British warplanes flying over Britain and the English Channel, but they had not flown over Germany.

The latest transaction means deliveries over and above the rough fifty-fifty rule announced recently. This rule, officials explain, was always intended to be a flexible standard.

American aircraft production is being speeded up as rapidly as possible with a view to reaching peak production by the Spring, when a British aerial offensive is anticipated. This speed up will be in the nature of an emergency spurt and may slow down deliveries some months after, but officials believe this is better than attempting a steadily rising flow which bears no relation to military requirements and strategy.

(LONDON – ENGLAND.)

THE SUNDAY TIMES, NOVEMBER 24, 1940



The new American bomber, B-24.

POWERFUL NEW BOMBERS FROM AMERICA

Greatest U.S. Contribution To Victory

By THE "SUNDAY TIMES" AIR CORRESPONDENT

News that America has released twenty-six Consolidated B-24 four-motor bombers for immediate delivery to the R.A.F. is most encouraging.

The Consolidated Model 32, designated the B-24 by the U.S. Army, is by far the best military aeroplane which the U.S.A. has yet produced and the first American aeroplane on which we can really bestow unreserved enthusiasm.

It is fast, it is well defended (British gun turrets can be installed) it can carry a big load of bombs, and it has a long range. It is superior to any bomber at present in service, though not to some of our new machines now flying. It is vastly better than the old Boeing B-17 "flying fortresses"—as indeed it should be for it is five years later in design.

Before France fell the Armée de l'Air had ordered 120 of these Consolidated bombers, but orders previously placed by the U.S. Army had to take precedence. Great Britain took over all the French orders, but the gesture by America will mean that deliveries can begin immediately. The first production model flew three weeks ago.

3,000-MILE RANGE

The B-24 is claimed to have a top speed of round about 330 m.p.h., a bomb load of 4,000 lb., and a maximum range of more than 3,000 miles. So, in fact, it could fly from New York to England by way of Berlin.

The best feature of the machine aerodynamically, which accounts for its high speed, is its wing, designed on a new principle. This "Davies" wing, which in plan is very long and narrow, resembling a paper knife, presents about one-third less resistance to the air than a conventional type. The making of such a long thin wing, constructionally stiff, is a triumph of engineering.

There has been some confusion between the Consolidated bomber and the Boeing bomber. Apart from the fact that they both have four motors, there is little similarity. Incidentally, the Boeing Company has copyrighted the name "Flying Fortress"—which is misleading anyway.

The sending of these Consolidated bombers for the R.A.F. to intensify the offensive is one of the greatest contributions America can make towards the winning of the war.

THE R.A.F.'s NEW COMMAND

CO-OPERATION WITH THE ARMY

The new Army Co-Operation Command of the R.A.F. comes into being on December 1. The decision to form this new Command successfully avoids the drawbacks of handing over a separate Air Arm to the Army, yet presents to it a specialised body of Air Power under an officer—Air Marshal Sir Arthur Barratt—who came from the Army and thoroughly understands Army problems as no purely Army officer understands the air.

The step satisfies all the requirements outlined in these notes some weeks ago, yet has few disadvantages.

Its great merit is its elasticity. So long as that is maintained the R.A.F. can fall into none of the troubles which the Luftwaffe dug for itself in its rigid training for and adherence to the dictates of the German Army.

Air strategy of necessity calls for an independent air force. There are times when the whole of the available fighter strength may be needed for defence of a single objective. There are times when the whole of the R.A.F. may have to be flung in to support of land forces.

The Army Co-operation Command forms thus a nucleus, which at times may serve as the hub of the operation of all the other Commands of the R.A.F., or it may form a small preserve from which the other Commands may draw machines for support in independent action as the situation needs.

As a strategic weapon the Army Co-Operation Command finds efficiency in its specialisation and strength in its elasticity.

Industrial Los Angeles County

November - December 1940

Consolidated

In its immense plant adjacent to Lindbergh Field on San Diego Bay, Consolidated Aircraft Corp. is turning out huge flying boats and landplanes weighing from 27,000 to 65,000 pounds and costing upward of $200,000 each.

Consolidated has always specialized in building large airplanes. The company claims the distinction of having built, since its inception in 1923, four times as many ships with a wing span of 100 feet or more as all other United States aircraft manufacturers combined.

Huge mechanical and hydraulic presses, including one of 4,500 tons, large hydraulic drop hammers and hulls for the twin-engined PBY patrol bomber lined up 50 strong on the final assembly line, all convey the idea of great size.

When Consolidated transferred its activities to San Diego from Buffalo, N. Y., in 1935 it had about $6,000,000 of business on its books. It started operations with some 300 employes in a plant containing roundly 200,000 square feet of floor space. Today the company has an order backlog exceeding $320,000,000 and by February 1 next year expects to have roughly 1,500,000 square feet of covered floor area, plus a substantial paved but uncovered area suitable for final assembly work, and between 15,000 and 16,000 employes. This, however, will not complete Consolidated's expansion program.

Consolidated has greatly enlarged its plant this year and increased the number on its payroll from about 3,200 on January 1, to almost 14,000 at present. Consolidated today has an estimated $25,000,000 worth of parts and planes in various stages of production which should begin flowing off the final assembly line in steadily increasing numbers from now out.

On the basis of the present schedule deliveries from existing facilities, against contracts now on the books, should attain their peak around March or April. The latest addition should be completed by about June 1 and reach its peak employment of roughly 12,000 by November of next year.

Consolidated currently is working two ten-hour shifts five days a week. Like most other manufacturers it could undoubtedly enlarge its output by either working an additional day or adding another shift. This, however, has not proved feasible as yet as production of the air-frame manufacturers naturally must be geared to that of their suppliers and sub-contractors, as well as that of the engine producers.

At this time Consolidated is in production on three models but actually is making deliveries in any quantity on only one type. It is manufacturing a twin-engined flying boat for the Navy and the British, a four-engined flying boat, the PB2Y, for the Navy, and a four-engined land bomber, the model 32 or B-24, for the Army and British. This bomber, the prototype of which was first flown in 1939, marks Consoldiated's return to the landplane field. It is a high-wing ship, with a tri-cycle landing gear, which, according to available information, has a speed of over 300 miles per hour, a range of approximately 3,000 miles and a bomb-carrying capacity of approximately four tons.

Parts Plant

The company has just announced a $7,000,000 addition which will approximately double its present floor area. So far Consolidated has financed its own expansion, having previously spent or committed itself to spend this year approximately $6,000,000 for enlargement of manufacturing facilities. The latest addition, however, it is understood will be financed by the Government and leased by the company.

The new addition, according to present plans, will be devoted to the manufacture of parts and minor assemblies with existing facilities turned almost entirely to final assembly work. This does not mean, however, that Consolidated is not planning to sub-contract some of its work. It is already doing considerable sub-contracting and plans to do more as it swings into increased production on its present orders.

THE SAN DIEGO UNION: SUNDAY MORNING, DEC. 29, 194

Aircraft Plants Have $340,000,000 Backlog

Factories Hum With Activity For U.S. Defense

By HOWARD MORIN

San Diego's three major aircraft manufacturing plants, with a total backlog of $340,000,000, are playing an important part in the national defense program.

Consolidated Aircraft Corp. has a backlog of $325,000,000 and is constructing bombers not only for the U. S. war and navy departments but also long range bombing aircraft for the British Royal Air force.

The Ryan Aeronautical Corp. is working night and day on $11,000,000 worth of military contracts. The Solar Aircraft Co., engaged chiefly in the manufacture of manifolds and other aircraft accessories, has a backlog of $4,000,000.

All three companies have been compelled to expand their production facilities by frequent enlargement of their factories at the municipal airport.

EMPLOYES INCREASE

In the early part of December the three aircraft concerns were employing a total of nearly 17,000 men and women. This number will be more than doubled by this spring when new additions to the plants will be in full operation.

A $7,000,000 construction program which virtually will double the size of Consolidated is now under way. Eight new buildings are being erected along Pacific highway between Barnett ave. and Rosecrans st. Principal units will compose a huge parts plant, and a three-story drop hammer building which will house the largest battery of drop hammers and hydraulice presses on the Pacific coast.

The new buildings are situated on a factory site of 52 acres with 72 acres of adjacent parking area. Each of the three large units will be 400 by 750 feet. The smaller structures will include an office building, 750 by 50 feet; the drop hammer building 400 by 60 feet, a paint shop, a warehouse and a boiler plant.

FLOOR AREA EXTENDED

The expansion program will increase the floor area of Consolidated to 1,630,02[illegible] square feet and the paved yard [illegible]a to 1,100,141 square feet, a grand total of 2,730,167 square feet, an increase of 1000 percent of manufacturing area since 1935.

Although the Ryan company completed a new factory at Lindbergh field in June, 1939, additional government contracts made it obligatory to build another addition in 19[illegible] which more than doubled the floor area of the original factory. Two wings are now being added to the company's administration building on Pacific highway to meet increasing needs of engineering and office space.

In August and September Ryan received from the Air corps two large orders for its new ST-3 primary training plane—orders totaling $7,425,000. These orders are sufficient to keep the plant running at a high capacity during the next 18 months.

NEW TRAINER BUILT

The new ST-3 trainer, incidentally, is the latest development of the long line of Ryan S-T trainers which were first built in 1934 and subsequently refined by engineering changes until today the S-T is widely considered to be the finest primary military training plane available.

Work currently in the process of construction also includes a million dollar order for Ryan S-T-M military training planes for export to a foreign government. Many of these trainers are to be equipped with sea floats, the first time that Ryan has offered its famous trainers for the training of naval pilots.

The company recently established an unusual record of test flying two new type trainers in a single day at San Diego's Lindbergh field. The Ryan factory now has 1500 employes on its payroll and an additional 1000 are expected to be hired within the next five or six months so that the Ryan planes called for under the national defense program may be delivered on schedule.

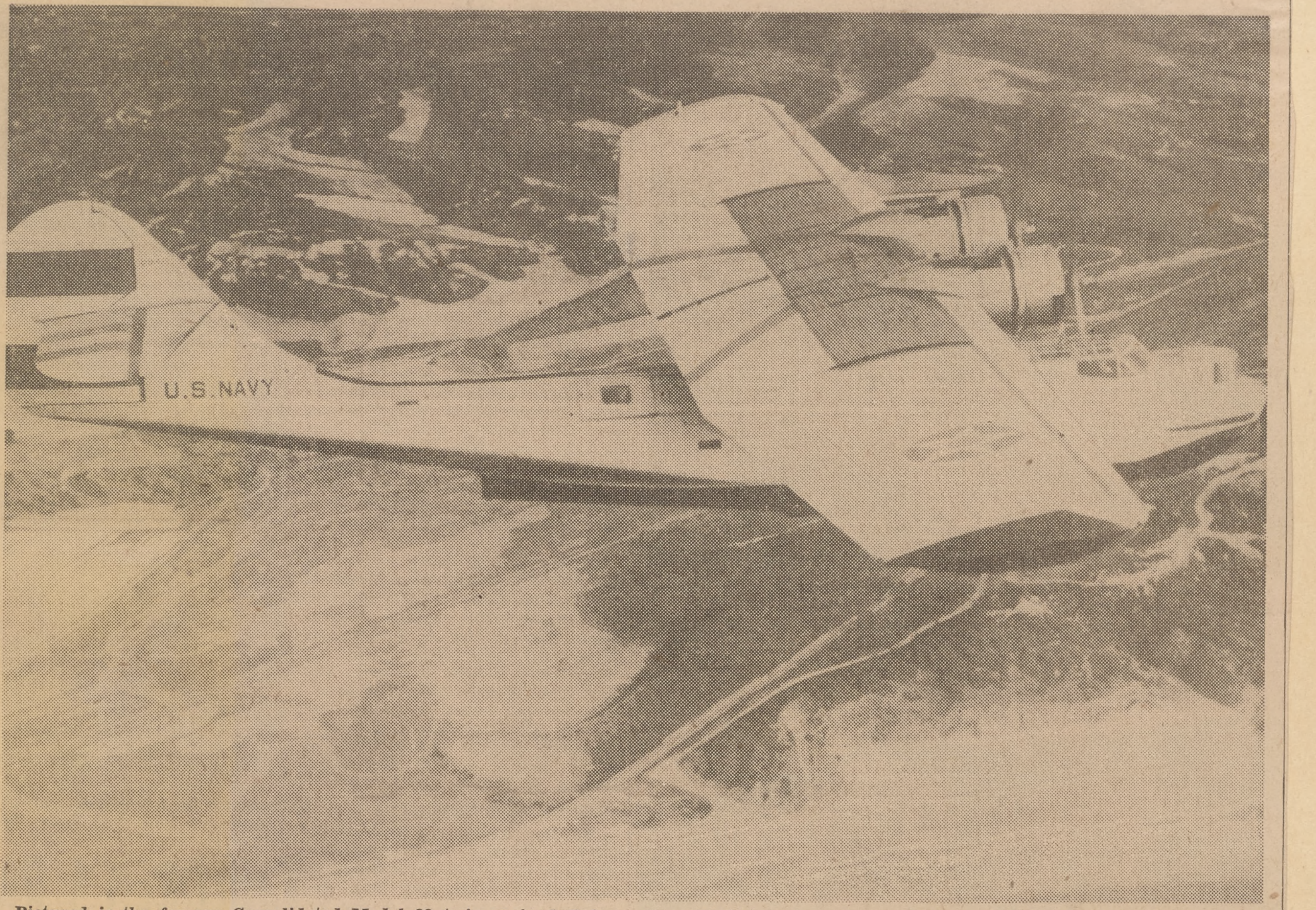
TO INCREASE OUTPUT

Current deliveries are being made at the rate of approximately two trainers per working day with the expectation that this rate will be greatly accelerated when the company finishes preparing tools necessary for the Air corps' type standardization mass production plan.

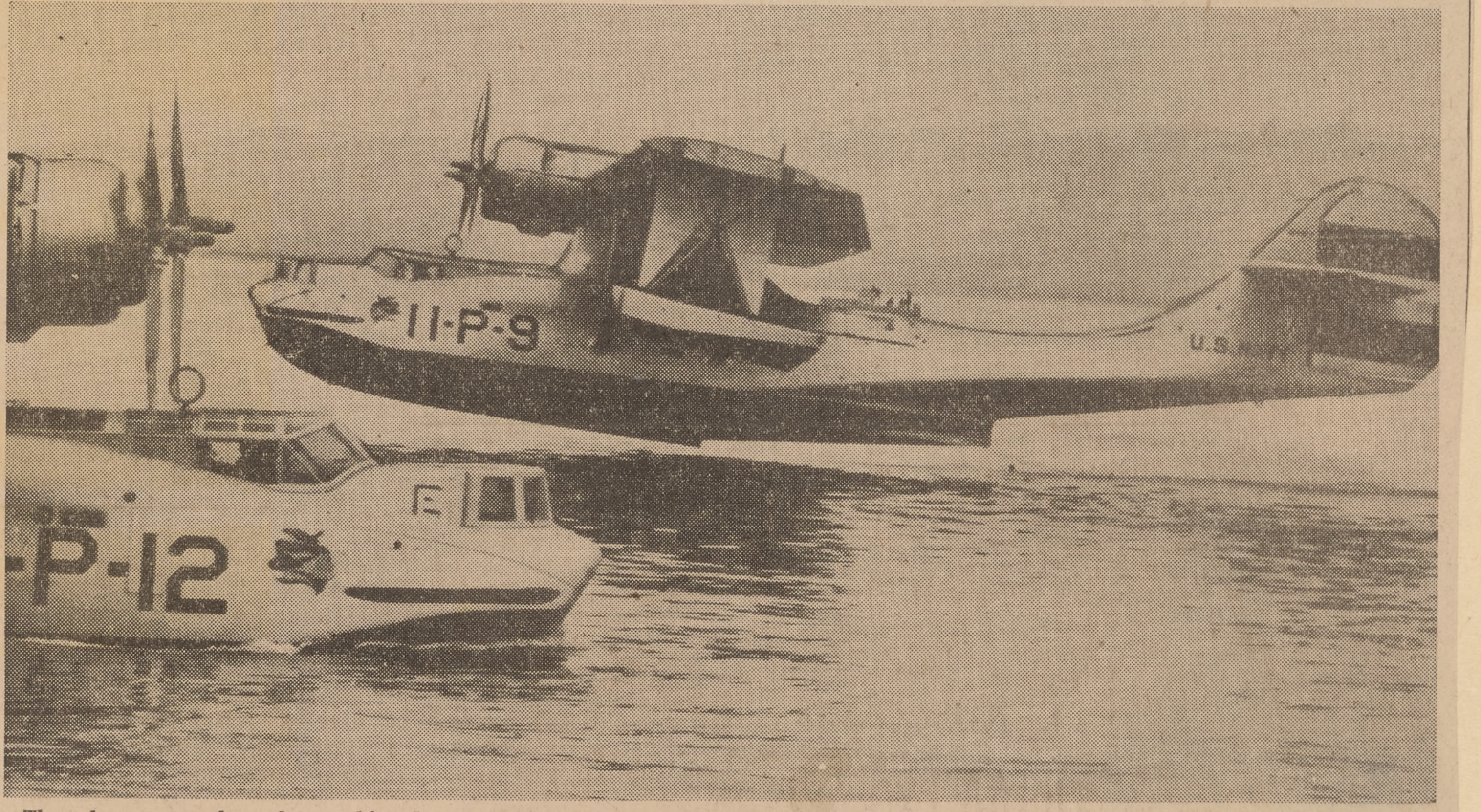
The Solar plant with a force of 650 workers has been trebled within the last year and additional ground has been obtained under lease from the harbor department for expanding the present facilities.

Local aircraft manufacturers are keenly alive to the fact there will be a slump at the end of the war but they are taking extraordinary precautions to avoid major lay-offs when this time comes. They are attuned primarily to the growing needs of American aviation, military, naval and commercial, and only in a limited way to foreign markets.

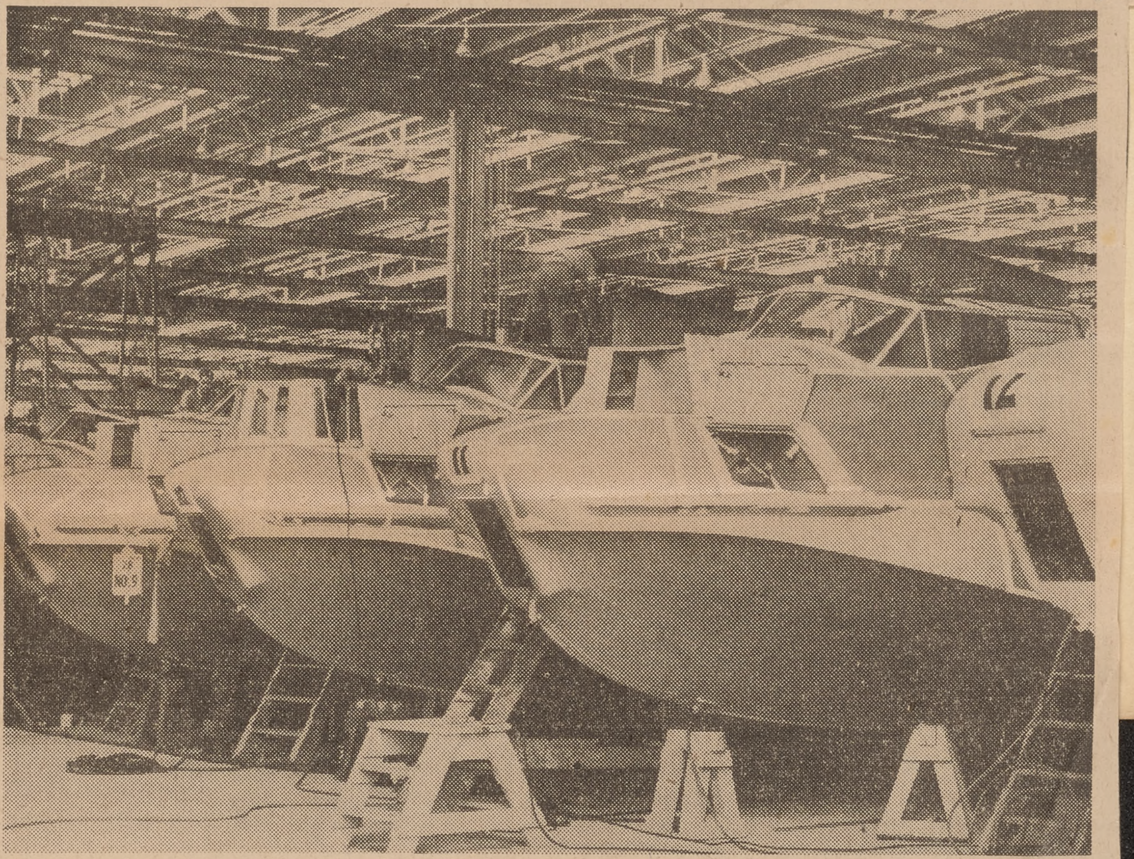
Because of this sound business policy and the steady expansion of the nation's air fleets, military and commercial, it is confidently expected the three San Diego aircraft plants will continue to operate with maximum personnel for many years.



Pictured is the famous Consolidated Model 28 twin-engined flying boat, the latest U. S. navy PBY-5, in flight. The PBYs have made Consolidated the largest manufacturer of flying boats in the world and have brought numerous records to the credit of local engineers.



These huge navy planes have achieved remarkable performance in massed, non-stop flights over long distances from their San Diego base.



Lineup of hulls for flying boats at Consair final assembly building. Heavy paper protects them during assembling operations. They soon will augment Uncle Sam's expanding air force.

American Aircraft Mechanic 12-26-40

An Open Letter

Messrs. Fleet and Associates,
Consolidated Aircraft Corp.
City
Gentlemen:

San Diego, Calif.
Dec. 23rd, 1940

I herewith present you with a challenge and a tribute. He who was the very embodiment of truth and the expression of the wisdom of all the ages, said: Render therefore unto Ceasar the things which are Caesar's and unto God the things that are God's.

You by your industrial initiative together with your power and wisdom to organize, have created in and for this city a great industrial enterprise, and for its populace a great opportunity, viz. the opportunity of Work and Progress. In the perpetuation of this great task as embraced in your program for the future we bid you Godspeed and wish you well. For what you have already accomplished and what you will yet achieve, we pay you tribute—for unto you, tribute is due.

Our challenge can best be expressed in the following lines which we have penned and which we now dedicate to you in this most crucial hour.

A. A. Perry,
Employee No. 795,
Consolidated Aircraft

AMERICA AWAKE

★

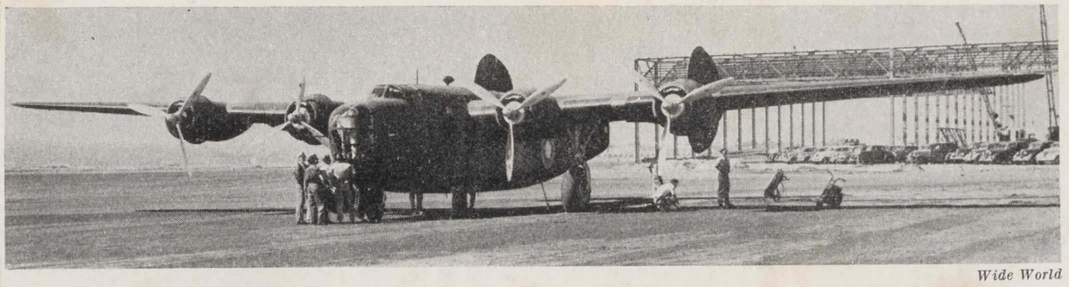
Production is the cry
Production is the need
This message oft repeated
We do well to heed.
Yes! Let us build armaments
And be sure we build them well
Not for aggression's purpose
Nor aught of recompense
But let us build them swiftly
For safety and defense.

Awake ye workers of America
Heed not the subtle power
Of discord and dissension
In this jeopardizing hour.
Today is yours in which to build
Great ships of sea and air
Therein lies supremacy
Here and everywhere.
Eventualities await
For them we must prepare
And to this end not hesitate
On land or sea or air.

Freedom's in the balance
Because of greed and hate
And if Totalitarians had their way
We'd be a vassal state
But this to them we will deny
On land and sea and sky.

Arouse ye builders of this craft
Before it is too late
Lest we like those across the seas
Suffer like terrible fate.
Our country's call we then will heed
Our energies we'll give
That Freedom's Cause, triumphantly
Forever then shall live.

Aviation – December, 1940



Wide World

A NEW FOUR-ENGINED BOMBER built by Consolidated Aircraft for Britain's Air Force. Large numbers of these planes are under construction at San Diego and will probably be flown across the Atlantic. The planes can carry four tons of bombs at 300 m.p.h. for 3,000 miles non-stop. Camouflage and RAF markings are already painted on as the bomber is prepared for test flight.

Agric Consolidated Air

ROMEIKE & CURTICE LTD.

35, Shoe Lane, London, E.C.4

THE PRESS CLIPPING BUREAU

19 NOV 1940

EXTRACT FROM

THE TIMES

?—

FAST BOMBERS FOR BRITAIN

NEW AMERICAN MACHINES

FROM OUR OWN CORRESPONDENT

NEW YORK, Nov. 18

The first two of an order for 70 or more Douglas bombers for Britain, superior to any hitherto sent abroad, arrived here on Saturday by air from California. They are similar in design to the D.B. 7-1 bombers now being bought by the United States Army—monoplanes with tricycle landing gears, powered with two 1,050 h.p. Pratt and Whitney engines, which give them a cruising speed of more than 280 miles an hour. In addition to bomb racks they have emplacements for three machine-guns.

It is said that the bombers were ordered originally for France, and were diverted to Britain after the surrender of France.

A report from San Diego says that the Consolidated Aircraft Corporation has nearly completed the first of a number of huge bombers for Britain, which are described as probably the most powerful long-range bombers in the world, superior even to the famous B-17 " flying fortresses." These B-24 aeroplanes are four-engined craft weighing 20 tons each. They have a cruising range of more than 3,000 miles, and a speed of more than 300 miles an hour, and can carry 8,000lb. of bombs.

(21st Nov.)

21/11/40

"Daily Telegraph"

LONDON, ENGLAND

U.S. SENDING NEW TYPE 'PLANE

BOMB SIGHT FOR BRITAIN

FROM OUR OWN CORRESPONDENT

WASHINGTON, Wednesday.

Gen. Marshall, United States Chief of Staff, announced to-day that 26 heavy four-engined bombers, equipped with the Sperry bomb-sight, had been released by the Priorities Board for despatch to Britain.

The bombers, which are being manufactured by the Consolidated Aircraft Co., are very similar in effectiveness to the famous Flying Fortresses, with a range of 3,000 miles. They are the first machines equipped with the Sperry bomb sight to be released to Britain. The United States is retaining for her own use the more modern Norden bomb sight.

Three of the new machines are due to be delivered this month and three in December, while 20 more are due to be delivered before March. Gen. Marshall pointed out that no comparable 'plane had ever been used in active operations, and the United States was anxious to see the results.

BRITISH EQUIPMENT

He also stated that Britain, in consideration of the release of the bombers, had agreed to supply to the United States sufficient engines to equip 41 Flying Fortresses.

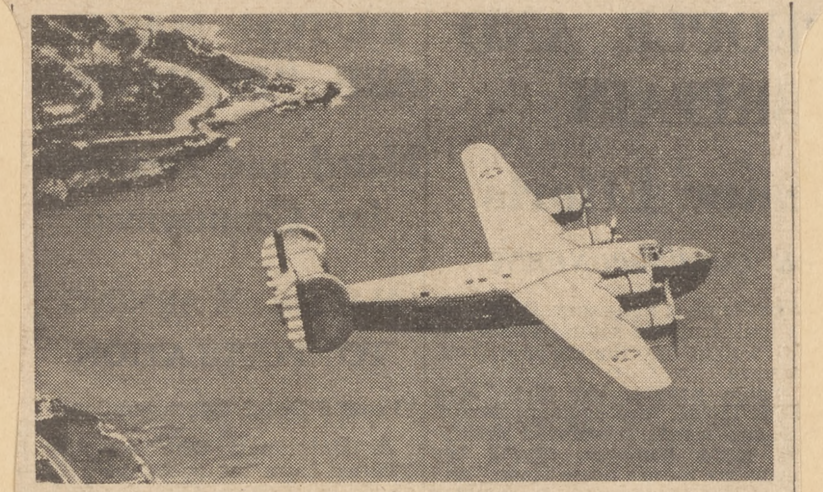
He disclosed that the United States Army has observers in British warplanes flying over Britain and the English Channel, but they had not flown over Germany.

The latest transaction means deliveries over and above the rough fifty-fifty rule announced recently. This rule, officials explain, was always intended to be a flexible standard.

American aircraft production is being speeded up as rapidly as possible with a view to reaching peak production by the Spring, when a British aerial offensive is anticipated. This speed up will be in the nature of an emergency spurt and may slow down deliveries some months after, but officials believe this is better than attempting a steadily rising flow which bears no relation to military requirements and strategy.

(LONDON — ENGLAND.)

THE SUNDAY TIMES, NOVEMBER 24, 1940



The new American bomber, B-24.

POWERFUL NEW BOMBERS FROM AMERICA

Greatest U.S. Contribution To Victory

By THE "SUNDAY TIMES" AIR CORRESPONDENT

News that America has released twenty-six Consolidated B-24 four-motor bombers for immediate delivery to the R.A.F. is most encouraging.

The Consolidated Model 32, designated the B-24 by the U.S. Army, is by far the best military aeroplane which the U.S.A. has yet produced and the first American aeroplane on which we can really bestow unreserved enthusiasm.

It is fast, it is well defended (British gun turrets can be installed) it can carry a big load of bombs, and it has a long range. It is superior to any bomber at present in service, though not to some of our new machines now flying. It is vastly better than the old Boeing B-17 "flying fortresses" —as indeed it should be for it is five years later in design.

Before France fell the Armée de l'Air had ordered 120 of these Consolidated bombers, but orders previously placed by the U.S. Army had to take precedence. Great Britain took over all the French orders, but the gesture by America will mean that deliveries can begin immediately. The first production model flew three weeks ago.

3,000-MILE RANGE

The B-24 is claimed to have a top speed of round about 330 m.p.h., a bomb load of 4,000 lb., and a maximum range of more than 3,000 miles. So, in fact, it could fly from New York to England by way of Berlin.

The best feature of the machine aerodynamically, which accounts for its high speed, is its wing, designed on a new principle. This "Davies" wing, which in plan is very long and narrow, resembling a paper knife, presents about one-third less resistance to the air than a conventional type. The making of such a long thin wing, constructionally stiff, is a triumph of engineering.

There has been some confusion between the Consolidated bomber and the Boeing bomber. Apart from the fact that they both have four motors, there is little similarity. Incidentally, the Boeing Company has copyrighted the name "Flying Fortress"—which is misleading anyway.

The sending of these Consolidated bombers for the R.A.F. to intensify the offensive is one of the greatest contributions America can make towards the winning of the war.

THE R.A.F.'s NEW COMMAND

CO-OPERATION WITH THE ARMY

The new Army Co-Operation Command of the R.A.F. comes into being on December 1. The decision to form this new Command successfully avoids the drawbacks of handing over a separate Air Arm to the Army, yet presents to it a specialised body of Air Power under an officer—Air Marshal Sir Arthur Barratt—who came from the Army and thoroughly understands Army problems as no purely Army officer understands the air.

The step satisfies all the requirements outlined in these notes some weeks ago, yet has few disadvantages.

Its great merit is its elasticity. So long as that is maintained the R.A.F. can fall into none of the troubles which the Luftwaffe dug for itself in its rigid training for and adherence to the dictates of the German Army.

Air strategy of necessity calls for an independent air force. There are times when the whole of the available fighter strength may be needed for defence of a single objective. There are times when the whole of the R.A.F. may have to be flung in to support of land forces.

The Army Co-operation Command forms thus a nucleus, which at times may serve as the hub of the operation of all the other Commands of the R.A.F., or it may form a small preserve from which the other Commands may draw machines for support in independent action as the situation needs.

As a strategic weapon the Army Co-Operation Command finds efficiency in its specialisation and strength in its elasticity.

Industrial Los Angeles County

November - December 1940

Consolidated

In its immense plant adjacent to Lindbergh Field on San Diego Bay, Consolidated Aircraft Corp. is turning out huge flying boats and landplanes weighing from 27,000 to 65,000 pounds and costing upward of $200,000 each.

Consolidated has always specialized in building large airplanes. The company claims the distinction of having built, since its inception in 1923, four times as many ships with a wing span of 100 feet or more as all other United States aircraft manufacturers combined.

Huge mechanical and hydraulic presses, including one of 4,500 tons, large hydraulic drop hammers and hulls for the twin-engined PBY patrol bomber lined up 50 strong on the final assembly line, all convey the idea of great size.

When Consolidated transferred its activities to San Diego from Buffalo, N. Y., in 1935 it had about $6,000,000 of business on its books. It started operations with some 300 employes in a plant containing roundly 200,000 square feet of floor space. Today the company has an order backlog exceeding $320,000,000 and by February 1 next year expects to have roughly 1,500,000 square feet of covered floor area, plus a substantial paved but uncovered area suitable for final assembly work, and between 15,000 and 16,000 employes. This, however, will not complete Consolidated's expansion program.

Consolidated has greatly enlarged its plant this year and increased the number on its payroll from about 3,200 on January 1, to almost 14,000 at present. Consolidated today has an estimated $25,000,000 worth of parts and planes in various stages of production which should begin flowing off the final assembly line in steadily increasing numbers from now out.

On the basis of the present schedule deliveries from existing facilities, against contracts now on the books, should attain their peak around March or April. The latest addition should be completed by about June 1 and reach its peak employment of roughly 12,000 by November of next year.

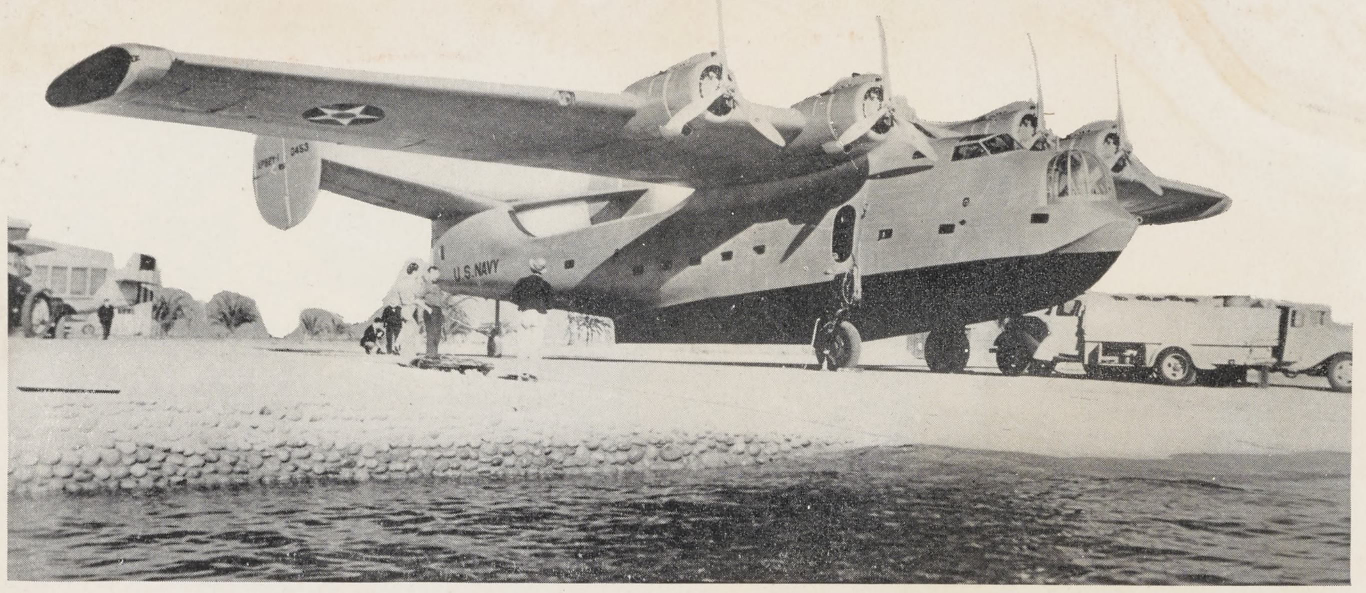
Consolidated currently is working two ten-hour shifts five days a week. Like most other manufacturers it could undoubtedly enlarge its output by either working an additional day or adding another shift. This, however, has not proved feasible as yet as production of the air-frame manufacturers naturally must be geared to that of their suppliers and sub-contractors, as well as that of the engine producers.

At this time Consolidated is in production on three models but actually is making deliveries in any quantity on only one type. It is manufacturing a twin-engined flying boat for the Navy and the British, a four-engined flying boat, the PB2Y, for the Navy, and a four-engined land bomber, the model 32 or B-24, for the Army and British. This bomber, the prototype of which was first flown in 1939, marks Consoldiated's return to the landplane field. It is a high-wing ship, with a tri-cycle landing gear, which, according to available information, has a speed of over 300 miles per hour, a range of approximately 3,000 miles and a bomb-carrying capacity of approximately four tons.

Parts Plant

The company has just announced a $7,000,000 addition which will approximately double its present floor area. So far Consolidated has financed its own expansion, having previously spent or committed itself to spend this year approximately $6,000,000 for enlargement of manufacturing facilities. The latest addition, however, it is understood will be financed by the Government and leased by the company.

The new addition, according to present plans, will be devoted to the manufacture of parts and minor assemblies with existing facilities turned almost entirely to final assembly work. This does not mean, however, that Consolidated is not planning to sub-contract some of its work. It is already doing considerable sub-contracting and plans to do more as it swings into increased production on its present orders.



CONSOLIDATED AIRCRAFT

Corporation, San Diego, is noted for development of flying boats, and recently turned out the world's largest amphibian plane. In addition to the four-engined bombers for the U.S. Navy (above) this company is also producing a bombardment plane for the United States Army Air Corps driven by four radial 1200 hp. engines. WILLIAM A. MALONEY, Consolidated plant engineer, here describes how the problems of heating southern California buildings differ from those in the east.

THE problem of supplying heat to an airplane factory in Southern California does not differ greatly from that of supplying heat to a manufacturing establishment of the same character in the Middle West or on the Atlantic Seaboard.

True, there is a considerable difference in design temperatures, but there is a corresponding, and offsetting, difference in the thermal conductivity characteristics of the construction materials used.

Along the northern Atlantic Seaboard and in the Middle Atlantic and Plains States, the common practice is to design for a differential of 0-70F or thereabouts, whereas, in California it is only necessary to design for a range of 35-70F. This difference in design temperatures does not necessarily indicate a large reduction in radiator surface requirements, for the reason that there is a considerable difference in the character of the available and employable building materials.

In the eastern section of the United States, the worst enemy of the heating engineer, when considering building materials, is the glass used in windows for the purpose of admitting daylight. For the balance of the building such materials as brick and concrete are used for basic walls and spandrels, and roofs are usually wood or concrete decks covered with felt and asphalt compound roofing.

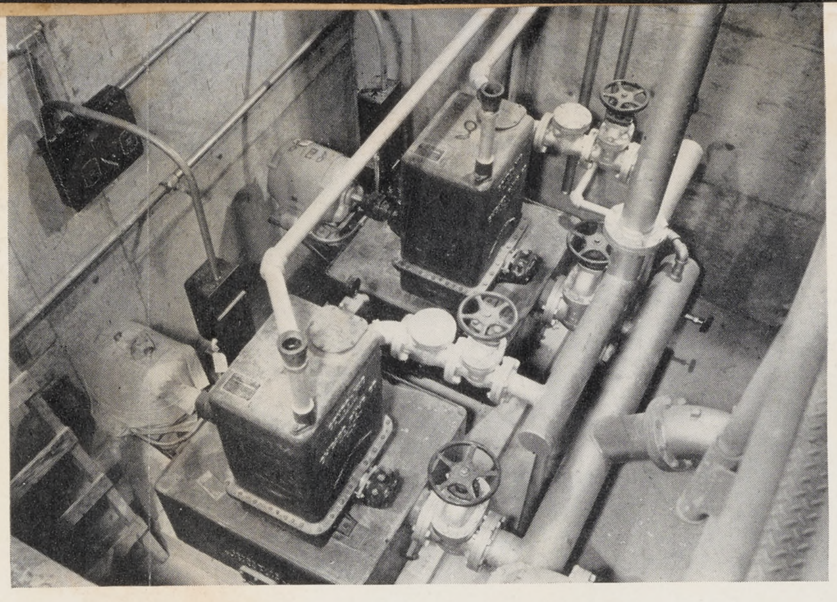
In sunny California, the available choice of materials changes considerably. The most popular and widely used material for wall and roof construction in industrial buildings is galvanized corrugated iron.

Although Southern California is looked upon by most of us as being a land possessed of a glorious sub-tropic climate, the fact still remains that the nights are quite cold, the temperature dropping to 35F or 40F after 8 p.m. in the winter months (November-April) and even in the summer months often going as low as 55F.

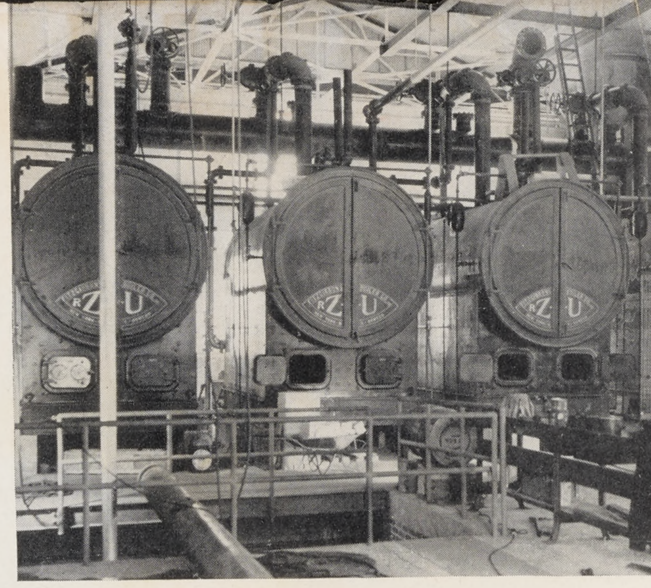
The outstanding characteristics of most aircraft manufacturing buildings are, first, the necessity for unobstructed clear height above the floor; second, the insistence on vast, unobstructed clear areas on the manufacturing and assembly floors. The first condition imposes on the designing engineer the necessity of keeping all supply and return lines above the bottom chord of the roof trusses, in order that the full height between the floor and the bottom chord line may be advantageously employed in handling large airplane fuselages and flying boat hulls. The second consideration compels the engineer to design carefully for uniform distribution and circulation of the warm air discharged from unit heaters in order to avoid the phenomenon of Cold 70. A third consideration, not previously mentioned, is the tendency to keep open the large hangar type doors which usually enclose two or three sides of modern aircraft manufacturing buildings. These doors must be kept open for the reason that "if we don't take a ship out Monday morning, we will surely take one out Wednesday afternoon."

In the 1939-40 expansion program at Consolidated there have been numerous additions to existing buildings, in which the boiler plant and piping systems were designed to allow for additions and expansions. Therefore, this discussion will not consider these additions, but will deal entirely with those separate new buildings served from a new, centrally-located boiler house.

The largest unit in the present program is the Final Assembly Building, measuring 360 ft. x 720 ft., containing with stockroom mezzanines, a total of 281,600 sq. ft. of usable floor area. In this building it was necessary to keep all heating and return mains, as well as other necessary services, above the bottom chord line of the roof trusses, in order not to interfere with the movement of travelling cranes required in the building. As the distance from the bottom chord to the floor was 36 ft., it was necessary to use high velocity, high output unit heaters located above the bottom chord line and discharging downward to the floor. The same considerations of clearance precluded the possibility of extending steam and return mains, and obtaining the required pitch, inside the building. It was, therefore, necessary to run these mains above the bottom chord line along the west exterior wall of the building, sufficiently high to permit the taking off of laterals in the various sawtooth bays, bringing the returned condensate back to the return main well above the bottom chord line.



A view in the boiler house just before completion showing the Chicago vacuum pumps and return header installation. Warren Webster valves and traps were used.



A view in the boiler house during the construction of the building showing the four Fitzgibbons boilers in process of installation.

The next largest building in point of volume, but not in area, is the Final Finish Building, to which finished airplanes, after engine and flying tests, are returned for final *touch-up* of exterior painting. This building is 120 ft. wide and 240 ft. long, with a clear height to bottom chord of truss of 36 ft., and is heated by a conventional fan system. Sufficient filtered, heated, outside air is introduced to the building to provide 7½ air changes per hour. For present operations, this volume of air is considered sufficient, but the fan rooms, of which there are two, both located above the bottom chord line, are designed and arranged to permit the addition of sufficient equipment to permit of providing 15 air changes per hour, should the building ever be converted to use for general spray painting operations. No provision for exhausting air is made at present, leakage through door cracks, steel sash mullions, and corrugated iron laps being deemed sufficient. The final plan (15 air changes per hour) includes provision for a water washed exhaust system to separate all pigment and solvents from the exhausted air.

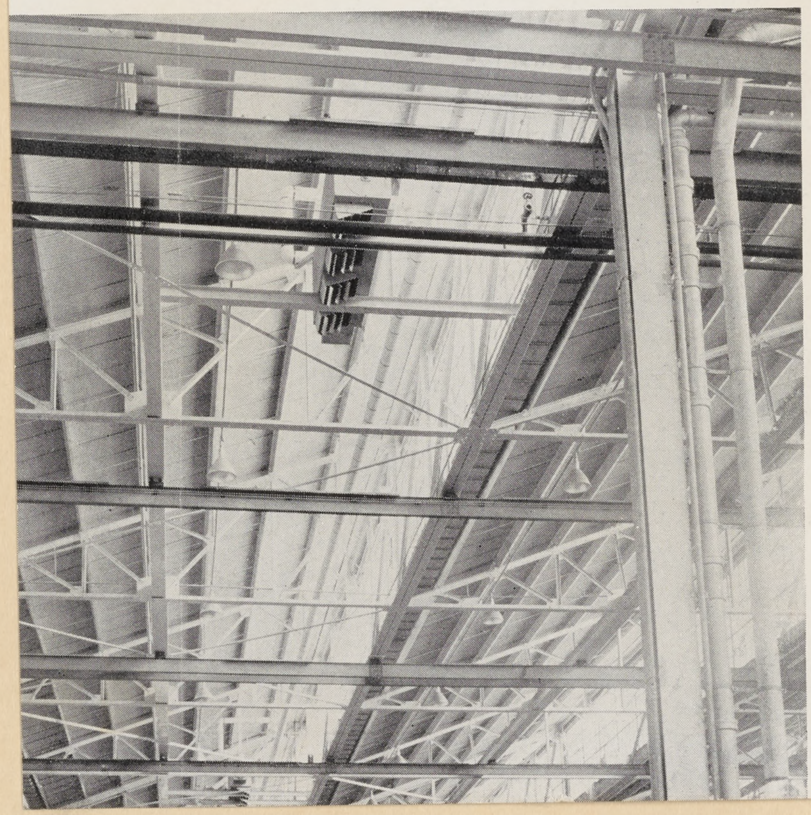
The remaining major building, known as the *shed* is 30 ft. wide, 1000 ft. long, of lean-to construction, with an average height of 25 ft., and is heated by conventional, low discharge velocity unit heaters.

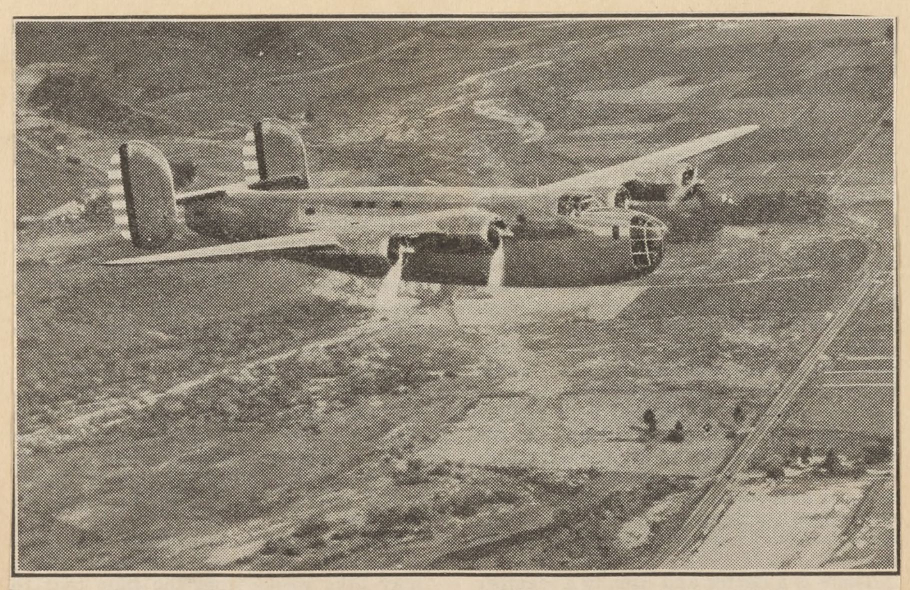
The total load in these three buildings is 158,500 sq. ft. E.D.R. and is supplied by a battery of four welded steel fire-tube boilers in a central boiler house, each of 42,500 sq. ft. capacity. These boilers are fired with radiant type burners, using 1200 B.t.u. natural gas, sufficient to develop 200% of rating at an overall efficiency of 77%. As the boiler house is located on the edge of Lindbergh Field, San Diego's airport, it was necessary to employ induced draft to keep the stack height below the safe gliding angle for entering airplanes. Gas and primary air supply are controlled by pressure operated valves and louvres, and the induced draft fans are controlled by stack temperature relays.

Temperature control in the manufacturing and assembly buildings is accomplished by means of local thermostats controlling the fan motors. In the Final Finish Building a pneumatically-operated by-pass damper system is used.

In the boiler plant, the supply and return headers, as well as the vacuum pump headers, are so arranged that the capacity can be quadrupled without changes to the piping system, and with but minor changes to the building structure and arrangement.

A view looking into the roof of the final assembly building showing one of the Buffalo Forge unit heaters. Herman Nelson DeLuxe unit heaters and Young Radiator concealed radiation were used.





The Consolidated Model 32 heavy bomber, named by the United States Army Corps the XB-24. It has a top speed of over 300 m.p.h. Photograph by courtesy of the Consolidated Aircraft Corporation, U.S.A.

Meccano - Aug. 1940

Meccano - Aug. 1940

Famous American Flying Boat for Sale

The famous United States Consolidated flying boat *"Guba"* was advertised for sale as a bargain in an American aviation magazine recently. This boat was much in the news last year, when it carried out a series of fine flights across British territories overseas. It accomplished a remarkable long-distance round trip that included crossings of the Atlantic and Pacific Oceans, the continents of Australia and Africa, and the first coast-to-coast crossing of the Indian Ocean from India to British East Africa. This achievement demonstrated some of the possibilities of modern long-range aircraft in linking up distant parts of the British Empire.

The *"Guba"* is said to have a range of 4,000 miles and a top speed of nearly 200 m.p.h. The extensive equipment aboard includes automatic pilot homing devices and direction-finding apparatus.

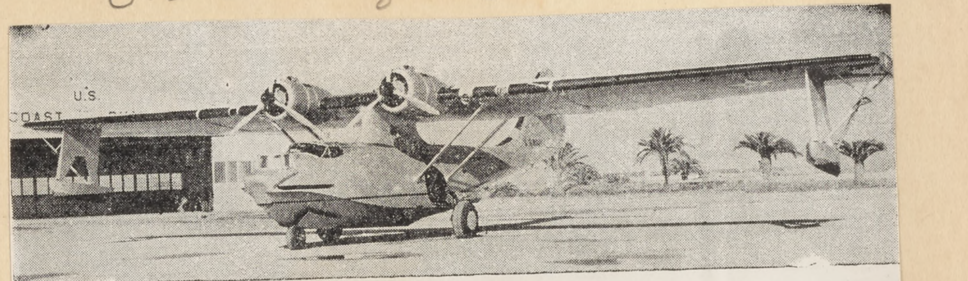
---

over

Aviation Oct. 1940

Consolidated Aircraft: $85,800,000 contract for Army bombers and $3,500,000 contract from Australia for flying boats. Backlog now approximately $221,000,000. Plant expansion costing more than $2,000,000 just completed and additional expansion plans expected to be announced soon.

U.S. Coast Guard Oct. 1940



LATEST IN AMPHIBIANS

This is the spectacular new amphibian being currently produced by the Consolidated Aircraft Corporation, San Diego, Calif., and known as Model 28-5A (designated by the Navy as XPBY-5A). This amphibian offers many aeronautical features which are the subject of careful study by Coast Guard aviation experts. Note the tricycle landing gear and the wing-tip pontoons which become extended parts of the wing when in flight.

On Page 10 of our September issue appeared the above picture. The descriptive lines accompanying pictures of the Consolidated Model 28-5A Amphibian and the GUBA flying boat were run together in a manner that confused some of the basic qualities of these two planes.

Consolidated Model 28-5A, pictured above, is a military-naval true amphibian. This plane is a product of the Consolidated Aircraft Corporation, San Diego, Calif.

The GUBA, as every aircraftsman knows, is Richard Archbold's private flying boat, most certainly not an amphibian.

We regret the error.

FULLSPEED AHEAD

In the Aircraft Industries

By MAJOR REUBEN H. FLEET

President, Consolidated Aircraft Corporation
Director, California State Chamber of Commerce

The eyes of the nation are on Southern California's aircraft factories. (Top) assembling bombers at Douglas plant in Santa Monica. (Center) Vultee "Vanguard" pursuit interceptor. (Bottom) Consolidated Aircraft four-engined land bomber

IN huge factories which spread across large tracts of land on the outskirts of Los Angeles and on San Diego's bay front, shrill electric drills and riveting hammers and ponderous hydraulic presses are blending into an industrial symphony significant to all California.

Creation of thousands of airplanes for America's defense is the order of the day. And California's aircraft factories, which produce more than 50 per cent of the planes built in the nation, have been assigned a major rôle in this vast program.

The aircraft manufacturers have adopted the principle of "defense first—profits afterwards." They have accepted patriotically the strict profit limitations of the Vinson-Trammel Act.

In a recent statement, the presidents of the leading Pacific Coast aircraft factories declared:

"In the present national defense emergency, aircraft manufacturers have offered, and continue to give, the government of the United States every resource and facility at their command.

"We are ready to build airplanes first and talk about profits afterward. To this end, the industry is making rapid progress.

"In this last 10 weeks members of the industry have actually purchased on their own responsibility more than $100,000,000 worth of materials for future use and have spent, or contracted obligations for, more than $50,000,000 in additional plant facilities, machinery, and equipment, and have added to their pay rolls 21,000 new employes.

"If additional time can be saved, some companies are prepared to build and finance emergency expansion themselves."

Many phases of California economy are being tremendously stimulated by this activity in the aircraft plants.

Labor, building construction industries, material and supply sources, parts makers, and many others—throughout California—are benefiting from the aircraft industry's situation of demand outracing supply.

Aircraft employment figures have risen phenomenally. Today they lead all other industries by a tremendous margin—an increase of 112 per cent over the same period last year, as against shipbuilding, the next closest industry, with a gain of 71 per cent.

Such figures spell good news not only for Southern California, where the factories are located, but for the entire State. For the industry is drawing skilled workers from all parts of California and is helping materially to ease the burden of relief rolls.

So important is this factor of locating trained workmen for aircraft construction that the State Department of Employment maintains a special aircraft placement bureau in the Los Angeles area. This bureau is in close contact with the plane factories and with employment offices throughout California, sending out the call for new employes whenever the occasion arises.

An example of what this means to the rest of the State is the fact that in the past year several hundred workers have been sent to the aircraft industry from the areas north of the Tehachapis.

Statistics change overnight in an industry expanding as rapidly as California's aircraft manufacturing industry. A recent survey shows that six major companies—Consolidated Aircraft Corp., San Diego; Douglas Aircraft Co., Santa Monica; Lockheed Aircraft Corp., Burbank (including Vega); North American Aviation, Inc., Inglewood; Northrop Aircraft, Inc., Hawthorne; and Vultee Aircraft, Inc., Downey—are employing approximately 50,000 men. In scores of other plane and parts plants, thousands more pairs of hands are working for air defense.

Currently, monthly pay rolls are running well over six million dollars, while the backlog of unfilled orders for the six companies has passed the half-billion-dollar mark.

By the time this article is published, all these figures will be much larger.

In anticipation of the tremendous task of fulfilling the needs of America's winged defense, the industry has embarked upon expansion programs costing millions of dollars, and adding millions of square feet of manufacturing space to existing facilities. In fact, within the next four months aircraft factories in the Los Angeles area alone will expand their working space by 52 per cent.

Some instances of this expansion:

Douglas Aircraft recently announced a $20,000,000 program, which includes construction of a huge new plant at Long Beach and extensive additions and improvements of the Santa Monica and El Segundo divisions.

Lockheed and its subsidiary, Vega Airplane Co., are in the midst of a $5,500,000 program which calls for 18 additional buildings with a floor area of 520,000 square feet for Lockheed and a new factory for Vega. (Architect's drawing of new Vega plant, page 17.)

Vultee's working space is being increased to 800,000 square feet through a program calling for expenditure of nearly $3,000,000.

North American's program contemplates expansion of its space to approximately 1,000,000 square feet before the end of 1940 and the company is negotiating for the erection of an additional plant at a new location.

Northrop, newest of the California companies, has been building rapidly to meet production orders.

And in San Diego, Consolidated is rushing to completion additions that will give it the largest integrated aircraft plant in the United States, with 2,529,100 square feet of covered and uncovered manufacturing space. Additional contiguous airport space is under option.

For space is at a premium in this bustling industry—from space in which to build airplanes to space in which to live and eat.

New communities are springing up all around the plants and contractors report they are unable to get homes up fast enough to house employes. Engineering departments cry for more space in the plants. More desk room is continually needed by the management. Even restaurants and lunchrooms are hard pressed to feed all the aircraft workers at mealtimes.

It is doubtful whether any industry in American history has ever passed through a more strenuous period of advancement. And all this intense, hectic activity of production and expansion is making itself felt from one end of the State to the other.

This is in the present. The picture of the future is even more important to California.

When President Roosevelt first called for the creation of a vast American air force, leaders of the aircraft industry promptly replied, "It won't be easy, but we can do it."

Such tremendous increases in production might have seemed impossible a few years ago. But the Government showed very clearly that it wasn't "just talking" when President Roosevelt anounced recently that 10,000 planes were actually under construction for the Army and Navy, and that aircraft production would approach an annual rate of 36,000 ships by 1942. And California factories will supply a major portion of this production.

The importance of the defense orders to a California industry that produces every type of plane known to modern warfare—long range, medium, patrol, attack and dive bombers, fighters and interceptors, troop transports, observation ships, and training planes—was tremendous.

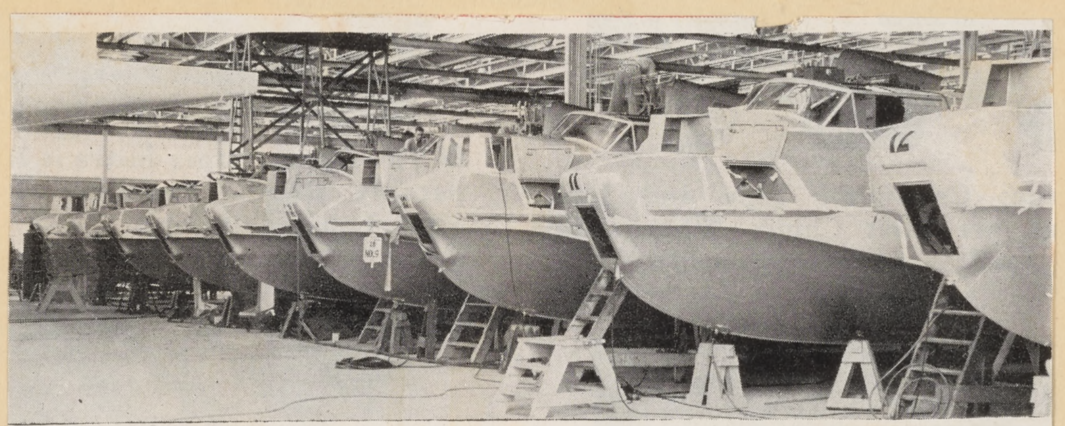
But both government and industry have been wise enough to look backward as well as forward, to avoid the evil of overexpansion as exemplified by World War I. Addressing a meeting of San Francisco business interests recently, Lieutenant-Colonel J. L. Stromme, industrial planning officer for the U. S. Army Air Corps, made the following significant remarks:

"In order that there can be no collapse due to overexpansion, no repetition of the days after 1918, when scores of aircraft factories became empty and lifeless, we are working toward the 'farming out' of machine shop work, and centering the activity of the actual aircraft factories in the assembly of planes.

"Thus we hope to utilize existing shop facilities where aircraft machine work, welding, and the like can be done, and place a sensible limitation on industry expansion."

Colonel Stromme's statement added emphasis to a situation in which many a Northern and Central California community had already seen some real opportunities. Led by San Francisco, a number of such communities are engaged in surveys to determine the potentialities their industries have to offer the aircraft industry in the matter of sub-contracting parts, accessories, and other materials susceptible to mass production.

How the aircraft industry's need for trained workers is being met is treated in an article beginning on page 14.



SNIPS--Oct. , 1940

Artists in Sheet Metal Working

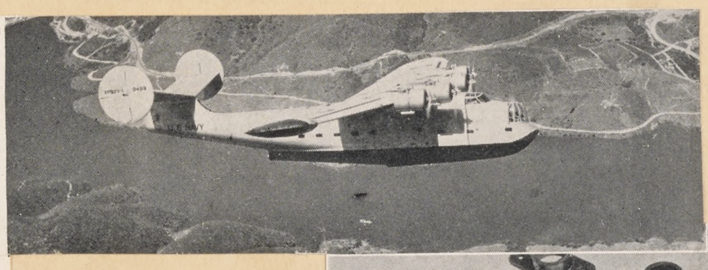
The illustration above is an official U. S. Navy photograph taken in the large Consolidated Aircraft Corporation plant at San Diego, California. These Navy flying boats, shown nearing completion, are something beautiful and graceful to behold. Careful designing, attention to thousands of important details and light weight materials utilized to their best advantage, are necessary to their production.

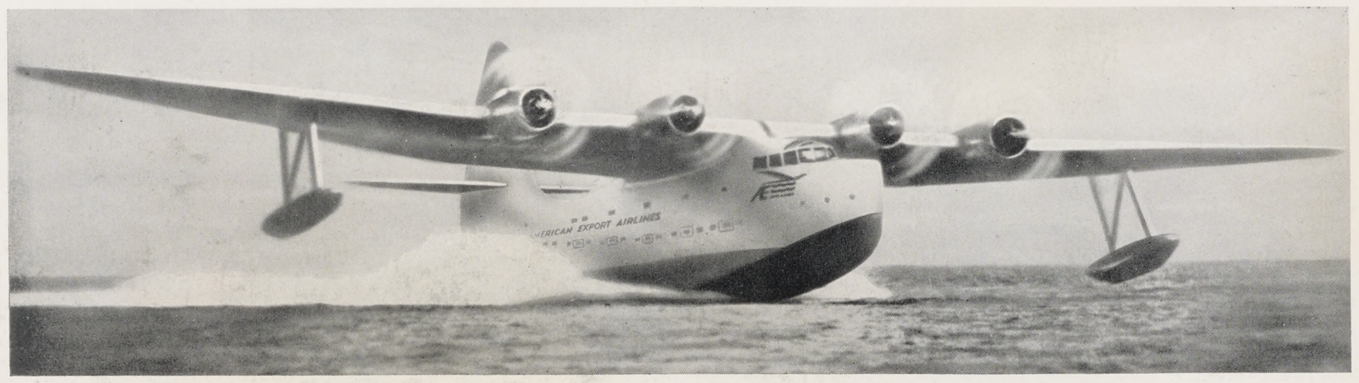
To gain this end, thousands of sheet metal parts must be ingeniously designed and accurately built to assure satisfactory assembly and operation. To the sheet metal department of the aircraft corporation is entrusted this job, equipped with the most modern of sheet metal working equipment. The men employed here are experts and artists in their craft and due credit can be given them for correctly and highly efficiently turning out the work required in modern aircraft manufacturing. They can be justly proud of their important part towards the completion of these magnificent flying craft.

New Bomber Tested

Bakelite Review Oct.,40

Consolidated Aircraft Corporation's 4-engine land bomber has a speed of 300 miles per hour, a range of approximately 3000 miles, and a bomb carrying capacity of 4 tons. Years of skilled engineering effort have gone into this ship — every small part has been perfected in design and function to assure high standards of performance. Illustrated is a group of elevator and cab control bearings made of Bakelite phenolic material, molded by Remler Company, Ltd. This is a light duty bearing employed in the surface control mechanism. Bomb door track shoes are also molded of the same material as slides for the large bomb doors.





AMERICAN EXPORT AIRLINES' NEW FOUR-ENGINED FLYING BOAT

This is an Actual Photograph of the Navy Vought-Sikorsky Flying Boat with Exterior Changes to Show its Conversion into Commercial Use for the Carrying of Passengers, Mail and Express to Europe Next Year. Three of These Planes are Now Being Built by United Aircraft Corporation

American Export Airlines Soon Will Begin Flying the Atlantic

FINAL APPROVAL OF CERTIFICATES for a second American flag air service across the Atlantic, to be operated by the American Export Airlines, Inc., a subsidiary of American Export Lines, was announced by the Civil Aeronautics Board on July 15.

The decision stressed the Board's feeling that future importance to the United States of an air service across the North Atlantic justified a second, and necessarily competitive service. At present Pan American Airways, under the American flag, is solely in this field. At the time the present war started at least six foreign governments had received or applied for landing rights on this side of the Atlantic, and others, including British Imperial Overseas Airways, were launching service. The war has eliminated other services.

Pan American augmented its service recently to a third weekly frequency and announced its aim eventually to provide a daily service to and from Europe, six days a week.

American Export Airlines, however, bolstered its claims for consideration with detailed schedules for nonstop, fast service, using a late type of Navy patrol bomber, built by Consolidated and converted for passenger and cargo service.

One certificate, good until September 1, 1941, permits American Export to carry mail and express only between New York and Lisbon, Portugal, within 60 days. The other certificate calls for a new nonstop New York-Lisbon passenger service to begin next year, it was announced by J. E. Slater, executive vice president of the company. This certificate is to be effective as long as the conduct of operations to France, England and Ireland is rendered unlawful because of the Neutrality Act of 1939, and the Presidential proclamation issued thereunder, and for 60 days thereafter.

The mail-express service will be started with a Consolidated Model 28 PBY twin-engined monoplane which made three successful round-trip survey flights across the Atlantic last summer. Plans call for two round-trips monthly with Horta, the Azores, as an intermediate stop.

The nonstop passenger service, which also will carry mail and express, will be provided by three S-44 Vought-Sikorsky flying boats, the commercial version of the Navy's flying dreadnaughts, which are being built by the United Aircraft Corporation. The schedule calls for two round-trips a week.

AUTHORIZATION OF THE NEW SERVICES by the CAB with the approval of President Roosevelt, will result, Mr. Slater pointed out, in "important developments in trans-Atlantic air service," including:

> Increase in trans-Atlantic service between New York and Lisbon through the opening of a second line.
>
> Establishment of a nonstop service with consequent saving of time, made possible by the new type of flying boat with greater flying range and higher speed than the clipper ships now in operation.
>
> Eventual extension of the service to other European countries when restrictions imposed by the Neutrality Act are lifted
>
> Co-ordination of American Export Airlines flying boats with steamships of the American Export Lines, the parent company, in navigation and in sales and service facilities, thus making the first time that ship and plane services have been operated under unified management.
>
> Improvement in air service by creation of competition with Pan American Airways which now has a virtual monopoly in air service between the United States and Europe.
>
> Increase of the potential strength of the naval air service since the flying boats readily can be converted into bombing planes.

The company's original application, filed with the CAB May 9, 1939, and subsequently amended, sought certificates of public convenience and necessity authorizing it to establish routes between New York and Marseilles, via Biscarrosse, France, and between New York and Southampton, England, via Foynes, Irish Free State, as well as between New York and Lisbon.

It was the majority opinion of the Board that its approval of the steamship company's control of the air line was not necessary. The air line had applied for such approval in case it was necessary.

Commenting upon his company's plans, J. M. Eaton, vice president of American Export Airlines, said the company's personnel had been kept intact since completion of the survey flights last year. He said very little additional preparation would be necessary for the start of the PBY mail-express service. He pointed out also that the further flights of this ship will be useful in paving the way for the nonstop service with the Sikorsky planes.

American Aviation for August 1, 1940

American Export Airlines Granted New York-Lisbon Route by CAB

Unable to Find Pan Am's Trans-Atlantic Monopoly in Public Interest, Board Says; Temporary Operation With Consolidated Also Approved

Stating that it was unable to find that "the continued maintenance of an exclusive monopoly of trans-Atlantic American flag air transportation is in the public interest," the Civil Aeronautics Board on July 15 granted American Export Airlines permission to conduct scheduled operations between New York and Lisbon.

Climaxing a long, drawn-out fight between Export and Pan American Airways, intervener, the decision granted the former company two certificates: (1) a temporary permit to conduct mail-passenger-property service between New York, with Baltimore as a weather alternate, and Lisbon, with both Bermuda and Horta approved as stops in case of bad weather, and (2) a temporary permit to operate, until Sept. 1, 1941, mail-express service between New York, or Baltimore and Lisbon via the Azores, with Bermuda approved as a weather stop.

The Board dismissed without prejudice Export's applications for service to England, France and Italy, and dismissed for lack of jurisdiction the application for approval of the acquisition of control of the air carrier by American Export Lines Inc.

The mail-passenger-property certificate remains in effect as long as operations to England, France and Italy are unlawful under the Neutrality Act, and for 60 days thereafter. If Export makes application during the 60 days for removal of the time limitation, its temporary permit will remain in effect until the Board takes action on the application.

First Dissenting Opinion

CAB member Oswald Ryan agreed with Chairman Harllee Branch and member Grant Mason that the certificates should be issued, but dissented concerning the acquisition of control of the airline by the steamship company. Ryan, in the Board's first dissenting opinion, claimed that the CAB has jurisdiction over the matter.

In a lengthy discussion of "the need for competition in the trans-Atlantic service," the CAB said that although the service of Pan Am has not been inadequate, "we are unable to find that the continued maintenance of an exclusive monopoly of trans-Atlantic American flag air transportation is in the public interest, particularly since there is no such public control over the passenger or express rates to be charged or over the standards of service to be rendered as is customarily provided in the case of a publicly protected monopoly."

The question of entry of a second carrier into the trans-Atlantic picture "involves the entire underlying policy of the Civil Aeronautics Act of 1938," the decision said. Competition in air transportation is not mandatory, especially when considered in relation to any particular route or service, the CAB concluded. "Clearly, Congress has left to the discretion of the Board the determination of whether or not competition in a particular area is necessary to assure the sound development of an appropriate air transportation system," it said.

Competition Desirable

Competition, the Board continued, "invites comparisons as to equipment, costs, personnel, methods of operation, solicitation of traffic and the like, all of which tend to assure the development of an air transportation system properly adapted to the present and future needs of the foreign and domestic commerce of the U. S., of the postal service and of the national defense. Although it does not appear that the quality of service rendered by intervener is at present inadequate in any respect, the record indicates that benefits to the public, in the shape of improved service resulting from advances in the industry, would be accelerated by competition between U. S. air carriers on the north Atlantic route."

Pan Am had, at the Export hearing, contended that foreign carriers would soon be in a position to furnish stiff competition on the Atlantic. The CAB said, however, that "it is obvious . . . that competition by foreign air carriers will not have the same beneficial effect which competition by U. S. air carriers should have. The part which national loyalties may be expected to play in the routing of traffic must not be forgotten. Moreover, fundamental difference in background and technique between U. S. and foreign flag air carriers may tend to distinguish their respective services by essentially non-competitive basic characteristics, rather than by those differences of degree which stimulate progress through competition.

"The addition of new and improved equipment by foreign air carriers will, to be sure, result in the necessity of U. S. air carriers equaling or bettering such equipment if they desire to maintain their competitive position. However, unless and until the U. S. air carrier can match a given improvement in the service rendered by a foreign air carrier, U. S. air transportation will not have been advanced. On the other hand, any addition to service or improvement of equipment by a competing U. S. air carrier will be an immediate and direct advantage to the air transportation system of the U. S."

National defense also will be benefited by a second service, the CAB said. "It appears that competition by applicant would induce the use of different types of equipment and make use of the facilities of a greater number of our manufacturers, thereby affording the War and Navy departments valuable data concerning additional types of equipment. It would mean the training of additional American supervisory operations personnel and would provide an incentive to the development of new and different operating technique."

Since the outbreak of the war, Pan Am has been the only airline operating across the Atlantic, all European companies having suspended service, the decision noted, adding that "these factors render it all the more desirable to take advantage of this opportunity to entrench American air transportation more firmly in the North Atlantic field by means of a second American airline."

The CAB pointed out that the "saturation point of available air traffic on this route is not yet reached." It also quoted an Interstate Commerce Commission decision which stated that "Regulated monopoly is not a complete substitute for competition. The latter fosters research and experimentation and induces refinements in service which are not likely otherwise to be accomplished."

Cost Not Controlling

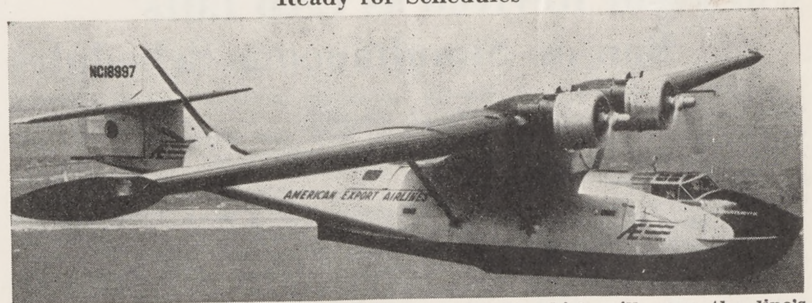
Pan Am had also contended that to approve Export rather than more Pan Am schedules would be a wasteful expenditure of government funds. "We are unable to agree that the advantage in cost to the government which the service proposed by intervener would have over that proposed by applicant can be accorded controlling significance on the issue of public convenience and necessity in this case," the CAB said.

Pan Am claimed that Export's 12-passenger four-engined Sikorsky S44's would not be satisfactory, but the CAB pointed out that both companies have access to U. S. aircraft markets, and added that neither company's equipment will be that in use 10 years from now. "It remains to be seen whether applicant's or intervener's equipment will find the greatest favor with the traveling public and which type, in general or in particular respects, will provide, technically speaking, the better operation," it said. It found Export fit, willing and able to perform the proposed service.

Concerning the mail-express service, which will be conducted with a Consolidated flying boat now owned by Export, the decision said that such service "is required by the public convenience and necessity not only because it will promote the development of applicant's complete passenger, mail and express service, but also because it will relieve intervener's trans-Atlantic service of some part of the extremely heavy mail loads which that service has had to bear in the past and which have resulted in intervener's inability to accommodate all of the passenger traffic offered . . . It should continue no longer than such time as applicant is in a position to inaugurate its complete passenger, mail and property service."

Since Export was not an air carrier when its stock control was acquired by the steamship company, section 408 of the Act does not apply, the CAB said. The steamship-airline relationship is not inconsistent with the public interest, and Export is fit, willing and able to operate either as an independent airline or in connection with the steamship company, the Board added.

Ready for Schedules



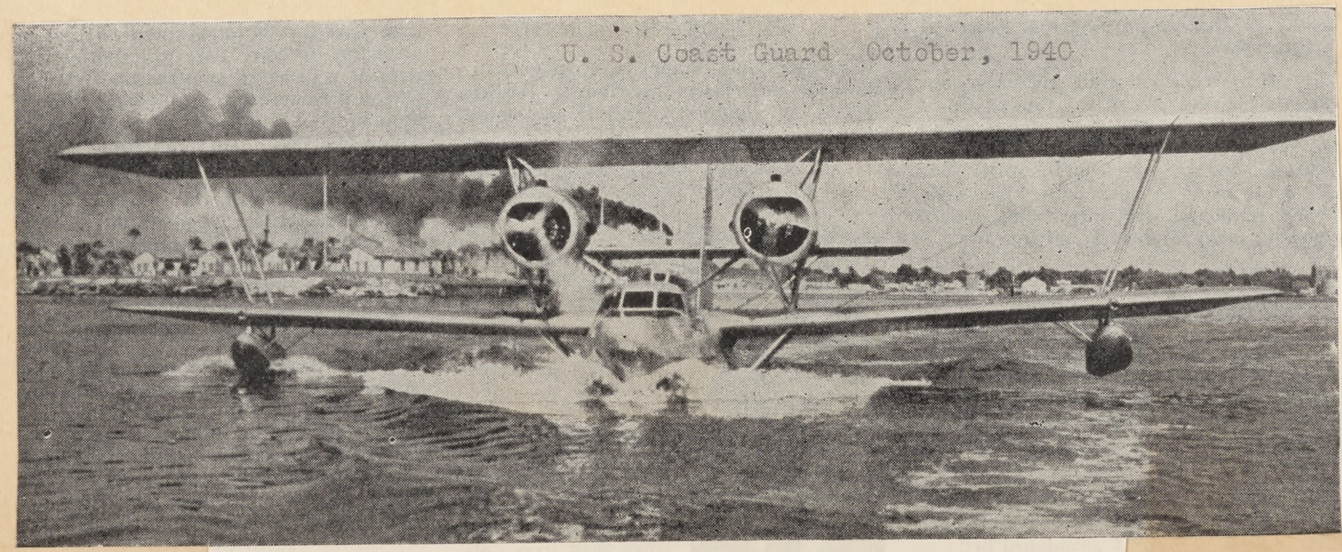
American Export Airlines' Consolidated model 28 which will open the line's New York-Lisbon route, carrying mail and express.

U.S. Coast Guard Oct. 1940

* * * * *

BIG CONSOLIDATED PLANE

The big Consolidated transport plane being built for the Coast Guard at the Consolidated plant (world's largest builders of Amphibians) in San Diego, Calif., is being constructed on Navy contract, and Navy inspectors, not C. G., comprise the board of inspectors. The radio equipment in the plane will, however, be a strictly Coast Guard job, with a C. G. radioman (Avery Brace, RM1c) serving as inspector. The Washington Whirlpool expects this big plane to be the forerunner of many Consolidated planes to be built for the Coast Guard in the not-distant future.



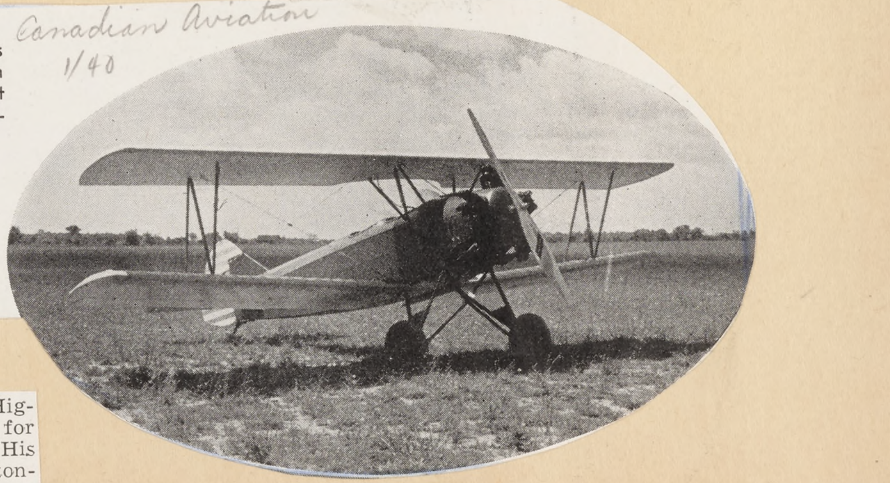
U. S. Coast Guard October, 1940

FOR SERVICE TO OUR COUNTRY HIGH IN THE SKIES

U. S. Coast Guard's PH-3, built by Hall Aluminum Aircraft Corporation, Bristol, Pennsylvania.

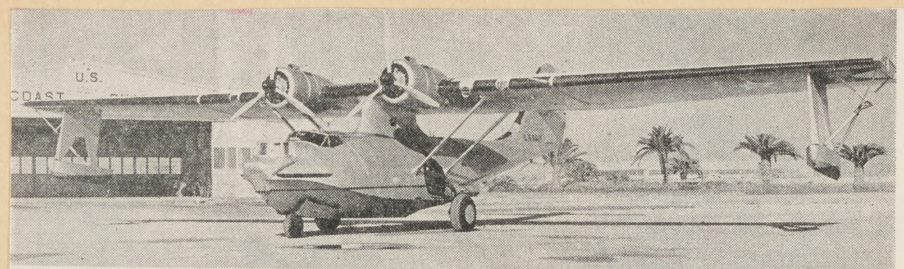
Canadian Aviation 1/40

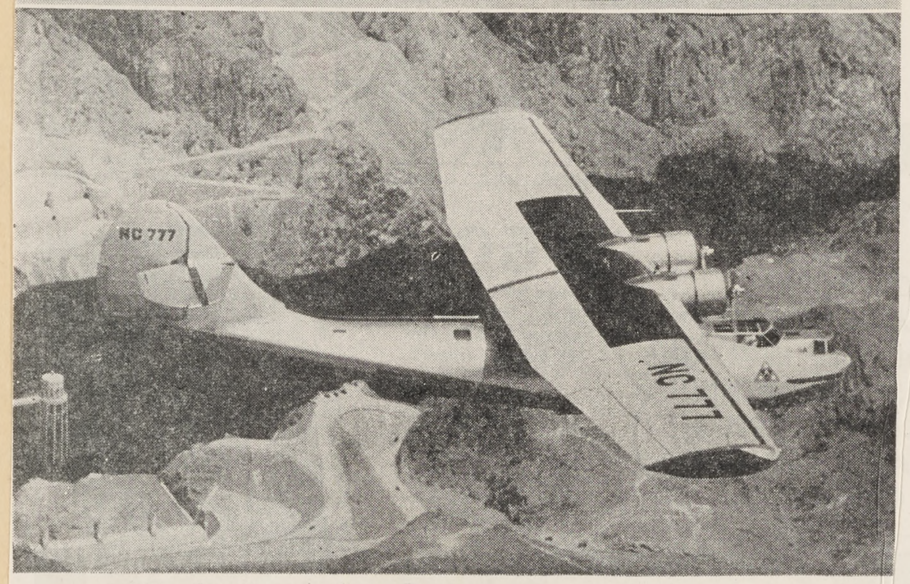
RIGHT: More machines of this type have probably been built in Canada than any other type. It is the Fleet Trainer, manufactured by Fleet Aircraft Ltd., Fort Erie, Ont. With large numbers already in use in Canada, for both civil and military training, hundreds more will be used for elementary pilot training in the Commonwealth scheme.



During the past summer, Higgins has acted as test pilot for Fleet Aircraft Ltd., Fort Erie. His mechanic on the Leamington-Pelee route is James Sherratt.

Canadian Aviation 1/40





U. S. Coast Guard

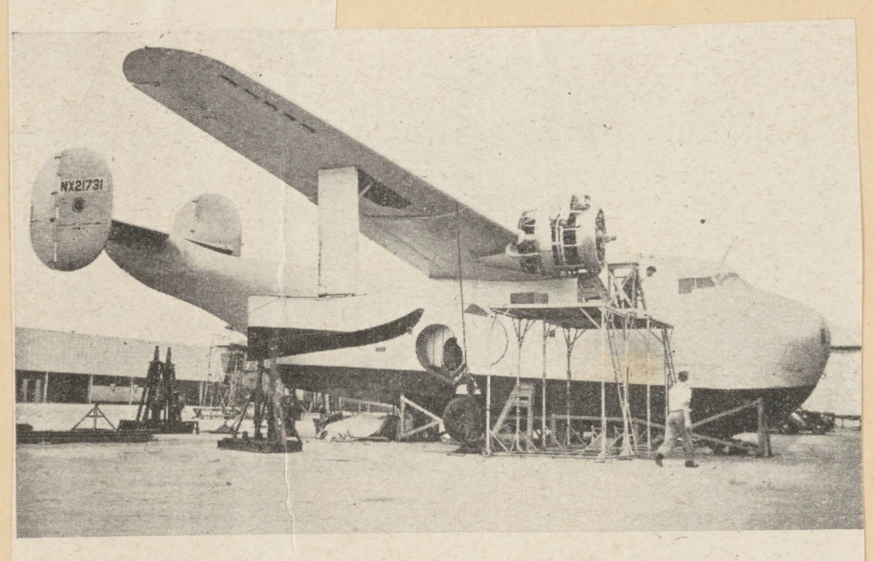
U. S. Navy Official Foto

WORLD GIRDLER

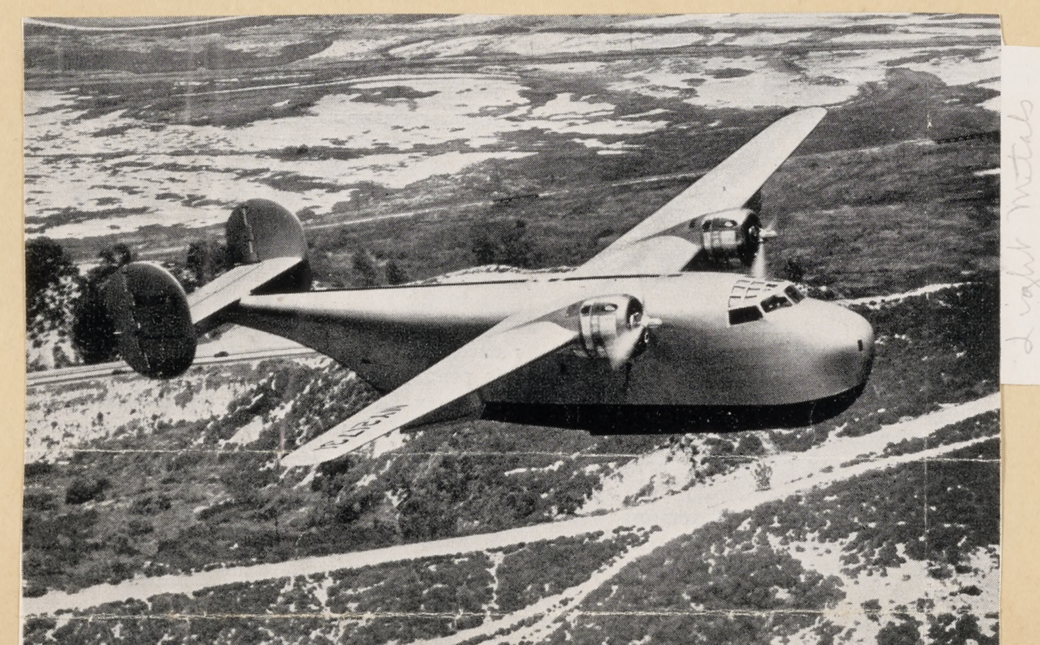
This is the famous GUBA flying boat (Consolidated Model 28) in which Explorer Richard Archbold flew completely around the world, crossing the continents of Africa, Australia, and America, crossing the Indian Ocean for the first time by airplane, making the first circumnavigation of the world at its greatest diameter, first seaplane flight around the world and longest non-stop over-water flight of a seaplane. The GUBA completed this epic voyage a year ago when it came to anchor at the Coast Guard Air Station, Brooklyn, N. Y. The GUBA (a flying boat, not an amphibian) is here shown over Boulder Dam. The forward hatch offers distinct structural possibilities for the handling of stretcher cases at sea. The wing-tip pontoons fold up and become extended parts of the wing when in flight. Tricycle landing gear.

8/8/40

FLIGHT



4,000 H.P. The Consolidated type 31 is powered by two of the new Wright two-row Duplex-Cyclone engines, and is probably the world's most powerful twin-engined flying boat. The "retractable tricycle undercarriage" is a beaching trolley. The struts of the outboard floats fold into the wing. The machine has accommodation for 52 passengers in the daytime and 28 at night.



Light Metals Sept, 1940

THE flying boat, Model 31, of the Consolidated Aircraft Corporation, San Diego, Cal., which was recently released for export to the Allies. It is one of the largest aircraft ever constructed and has carried out numerous trials with 52 passengers aboard. The hull, wings and tail surfaces are of aluminium-coated sheet and are internally reinforced. The cruising range is said to be from 8,000 to 10,000 miles, and the maximum speed in excess of 200 m.p.h. The craft is powered with two Wright Cyclone engines, developing 2,000 h.p. each. (See *Light Metals*, 1940/3/74.)

"Guba" Consolidated's PB-7 type recently crossed Eastern Canada on her delivery flight to England. From California to England gives one a clear idea of the range and power of the modern flying boat. The latest Consolidated boat, a four motor machine, appears to be one of the most efficient aeroplanes of its class in the field. It is capable of carrying 49,000 pounds of bombs and torpedoes. A range of 4,000 miles is available. Commercial Aviation 11/39

AIRCRAFT DEVELOPMENT

The Coast Guard has had considerable experience with airplanes during the past 15 years and out of this experience has come the belief that there has not yet been designed a satisfactory basic type of C. G. plane.

There is now reason to believe that Coast Guard aviators are paying much attention to recent developments at the Consolidated Aircraft Corporation, San Diego, Calif., where the Model 28-5A Amphibian (designated by the Navy as the XPBY-5A) represents the newest contribution to aeronautical progress. Basically the new Consolidated Amphibian is the Model 28 twin-engined flying boat, with full facilities for land operation added.

The landing gear is of the tricycle type, with a single wheel forward and two aft, all of which are fully retractable. The side wheels and supporting mechanism retracts into wells in the side of the hull. The nose wheel in the bow is completely closed over in the retracted position by automatically operated hatches so that no resistance in planing is encountered.

Flight characteristics have been unaffected by the incorporation of the landing gear, and several handling advantages have become apparent. Flight testing with the gear in all positions, and in any combination with the retractable wing-tip floats, failed to disclose any adverse affects. The same stable flying characteristics of the PBY are maintained, and there was found no loss of speed with the landing gear in the retracted position.

The advantages of the landing gear, aside from greatly extending the scope of utility, are of special interest to all Coast Guard flyers. For rough water taxiing the extended gear serves as a sea anchor and greatly assists in control on rough open water, and in making an approach for mooring or ramp with an adverse wind. More engine power may be applied for short turns without undue acceleration. Turns on the water are achieved with far less skidding, and the danger of scraping the keel on the ramp is eliminated. There is no necessity for a beaching crew, as the ship can climb a ramp or beach under its own power, or descend in the same manner, completely controlled by the brakes. It may also operate from remote sand beaches without benefit of special ramps or facilities for handling.

The side wheels are above water when the ship rises on the step in making a take-off, and automatic means have been provided to eject all water in the closed bow wheel hatch before the plane is in the air. Thus the flying trim is unaffected.

In action the huge amphibian alights with a smooth absorption of its descending velocity, exhibiting no tendency to bounce or porpoise. When alighting on land, the ship's tendency in a side landing is to straighten out; and the brakes may be applied to the utmost without adverse effect. This technique simply increases the load on the nose wheel. No special procedure is needed for take-off or landing. The wheels may be locked, elevators pulled full back, and both engines given full take-off throttle without the possibility of the nose wheel rising from the ground. During one recent test, a landing was made in which a bump was struck on the instant of contact with the brakes on. The accelerator showed a very high reading, yet no trouble, either structural or in handling, was encountered. With the familiar Model 28 wing-tip floats extended, the drag is increased and the angle of glide is steepened.

Consolidated Dedicates New Plant

WITH APPROPRIATE CEREMONIES the large new buildings of Consolidated Aircraft Corporation at San Diego, Calif., were dedicated on Labor Day, September 2. High ranking officers in the Army, Navy and Marine Corps, Consolidated and other aviation leaders, employes and their immediate guests attended. A handsome souvenir booklet containing pictures of various types of Consolidated airplanes was distributed. Among the musical selections by the Consolidated Glee Club and Orchestra was a new song, "Wake up America," by Dorothy Fleet and Edward Borgens. Edgar N. Gott, vice president of the company, was master of ceremonies.

Rear Admiral Charles A. Blakley, U.S.N., Eleventh Naval District, delivered the dedicatory address. He said, in part:

> I hereby dedicate this new plant to work in national preparedness, to help maintain our rightful place as a mighty nation. And when this present emergency shall have passed, it may be dedicated in more glorious activity in supplying commerce with its products. I congratulate Major Fleet and his associates on this fine plant and bring the best wishes of the whole Navy. I declare this new addition and plant to be open.

Other addresses were given by Brig. Gen. Frank D. Lackland, Wing Commander, March Field; Maj. Gen. W. P. Upshur, Commanding Department of the Pacific, Fleet Marine Force and U. S. Marine Corps Base; Col. Peter H. Ottosen, Commanding Fort Rosecrans, and Maj. R. H. Fleet, president of Consolidated. Maj. Fleet said:

MAJ. REUBEN H. FLEET, PRESIDENT, CONSOLIDATED AIRCRAFT CORPORATION, DELIVERING ADDRESS AT DEDICATION OF NEW PLANT BUILDINGS

Major Fleet Expressed Himself Pointedly and With Characteristic Vigor as Being Opposed to the Bill Authorizing the Peacetime Commandeering of the Country's Industrial Plants. He Asserted that, Whereas His Company Had Planned to Announce Further Expansion, the Bill Had Caused it to Hesitate, Even While Striving to do all Possible as a Private Enterprise

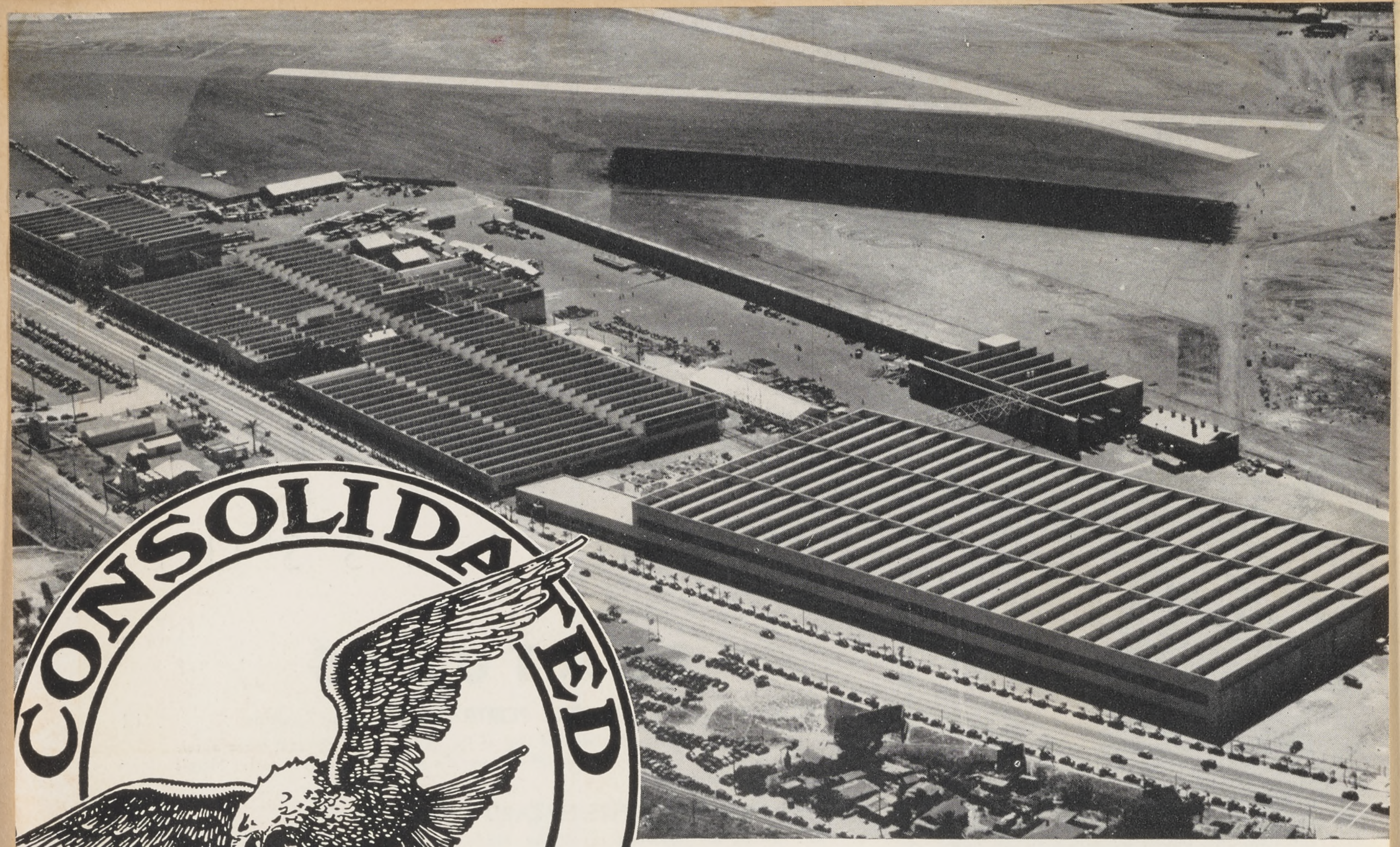
> Five years ago Consolidated Aircraft Corporation began work in San Diego, the city of our choice, with 300 workers and a plant of 200,000 sq. ft. Today, we have 9,600 men and 867,000 sq. ft. By Christmas, we shall have 15,000 men and 1,500,000 sq. ft. We came here with $6,000,000 of business—today, our backlog is $132,000,000. In this plant we have manufactured twice as many airplanes of over 100-foot wing span as have ever been made elsewhere in this country.
>
> We had planned announcement today of further extensive plant expansion, but the bill recently passed by the Senate authorizing peacetime commandeering of industrial plants which may fail in any respect to please a high official of our Government, makes us hesitate, much as we have been striving with all our might as a private enterprise to do our bit. Nationalization of her aircraft industry by France was so disastrous that that country's production fell down terribly, and even though she frantically resorted to foreign help at exorbitant expense, she collapsed as a nation and probably never will recover. We hope our Government will not make this mistake, which would be the beginning of labor regimentation, the emasculation of labor unions which our President has stated cannot strike against the Government, and the end in this country of free men and free enterprise.
>
> A year ago, Great Britain and France declared war on Germany. Since, Germany has conquered Poland, Norway, Finland, Holland, Denmark, Luxembourg, Belgium, and France and is now conducting a strong war of aggression against England. These results could not have been attained without superior airpower. Navies and armies are impotent without adequate airpower.
>
> Part of the new technique developed in this war has been instant concentration of air attack on landing fields. Herein we find the necessity for the possession of flying boats as they are not grounded by such tactics, because water cannot be destroyed by bombs.
>
> During the next few years our aviation industry will manufacture aircraft capable of protecting America from foreign attack and of carrying a war to the heart of any enemy fighting us. The airpower represented by these aircraft will enable America safely to enter into a world-peace pact, capable of enforcement because of the airpower thus created. Such airpower bows to no obstacle within its range—a continent or an ocean in a day. To preserve world peace, such power must exist; it does not police territory; it need not often be employed; its superiority at home should be sufficient to guarantee against aggression.
>
> And meanwhile aircraft will continue in peacetime to spread goodwill by enabling peoples to get together quickly and thus to know each other better. With each one realizing his individual responsibility, may those who toil here help to bring air supremacy, and therefore safety to our beloved country!

Consolidated Acquires Hall-Aluminum

HALL-ALUMINUM AIRCRAFT CORPORATION of Bristol, Pa., has been merged through purchase with Consolidated Aircraft Corporation, and some 32 key men as well as all material and equipment have been transferred to San Diego, Calif.

Archibald M. Hall, president and director of the Hall-Aluminum Aircraft Corporation, is the son of Charles Ward Hall who founded Charles Ward Hall, Inc., the pioneering aluminum alloy aircraft manufacturing company. A. M. Hall was born in New York in 1899, and is a Mechanical Engineering graduate of Cornell University, 1924. He spent a year on the inspection side of the Navy's F4C-1 fighters, and was with the Union Carbide and Carbon Corp. as an engineer. From 1927 through 1936 he was vice-president of Hall Aluminum Aircraft Corp. and from 1936 to date, president.

Until its acquisition by Consolidated the company was engaged in the design and manufacture of aircraft, particularly flying boats.



CONSOLIDATED AIRCRAFT

AN INDUSTRY PORTRAIT

By

SELBY CALKINS

RACKS of shiny red, chromium trimmed bicyles and a fleet of little motor scooters equipped with diminutive sidecars, oddly enough, give the visitor to Consolidated Aircraft Corporation's San Diego factory his most vivid sense of the magnitude and scope of this giant of the aviation industry.

The visitor will hike miles (and "hike" is the word—not "stroll" or "walk" or any other term denoting a short or casual passage) through vast sheet metal departments, forests of jigs, broad assembly buildings and huge yards. He will see big flying boats under construction; PBY twin-engine patrol bombers with hulls like small yachts, four engine ships with bodies two stories high. He will see B-24 land bombers grow from sheets of metal and skeletons of ribs, frames and other stress members. He will see automatic machines making the plant's own millions of rivets, a wood shop bigger than the first Consolidated factory, even though there is no wood in the planes—except one single slab for the top of each map table, for thumb tacks!

Long factory vistas, huge buildings, outdoor assembly lines, steel work rising around actual manufacturing departments in production, raeing to roof against winter rains; these and a thousand like sights give him such conditioning to size that he loses his perspective.

That perspective, that realization of size and scope, is brought back with all the delicacy of a punch in the nose by the racks of bicycles and rows of motor scooters. Out of an office building comes an Air Corps inspector. He grabs a bicycle labeled "Army Only" and pedals briskly away. From another door emerges the employment manager, to ride off

On the adjoining page, the mammoth Consolidated Aircraft Corporation factory on Lindbergh Field, San Diego. This aerial view was made on September 6, three days after dedication of the newest unit in the company's expansion program, the $2,000,000 wing shown at the right of the photograph.

on a little "chug-chug." Mail boys, shop foremen, inspectors, Army and Navy representatives—everyone uses bikes or motor scooters to save indispensible minutes.

Seeing this, the visitor needs no statistics to impress him with the greatness of "Consair."

Consolidated Aircraft Corporation's history dates much farther back than May 23, 1923—its date of incorporation — for it may be truthfully said that the history of Consolidated is the life story of Major Reuben Hollis Fleet, its President. It is also the history of the aviation industry, of the first World War, of the first air mail service, the first Army and Navy training planes with steel tube fuselages, and the innumerable "firsts" in aviation's progress scored by Consolidated's flying boats.

Plain "Reub" Fleet, aged 30, when the United States entered the World War, he won the rating of Junior Military Aviator in the Army in 1917 at San Diego; became officer in charge of flying at Sacramento's Mather field; executive officer in charge of training in the office of the Chief of Air Corps; attended Gosport School of Advanced Flying for flying instructors in England; was officer-in-charge when the Army started air mail service between Washington and New York in May, 1918; became contracting officer for the Air Corps and business manager of McCook Field from January, 1919, to November, 1922.

The scene shifts to East Greenwich, Rhode Island, and the plant of the Gallaudet Manufacturing Company. While Major Fleet was at McCook Field, the Rhode Island company won a contract for remodeling of a number of DH's for the Army. Major Fleet resigned to become vice president and general manager of Gallaudet. Originally built as an airplane factory, the Gallaudet plant had descended to the lowly—but more profitable — work of making "feather boards" for the textile industry. (Feather boards are thin strips of wood around which bolts of cloth are wound.)

That remodeling job, in a factory of some 30,000 square feet of production space, proved the beginning of Consolidated as we know it today. In May, 1923, Major Fleet organized the Consolidated Aircraft Corporation, purchased the Dayton-Wright Company's engineering designs and used, under contract, the Gallaudet manufacturing facilities.

Operations were carried on here until 1924, when Major Fleet and his associates (many of them still Consair executives) were successful in an Army airplane competition and were awarded a contract for 50 two-place tandem trainers.

The contract brought the baby company smack against a problem still unsolved — a plant large enough to "handle the business on the books." There were also the problems of a good skilled labor supply, room for expansion, need for machine tools — all the same problems still fretting every aircraft manufacturer.

Consolidated solved its dilemma of 1924 by a nation-wide survey—and an "odd man wins" penny matching!

Present when the fateful decision was made were President Fleet, Plant Superintendent George Newman, and Col. V. E. Clark, Consolidated's chief engineer and inventor of the Clark Y and USA series of airfoils. Major Fleet favored Baltimore, as an industrial center; Col. Clark favored Dayton as a virtual Army headquarters; Newman boosted for Buffalo, where wartime Curtiss had trained a labor supply. Each thought his argument the best. Coins were produced and flipped into the air. The decision clattered to the desk top —Buffalo.

The city thus determined, ready to use manufacturing facilities were sought. One large plant was rejected for lack of headroom. The wartime Curtiss plant at 2050 Elmwood Ave., which had passed into the hands of the American Terminal Warehouse Corp., was finally selected.

Consolidated's first lease was signed on September 2, 1924 covering 28,351 square feet of manufacturing space. This document was the forerunner of a series of leases, supplemental agreements, leases to end all leases, supplemental agreements to them, etc., until the lease files presented an imposing—and confusing — array of documents. No less than 17 such transactions were carried out as Consolidated spread through the American Terminal Warehouse Corp. properties on Elmwood Ave., until finally the

Major Reuben Hollis Fleet, president of Consolidated, as he appears today. Major Fleet organized the company and still directs its

products coming from its shops. Following the same general outline which has brought us to this point, let us sketch the company today—first, its manufacturing facilities; second, its business:

Including an addition dedicated on September 2, 1940, the Consolidated Aircraft Company has a factory comprising 1,910,000 square feet of manufacturing space and 954,000 square feet of adjoining land for further expansion. Also early in September, Consolidated disclosed the purchase of the Hall Aluminum Aircraft Corp. of Bristol, Pennsylvania. Machinery and equipment of Hall Aluminum has been shipped to San Diego.

Consolidated's original San Diego factory encompassed 246,841 square feet of floor space, in which 262 employes worked for a payroll of approximately $10,000 per week. Today's huge plant employes 10,304 men (as of September 12, 1940 — additional men are being hired at the rate of 500 per week) with a weekly payroll of approximately $350,000, and in prospect of another $2,500,000 in plant expansion.

The company arrived in San Diego with a backlog of $6,000,000 in unfilled orders. Today the figure stands at approximately $220,000,000.

A detailed breakdown of the Consolidated backlog, one of the largest in the industry, is of course impossible because of defense restrictions. A recapitulation of recent orders and other data already published, however, will give the reader an insight into the strides taken by Consolidated.

In mid-August the company's backlog was approximately $130,700,000 including U. S. Navy orders for 200 PBY-5 twin engine patrol bombers and two PB2Y-2 four engine patrol bombers tabulated by the Navy as on order but undelivered; orders from the Navy, Great Britain and France (assumed by Great Britain) and a $14,800,000 order from the U. S. Army for 56 four engine B-24 four-engine heavy bombers.

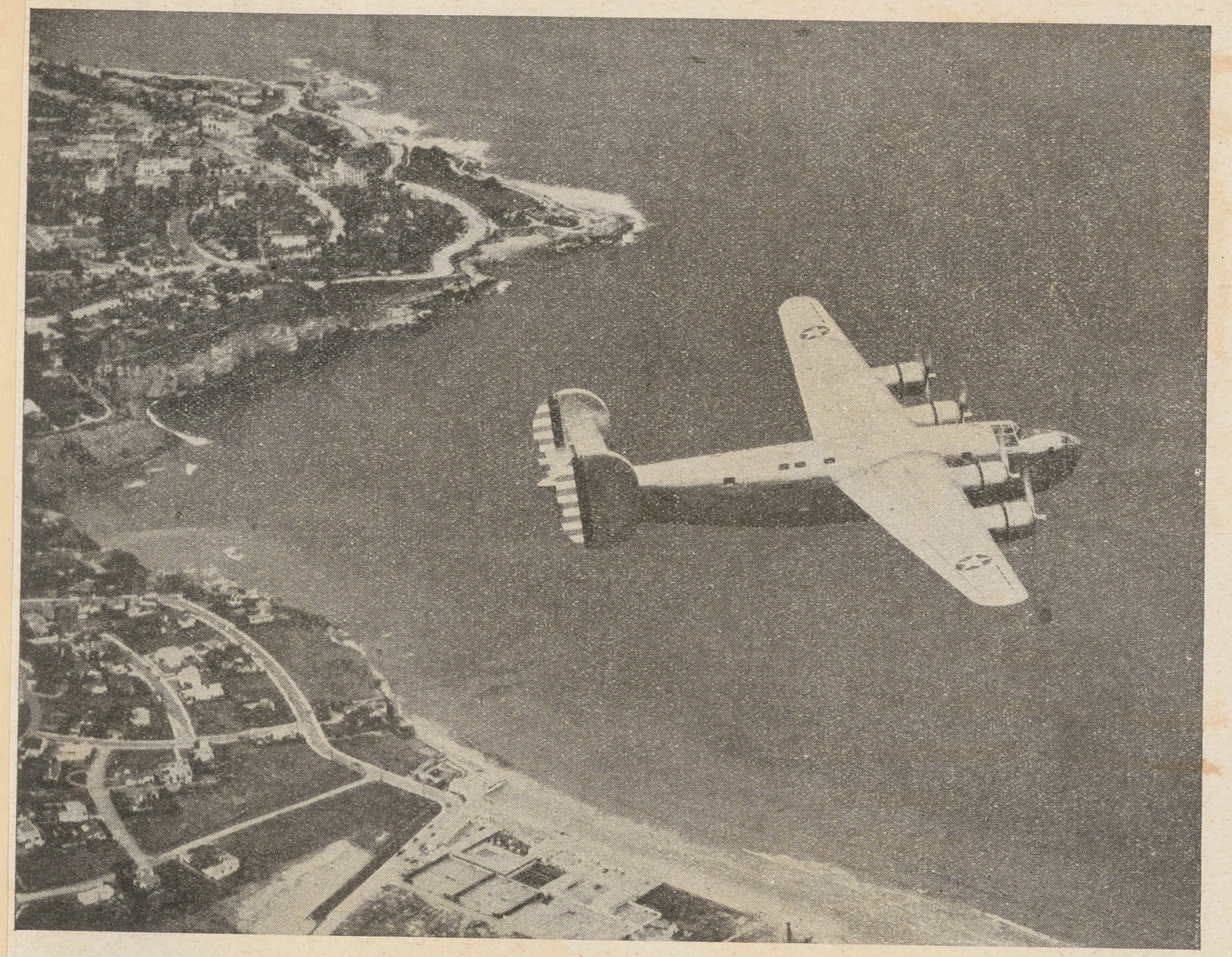
In rapid order came, on September 17, an order from Australia for 11 PBY twin-engine patrol bombers amounting to $3,500,000; and on September 20 an order from the U. S. Army for advanced versions of the B-24 in the amount of $85,800,000. The number of planes was not given in the published announcement, but a guess in the neighborhood of 300—based on the August 16 order for 56 planes at $14,800,000 — would not be far wrong.

A contract to remodel a few "Jennies"—and $220,000,000 in unfilled orders . . . thirty thousand square feet of rented space in a "feather board" plant—and two million square feet of 1940 factory . . . a handful of men designing and building a trainer in eight weeks—and 15,000 employes by Christmas . . . the flip of a copper coin sending a tiny concern to a Buffalo warehouse—and motor scooters to speed inter-office travel.

These are the lineaments of Consolidated's "Industry Portrait."

Some of the veteran officers being retired were largely responsible for the Navy's many successful mass flights of PBY patrol bombers (below) to Hawaii and Panama.

July 1940 Pop. Aviation



The U.S. Army Air Corps' latest big bomber, the Consolidated XB-24, in flight over San Diego, California. The aeroplane is liberally supplied with hatches and windows. Fixed wing-tip slots and two pitot heads may be noticed, and the airscrews are Hamilton Hydromatics.

CONSOLIDATED BOMBER XB-24

Davis Aerofoil Again Used : Patent Details

THE U.S. Army Air Corps' latest "bombardment" (long-range bomber) type, known to the Air Corps as the XB-24 and to its designers as Model 32, has a wing incorporating the new Davis aerofoil. Designed and built by the Consolidated Aircraft Corporation, the prototype made its initial flight early this year at Lindbergh Field, San Diego, California.

It is a four-engined high-wing bomber of all-metal construction. The wing is a full cantilever type of high aspect ratio with four tractor engine nacelles mounted flush to the upper surface. Fowler flaps extend from fuselage to ailerons. In the illustration five fixed slots will be noticed in each wingtip.

Power is provided by four Pratt & Whitney 18-cylinder twin-row radial air-cooled engines rated at 1,200 h.p. each. The airscrews are of the Hamilton Standard 3-bladed Hydromatic constant-speed type, 12ft. in diameter.

The gross weight of the aeroplane is 40,000 lb.; wing span, 110ft.; length of fuselage, 64ft.; and overall height, 19ft. Crew varies from 6 to 9 persons, depending upon the mission to be performed.

Control surfaces are fabric-covered and mass-balanced. A full cantilever horizontal tailplane has twin fins and rudders mounted at the tips. The all-metal stressed-skin fuselage is equipped with hatches and windows in the nose, tail, sides, top and bottom. The landing gear is of nose-wheel type with all three wheels retracting.

The makers claim a speed of over 300 m.p.h., a range of 3,000 miles, and a bomb carrying capacity of 4 tons.

The Davis aerofoil has come in for a certain amount of publicity and some extravagant stories have been written about it. But the fact that Consolidated, always in the forefront of American design, has seen fit to adopt it and use it on their outstanding twin-engined Model 31 flying boat and then on the later XB-24, shows that it is somewhat more efficient than a flat plate.

The Davis Aerofoil

This aerofoil is covered by U.S. Patent No. 1,942,688, dated January 9, 1934. Its inventor lodged the claim some years before this, in 1931. The following is a brief precis of the patent:—

For any given upper curve of an aerofoil there is but one most efficient lower complementary curve. The upper and lower curves of the profile each affect the fluid flow around the other and are interdependent.

The general object of the invention is to provide a formula for laying out the two profile lines so that they have a definite relationship for each given type of aerofoil.

(*Continued on page* 152.)

The co-ordinates for the upper or suction surface are determined by the two following equations:—

$$X_S = \sin\theta\,[0.6366198(A-B)+B] + \tan\theta\,[(1-0.6366198\,\theta)(1-A)]$$

$$Y_S = \cos\theta\,[0.6366198(A-B)+B] - A(1-0.6366198\,\theta)$$

A pair of similar equations defines the shape of the lower or pressure surface:—

$$X_P = \sin\theta\,[0.6366198(A-B)+B] + \tan\theta\,[(1-0.6366198\,\theta)(1-A)]$$

$$Y_P = \cos\theta\,[0.6366198(A-B)-B] - (A-2B)(1-0.6366198\,\theta)$$

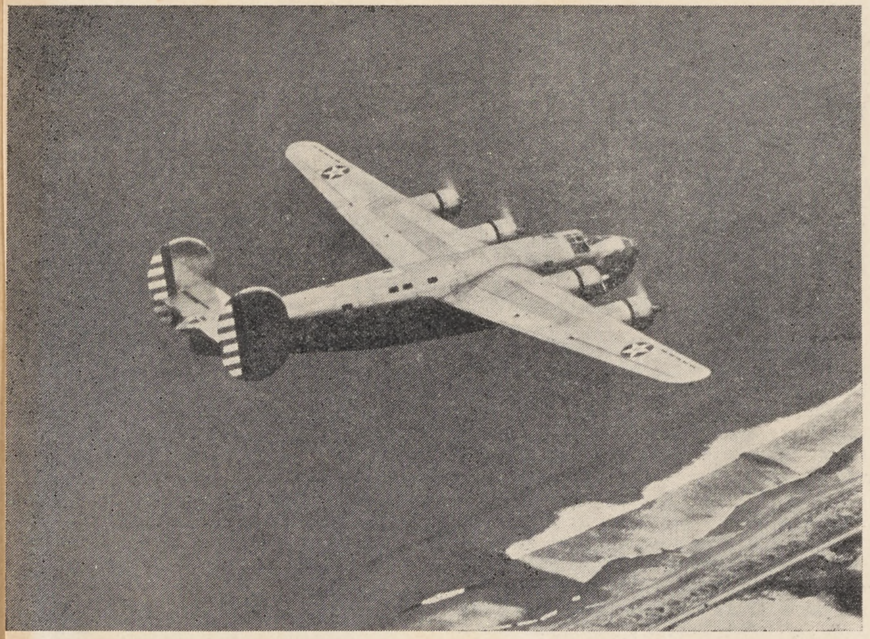
(In all four formulæs, θ varies from 0 to $\pi/2$ radians.)

The values of A and B are kept constant for any one aerofoil. A sufficient number of values of θ should be used in order that the points found will be numerous enough to determine fair curves. If the constants A and B are given regular increments, a series of aerofoils can be constructed which will vary gradually in their properties.

The equation was developed from formulæs based on the mechanical action of a rotor having rotation and translation through a fluid.

This combination of rotation and translation produces a lift, and the phenomenon, known as the "Magnus effect," has been well known to theoretical and practical aerodynamicists for many years. The Flettner rotor ship was built on this principle, and every time one puts top-spin on a tennis ball to pull it down quickly after crossing the net, the phenomenon is utilised, the lift in this case having a negative value. Back spin, of course, tends to keep the ball in the air.

The Davis section as used by Consolidated is thinner than current practice and the thin wing has always been attractive aerodynamically, due to reduction of profile drag. But how to obtain a light structure with shallow wing spars is the stress analyst's difficulty, and progress on this problem must precede any aerodynamic advances in reducing wing thickness. The Consolidated 31 appears to be a very good boat, but not all its excellence comes from the wing section, for the general progress in structures and in design generally has contributed much to its success.



CONSOLIDATED BOMBER UNDERGOES TESTS.

Shown above is one of the first flight pictures of the new Consolidated Model 32 four-engined land bomber undergoing tests at San Diego (California, U.S.A.).

Designated by the Army as the XB-24, the 'plane marks Consolidated Aircraft Corporation's re-entry into the land 'plane manufacturing field, breaking a virtual specialization which has brought Consolidated the distinction of being the world's largest manufacturer of flying boats.

The Model 32 is a full cantilever, all-metal 'plane, powered with four Pratt and Whitney 14-cylinder, twin-row radial, air-cooled engines rated at 1,200 h.p. each. The propellers are Hamilton Standards of the 3-bladed hydromatic constant-speed type, 12 feet in diameter. Fowler flaps extend inboard of the ailerons in the wing of high aspect ratio, with the engine nacelles mounted flush with the upper surface of the centre section.

The approximate gross weight of the airplane is 40,000 lbs.; wing span, 110 ft.; length of fuselage, 64 ft.; and over-all height, 19 ft. Tactical requirements are for a crew of from six to nine persons, depending upon the mission to be performed.

While the performance figures are strictly confidential, an official release states: "This airplane, from preliminary examinations, gives evidence of living up to the advancements in aerodynamic and performance characteristics predicted. These include a speed of over 300 miles per hour, a range of approximately 3,000 miles, and a bomb-carrying capacity of approximately 4 tons."

Consolidated Aircraft Corporation, San Diego, California

Largest Aircraft Plant in America.

Consolidated Aircraft Corporation's present expansion programme, now being rushed to completion with full manufacturing facilities estimated as completed by August first, brings this plant into full alignment with the President's recently announced emergency defense programme for building a vastly expanded number of aircraft. **When completed, Consolidated Aircraft Corporation will have the largest integrated aircraft plant in America,** with 1,910,000 square feet of covered and uncovered manufacturing space and 954,440 square feet of contiguous airport land under option for further expansion if necessary. Ramp, airport and rail sidings are not included in these figures.

Founded in 1923, Consolidated has made a most rapid advance to its present position, unobtrusively becoming the world's largest manufacturer of flying boats as one of its interesting achievements. Because the performances of flying boats are not usually as spectacular as those of smaller planes or land planes of comparable size, this rise to first position has not been noted by the public generally, nor has the company's specialization upon larger craft. **Taking as an arbitrary measure of "bigness" the wing span of 100 feet or more, and including the airplane equivalent to spares furnished, Consolidated has constructed more than three times as many such airplanes as all other manufacturers combined. This includes those built during the World War period.** Since the company's advent in 1923, Consolidated has built approximately four times as many of such aircraft as all other U.S. manufacturers combined.

As early as 1934, six Consolidated P2Y-1 twin engined flying boats in the service of the U.S. Navy, flew the first successful massed flight from San Francisco to Hawaii, a distance of 2,414 miles, non-stop. Phenomenal success followed the current Model 28's, or U.S. Navy PBY's, the larger twin-engined flying boats. With these 'planes scarcely off the line the U.S. Navy began a series of "routine" delivery flights non-stop from San Diego to Hawaii, a distance of 2,553 miles, with the 'planes flying in groups of from 12 to 18 at a time. Eighty-eight of these ships to date have made this "routine jump" to Hawaii. Another 88 in groups of from 12 to 48 at a time, have been flown non-stop from San Diego to Coco Solo, in the Canal Zone, a distance of 3,087 miles. Aboard these planes were some 1,200 men, members of their regular crews. No untoward incidents were encountered on any of these flights.

Consolidated engineers have followed the highly successful Model 28 design with the Model 29 a huge four-engined craft built for the U.S. Navy, and the Model 31, a twin-engined flying-boat boasting the first two radial air cooled engines of 2,000 horsepower each, ever to be installed in an airplane. Successfully tested, and known to exceed in range, speed and load carrying capacity its forerunners the Model 28's, the Model 31's performance figures are being carefully shielded because of their military potency, though a range of over 5,000 miles non-stop and speed of 250 m.p.h. are said to be conservative figures.

Re-entry of Consolidated into the land plane field is marked by the Model 32 four-engined land bomber known as the U.S. Army's XB-24, with an approximate gross weight of 40,000 pounds. Of this plane the United States Army Air Corps recently stated: "This airplane, from preliminary investigations, gives evidence of living up to the advancements in aerodynamic and performance characteristics predicted. These include a speed of over 300 miles per hour, a range of approximately 3,000 miles and a bomb carrying capacity of approximately 4 tons."

Ind. L.A. County 11-12/40

Consolidated

In its immense plant adjacent to Lindbergh Field on San Diego Bay, Consolidated Aircraft Corp. is turning out huge flying boats and landplanes weighing from 27,000 to 65,000 pounds and costing upward of $200,000 each.

Consolidated has always specialized in building large airplanes. The company claims the distinction of having built, since its inception in 1923, four times as many ships with a wing span of 100 feet or more as all other United States aircraft manufacturers combined.

Huge mechanical and hydraulic presses, including one of 4,500 tons, large hydraulic drop hammers and hulls for the twin-engined PBY patrol bomber lined up 50 strong on the final assembly line, all convey the idea of great size.

When Consolidated transferred its activities to San Diego from Buffalo, N. Y., in 1935 it had about $6,000,000 of business on its books. It started operations with some 300 employes in a plant containing roundly 200,000 square feet of floor space. Today the company has an order backlog exceeding $320,000,000 and by February 1 next year expects to have roughly 1,500,000 square feet of covered floor area, plus a substantial paved but uncovered area suitable for final assembly work, and between 15,000 and 16,000 employes. This, however, will not complete Consolidated's expansion program.

Consolidated has greatly enlarged its plant this year and increased the number on its payroll from about 3,200 on January 1, to almost 14,000 at present. Consolidated today has an estimated $25,000,000 worth of parts and planes in various stages of production which should begin flowing off the final assembly line in steadily increasing numbers from now out.

On the basis of the present schedule deliveries from existing facilities, against contracts now on the books, should attain their peak around March or April. The latest addition should be completed by about June 1 and reach its peak employment of roughly 12,000 by November of next year.

Consolidated currently is working two ten-hour shifts five days a week. Like most other manufacturers it could undoubtedly enlarge its output by either working an additional day or adding another shift. This, however, has not proved feasible as yet as production of the air-frame manufacturers naturally must be geared to that of their suppliers and sub-contractors, as well as that of the engine producers.

At this time Consolidated is in production on three models but actually is making deliveries in any quantity on only one type. It is manufacturing a twin-engined flying boat for the Navy and the British, a four-engined flying boat, the PB2Y, for the Navy, and a four-engined land bomber, the model 32 or B-24, for the Army and British. This bomber, the prototype of which was first flown in 1939, marks Consoldiated's return to the landplane field. It is a high-wing ship, with a tri-cycle landing gear, which, according to available information, has a speed of over 300 miles per hour, a range of approximately 3,000 miles and a bomb-carrying capacity of approximately four tons.

Parts Plant

The company has just announced a $7,000,000 addition which will approximately double its present floor area. So far Consolidated has financed its own expansion, having previously spent or committed itself to spend this year approximately $6,000,000 for enlargement of manufacturing facilities. The latest addition, however, it is understood will be financed by the Government and leased by the company.

The new addition, according to present plans, will be devoted to the manufacture of parts and minor assemblies with existing facilities turned almost entirely to final assembly work. This does not mean, however, that Consolidated is not planning to sub-contract some of its work. It is already doing considerable sub-contracting and plans to do more as it swings into increased production on its present orders.

Popular Aviation - June 1940

Davis' airfoil is the keystone of the Air Corps' new Consolidated B-24 bomber.

First plane to use the Davis airfoil was the Consolidated Model 31 flying boat.

MYSTERY AIRFOIL

By

HAROLD KEEN

Uncle Sam may rule the skyways because of the work of a lone, scorned engineer. His new wing section astonished aviation authorities.

HE'S not listed in "Who's Who" and that's all right with David R. Davis, notwithstanding the fact he has solved an aviation riddle which defied the most brilliant aeronautical engineering minds since that incident at Kitty Hawk.

"I'm just a little fellow trying to get along," he comments, shunning a place in the Hall of Fame which ought to be reserved for "little fellows" who profoundly affect the study of aerodynamics, set the academicians back on their heels and show an incredulous world that what once had been considered the ultimate in combating flight's greatest enemy, air resistance, was hardly more than a modest approach to the problem.

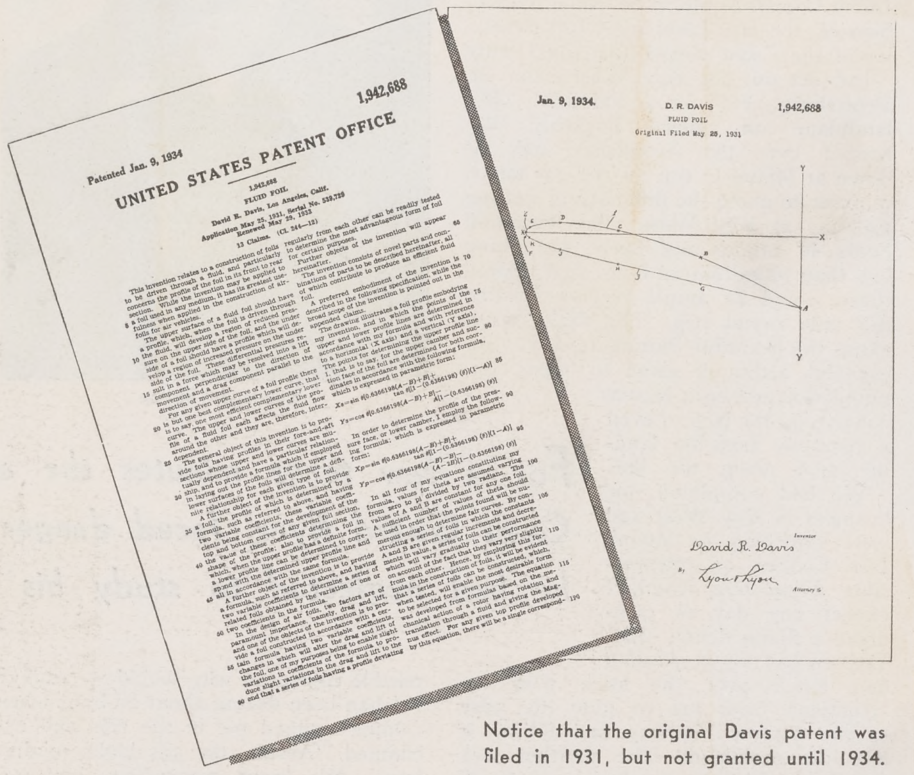
That's by way of introducing David R. Davis, as modest a gifted individual as ever graced this earth. If posterity, despite the "Who's Who" oversight, remembers him only for the development of the Davis airfoil, a hard-won immortality will be his.

This is essentially the story of that airfoil and how it has jarred aeronautical engineering, but it cannot be disengaged from the story of the little-known man who conceived it. Davis, a bespectacled, mild-mannered gentleman who today occupies a small, easily accessible office on a quiet Hollywood street, recalls that he has always been a "nut on aviation."

Originally he set out to be a barrister, duly completing the law course at Vanderbilt University. But he soon discovered that law practice and law study registered totally different appeal and the bar held out no lure for him.

Aviation somehow gripped him from the start.

"I was one of that generation born with the urge to fly and build airplanes at this particular moment in world history," he comments.



Patented Jan. 9, 1934

1,942,688

UNITED STATES PATENT OFFICE

1,942,688

FLUID FOIL

David R. Davis, Los Angeles, Calif.

Application May 25, 1931, Serial No. 539,729

Renewed May 29, 1933

13 Claims. (Cl. 244—12)

Jan. 9, 1934. D. R. DAVIS 1,942,688

FLUID FOIL

Original Filed May 25, 1931

David R. Davis

X
Y
A
B
C
D
G
H
J
Inventor

Notice that the original Davis patent was filed in 1931, but not granted until 1934.

The handicap of defective eyesight possibly contributed in pointing Davis toward his destiny as one of the world's finest, self-taught practical aerodynamic experts. It has kept him close to the drafting board and out of the cockpit most of his life. He was refused enlistment in this nation's air forces during the World War and was cast in the humble role of infantry private. But the love for planes flamed with undimmed vigor through the years.

Early in the '20's Davis was in possession of funds looking for a place to roost. With Bill Henry, then an ambitious young journalist (now columnist for the Los Angeles *Times* following a period as correspondent with the Royal Air Force on the western front), induced Donald Douglas to come west early in the 1920's. The luster of Douglas' present-day fame has obscured his transition from status of employee to employer. He owes his start in manufacturing to David R. Davis and his continuance in this field to Bill Henry (see Popular Aviation, November, 1938).

David R. Davis

Douglas then was chief engineer for Glenn Martin, with whom he had moved east from the original Los Angeles plant. Both Henry and Davis knew him well, the former idolizing Douglas as the greatest engineer of his day.

The Davis-Douglas Aircraft Corporation was formed and the famed *Cloudster,* first Douglas transport, was built—with $30,000 of Davis' money. He also financed engineering of the first major Douglas military ship, the DT torpedo plane. But before the production order was received, Davis saw himself bucking against a stone wall. He went to Washington, observed at close quarters what seemed insurmountable difficulties in dealing with stubborn authorities. "I realized I wasn't big enough," he declared. And he severed his now historic connection with Donald Douglas. The Davis finances could go only so far.

Two persons made it possible for Douglas to continue. One was the rampaging Billy Mitchell, who shattered the monopolistic trend of Army and Navy aircraft orders and breathed new life into such struggling independents as Douglas. The other was hero-worshiping Bill Henry, who "sold" Douglas to his boss, Harry Chandler, publisher of the Los Angeles *Times.* Chandler and fellow financiers raised the necessary cash to keep Douglas in business and eventually his first large military order was received by the man who now heads the nation's most gigantic aircraft enterprise.

Thus ended David R. Davis' career as a financial "angel". He had turned over all the good will and assets of the Davis-Douglas Corporation to his friend, Don. Lock, stock and barrel the concern changed hands (Davis had been sole owner until then) without a penny involved. The money sunk into the experimental work on the DT was, however, ultimately repaid by the prospering Douglas.

In this unpromising manner began the most significant—and present—phase of Davis' career. He became a lone wolf engineer, operating much of the time only with his own unorthodox ideas for company. For a while, late in the 1920's, he was employed by the Bendix Aviation Corporation, where he developed the first variable-pitch propellers without mechanical control. He toyed with an automatically stable ship, abandoned the notion when it was found less practical than the controllable type.

He never lost his primary interest in wings. This plunged him into the vortex of a behind-the-scenes struggle—one in which he has been engaged since the Davis airfoil told the N. A. C. A. and most aeronautical engineers they may have been going up a detour in their search for the "perfect wing".

As long as man has been able to fly, he has been intensely concerned with the airplane wing. "In the old Curtiss days," Davis reminisced with a smile, "everybody had a secret wing section in his hip pocket. He guarded it with his life."

Davis was no exception. He always wondered what made the wing lift an airplane. What did a wing curve do? How did it function? And when he asked that question he came upon a conception as simple and yet as startlingly beyond man's thinking habits as Newton's discovery of the law of gravitation. A curve, he perceived, was not a dead geometric figure. *It was a living, mechanical, operating thing.* On the basis of this, he could not but depart from what now seemed an archaic process of obtaining the most efficient curve for an airplane wing — the so-called "cut and try" methods.

The oldest approach to this problem was by taking a wooden "blank" or board and sandpapering it down to different shapes, trying each in the wind tunnel until the best shaped wing was evolved. Truly hit or miss. An improvement on this technique was established by the National Advisory Committee for Aeronautics, which sought an airfoil system. This group's engineers developed a series of streamlines. These in turn were bent around different-shaped curves or "mean camber lines", thus creating a system of foils. In this general manner related series of foil shapes were developed, tested and the characteristics listed. By analyzing the "bent" streamlines, performance could be quite accurately foretold.

(*Continued on page* 64)

With airfoils stretching almost to infinity and millions spent in all parts of the world on their development, the engineers agreed that they had reached the acme of wing perfection—90 per cent efficiency, with the 10 per cent loss accounted for by skin friction. Meanwhile, working quietly with his revolutionary conception for more than a decade, David R. Davis threw overboard the time-honored approach to airfoils.

A curve, he saw, was the product of mechanical action—rotation at infinite speed. "A circle," he said, "is not an inert object. It is something going around—a radius arm (or lever arm) rotating about a center."

Having stumbled on this hypothesis, he discovered that the most efficient mechanical action to produce lift would result from the proper relation between the rotational speed of the radius arm and the translational velocity of the point about which the radius arm rotates.

Sounds pretty deep, doesn't it? Actually, it's quite simple. Two factors must be borne in mind when considering the Davis airfoil. One is rotation—*movement* of the radius arm around the center of a circle. The other is translation—*movement* of the center itself. You can reproduce part of a Davis airfoil—not *the* mystery Davis airfoil, of course—as follows:

Mark a dot on a sheet of paper, designating it as the center of a circle. Place the point of a pencil on that dot, then lay the pencil down to form a radius, or lever, arm. Now turn the pencil clockwise and, at the same time, move the point in a straight line to the left (thus indicating movement of the circle's center by the latter motion). The curve formed by the top of the pencil as result of this simultaneous action is fundamentally part of a Davis airfoil profile—the product of two *steady movements.*

Steadiness is important. "If you rotate a flywheel steadily it takes less effort to keep it moving," Davis explained. "If done jerkily, more horsepower will be required. The same is true of translation. The center of the circle must move at a steady rate. The combined steady actions will trace the top curve of an airfoil and a million of these (an abstract number) will form the wing's cover."

A wing surface is no more inert than a buzz-saw, Davies declares. It is a mechanical device whipping the tar out of the airstream, smashing all its resistance and converting it into work for the plane. That, stripped of elegant technical terms, is "lift." To illustrate this, Davis uses the golfer. The golf club rotates around the hand as a center. Both hand and club are moving—translation and rotation. If the swing is not smooth, the ball won't travel far. A weakling with a steady swing will send the ball farther than a muscular gent with jerky style.

An airfoil is the golf club in opposite action—seizing the ball as it would come to it in a reverse motion picture and killing its resistance. The more smoothly the wing does this with air, the faster the plane will travel with least effort. A wing in flight, to Davis at least, is nothing more than millions of lever arms grabbing and taking the punch out of air.

Where is the mystery in an airfoil so readily explained by its creator? Ah, that is the formula which expresses the most perfect relation between the rotational and translational speeds. With the seemingly endless possibilities involved no less than an Einstein, one would surmise, could arrive at this formula. But Davis calls it a natural conclusion reached once the old ideas of airfoil design are junked.

"I know little about mathematics," he says with a modesty so baffling because of its very sincerity—and in Hollywood, of all places.

The whole fabric of instruction in

Below is first flight photograph of Army's secret Consolidated XB-24 bomber. Engines are 1,200 h.p. each, gross weight 20 tons including 8,000 lbs. of bombs, speed 300.

Popular Aviation July 1940

aeronautical engineering schools was subjected to great stress by the Davis airfoil. Straight-laced engineers claimed that research already had gone as far as possible in this field—that a positive science had been achieved which would tolerate no modification, let alone complete annihilation.

When Davis placed his wing section in wind tunnels to outstrip performance characteristics of the super-airfoils developed by accepted methods, the cry of "black magic" was raised. There must be some trick to it, was the concensus of opinion. And, although the airfoil seemed destined to give America uncontested mastery in plane performance—because 90 per cent wing efficiency in one stroke has been increased to 100 per cent—Davis had to face the almost unbreakable prejudice born of the fear of entrenched engineers. Glenn Martin, for example, became highly interested but was dissuaded by his staff from adopting it. This, despite these facts on the Davis airfoil, as proved in wind tunnels in competition with the most widely used wing section:

1. It showed 25 per cent less profile drag at low speeds and 10 per cent less at high speeds.

2. It showed 20 parts of lift to one of drag, compared with 13 to 1.

But there must be a trick to it, they insisted. All except one of the nation's smartest engineers, another unsung, little-publicized gentleman named I. M. Laddon, chief engineer of Consolidated Aircraft Corporation, San Diego. It took imagination and courage, but when Laddon saw the Davis airfoil perform in the wind tunnel he was sold and proceeded to sell fellow officials.

The section was leased and used on Consolidated's Model 31, launched in May, 1939. With an extremely heavy hull, bomb and torpedo load to carry, this craft will fly in excess of 300 m.p.h. an amazing distance non-stop (reliably reported at 10,000 miles). It is almost as far ahead of its time as the Davis airfoil itself was in 1931, when the patent application was first made after several years' study. Military experts foresee this privately engineered ship as the future nucleus of an invincible U. S. Navy long-range air force.

Then came the sensational B-24, the four-motored bomber which has the Army Air Corps gushing in superlatives. The Davis airfoil again makes it possible, in large measure, for this 20-ton craft to hurtle through the air at better than 300 m.p.h.

Hard-shelled engineers began to crawl out of there ivory towers for a better look at this wing section they had snubbed. Other manufacturers, with Consolidated's example before them, have become quite interested. Whereas previously no amount of pleading could induce them to run their pet designs through wind tunnel tests in competition with Davis airfoil-equipped duplicates, they now are more than willing.

Two major plants (Davis will not reveal their identity, but they probably are Douglas and Boeing—Ed.)—have, since the Model 31 and B-24 began their trail-blazing, undertaken experimental designs around this airfoil. One of the concerns is building a huge landplane and the other a seaplane. Both are believed to be larger than any craft conceived yet and will have military *and* commercial utility, according to Davis.

The Davis section is of most practical value to large ships in which payload and long cruising range are major factors. By cutting down drag and improving lift, this wing section makes possible an increased gasoline or passenger and air express capacity. For instance, should the Davis airfoil be substituted for the conventional type on today's transports, a 15 to 20 per cent greater pay load might be possible, Davis estimated. He pointed out, however, that it would be impractical to switch wing sections on an established type, although it could be done in the same wing area. Fullest benefit can be obtained only when the rest of the plane is engineered with the airfoil in mind.

Davis has received inquiries from numerous foreign governments and he is conducting wind tunnel tests for their benefit, he revealed. In fact, negotiations with one particular country (reliably reported to be England.—Ed.), whose name he cannot disclose because of the international situation, have reached such an advanced stage that before this is published the Davis section may be putting new wings on European aircraft. England, France and Holland are known to be particularly intrigued with this wing section's possibilities. Davis is not dealng with any nation unfriendly to the United States and he infers that in this classification are those who have discarded the democratic idea.

There is irony in the fact that, whereas Martin might at one time have had access to the Davis airfoil, the avenue to it has been closed today. Martin is looked upon by Davis as in direct competition with Consolidated, to whom he owes a debt that can hardly be repaid in cash alone. The San Diego concern, after all, in a practical way showed the aviation world what Davis had been trying to demonstrate on paper and in the wind tunnel.

After the many years of battling, at thousands of dollars of personal expense, Davis is beginning to realize the monetary reward too few inventors enjoy. He receives, as royalty, one-half of one per cent of the plane's sales price, without engine. At this writing, the only actual production orders for a ship with a Davis airfoil are the Army contracts with Consolidated, totalling $11,365,000 for 46 B-24's. That amounts to approximately $245,000 per plane, or 1,200 a wing to swell Davis' exchequer. Not potatoes, exactly, but aggregating a sum to date that is not generous compensation for more than a decade's efforts.

Queries of light private plane manufacturers on the airfoil have been tabled by Davis to satisfy a quite obvious Army and Navy desire to confine its use, for the present, to secret military craft. He hopes some day to accommodate all concerns desiring his wing section rights. He is frank, however, in admitting that the Davis airfoil probably never will prove as attractive to small craft concerns as to those who specialize in sky juggernauts. "Maximum performance is not as essential in private planes," he explains.

The ideal characteristic of this new wing section is that aircraft performance is better at *every* flying attitude, whether climbing, landing or merely cruising. Not only are top speed, altitude attainment and long-range cruising greatly enhanced but the improved lift actually cuts down landing speed. Hence, the pilot of a plane with a Davis wing section need not fear "hot" landings, Davis maintains.

It is no more expensive to build a plane with the Davis airfoil than the NACA or any other type—provided all the engineering and construction is done, from the outset, with this curve an integral part of the plans. Wing areas of today's standard planes, if fitted with the Davis airfoil would, if anything, be reduced, Davis said, although this can be traceable to a modern tendency toward the heavily loaded wing for speed qualities. Both the Consolidated Model 31 and B-24 are quite heavily loaded per square foot and each plane is phenomenal for speed in its respective class.

The pioneering has been heart-breaking and would have caused a thinner-skinned man than Davis to give up before emerging from the jungle. But he hasn't finished shocking the aviation world. The wing has been his specialty to date and now he is turning his attention to the things that detract from its efficiency. The fuselage, tail and engines are nothing but "unfortunate" drag factors as far as Davis is concerned. And he has set about attacking this problem in a sensational pursuit interceptor, details of which we are not at liberty to disclose except to state it's the closest thing to a flying wing actually tested and proved for performance. The wind tunnel already has demonstrated it is 40 per cent more efficient than any other of that type.

Associated with Davis in development of this plane is W. J. Waterhouse, one of the nation's finest in practical structural work and an illustrious pioneer in his own right. He it was who supervised conversion of the wood construction in the Douglas DT to welded chromolybdenum tubing, a remarkable advance for its time. Affiliated with Glenn Curtiss at Hammondsport, N. Y., Waterhouse has been in aviation since its infant years.

Davis holds no malice for the overwhelming majority of engineers who greeted his airfoil with ridicule. His chief desire is to cooperate with NACA and military experts in practical application of his revolutionary conception. And as for taking the lion's share of credit, nobody need fear Davis for that. Of the only two plane types actually completed and using the Davis airfoil at this writing, he says:

"They were intelligent engineering jobs by Mr. Laddon and his staff. You must realize that my airfoil will show no performance if the rest of the plane isn't clean."

Aviation will have to learn from someone other than David R. Davis how much it owes him.

END

Metals & Alloys
Aug. 1940

Bending Aluminum Aircraft Tubing

by Bert Freakley
Consolidated Aircraft Corp.

Manufacturing conditions in the aircraft industry make the tube bender's task much more difficult today than a few years ago, when a tube bent over a nail keg or one's knee might be satisfactory. Aluminum alloy tubes for oil and gas lines, for example, must be perfect in every respect, including the bends, before final inspection.

We have found that the use of a low-melting alloy as filler during bending not only results in perfect bends that are exactly reproducible at any future time, but also provides a means of checking for freedom from pinholes or other flaws in the material. The main purpose of the filler is simply to make the tube behave something like a solid bar and not flatten out at the point of bend, and for this non-metallic filler material (rosin or sand, for example) could be used. With sand or rosin, however, the filling process is tedious, inconvenient and sometimes unsafe, and the quality of the job is not always perfect.

Before bending, the tubes are visually inspected and cut to a length about 1-in. longer (for holding purposes) than that finally desired. Hardwood and rubber plugs, slightly tapered, are fitted snugly into one end of the tube and water at 160 deg. F. is poured in to bring the tube up to the same temperature as the molten filler alloy, which is next introduced. The filler in most common use is "Cerrobend" [50% Bi, 26.7 Pb, 13.3 Sn, 10 Cd, a designed-for-bending modification of Wood's metal produced by Cerro de Pasco Copper Corp., New York], which melts at 160 deg. F. The penetrative powers of the filler metal are such that some of it oozes through the close grain of the 1½-in. long plug.

At this stage, any pinholes, however small, will be revealed by the molten filler metal, which will come out through a hole finer than frog hair. If a defect has metal burnished in or over it, the Cerrobend will heave the metal out of the defect and expose the hole. If no defect was revealed, the filled tube is lowered slowly into cold water and left immersed while other tubes are being checked.

Now, suppose that *inside* this tube that has been left cooling there was a defect near the middle of the piece (the piece being 6-7 ft. long, 1 in. outside diam., of 0.049 in. 52 SO aluminum alloy) such that the wall thickness was actually only about 0.0005 in. The filler metal will raise a wart at that point as it solidifies during cooling, and will finally crack the tube open. A weak seam in the tubing will be split open in the same manner. This is because Cerrobend and similar alloys expand slightly on solidifying—enough to reveal any defects, but not to injure a sound tube.

Electrical conduit tubes, which do not have to be liquid tight, are bent with steel mandrels, no Cerrobend being used.

U. S. Air Services Jan 1940

Consolidated's Twenty-Million-Dollar Navy Contract—Notes

ONE OF THE LARGEST single orders for planes under the present national defense aviation expansion program was announced by the Navy Department on December 22, in the award of a $20,016,669.60 contract to the Consolidated Aircraft Corporation, of San Diego, Calif., for additional numbers of that company's Model 28, which is in use by the Navy as that Service's standard patrol bomber.

As noted elsewhere in this issue, the Navy now has an advanced amphibian version of this big plane at the Anacostia, D. C., Naval Air Station for service performance tests, but it is understood that the present order is for the standard Consolidated ship, such as this company has supplied the Navy for use as patrol bombers in current service.

There is every reason to believe the Navy is well satisfied with this particular model, based on performances of squadrons of these ships in mass flights to Hawaii and Panama. It will be recalled that more recently a squadron of Navy patrol bombers flew across the Pacific to the Philippine Islands, making two stops after leaving Hawaii. These, it is known, were Consolidated's basic Model 28, the famous PBY's.

The Navy confined announcement of its order to the bare fact of the award, as it no longer specifies number of ships, nor the type and number of engines.

⁂

THE AIR SERVICES

Consolidated Bomber Tested at San Diego

Now undergoing tests at San Diego, the new Consolidated Model 32 four-engined land bomber marks Consolidated's re-entry into the land plane manufacturing field.

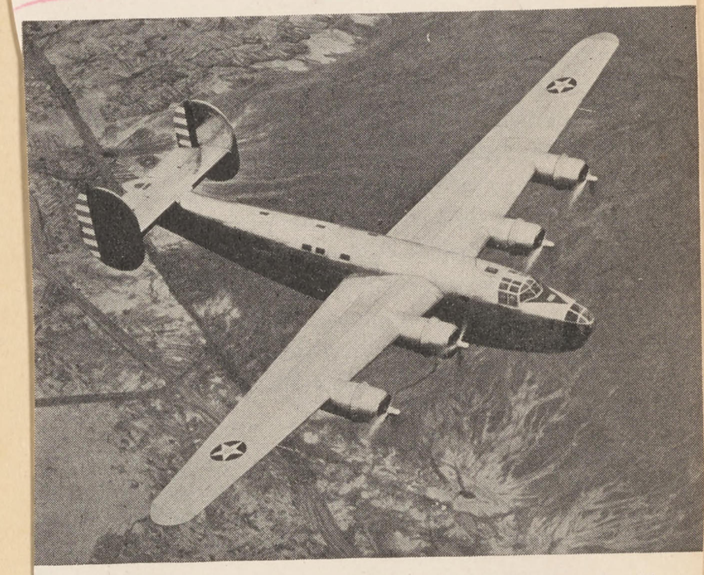
The Model 32 is a full cantilever, all-metal plane, powered with four Pratt & Whitney 14 cylinder twin row radial air-cooled engines rated at 1200 hp each. The propellers are Hamilton Standards of the 3-bladed Hydromatic constant speed type, 12 ft. in diameter. Fowler flaps extend inboard of the ailerons in the wing, with the engine nacelles mounted flush with the upper surface of the center section.

Approximate gross weight of the airplane is 40,000 lbs.; wing span, 110 ft.; length 64 ft.; and overall height, 19 ft. Tactical requirements are for a crew of from 6 to 9, depending upon the mission to be performed.

Control surfaces are fabric covered and fully counterweighted. A full cantilever horizontal stabilizer has twin fins and rudders mounted at the tips. The all-metal stressed skin fuselage is equipped with hatches and windows in the nose, tail, turtledeck, back and bottom. The landing gear is of the tricycle type with a single retractable wheel forward. Main landing wheels retract into the wing wells.

While performance figures are not available, an official release indicates a speed of more than 300 mph, a range of approximately 3000 miles, and a bomb carrying capacity of approximately 4 tons

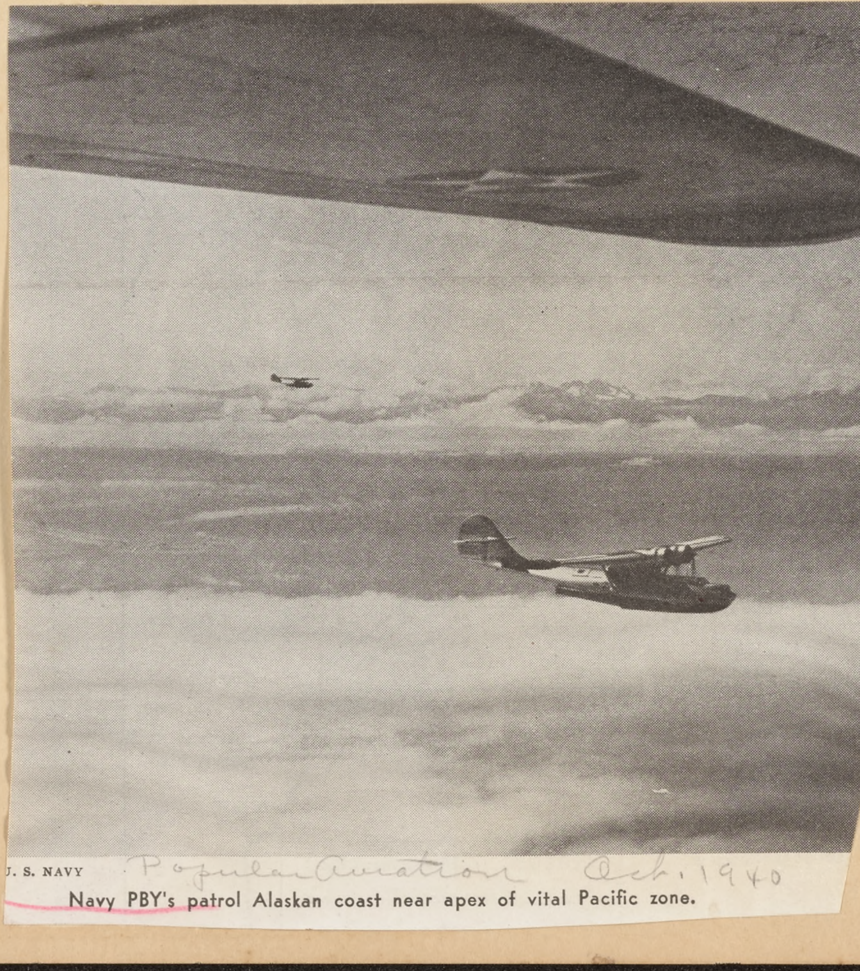
(Continued on page 110)



Consolidated's new four-engined XB-24 bomber in flight over San Diego

AERO DIGES

June 1940



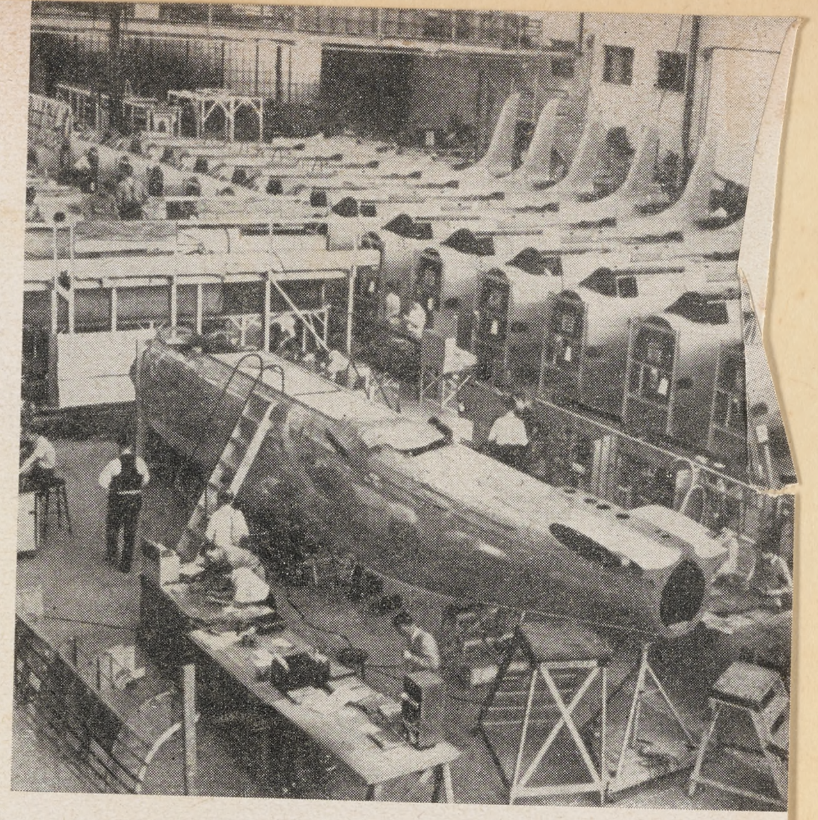
U. S. NAVY Popular Aviation Oct. 1940

Navy PBY's patrol Alaskan coast near apex of vital Pacific zone.

How America Is Helping Britain With Aircraft Supplies

★

By KEITH PALMER



BOMBERS FOR BRITAIN under construction at the Douglas factory in Santa Monica, California.

MR PALMER recently made the Melbourne-San Francisco and return journey with A.N.A., T.E.A.L., and Pan American. He described this 20,000 mile journey in the October edition.

Mr Palmer had several days on the West Coast of America, during which he visited the Douglas and Lockheed factories and met many leading aviation personalities. In this article he imparts a very encouraging picture of the invaluable war aid the U.S.A. is affording Britain.

LOCKHEED has supplied Britain with more service aeroplanes than any other American manufacturer. Douglas is at the moment building bombers for the Royal Air Force faster than any other company outside Britain, and because of the high repute of both companies any Australian visitor landed in the centre of the United States aircraft industry for only two days would have no doubt about choosing to see those two factories rather than any others.

It was very disappointing not to have time to get down to San Diego, less than an hour's flying away, to see the birthplace of the famous PBY's and of the new four-engined landplane bombers that seem likely, from all accounts, to earn as big a name as the flying boats. Also, I wanted to see North American, which is in Los Angeles area and which is credited with having got nearer to mass production than any other plane-maker in the world. But something had to be sacrificed, with time chasing as hard as it was, and because North American's main product was the *Harvard*, a type which Australians can see made — with modifications — in Australia, I saw Douglas and Lockheed.

They are the two biggest concerns in Los Angeles, he most important aircraft town on the Pacific Coast, where about three-quarters of the American industry is located.

Many Australians ask why the industry should ave picked on this town with such unanimity. here are several answers.

In the first place the weather is ideal. The warmth of the winter makes it unnecessary to provide any heating for the factories, which can also be of much lighter construction than buildings in the Eastern States because they never have to carry a snow load. The climate is also an asset in getting the goods away from the factory. Test-flying is possible every day of the year, and although at first one doesn't consider that very important, it is easy to see what a week's fog or snow would do to clutter up the works when aeroplanes are being built at the rate of several a day.

Secondly, Douglas has been established there for many years, and that in itself attracted other manufacturers because it meant that there was a supply of skilled labor to be drawn on as a nucleus for a new production force.

This effect is cumulative, because as the industry grows the city becomes more and more desirable for newcomers, both because of the labor supply and the natural growing-up of accessory and material supply.

For this reason, no manufacturer is anxious to comply with the desire of the Government that new factories should be considerably inland, on the other side of the mountain ranges from any potential attacker in the Pacific. This would raise costs and would introduce great difficulties of labor supply; and against it the industry uses the argument that the main need for defence is a large number of aeroplanes, which can best be produced by expansion on present sites.

Enormous Backlog

AT present, plant increases of 70 per cent. are actually in hand, to enable the Pacific Coast section of the industry to bite into its backlog of approximately £A170,000,000, a figure that is growing almost daily with new British orders and that will soar prodigiously when the United States Government finally places orders to carry out its vast rearmament programme. Early in August, none of the new United States programme had reached the contract stage, and apart from routine deliveries, fairly small, the bigger factories were free to concentrate on their job for the R.A.F.

To give an idea of the terrific activity on the coast, I have summarised here the position of the

(Over)

---

superbly finished as the DC2 and DC3, and, given the chance, would do as much flying. Some of the executives to whom we talked wondered if the policy that sets such a standard was correct, pointing to the thousands of man-hours that are going into producing perfection when something less than perfection would do.

But none of them wants to lower the standard, and none could suggest exactly where the line should be drawn, once something less than the best was decided on. Certainly the time, labor and money spent on perfecting the construction of an aeroplane that may have a life of only a few hours, and equipping it in a way that may often be completely unnecessary, could be spent in producing more aeroplanes, but that is simply sacrificing efficiency of the unit for sheer mass.

Early in August it was generally believed in the United States that the Germans had begun to do this. It was widely stated, and apparently on good authority, that many German machines had no blind flying instruments. The story was that only formation leaders had full equipment, and that in instrument-flying conditions the rest simply formated closely on him. But what happens if the fully-equipped machine is shot down, and the others have to pass through cloud to get home, no one could explain.

Production Short-Cuts

ACTUALLY, in the United States, as, we believe, in the British industry, standards are rising, with consequent increases in cost and, even more important in war time, in man-hours per machine. However, to some extent this latter factor is being overcome by production short-cuts, made possible by the large orders of today. Even without improved production methods, the rate goes up on large orders as the labor force learns its job on the type under construction.

One advance in production methods I noticed was in the Douglas factory, where the DB7 fuselages, instead of being built up on one jig, as is still done with transports, are built in several sections — two halves, like a cigar split down the middle, nose and tail.

A great deal of installation work, including control cables, etc., seemed to be done while the two halves of the fuselage were still separate, giving the men plenty of room and natural light to work in. At a given stage in the production line the two halves meet, and later take on the nose and tail.

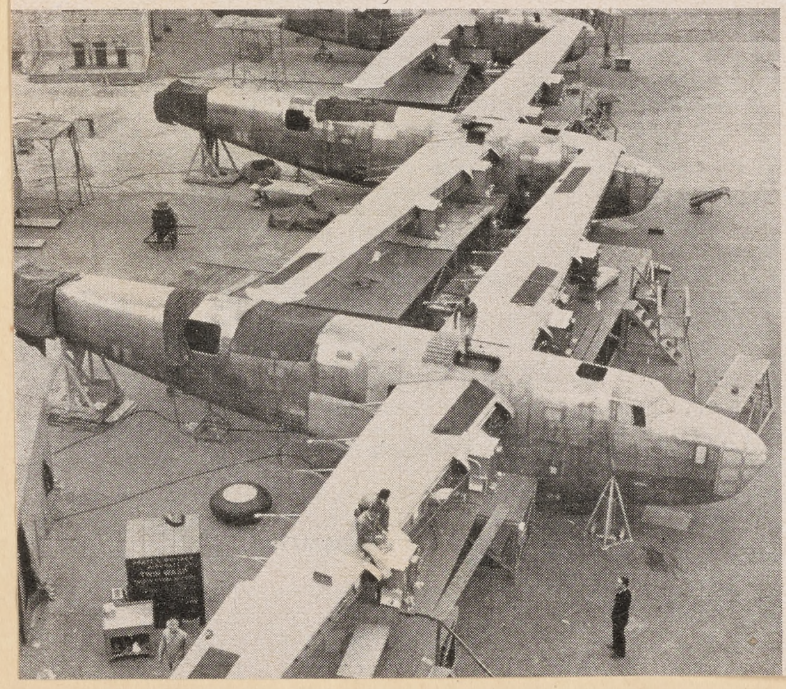
THE NORTH AMERICAN FACTORY which is generally considered to be the nearest approach to the mass production methods of the motor industry. Here, the Harvard, an advance trainer, is the chief type in production.

The final assembly section of the factory, where this was going on, was an immense place. Dozens of DB7's in all stages were on the floor, working steadily towards the vast main doors whence they are wheeled out for test flights. In such a building one loses all sense of normal size; everything is huge, and all departments are true to scale. After walking for miles through a factory it is no surprise to come on a drawing office where literally hundreds of men are at work, and after a time one takes things pretty much for granted. Only now, in retrospect, do I realise how huge that main assembly department was by thinking of the number of DC3's that were going through, and how comparatively little space they occupied; or of what a comparatively small thing, in another part of the factory, one of the main jigs (from memory, the centre-section) of the new DC4 seemed.

Our guide through the Douglas factory was Major V. E. Bertrandias, well known to many people in Australian aviation who met him when he brought the first DC2 and later the first DC3 to this country. As vice-president, and O.C. exports, he is now one of the busiest men in the plant. With purchasing missions from Britain and from Allies, such as Norway, which are fighting on from British soil, in Los Angeles, he was particularly busy when Jack Percival and I were in California, but he met us at the airport, spent a long evening talking about the aviation situation, introducted us to other men in the industry, including Captain Eddie Rickenbacker, America's leading ace of the Great War and now head of Eastern Airlines, and next day gave up his morning to showing us the factory. It was he, also, who introduced us to Donald Douglas, who gave us more than half an hour of his time.

At Lockheed we had no such previous contacts, so it must have been American hospitality, combined with letters of introduction from Mr D. H. Dureau, that induced executives to spend an afternoon entertaining us.

The American newspaper men who came out here on the *Clipper's* Press flight claimed that they had never met more hospitality than in Australia. We could return the compliment by saying that we had never been better treated than in Los Angeles. After Lockheed had provided me with an office and a typewriter for an hour, made special arrangements to send a long cable for me, and provided us with a fine collection of assorted aviation reading — not all about Lockheed —



THE NEW CONSOLIDATED four-engined bomber which has recently been released for export to Britain. A speed of over 300 m.p.h., a range of approximately 3000 miles, and a bomb carrying capacity of approximately 4 tons is claimed.

Aviation Angles

12/19/40

By Dr. Nathaniel F. Silsbee

Beaver College Comptroller, Formerly U. S. Air Service Aircraft Production, and Member Aviation Writers Association.

LONG-RANGE AIR DEFENSE

Last spring when President Roosevelt called for an Air Defense objective of 50,000 airplanes and a productive capacity of 50,000 planes a year, an extremely important problem arose as to the most effective types of aircraft for the defense of the western hemisphere. Major-General H. A. Arnold, then Chief of the Army Air Corps and recently promoted to the General Staff to more effectively represent air power at headquarters, maintained that the only effective method of defense was to employ long-range bombing planes capable of intercepting and disabling enemy fleets up to 1,000 miles from shore, preventing them from ever becoming a menace to America's populous and heavily industrialized seaboard centres on the Atlantic ocean, and more recently, the Pacific, with its heavy proportion of vital military aircraft productions plants.

JOINT ARMY-NAVY BOARD

Early in the summer the joint Army-Navy Board for Western Hemisphere Defense made plans calling for at least 600 four-engined land-based Army bombers in addition to the long-range patrol-bombers used by the Navy. Experinced flying officers of the G.H.Q. Air Force not only felt that this number was wholly inadequate for such an extensive job, but were also fearful that large numbers of the wrong types of planes would be included in our rearmament program, particularly thousands of pursuit planes and short range bombers. These are necessary in European air warfare, and a certain number of them here also, but it was emphasized that for our peculiar problems long-range bombers with terrific hitting power was a prime essential.

EVERYBODY SATISFIED

It is now understood that largely through the persistent advocacy of Major-General Frank M. Andrews of the General Staff and former Chief of the Army Air Corps this point of view has prevailed and some 1,100 long-range bombers are on order and are being turned out as rapidly as possible. The two main types are the famous Boeing B-17 and the new Consolidated B-24. The Navy have also stepped up their orders for their huge patrol-bombers of the PBY (Consolidated) and PBM (Martin) types. In this article we shall take a look at the two Army ships and next week review the main items of interest in connection with the Navy patrol-bombers.

NEW FLYING FORTRESSES

Late in October the new Boeing B-17C four-motored bomber was put through exhaustive flight tests at Wright Field, Dayton, by Army Air Corps experts. This is the fifth model of the "flying fortress," and the tests being satisfactory, production and delivery to our Air Corps and to Great Britain is being speeded up. As a matter of fact practically all of the present output is being released for Britain, and these ships, with their 4,000 mile range, 300 mile speed, altitude above 40,000 feet, huge bomb load, and new tail turret for machine guns, should be of the utmost value to the Royal Air Force, the main lack of which has been long-range bombing planes capable of reaching military objectives in the eastern parts of "greater Germany" and Italy. Lessons learned from the present war are being incorporated in the still newer B-17D, which will be in production by spring, while the experimental work on the B-17E, a further improvement, is well under way. The B-17D, by the way, will be well adapted for high altitude work in that its cabins are to be supercharged in the same way as the Boeing "Stratoliner," so successfully used by TWA in its transcontinental flights, and by Pan-American in its new speed-up service to South America. We still have the feeling, however, that until these huge bombers can be more successfully defended themselves, without the aid of a swarm of fast convoy fighting planes, the name "flying fortress" is somewhat misleading. Each successive model is being stepped-up in this matter, however, and it may be of interest to note that the gigantic Douglas bomber, the B-19, with a range of 7,000 miles, is wholly independent as regards defensive fire-power. In all, some 650 of the B-17C, B-17D, and B-17E types have been ordered.

CONSOLIDATED BOMBER

Re-written

Owing to the fact of the Boeing jobs having been developed in 1937 it is natural that more of these should be ordered than a new experimental type. However, the Consolidated B-24 appears to be a splendid ship and 450 have been contracted for. Great Britain has also placed a sizeable order, and it will be recalled that recently our Air Corps allowed the British to take priority on the first 20 B-24's to come off the line, which will not only help the R. A. F. in their offensive effort, but enable us to gain valuable experience for later developments of the B-24 based on actual performance in the war. Exact performance figures tre not available for release, but the following summary will give an idea of what the new ship will do: Powered by 4 Pratt & Whitney Twin Wasp 1,100 h. p. engines it has a speed in excess of 325 m.p.h., a range of over 3,000 miles, a ceiling of about 36,000 feet and a bomb load that will spell plenty of trouble for an enemy objective. From an aerodynamic point of view it may be of interest to point out that it has twin-rudders (like the Lockheed planes) and employs the new Davis airfoil for wing, which gives greater lift, decreased resistance and allows a higher wing-loading with equal safety—all of which adds up to SPEED! The B-24 also follows the new trend in military and commercial planes (a revival of pre-World War days) in using the tricycle landing gear, making for easier take-offs and landings.

The mere possession of these two long-range bombers serves due notice to all-comers that Uncle Sam means to keep enemy aircraft and fleets where they belong!

Southern Engineer - March 1940

Today's Design—Tomorrow's Plane

By

ROBERT W. AUSTIN, Jr.

THE Europeans are becoming more startled every day at the progress of the American designers and builders of transports. At least, that was the condition before the present war started. Now they are thinking of the bombing plane instead of the transport. This is all the more reason why the United States should continue to develop and build the best aircraft in the world. Although there is not a great demand for passenger service on the Trans-Atlantic route at the present time, it would be very profitable to continue development of the transports, because of the decreased foreign competition.

100 passengers, 300 m.p.h.

It is a little difficult for us to realize the rapidity of advancements now being made in oceanic transportation. Pan American Airways has decided that the present day transport will not withstand the demands to be made of it in the near future. With this in mind, P.A.A. has made the following challenge to eight of aviation's largest airplane manufacturers: an airplane to be designed with accommodations for at least 100 passengers including staterooms, a dining room, a lounge, and dressing rooms. In addition, there must be accommodations for sixteen crew members. The plane must carry complete facilities for storing and preparing food. It should have a payload capacity of 25,000 pounds and be able to fly 5,000 miles in still air at a top speed of 300 miles per hour under this loading. These specifications were sent to the eight firms in the form of an invitation to bid for a contract. The four companies accepting the invitation were Boeing, Sikorsky, Douglas, and Consolidated. During the first four months after the invitations were issued, these companies compiled thousands of sketches and performance charts for Pan American officials. Accompanying this article is an artist's conception of three of the flying ships being considered. Notice first that there are no radical changes in the streamlining of these ships, because the present-day streamlining has reached such high efficiency that it will probably remain as it is for years to come.

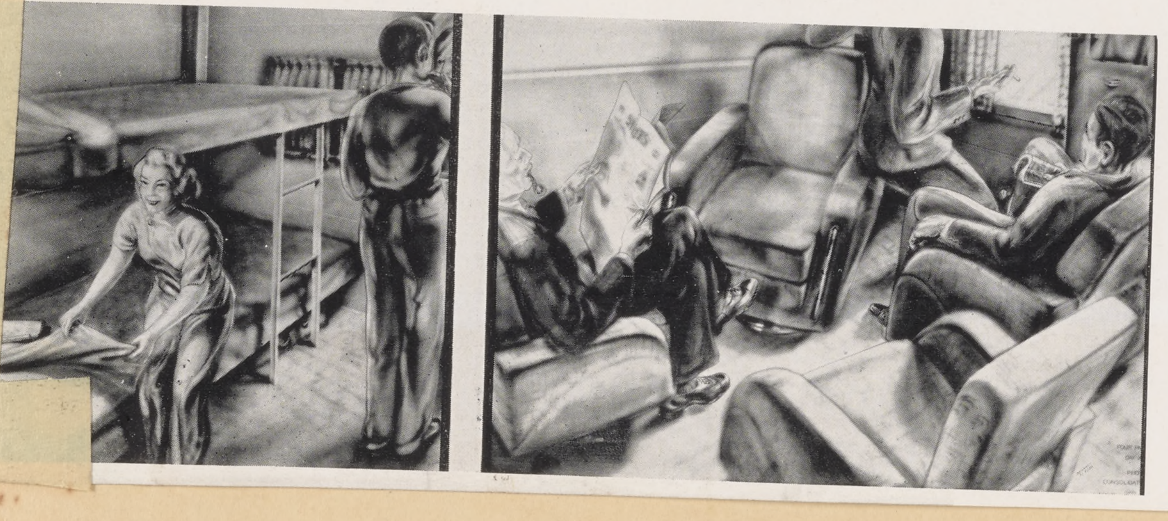
design

The Consolidated ship is the only one in the group with four engines and three passenger decks. The others have six engines and only two passenger decks. All four ships are capable of carrying 100 passengers. They all contain passageways leading to the engines, so that they may be repaired during flight. They also contain a bar, a lounge, a dining room, passenger cabins, dressing rooms, and a galley. All of these ships are designed to fly much higher than life sustaining atmosphere and pressure exist. It will, therefore, be necessary for them to have constant pressure cabins with special ventilating systems that will artificially enrich the air with oxygen.

The Douglas, although we do not have a sketch of it, is possibly the unique ship of the group. It has the same passenger capacity as the other designs, but instead of being a flying boat, it is a land plane. Evidently, the Douglas engineers believe that their airplane will remain an airplane. Possibly they have started a revolutionary idea. The ship is capable of remaining in flight on three of its six engines while the other three are being repaired during the flight. This cuts down to a minimum the possibility of having to make a forced landing on the water. If for any reason it should have to land on the water, the cabin is so tightly sealed that the plane would remain afloat for several days. The only draw-back is, that it could never take-off from the water once it landed.

Contrary to general belief, the larger transports do not require much more space for landing than the small ones. For that reason, there are many fields that could accommodate it such as the newly constructed North Beach Airport

Seats are converted to berths. Luxurious quarters are provided.



Courtesy Consolidated Aircraft Corporation.

Today's Design—Tomorrow's Plane

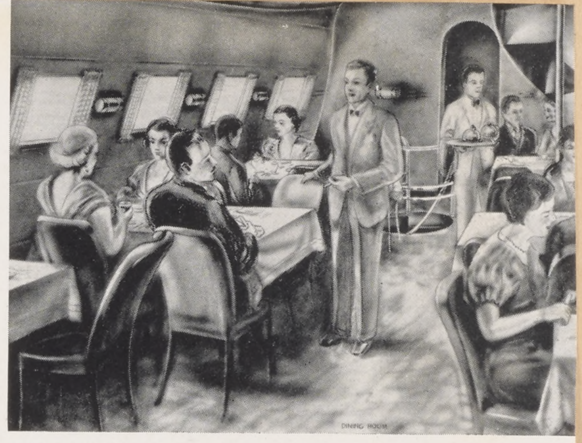
(Continued from page seven)

engine now used. No matter what type of engine is used, the plane must have at least 10,000 horsepower.

The propeller efficiency is a problem that has never been solved completely. A propeller that will absorb all of the horsepower of the engine is still a rarity. As the tip of the propeller approaches 750 miles per hour, which is the approximate speed of sound, it begins to lose its pulling power. The problem for the engineer is to gear the propeller so that the tip speed remains below 750 miles per hour and still absorb all of the power delivered to it.

A material that is light in weight, very strong, and unaffected by salt corrosion, is the material for the hull construction. Duralumin will corrode. Stainless steel is strong, but it is very heavy and hard to work. The desired material might be produced by alloying these two alloys, but that can be determined only through experiment.

The expense of these ships is also an engineering problem. Naturally, the companies will be as economical as possible, but they will never sacrifice quality for economy in an airplane. Each of these ships will cost over $5,000,000 for the first one, with each additional plane costing about $1,500,000.



Courtesy Consolidated Aircraft

"Cosmopolitan Catering"

12 hour trip

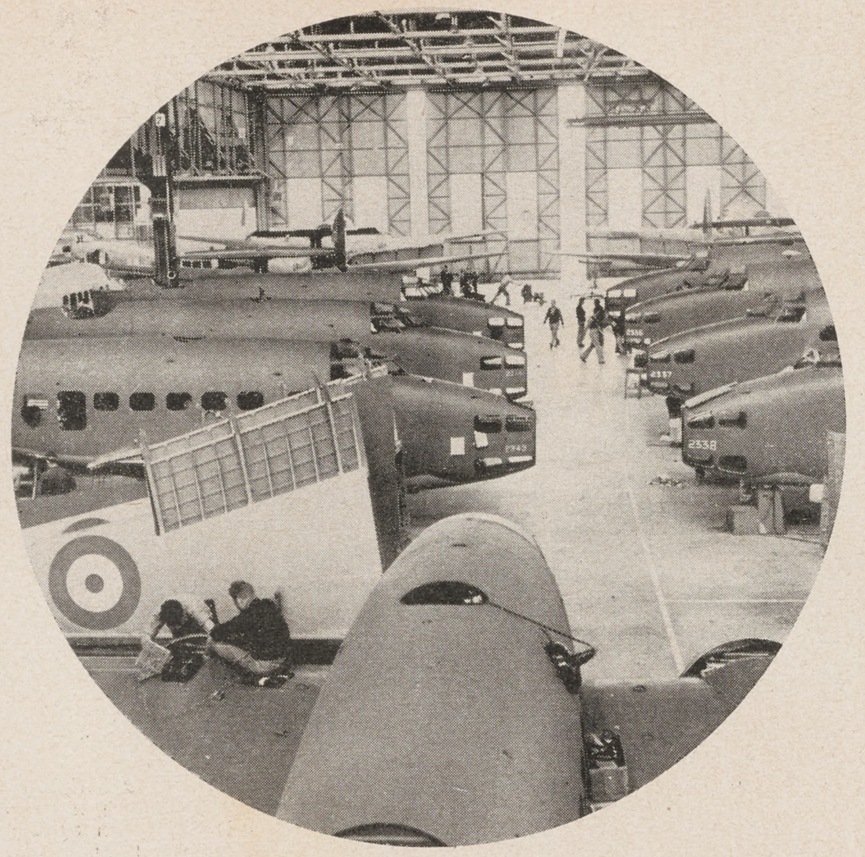
First of all, you will have paid about $450 for the trans-Atlantic round-trip, which will probably take a lot of the thrill out of your experience. But since you have already paid for it you might as well get the most out of it. When you get tired of your stateroom you may go to the gameroom and play pingpong. But this soon becomes boring so you go into the lounge and read, or start a conversation with someone to whom the hostess has introduced you. After your little chat, it will probably be time for one of the two meals that you will be served during each crossing. The food will consist of frozen vegetables and fruit, and one meat, possibly chops or roast. After the meal you will probably visit the bar and then retire to your room for eight hours sleep, as this flight is being made at night. There will be practically no bumping because of the high altitude flying, and the noise will be at a minimum because of the tightly sealed cabin. When you arise in the morning you will find a shower in the dressing room with hot and cold running water. After breakfast you will probably be over Ireland and therefore have something to look at other than a wide expanse of water or a cloud bank. Probably the most confusing thing about the flight will be the time element. Before leaving New York, you were told to advance your watch 25 minutes each hour, and before you leave London you will be told to set your watch back 25 minutes each hour.

The eastward crossing will require but about 12 hours, whereas the westward crossing will require about 13 or 14 hours because the plane will have to buck the prevailing Easterly winds in returning.

And there you have tomorrow's trans-Atlantic plane that is today's design.

Specifications of the *Consolidated* 100-passenger flying boat:

Gross Weight	168,000 lbs.
Wing Span	194 feet
Wing Area	3,450 sq. ft.
Overall height	31 feet
Overall length	102½ feet
Fuel Capacity	8,450 gals.
Payload	25,000 lbs.
High speed at 20,000 feet Altitude	276 MPH
Range at 20,000 feet Altitude (still air)	5,000 miles
Stalling speed at sea level (½ fuel, flaps down, power on)	78 MPH
Service ceiling	30,000 feet
Time to climb to 20,000 feet	34 min.
Rate of climb at sea level	680 ft./min.
B.H.P./R.P.M. S.L. to 25,000 feet (Turbo Supercharged)	2150/2600



the total it can be said that Lockheed is expected to be producing between 200 and 300 planes a month by the end of this year. It can be assumed from the number of employees that the Douglas output will be still higher. Consolidated will

LOCKHEED HUDSON BOMBERS are now coming along at approximately 70 a month. They have given an excellent account of themselves in active service with the R.A.F. Coastal Comcand. The R.A.A.F. have 149 on order, of which approximately 100 have been delivered in Australia.

be producing fewer aircraft because its units are so mucl bigger. Boeing production c DB7's can be guessed at minimum of two or three a da Vultee — which is likely t get a British order for it *Vanguard* fighter — and North rop, reported to be negotiatin to build Bell *Airacudas* unde sub-contract, will be producin relatively small numbers. Nort American has apparent reached the stage at which can turn out advanced trainers as fast as anyo wants them.

main factories, as given by a number of authoritative sources:—

DOUGLAS. — 19,000 employees; 140,000,000 dollar backlog; June production 8,000,000 dollars; main military production DB7 and A20 bombers for Britain.

LOCKHEED. — 12,000 employees; including 2000 in Vega, a subsidiary company; 169,000,000 dollar backlog; main production Hudsons for Britain, with Hudson successor just starting; 4,000,000 dollars expansion under way.

CONSOLIDATED. — 6650 employees; 71,000,000 dollar backlog; main production long range flying boats and bombers for R.A.F.; now doubling facilities.

BOEING. — 7600 employees; 50,000,000 dollar backlog; main production Douglas DB7s under sub-contract for Britain: 377,000 sq. ft. of factory space being added, and facilities more than doubled since last December.

NORTH AMERICAN.—6000 employees; 85,000,000 dollar backlog; been manufacturing 175 planes a month, mainly advanced trainers for Britain.

VULTEE. — 3500 employees; 14,750,000 dollar backlog.

NORTHROP. — 700 employees; 2,500,000 dollar backlog.

This all adds up to a handsome total of production, but you cannot appreciate it fully without taking into account the rapidity of the growth. Douglas, long the mammoth of the industry, had only 6700 employees as recently as 1938. Lockheed had 2400 employees two years ago, when the first British order was received; by next March it and Vega will have a combined labor force of 25,000. North American, Consolidated, Boeing, Vultee and the recently-formed Northrop company could all show still more astonishing growth.

It is extremely difficult to calculate production rates, even if it were advisable, but as a pointer to

Add to these the capacity of the Eastern firr — Curtiss-Wright, which sold hundreds of fighte to France, United Aircraft, Glenn Martin, nc working on a big British order, and such firr as Brewster, Grumman (whose deck fighters a now being used off aerodromes by the R.A.F.) ar Republic (ex-Seversky), and you can see how ir portant the United States is as a supplier.

Engine Bottleneck Diminishing

AT present, the engine bottle-neck remains, b with the new plants built by Allied finar coming into operation it is steadily widening, a even such a conservative authority as Don Douglas, who has consistently deprecated extra gant estimates of the industry's capacity, can its ultimate removal.

There is, however, no immediate prospect getting a considerable supply of liquid-coo engines. Everyone realises that *Merlins* cannot turned out in a few weeks, and when we were America arrangements to build them there had been completed. It is fortunate that the Alliso being built by a concern with the finance, organi tion and production experience of General Mot which can probably boost output faster than a one else could, now that this engine is regar as a finished job.

In any case, although they mean much, numb are not everything, as Donald Douglas emphasi He said that all private reports from Europe agr on the high quality of the American aircraft s plied, and the superiority of their performa over the German, and on the equal superiority the British pilots. Quality, with a reasonable ba ing of quantity, would be the determining fa in the air war, he considered.

This quality in the aircraft is obvious. *Hudson* is too well known here to need comm The Douglas DB7's that we saw in all stages ar

---

superbly finished as the DC2 and DC3, and, given the chance, would do as much flying. Some of the executives to whom we talked wondered if the policy that sets such a standard was correct, pointing to the thousands of man-hours that are going into producing perfection when something less than perfection would do.

But none of them wants to lower the standard, and none could suggest exactly where the line should be drawn, once something less than the best was decided on. Certainly the time, labor and money spent on perfecting the construction of an aeroplane that may have a life of only a few hours, and equipping it in a way that may often be completely unnecessary, could be spent in producing more aeroplanes, but that is simply sacrificing efficiency of the unit for sheer mass.

Early in August it was generally believed in the United States that the Germans had begun to do this. It was widely stated, and apparently on good authority, that many German machines had no blind flying instruments. The story was that only formation leaders had full equipment, and that in instrument-flying conditions the rest simply formated closely on him. But what happens if the fully-equipped machine is shot down, and the others have to pass through cloud to get home, no one could explain.

Production Short-Cuts

ACTUALLY, in the United States, as, we believe, in the British industry, standards are rising, with consequent increases in cost and, even more important in war time, in man-hours per machine. However, to some extent this latter factor is being overcome by production short-cuts, made possible by the large orders of today. Even without improved production methods, the rate goes up on large orders as the labor force learns its job on the type under construction.

One advance in production methods I noticed was in the Douglas factory, where the DB7 fuselages, instead of being built up on one jig, as is still done with transports, are built in several sections — two halves, like a cigar split down the middle, nose and tail.

A great deal of installation work, including control cables, etc., seemed to be done while the two halves of the fuselage were still separate, giving the men plenty of room and natural light to work in. At a given stage in the production line the two halves meet, and later take on the nose and tail.

The final assembly section of the factory, where this was going on, was an immense place. Dozens of DB7's in all stages were on the floor, working steadily towards the vast main doors whence they are wheeled out for test flights. In such a building one loses all sense of normal size; everything is huge, and all departments are true to scale. After walking for miles through a factory it is no surprise to come on a drawing office where literally hundreds of men are at work, and after a time one takes things pretty much for granted. Only now, in retrospect, do I realise how huge that main assembly department was by thinking of the number of DC3's that were going through, and how comparatively little space they occupied; or of what a comparatively small thing, in another part of the factory, one of the main jigs (from memory, the centre-section) of the new DC4 seemed.

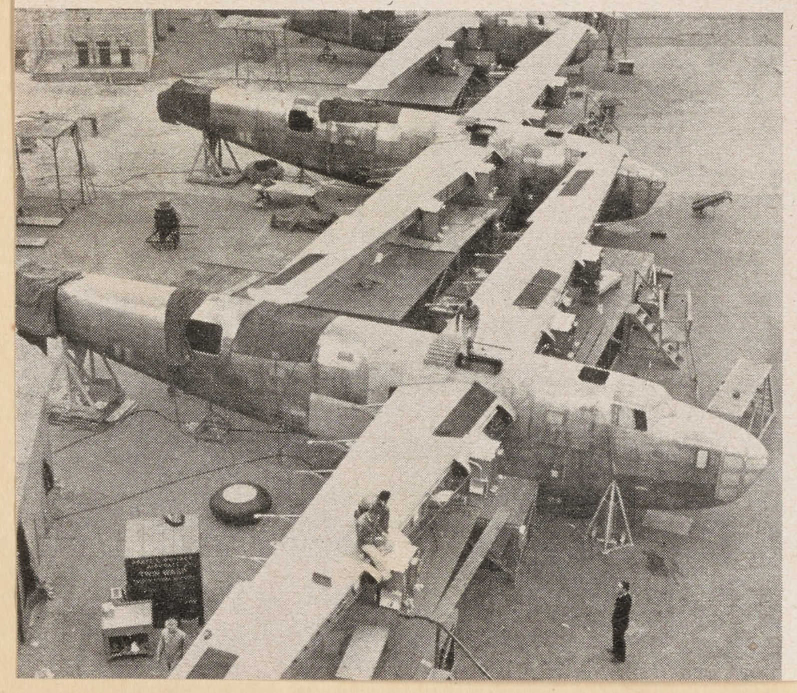
Our guide through the Douglas factory was Major V. E. Bertrandias, well known to many people in Australian aviation who met him when he brought the first DC2 and later the first DC3 to this country. As vice-president, and O.C. exports, he is now one of the busiest men in the plant. With purchasing missions from Britain and from Allies, such as Norway, which are fighting on from British soil, in Los Angeles, he was particularly busy when Jack Percival and I were in California, but he met us at the airport, spent a long evening talking about the aviation situation, introducted us to other men in the industry, including Captain Eddie Rickenbacker, America's leading ace of the Great War and now head of Eastern Airlines, and next day gave up his morning to showing us the factory. It was he, also, who introduced us to Donald Douglas, who gave us more than half an hour of his time.

At Lockheed we had no such previous contacts, so it must have been American hospitality, combined with letters of introduction from Mr D. H. Dureau, that induced executives to spend an afternoon entertaining us.

The American newspaper men who came out here on the *Clipper's* Press flight claimed that they had never met more hospitality than in Australia. We could return the compliment by saying that we had never been better treated than in Los Angeles. After Lockheed had provided me with an office and a typewriter for an hour, made special arrangements to send a long cable for me, and provided us with a fine collection of assorted aviation reading — not all about Lockheed —

THE NORTH AMERICAN FACTORY which is generally considered to be the nearest approach to the mass production methods of the motor industry. Here, the Harvard, an advance trainer, is the chief type in production.

THE NEW CONSOLIDATED four-engined bomber which has recently been released for export to Britain. A speed of over 300 m.p.h., a range of approximately 3000 miles, and a bomb carrying capacity of approximately 4 tons is claimed.



Aviation Angles

12/19/4

By Dr. Nathaniel F. Silsbee

Beaver College Comptroller, Formerly U. S. Air Service Aircraft Production, and Member Aviation Writers Association.

LONG-RANGE AIR DEFENSE

Last spring when President Roosevelt called for an Air Defense objective of 50,000 airplanes and a productive capacity of 50,000 planes a year, an extremely important problem arose as to the most effective types of aircraft for the defense of the western hemisphere. Major-General H. A. Arnold, then Chief of the Army Air Corps and recently promoted to the General Staff to more effectively represent air power at headquarters, maintained that the only effective method of defense was to employ long-range bombing planes capable of intercepting and disabling enemy fleets up to 1,000 miles from shore, preventing them from ever becoming a menace to America's populous and heavily industrialized seaboard centres on the Atlantic ocean, and more recently, the Pacific, with its heavy proportion of vital military aircraft productions plants.

JOINT ARMY-NAVY BOARD

Early in the summer the joint Army-Navy Board for Western Hemisphere Defense made plans calling for at least 600 four-engined land-based Army bombers in addition to the long-range patrol-bombers used by the Navy. Experinced flying officers of the G.H.Q. Air Force not only felt that this number was wholly inadequate for such an extensive job, but were also fearful that large numbers of the wrong types of planes would be included in our rearmament program, particularly thousands of pursuit planes and short range bombers. These are necessary in European air warfare, and a certain number of them here also, but it was emphasized that for our peculiar problems long-range bombers with terrific hitting power was a prime essential.

EVERYBODY SATISFIED

It is now understood that largely through the persistent advocacy of Major-General Frank M. Andrews of the General Staff and former Chief of the Army Air Corps this point of view has prevailed and some 1,100 long-range bombers are on order and are being turned out as rapidly as possible. The two main types are the famous Boeing B-17 and the new Consolidated B-24. The Navy have also stepped up their orders for their huge patrol-bombers of the PBY (Consolidated) and PBM (Martin) types. In this article we shall take a look at the two Army ships and next week review the main items of interest in connection with the Navy patrol-bombers.

NEW FLYING FORTRESSES

Late in October the new Boeing B-17C four-motored bomber was put through exhaustive flight tests at Wright Field, Dayton, by Army Air Corps experts. This is the fifth model of the "flying fortress," and the tests being satisfactory, production and delivery to our Air Corps and to Great Britain is being speeded up. As a matter of fact practically all of the present output is being released for Britain, and these ships, with their 4,000 mile range, 300 mile speed, altitude above 40,000 feet, huge bomb load, and new tail turret for machine guns, should be of the utmost value to the Royal Air Force, the main lack of which has been long-range bombing planes capable of reaching military objectives in the eastern parts of "greater Germany" and Italy. Lessons learned from the present war are being incorporated in the still newer B-17D, which will be in production by spring, while the experimental work on the B-17E, a further improvement, is well under way. The B-17D, by the way, will be well adapted for high altitude work in that its cabins are to be supercharged in the same way as the Boeing "Stratoliner," so successfully used by TWA in its transcontinental flights, and by Pan-American in its new speed-up service to South America. We still have the feeling, however, that until these huge bombers can be more successfully defended themselves, without the aid of a swarm of fast convoy fighting planes, the name "flying fortress" is somewhat misleading. Each successive model is being stepped-up in this matter, however, and it may be of interest to note that the gigantic Douglas bomber, the B-19, with a range of 7,000 miles, is wholly independent as regards defensive fire-power. In all, some 650 of the B-17C, B-17D, and B-17E types have been ordered.

CONSOLIDATED BOMBER

Re-written

Owing to the fact of the Boeing jobs having been developed in 1937 it is natural that more of these should be ordered than a new experimental type. However, the Consolidated B-24 appears to be a splendid ship and 450 have been contracted for. ~~Great Britain has also placed a sizeable~~ order, and ~~it will be recalled~~ that recently our Air Corps allowed the British to take priority on the first 20 B-24's to come off the line, which will not only help the R. A. F. in their offensive effort, but enable us to gain valuable experience for later developments of the B-24 based on actual performance in the war. Exact performance figures tre not available for release, but the following summary will give an idea of what the new ship will do: Powered by 4 Pratt & Whitney Twin Wasp 1,100 h. p. engines it has a speed in excess of 325 m.p.h., a range of over 3,000 miles, a ceiling of about 36,000 feet and a bomb load that will spell plenty of trouble for an enemy objective. From an aerodynamic point of view it may be of interest to point out that it has twin-rudders (like the Lockheed planes) and employs the new Davis airfoil for wing, which gives greater lift, decreased resistance and allows a higher wing-loading with equal safety—all of which adds up to SPEED! The B-24 also follows the new trend in military and commercial planes (a revival of pre-World War days) in using the tricycle landing gear, making for easier take-offs and landings.

The mere possession of these two long-range bombers serves due notice to all-comers that Uncle Sam means to keep enemy aircraft and fleets where they belong!

Southern Engineer - March 1940

Today's Design—Tomorrow's Plane

By

ROBERT W. AUSTIN, Jr.

THE Europeans are becoming more startled every day at the progress of the American designers and builders of transports. At least, that was the condition before the present war started. Now they are thinking of the bombing plane instead of the transport. This is all the more reason why the United States should continue to develop and build the best aircraft in the world. Although there is not a great demand for passenger service on the Trans-Atlantic route at the present time, it would be very profitable to continue development of the transports, because of the decreased foreign competition.

100 passengers, 300 m.p.h.

It is a little difficult for us to realize the rapidity of advancements now being made in oceanic transportation. Pan American Airways has decided that the present day transport will not withstand the demands to be made of it in the near future. With this in mind, P.A.A. has made the following challenge to eight of aviation's largest airplane manufacturers: an airplane to be designed with accommodations for at least 100 passengers including staterooms, a dining room, a lounge, and dressing rooms. In addition, there must be accommodations for sixteen crew members. The plane must carry complete facilities for storing and preparing food. It should have a payload capacity of 25,000 pounds and be able to fly 5,000 miles in still air at a top speed of 300 miles per hour under this loading. These specifications were sent to the eight firms in the form of an invitation to bid for a contract. The four companies accepting the invitation were Boeing, Sikorsky, Douglas, and Consolidated. During the first four months after the invitations were issued, these companies compiled thousands of sketches and performance charts for Pan American officials. Accompanying this article is an artist's conception of three of the flying ships being considered. Notice first that there are no radical changes in the streamlining of these ships, because the present-day streamlining has reached such high efficiency that it will probably remain as it is for years to come.

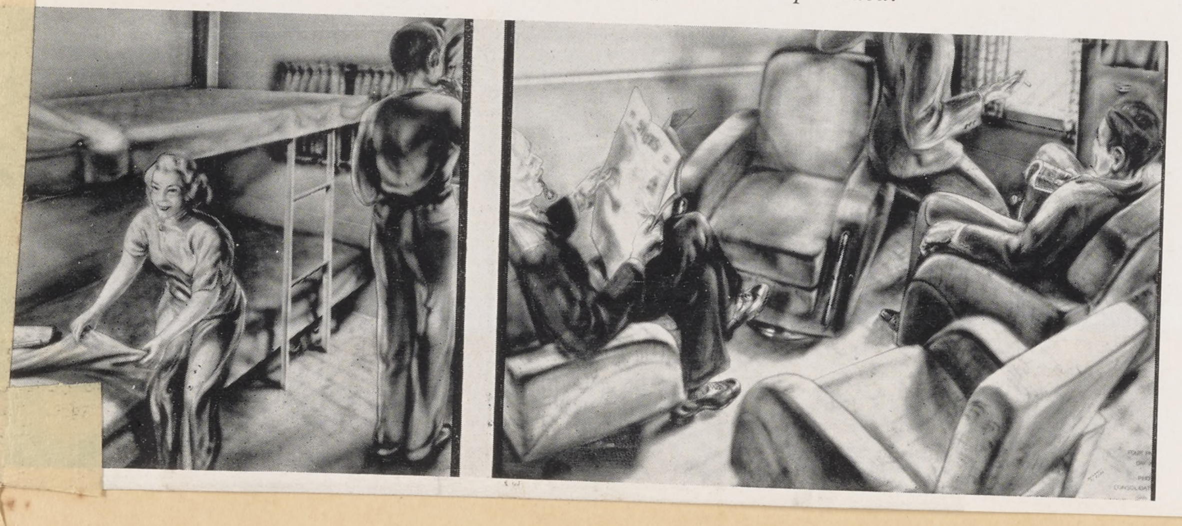
design

The Consolidated ship is the only one in the group with four engines and three passenger decks. The others have six engines and only two passenger decks. All four ships are capable of carrying 100 passengers. They all contain passageways leading to the engines, so that they may be repaired during flight. They also contain a bar, a lounge, a dining room, passenger cabins, dressing rooms, and a galley. All of these ships are designed to fly much higher than life sustaining atmosphere and pressure exist. It will, therefore, he necessary for them to have constant pressure cabins with special ventilating systems that will artificially enrich the air with oxygen.

The Douglas, although we do not have a sketch of it, is possibly the unique ship of the group. It has the same passenger capacity as the other designs, but instead of being a flying boat, it is a land plane. Evidently, the Douglas engineers believe that their airplane will remain an airplane. Possibly they have started a revolutionary idea. The ship is capable of remaining in flight on three of its six engines while the other three are being repaired during the flight. This cuts down to a minimum the possibility of having to make a forced landing on the water. If for any reason it should have to land on the water, the cabin is so tightly sealed that the plane would remain afloat for several days. The only draw-back is, that it could never take-off from the water once it landed.

Contrary to general belief, the larger transports do not require much more space for landing than the small ones. For that reason, there are many fields that could accommodate it such as the newly constructed North Beach Airport

Seats are converted to berths. Luxurious quarters are provided.



Courtesy Consolidated Aircraft Corporation.

Today's Design—Tomorrow's Plane

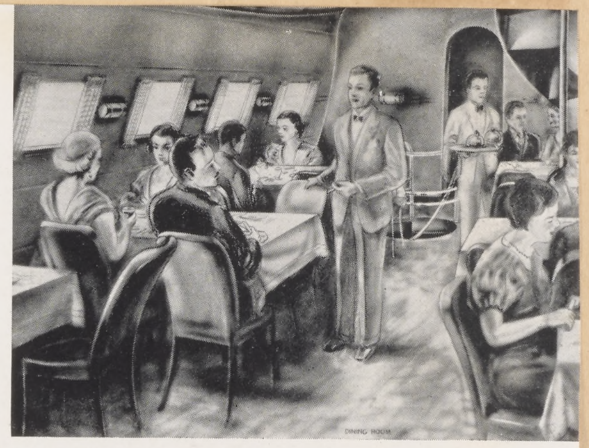
(*Continued from page seven*)

engine now used. No matter what type of engine is used, the plane must have at least 10,000 horsepower.

The propeller efficiency is a problem that has never been solved completely. A propeller that will absorb all of the horsepower of the engine is still a rarity. As the tip of the propeller approaches 750 miles per hour, which is the approximate speed of sound, it begins to lose its pulling power. The problem for the engineer is to gear the propeller so that the tip speed remains below 750 miles per hour and still absorb all of the power delivered to it.

A material that is light in weight, very strong, and unaffected by salt corrosion, is the material for the hull construction. Duralumin will corrode. Stainless steel is strong, but it is very heavy and hard to work. The desired material might be produced by alloying these two alloys, but that can be determined only through experiment.

The expense of these ships is also an engineering problem. Naturally, the companies will be as economical as possible, but they will never sacrifice quality for economy in an airplane. Each of these ships will cost over $5,000,000 for the first one, with each additional plane costing about $1,500,000.



Courtesy Consolidated Aircraft

"Cosmopolitan Catering"

12 hour trip

First of all, you will have paid about $450 for the trans-Atlantic round-trip, which will probably take a lot of the thrill out of your experience. But since you have already paid for it you might as well get the most out of it. When you get tired of your stateroom you may go to the gameroom and play pingpong. But this soon becomes boring so you go into the lounge and read, or start a conversation with someone to whom the hostess has introduced you. After your little chat, it will probably be time for one of the two meals that you will be served during each crossing. The food will consist of frozen vegetables and fruit, and one meat, possibly chops or roast. After the meal you will probably visit the bar and then retire to your room for eight hours sleep, as this flight is being made at night. There will be practically no bumping because of the high altitude flying, and the noise will be at a minimum because of the tightly sealed cabin. When you arise in the morning you will find a shower in the dressing room with hot and cold running water. After breakfast you will probably be over Ireland and therefore have something to look at other than a wide expanse of water or a cloud bank. Probably the most confusing thing about the flight will be the time element. Before leaving New York, you were told to advance your watch 25 minutes each hour, and before you leave London you will be told to set your watch back 25 minutes each hour.

The eastward crossing will require but about 12 hours, whereas the westward crossing will require about 13 or 14 hours because the plane will have to buck the prevailing Easterly winds in returning.

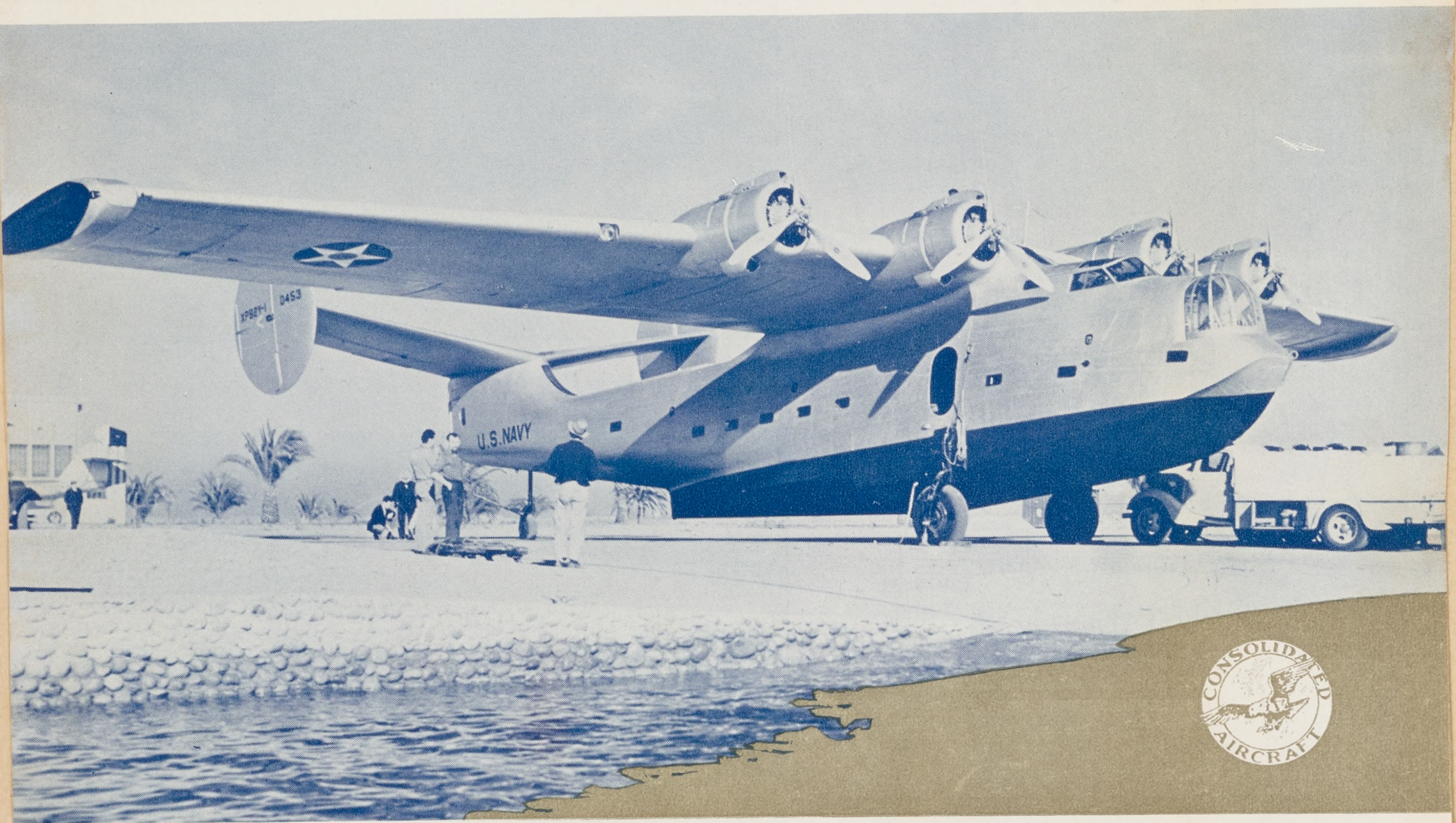
And there you have tomorrow's trans-Atlantic plane that is today's design.

Specifications of the *Consolidated* 100-passenger flying boat:

Gross Weight	168,000 lbs.
Wing Span	194 feet
Wing Area	3,450 sq. ft.
Overall height	31 feet
Overall length	102½ feet
Fuel Capacity	8,450 gals.
Payload	25,000 lbs.
High speed at 20,000 feet Altitude	276 MPH
Range at 20,000 feet Altitude (still air)	5,000 miles
Stalling speed at sea level (½ fuel, flaps down, power on)	78 MPH
Service ceiling	30,000 feet
Time to climb to 20,000 feet	34 min.
Rate of climb at sea level	680 ft./min.
B.H.P./R.P.M. S.L. to 25,000 feet (Turbo Supercharged)	2150/2600

Consolidated—Biggest Builder of Flying Boats

By CHARLES O. HERB



THE Consolidated Aircraft Corporation, San Diego, Calif., is famous for its pioneer work in the development of long-range flying boats. Recently it produced the world's largest amphibian. Mighty planes of the United States Navy—four-engined bombers—as well as the Navy's fleet of more than 200 twin-engined patrol bombers (PBY) have also been built by Consolidated. In the commercial field, the concern made a noteworthy contribution to aviation by the construction, in 1939, of a fast, long-range flying boat capable of carrying fifty-two passengers, which is propelled by two Wright engines of 2000 H.P. each.

The latest Consolidated development is a bombardment airplane for the United States Army Air Corps, which is driven by four radial air-cooled engines of 1200 H.P. each that give it a speed of over 300 miles an hour. Thus large land planes have been added to the line of flying boats made by the concern, and it is now engaged on important contracts for supplying military planes to the British and French air forces.

Vast changes have occurred in aircraft building during the seventeen years that have passed since the founding of this concern. The airplanes of those days, constructed in large part of wood and fabric, have now been superseded by planes in which the only wood is the top of the navigator's table. This is made of wood solely to permit the use of thumb-tacks for holding down maps. The fabric covering on modern planes is now confined almost entirely to the movable control surfaces.

Five years ago, the concern moved from its Buffalo, N. Y., plant to San Diego, where buildings had been erected and equipped to provide advanced manufacturing facilities. With the completion of current factory expansion, Consolidated will have 1,910,000 square feet of covered and uncovered manufacturing space. Yard areas paved with asphaltic concrete can be used virtually the entire year for final assembly operations, because of the mild climate. The hulls are assembled indoors in a department, the final assembly line of which is seen in the illustration on page 189. Typical manufacturing operations in this aircraft-building plant, especially in the machine shop, are described here.

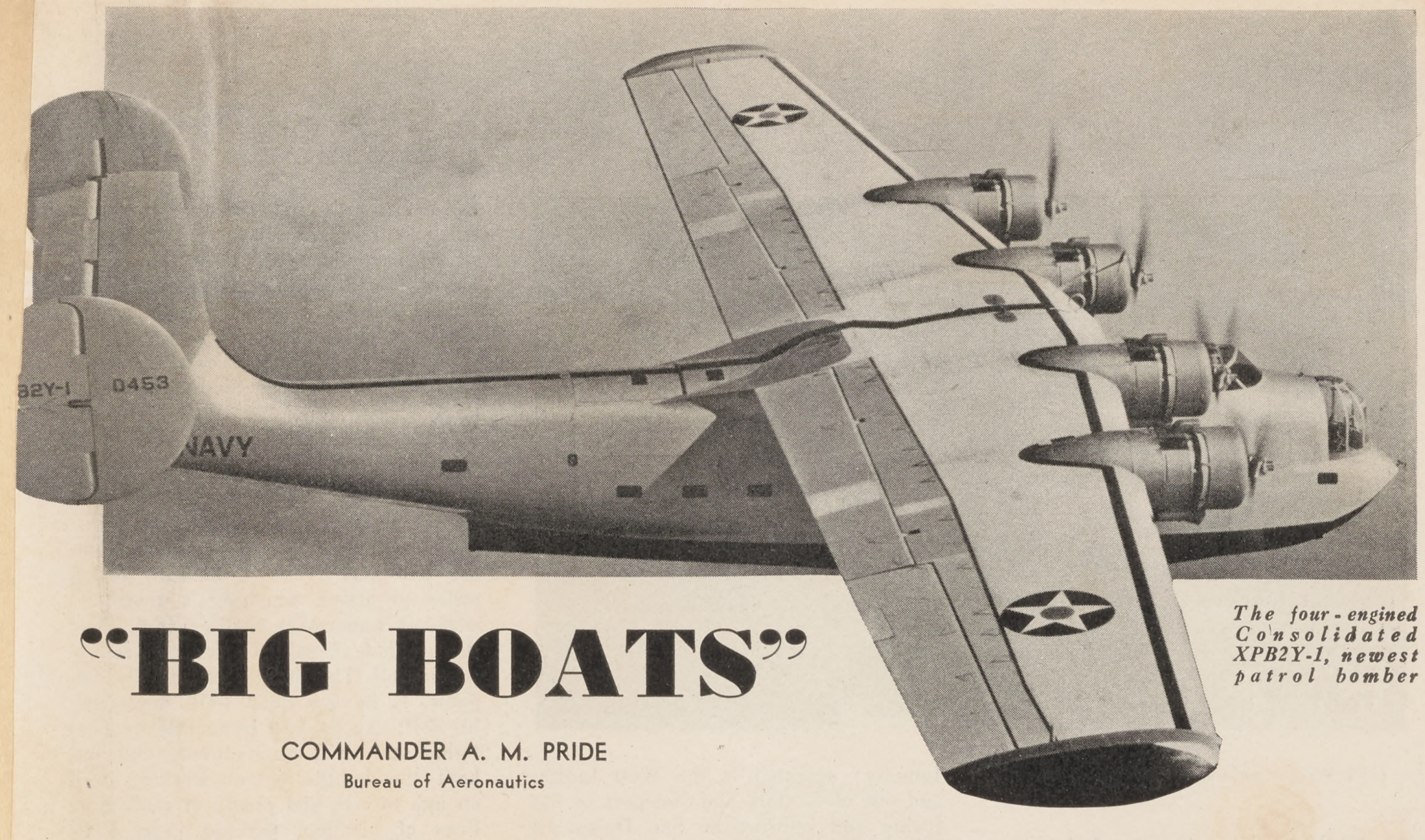
In Fig. 1 is shown a Cincinnati centerless grinding machine being employed for the external finishing of chromium-molybdenum tubes for the beaching gear for the flying boats. These tubes are 3 1/2 inches outside diameter by 18 inches long. They must be of the required diameter, round, and straight within close limits. The same machine is used for grinding a large variety of other work, including bronze bushings 3 1/2 inches outside diameter by 3 inches long, and parts of smaller diameter.

The application of a Murchey threading machine for cutting threads of 7/16 inch diameter, fourteen per inch, American Standard coarse thread series, to a length of 5 1/2 inches, is illustrated in Fig. 2. The work-piece is a special aluminum-alloy stud, 6 inches in length. One end is held between jaws on the carriage, and the part is threaded as the carriage advances the other end through the chasers of the die-head on the headstock. The movement of the carriage is controlled by a lead-screw. This machine has a capacity for cutting, on a production basis, threads from 1/4 inch to 1 1/2 inches in diameter to the Class 3 fit demanded for aircraft parts.

Another threading operation which consists of cutting a No. 10 thread, thirty-two per inch, American Standard fine series, on a chromium-molybdenum-steel bolt is shown in Fig. 3. This operation is performed on a machine built by the Eastern Machine Screw Corporation. The bolt head is of rectangular shape, about 3/4 inch wide by 1 inch long, and of the same thickness as the bolt diameter. The bolt shank extends for a length of 3/4 inch. The rectangular head is held in the slotted end of a bar mounted in the tailstock chuck, the fit between the walls of the slot and the work being tight enough to grip the piece solidly. Threads from No. 4 up to 1/2 inch are cut on this machine.

Sheets of aluminum alloy are scarfed along the edges to the required taper by the Cincinnati milling machine illustrated in Fig. 4, which is equipped with a work-holding fixture that can be tilted to various degrees by merely adjusting the convex bottom surface of the fixture table backward or forward along the concave top of the fixture base. The machine is fitted with a special cutter-head of combined welded and cast construction. The cutter is 4 1/2 inches in diameter by 12 inches long, and is made with teeth of an extremely steep helix, having a generous amount of front rake and clearance. With this design, thin shearing cuts are taken

U.S. NAVY
U.S. NAVY
U.S. NAVY
U.S. NAVY
9-P-7
S. NAVY



The four-engined Consolidated XPB2Y-1, newest patrol bomber

"BIG BOATS"

COMMANDER A. M. PRIDE

Bureau of Aeronautics

● In the early days of naval aviation there were F-boats, H-boats and "Big Boats." F-boats were little frail flying boats with Curtiss OX engines; H-boats were larger, had a Liberty engine and were the ultimate vehicles for most of our World War crop of Naval Aviators. But for the favored and the skillful, there were the two-engined "Big Boats"—H-12's with the long flat-bottomed tails; the handy H-16's with their multiplicity of cables and struts, and their counterparts, the F5L's. Only a few H-12's were built, but a great many H-16's and F5L's went into service both here and abroad and for several years after the War they comprised the principal equipment of the scouting air squadrons attached to the Fleet.

As today, the "Big Boats" went with the Fleet into its problem areas and back to the home ports between major problems. The 60-hour periods between overhauls of the Libertys were no help in keeping up with the battleships and many were the engines which had to be changed while planes were secured to the fan-tail of a mine-sweep or beached on a sheltered strand. Even so, the cruises went ahead, year after year, and by the time most of the Libertys had been used up and every hard landing was smashing in the bottom of a hull which had dried out in too-long storage, it was realized that something had to be done to carry on the work of the large seaplane after the last F5L had done its service.

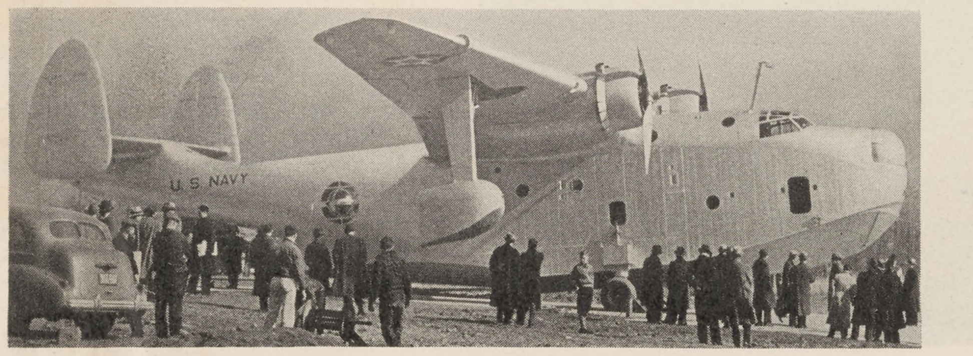
COMDR. A. M. PRIDE: Enrolled in Naval Reserve from civilian life (1917). Aviation Assignments—England and France (1918); Chatham Air Station and Carlstrom Field, Arcadia (1919-'20); USS Arizona, Hampton Roads Air Station, Mitchell Field (1920-'21); USS Langley (1921-'24); postgraduate instruction in aeronautical engineering at Naval Academy and MIT (1924-'25); USS Saratoga and Lexington (1926-'29); Hampton Roads Naval Air Station (1929-'32); VF Squadron 3-B aboard USS Langley (1932-'34); In charge Flight Test Section, Anacostia Naval Air Station (1932-'36); Bureau of Aeronautics (1936-'37); Air Officer, USS Wright (1937-'38); Staff, Patrol Wing One (1938-'39); Aeronautical Board, Bureau of Aeronautics (June 1939 to date).

New construction involved features of metal structures and radial air-cooled engines, but the old angular hull lines and sponsons were retained. Wings of the new boats advanced from the multiple bay trusses, used thicker and more efficient sections and improved the cleanliness of the whole plane. The absence of the "Dutch landscape" effect provided on the top of the hulls by an assortment of windmills to drive various accessories was not regretted.

From the metal counterparts of H-16's and F5L's, the type passed through the biplane stages common to other types of the period, but with little improvement, except such as might be incident to improved power plants. Then came the Hall PH-1 with no gasoline in the hull, no sponsons and a pay-load to gross weight ratio which made its predecessors out-of-date. This product appeared at about the time Martin and Consolidated planes were making it look as though the biplane, as a patrol plane type, would soon be gone. It was not long before the Consolidated PY Series were edging into the picture to the exclusion of everything else. This family abandoned the lower wings, used cantilever wings and retracting wing-tip floats, and brought refinements exemplified by the various versions of the PBY.

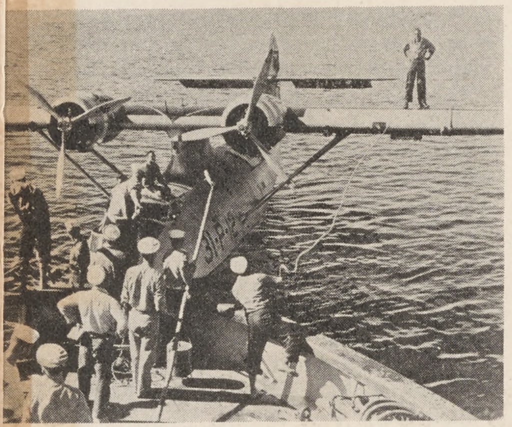
The "B" (for "bomber") was included with the "P" and the "Y" while the first of the current models was undergoing trials and it became apparent that this craft could do some effective bombing if such were required. Successive production schedules have placed in service the PBY-1, -2, -3 and -4, and the XPBY-5

The Martin XPBM-1 patrol bomber, a twin-engined, gull wing monoplane



Aero Digest

Fueling the flying boats from a fuel truck, and from a tender (below)



proficient culinary experts. Each plane has a two-burner electric stove and each plane crew seems to include at least one enthusiast who delights in operating it.

When landings have to be made, the difficulties are of seamanship rather than airmanship. Taxying into the wind is easy if the chop does not drench the windshield, obscure vision and give the pilots a shower. Taxying across the wind is something else again, and if the cross-wind is strong it frequently requires fully throttling one motor, while the other is wide open.

If a buoy is to be made, one of the crew has to "take it" from the nose of the boat with a boat hook. He takes a turn with a light line as soon as he can, snubbing the buoy up close to the plane and then secures the riding pendant and "preventer." Despite much ingenuity, the perfect mooring arrangement for flying boats has not yet been devised and the wire cable and fittings with which the planes are equipped are paralleled with slack lines to prevent the plane from drifting down on its leeward neighbor if the riding pendant fails.

When the planes have been secured at their buoys, with covers on the cockpit enclosures and engines, and the watch stationed on board, the boat from the tender takes the crew to the ship.

Take-off Technique

Take-off technique in "big-boats" has changed with the years and with increased horsepower and improved hull lines. Thanks to extensive model basin experiments, and take-off trim investigations by the NACA, as well as plenty of experimenting by the service test and squadron pilots, it has been well established that the modern "big boats" do best when they have their control adjustments set at a predetermined point according to the position of the center of gravity and are then "flown" out of the water, with no violent "rocking." It used to be that a sharp "pull-back" was the customary maneuver to "unstick," but this seems to defeat its purpose as often as it helps. While judicious "pull-back" can still make a doubtful take-off certain, a similar movement at the wrong moment can ruin the chances of getting off.

Landing technique hasn't changed much except for a greater emphasis on "power-on" landings. The idea is to get down to the low speed while maintaining the plane in its best attitude for striking the water. "Power-on" is the safest way to land on a glassy surface, through a fog, or at night and much practice to perfect the technique is required of each pilot ordered to flying boats.

Handling flying boats in the air presents nothing peculiar which is not experienced in other types of similar size.

Communications, internal and external, are necessarily elaborate due to separation of stations through the plane and because of development of the flying-boat's potentialities as a source of information to other fleet units. Interphones serve for internal communications and headphones are worn habitually by all hands on watch.

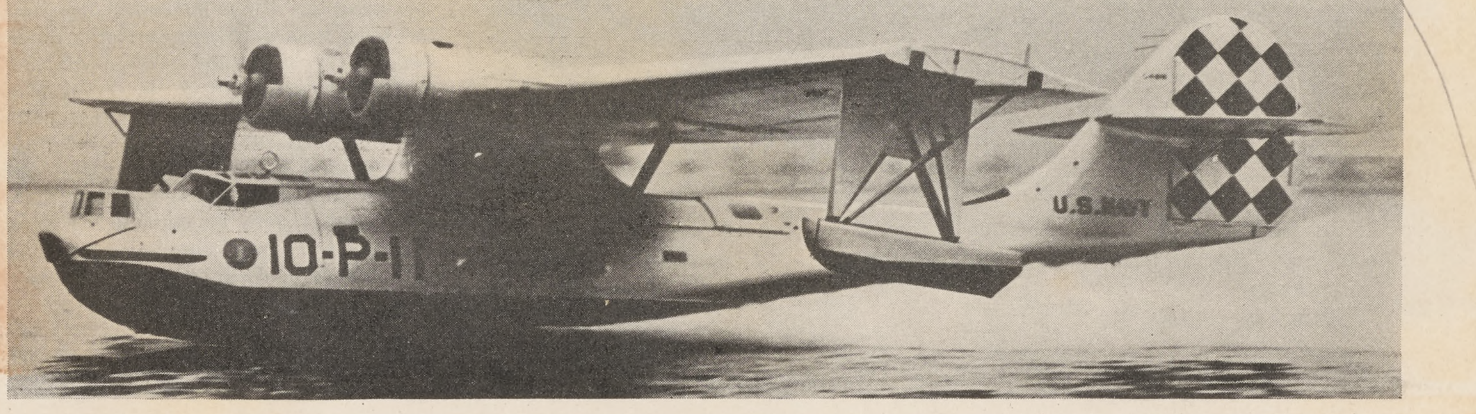
As the plane is seldom operating independently, at least two, and sometimes more, external communications channels must be maintained. This calls for an elaboration of radio equipment found in no other service type. In common with surface vessel practice, distress frequencies are guarded, as are weather and military frequencies. In addition, radio-bearings must be obtained whenever available or required by the pilot or navigator.

As suggested previously, it is customary to turn over straight-away piloting to the automatic pilot and relieve the human pilots of as much of that work as possible. This plan has a real military value in that it enables the pilots to observe more of the ocean and air above it than if they had to give almost exclusive attention to steering the course, and flying the plane. And when it is considered that the most important reason for having "big-boats" is to have something to take pairs of eyes to where they can scan vast areas of the sea and the spaces above the sea, it is realized that these eyes must have little else to do.

It is difficult to predict where the increasing demands on the "big boat" will lead design. The tendency in "big boat" characteristics is toward 4-engined planes or toward increased performance in twin-engined types using the higher powered engines now coming into the picture. Consolidated has received a Navy contract for some of the 4-engined type. More endurance, and better living accommodations, with increased military loads, point to increasing sizes, but operational difficulties react against increasing size and weight. A large plane over a given area of the sea is not, necessarily, any more effective as an observation post than is a smaller plane. Furthermore, if the small plane

(Continued on page 164)

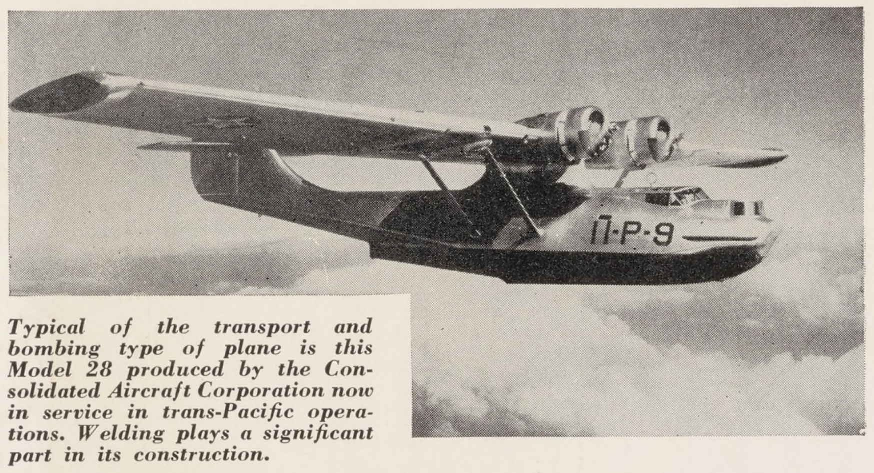
Consolidated PBY-1 patrol bomber "on the step" during its take-off run



can get there as quickly, and remain as long, it may be at an advantage in that the facilities which made it and maintain it and can make and maintain more units. However, the 250 or more PBY's now in service will be used for some time, and "big boat" operation will be the same, fundamentally, as it was with the H-16's—primarily scouting, and when opportunity dictates, bombing.

The large plane is more effective than its smaller counterpart if it carries more bombs to the same point, but, again, it is a more prominent and, frequently, less maneuverable target, and more small units might furnish a better set-up. New designs seem to indicate larger units, though, and the only safe prediction seems to be that, at least, "big boats" will remain "big" in the eyes of the pilots of other naval types, and that they are here to stay.

Welding Problems in Aviation



Typical of the transport and bombing type of plane is this Model 28 produced by the Consolidated Aircraft Corporation now in service in trans-Pacific operations. Welding plays a significant part in its construction.

ALL welding fixtures are made oversize and allowances are made for the shrinkage to be expected. Sometimes the design of the work itself brings about a condition in which both the expansion and contraction, plus the shrinkage, bring about trouble with the welding operation and results. There must be allowance for expansion, contraction and shrinkage, or some part of the weld will suffer.

A simple and excellent example of this is shown in Fig. 1. Here it was desired to run a tube through a boxlike structure of considerable stiffness (with the flanges, as well as the area of the bottom, contributing to this stiffness) and to weld around the point of passage of the tube through the box. Due to the stiffness of the box around the weld, the expansion forces the metal in the area surrounding the weld to be compressed. The outer areas remain cool and resist this expansion with their full strength. In the areas between, which are progressively cooler toward the outside, the force of expansion acts upon the metal in what amounts to cold working. Here the crystal structure of the metal is crushed and compacted together. Then, as the immediate area of the weld cools, it contracts more than it expanded, pulling with great strength upon the very structure it has just compressed, also pulling forward and back around the weld. Being restricted in contraction as it was in expansion, and with no allowance for the added shrinkage possible, all it can

From Reports of The Consolidated Aircraft Corporation, San Diego, California

Oct. 1940

(over)

is necessary after the normalizing. To avoid much of this the welders tack weld re-enforcing pieces which are cut loose after the heat treatment.

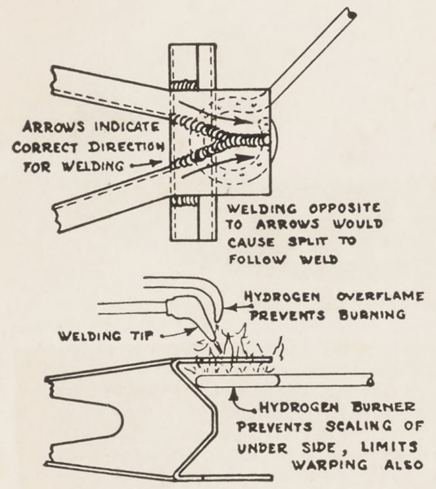

ARROWS INDICATE CORRECT DIRECTION FOR WELDING
WELDING OPPOSITE TO ARROWS WOULD CAUSE SPLIT TO FOLLOW WELD
HYDROGEN OVERFLAME PREVENTS BURNING
WELDING TIP
HYDROGEN BURNER PREVENTS SCALING OF UNDER SIDE, LIMITS WARPING ALSO

FIG. 2

Another phase of welding in which normalizing plays a large part is in the welding of large or complex assemblies in which it is desired to hold the work to close finish dimensions for subsequent machining. If the entire assembly is welded up immediately as a single unit, the strains set up and the interaction of them during the normalizing may easily warp the structure all out of shape. To avoid this the assembly is broken down into sub-assemblies in which the welding becomes more or less self-contained. Then these subassemblies are normalized after welding to remove the strains. Allowances are made in welding to allow for fitting the subassemblies together and they are straightened in themselves if found out of alignment. Then in the final assembly of the sub-assemblies into the one whole structure, only simple strains can be set up, rather than the danger of compounded strains and the likelihood of the structure being warped beyond recovery is averted. Fig. 3 indicates two simple shrinkage or warping effects which can be compounded into a lot of trouble in an intricate structure.

(Continued on page 96)

Hydrogen Protection

While most of the welding is done with the oxygen-acetylene flame, hydrogen is likewise brought into play with great benefit. Hydrogen is used for the welding of aluminium because it smothers the area surrounding the area of the weld with hydrogen to the exclusion of oxygen and prevents the aluminium from oxidizing. Two oxidized aluminium surfaces will not weld well even with the application of liberal amounts of flux. Hydrogen too, can be called to good turn simultaneously as a pre-heater and to prevent the formation of scale on thin steel pieces. While it actually heats of course, it seems to have the property of cooling, or at least of spreading the heat from a weld so that distortion is not so apt to occur. A simple hydrogen burner of copper tubing shaped to fit the work and used on the back side of a thin steel sheet being welded, largely prevents the formation of scale. See Fig. 2.

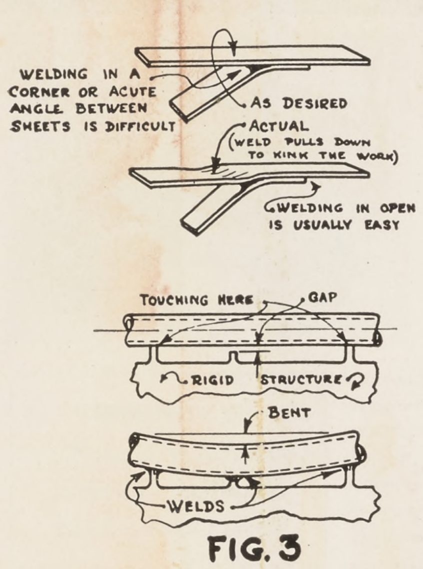

WELDING IN A CORNER OR ACUTE ANGLE BETWEEN SHEETS IS DIFFICULT
AS DESIRED
ACTUAL (WELD PULLS DOWN TO KINK THE WORK)
WELDING IN OPEN IS USUALLY EASY
TOUCHING HERE
GAP
RIGID STRUCTURE
BENT
WELDS

FIG. 3

A hydrogen burner placed above the oxy-acetylene torch and directing a flow of hydrogen down on the weld area helps also on the top side of the weld. Complex welds with sheet as thin as .035 can be accomplished by an airplane welder with comparative ease through the application of this principle.

If the welding could be made to take place over the entire line of the weld at one time, it is probable that many of the problems associated with welding would be eliminated. But, since it is necessary for the welding to progress along as a concentrated cone of heat from one end of the weld to the other, difficulties are multiplied. The direction of the progress of the weld has much to do with its successful completion. One direction will work perfectly, the reverse will split the work.

Welding in the trough of an acute angle is difficult, because the weld puddle should be in the very bottom and this is where the most heat should be concentrated but actually the hot flame cone is always closer to the adjacent walls. The result is that the bottom of the weld is apt to be not fully molten, the sides burned or melted away.

Welding in a confined area such as a pocket or inside a tube is another condition or predicament hard for the welder to cope with to the full extent of his skill. Here the torch tip becomes excessively heated. Water-cooled welding torch tips have been rigged up with gratifying results.

Flight 7/18/40

THE MYSTERY AEROFOIL

An American Invention

I HAVE before me as I write an article entitled " Mystery Airfoil "; it is the story of the Davis aerofoil and its inventor, David R. Davis.

All readers of *Flight* will readily recall the phenomenal Consolidated 31 flying-boat with its Davis wing and, more recently, the B-24 4-engined bomber of the same make. Until I read the story of the Davis foil I did not fully appreciate the fact that it was destined to go down in history as one of the epic inventions of our time with the most far-reaching effect on the design of aircraft.

Here, indeed, is an enthralling and inspiring story: " A curve, he perceived, was not a dead geometric figure. IT WAS A LIVING, MECHANICAL, OPERATING THING. On the basis of this, he could not but depart from what now seemed an archaic process of obtaining the most efficient curve for an airplane wing—the so-called ' cut and try ' methods." Again, " A curve, he saw, was the product of mechanical action—rotation at infinite speed. ' A circle,' he said, ' is not an inert object. It is something going around—a radius arm (or lever arm) rotating about a centre.'

" Having stumbled on this hypothesis, he discovered that the most efficient mechanical action to produce lift would result from the proper relation between the rotational speed of the radius arm and the translational velocity of the point about which the radius arm rotates.

" Two factors must be borne in mind . . . one is rotation—MOVEMENT of the radius arm around the centre of a circle. The other is translation—movement of the centre itself.

" Mark a dot on a piece of paper, designating it as the centre of a circle. Place the point of a pencil on that dot, then lay the pencil down to form a radius, or lever arm. Now turn the pencil clockwise and, at the same time, move the point in a straight line to the left (thus indicating movement of the circle's centre by the latter motion). The curve formed by the top of the pencil as result of this simultaneous action is fundamentally part of a Davis airfoil profile—the product of two *steady movements*.

" Steadiness is important. ' If you rotate a flywheel steadily it takes less effort to keep it moving,' Davis explains. ' If done jerkily more H.P. will be required. The same is true of translation. The centre of the circle must move at a steady rate. The combined steady actions will trace the top curve of an airfoil, and a million of these (an abstract number) will form the wing's cover.'

" A wing surface is no more inert than a buzz-saw, Davis declares. It is a mechanical device whipping the tar out of the airstream, smashing all its resistance and converting it into work for the 'plane. That, stripped of elegant technical terms, is ' lift.' To illustrate this, Davis uses the golfer. The golf club rotates around the hand as a centre. Both hand and club are moving—translation and rotation. If the swing is not smooth the ball won't travel far. A weakling with a steady swing will send the ball farther than a muscular gent. with jerky style.

" An airfoil is the golf club in opposite action—seizing the ball as it would come to it in a reverse motion picture and killing its resistance. The more smoothly the wing does this with air the faster the 'plane will travel with least effort. A wing in flight, to Davis at least, is nothing more than millions of lever arms grabbing and taking the punch out of the air.

" Where is the mystery in an airfoil so readily explained by its creator? Ah, that is the formula which expresses the most perfect relationship between the rotational and translation speeds. With the seemingly endless possibilities involved no less than an Einstein, one would surmise, could arrive at this formula. But Davis calls it a natural conclusion reached once the old ideas of airfoil design are junked."

The article goes on to tell of the innumerable and possibly inevitable difficulties Davis encountered in trying to get people interested, how the N.A.C.A. were flabbergasted when they observed for themselves the amazing efficiency of the Davis foil when compared with the super-foils they had evolved.

In discussing foreign interest in the Davis wing, the following is relevant: " . . . negotiations with one particular country (reliably reported to be ENGLAND.—ED.), whose name he cannot disclose, because of the international situation, have reached such an advanced stage that before this is published the Davis section may be putting new wings on European aircraft."

Apparently, Davis is not enamoured by the Dictators, or anybody who has discarded the democratic ideal.

Whether or no we are already building 'planes with this new aerofoil, I thought that I would bring this article to the notice of *Flight* readers.

JOHN W. MORRISON.

London, N.W.3.

AIRCRAFT CONSOLIDATION

All physical assets, as well as the name and good will of the Hall-Aluminum Aircraft Corporation, of Bristol, Pa., have been merged through purchase with Consolidated Aircraft Corporation. Thus tersely may be stated the fact that Hall-Aluminum Corporation is now a part of Consolidated Aircraft Corporation, San Diego, Calif.

Some 32 key men of the eastern airplane plant have joined the new organization, and all patent rights, material and equipment of the former company have been acquired through the purchase.

Hall-Aluminum Aircraft Corporation had its beginning in Charles Ward Hall, Inc., in 1916. Since that time and until the formation of Hall-Aluminum Aircraft Corporation, Inc., in 1927, Charles Ward Hall, president and sole stockholder, had been continuously engaged in research in the use of aluminum alloys in connection with the design and construction of aircraft. Mr. Hall applied for and was granted numerous basic patents relating to this field.

Along with the airplanes built, there were developed a complete line of draw bench shapes and other parts of strong aluminum alloys which were perfected and continuously produced and sold since 1923 to various airplane manufacturers.

In 1927 Hall-Aluminum Corporation was incorporated through the purchase from the late Charles Ward Hall of all assets belonging to Charles Ward Hall, Inc. The new company, until its acquisition by Consolidated Aircraft Corporation, has been engaged in the design and manufacture of aircraft, particularly flying boats and seaplanes, aircraft parts and sections, and in overhaul and repair work.

Clinging rather tenaciously to the naval side of aviation construction, Hall-Aluminum Aircraft has produced principally seaplanes and flying boats, pioneering in many phases of the work and particularly in all-metal construction. In 1920 metal wings were constructed for HS-3 flying boats. In 1924 there were built in conjunction with the Curtiss Aeroplane and Motor Company, two U. S. Navy F4C-1 fighter airplanes . . . the first all-metal aircraft used by the U. S. Navy. Other airplanes built included the C-333, XFH-1, XPH-1, PH-1s, PH-2s, PH-3s, and XP2H-1, a four-engine long range patrol or bomber boat with four liquid cooled engines. In 1933 it made the longest non-stop flight up to that time by the Navy, from Norfolk, Va., to Coco Solo in the Canal Zone.

The Company also made the twin float monoplane torpedo bomber, the XPTBH-2. Throughout this period and to the present time the corporation produced and supplied parts and standardized aircraft sections to all principal manufacturers and producers in the United States and Canada. Besides supplying the U. S. Navy with many of its aircraft the company has also supplied the Coast Guard with numerous craft.

Archibald M. Hall, president and director of the Hall-Aluminum Aircraft Corporation, now merged with Consolidated Aircraft Corporation, is the son of Charles Ward Hall, who founded Charles Ward Hall, Inc., the pioneering aluminum alloy aircraft manufacturing company.

Among those also joining Consolidated from the roster of executives of Hall-Aluminum Aircraft Corporation are: Charles F. Pape, who was vice-president, treasurer and director; Henry S. Deichert, factory superintendent, and John H. Smith and John Sangster, general foremen.

U. S. COAST GUARD November 1940

The Airlog October, 1940.

FLYING-FORTRESSES AND NAVAL PATROL-BOMBERS.

To Be Sold To England.

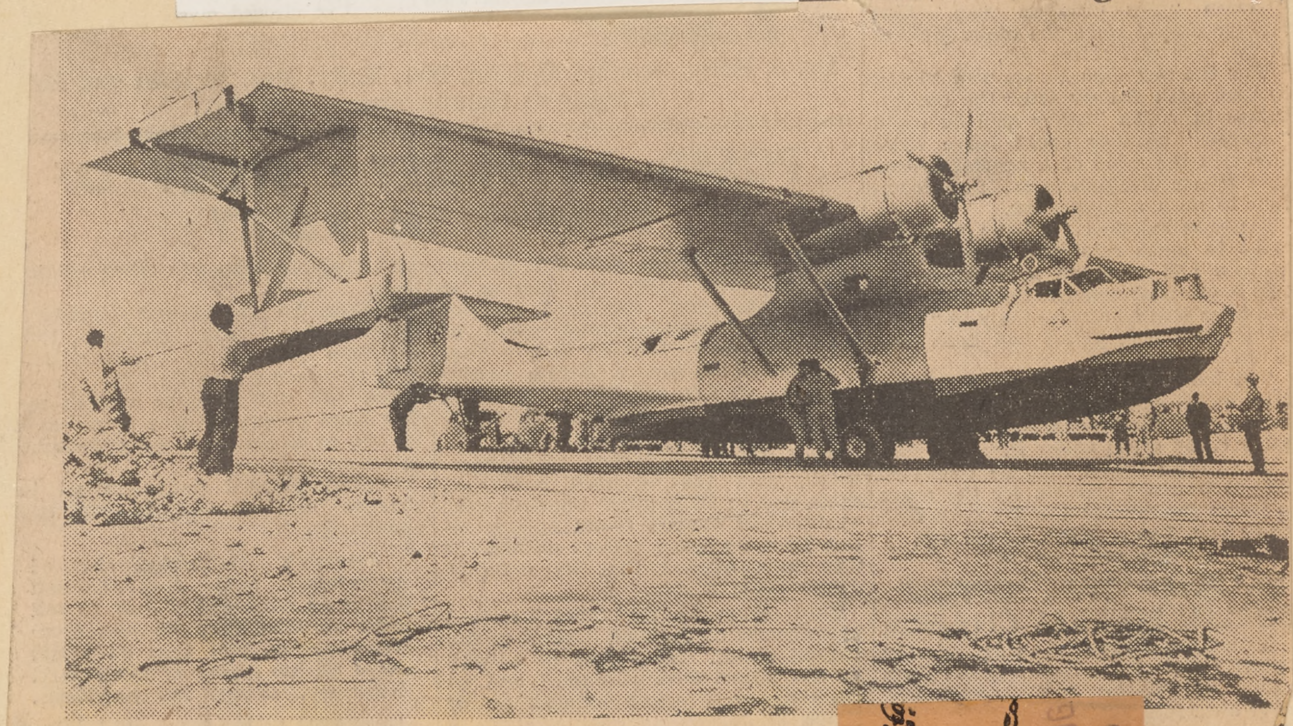
It is reported from America that, under a trade-in arrangement whereby the U.S. Government shall sell back to the manufacturers, in part-payment for other craft, a considerable number of Army and Navy bombers — Boeing four-engined "Flying Fortresses" and Consolidated twin-engined PBY flying-boats — the manufacturers, under Government permit, shall, in turn, put them in virtual brand-new order and sell them to England.

An initial shipment of twenty-five of each is declared imminent.

Heavily armed, with five machine-gun positions in "blisters" above, on the sides and below, as well as mounting forward-firing guns and being able to carry heavy bomb loads great distances at fairly high speeds, the Boeing "Flying Fortresses" would be difficult customers for ordinary fighting craft to come up against. They could operate over extreme ranges and attack enemy plants much further afield than those now being bombed from England by the Royal Air Force.

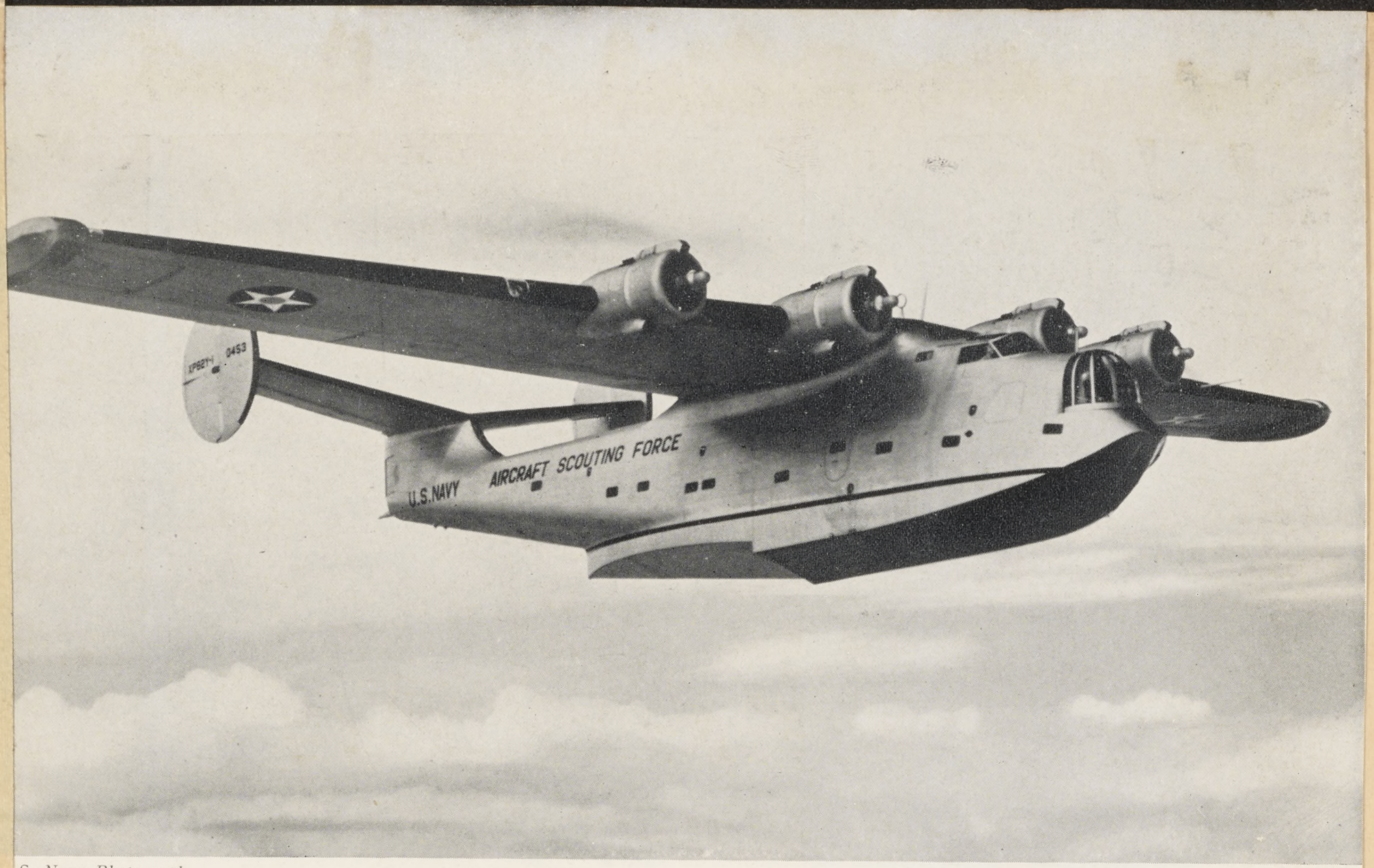
Similarly, the PBY's., with extreme range of about 4,000 miles as reconnaissance craft and able to carry a substantial bomb load for little short of that distance, should prove most useful adjuncts in both northern and Mediterranean areas.

Flying-boat "Ferry" between U.S. and England



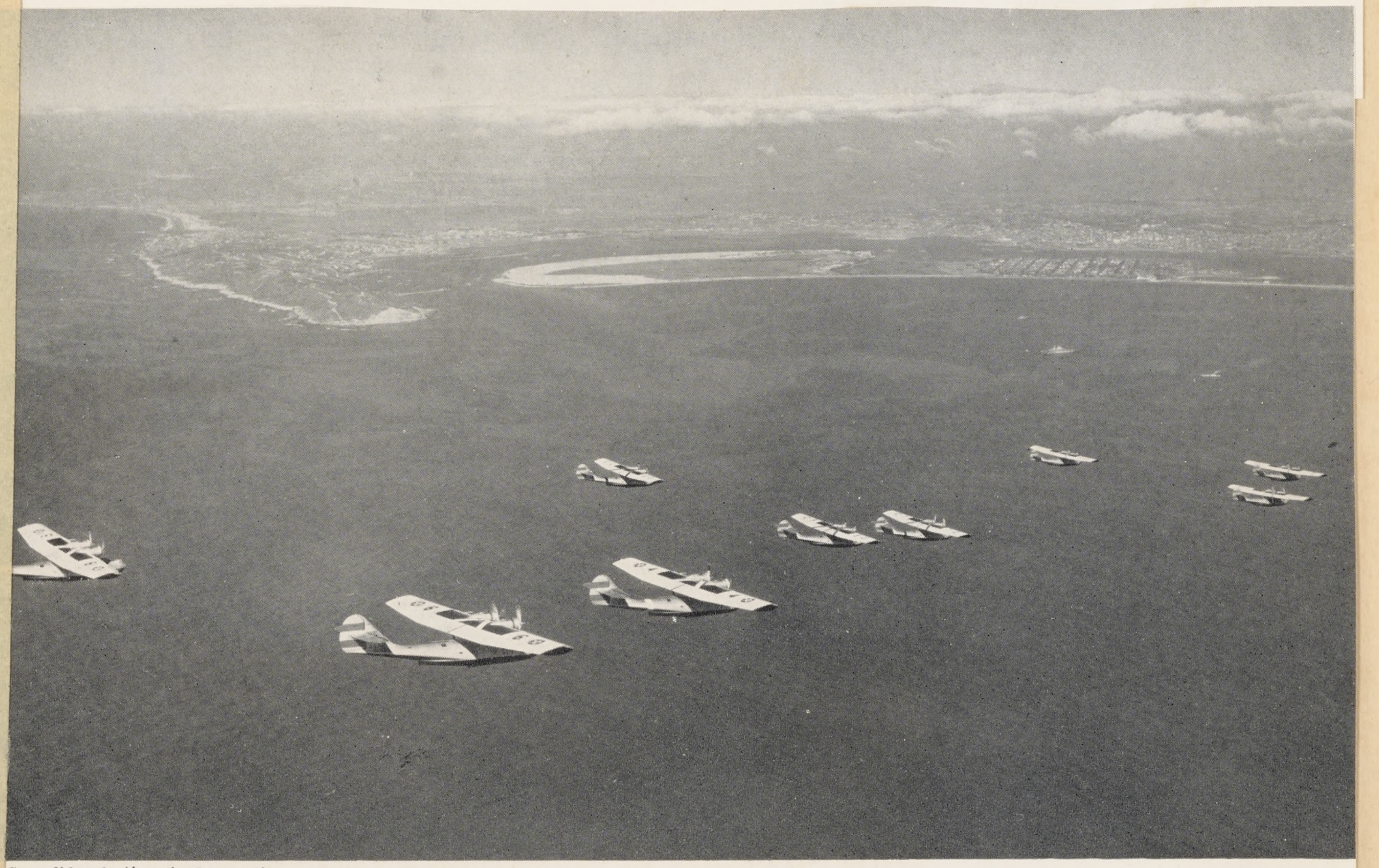
Mr. Richard Archbold, the former explorer, has announced in New York that he has sold his flying-boat, Guba, which he has used on scientific expeditions in Africa and New Guinea, to the British Government for transporting aluminium from the United States to England. The Guba will make trips twice a week. The American airman, Clyde Pangborn will head the crew.

Romeike & Curtice Ltd.
35, Shoe Lane
LONDON. E.C.4.
Telephone CENTRAL 2781 (2 Lines.)
EXTRACT FROM
Irish Press.
22 AUG 40



S. Navy Photograph

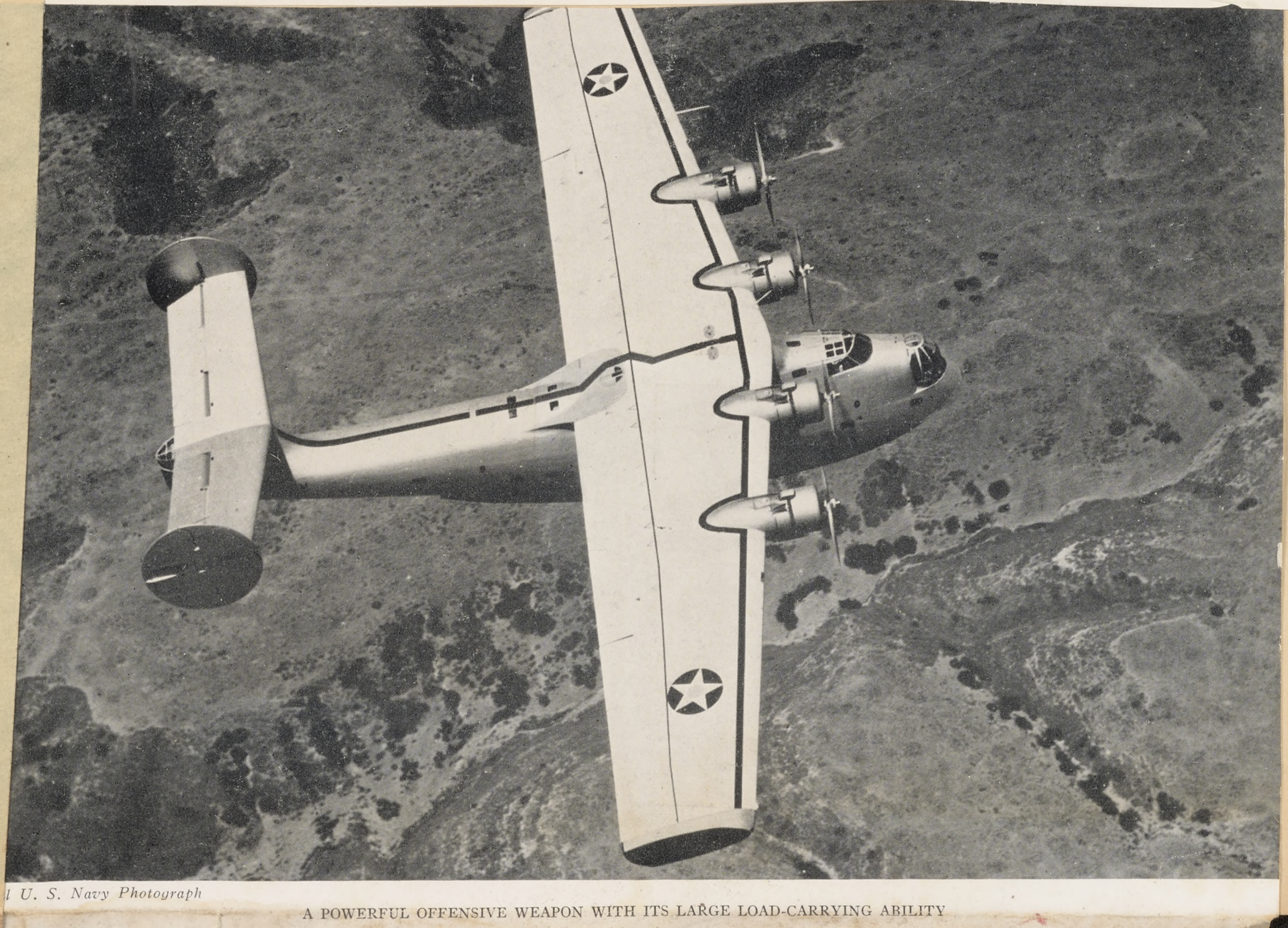
THE FLAGSHIP TAKES TO THE AIR, WITH EVERY FACILITY PROVIDED TO ENABLE THE ADMIRAL TO EXERCISE TACTICAL COMMAND OF HIS FAR-FLUNG UNITS



Consolidated Aircraft Corporation

THE NAVY'S LAND-BASED AIR POWER CAPABLE OF LONG-RANGE SCOUTING AND BOMBING OPERATIONS

The recent acquisition of Atlantic bases will enable the patrol plane to guard every approach to our vital areas.



l U. S. Navy Photograph

A POWERFUL OFFENSIVE WEAPON WITH ITS LARGE LOAD-CARRYING ABILITY

Gun turrets in every conceivab [illegible] area increase its ability for self-defens

---

THE PATROL PLANE AND THE FUTURE

By LIEUTENANT COMMANDER A. B. VOSSELLER, *U. S. Navy*

THE ENVIABLE reputation of American Naval Aviation, so richly deserved after years of efficient operations, is probably based principally upon public interest in the rather spectacular phases of carrier aviation. Operating airplanes from a ship's deck far at sea in the face of many difficulties, and the precision with which such operations have been carried on year after year, have an appeal to the lay mind which is quite understandable, and a value which is readily apparent to even the most confirmed landsman. While the flying boat type, extensively used during World War I, was instrumental in focusing naval interest upon the potentialities of aviation as an arm of the fleet, during the decade beginning in 1920 development of this type languished to a certain extent while primary attention was concentrated upon the perfection of carrier operations. The fact that the American Navy is the only one having any sizable and effective air component which can accompany the Fleet is eloquent testimony to the efficiency with which these developments have been carried on.

With no attempt or intent to disparage the accomplishments of carrier aviation, it is nevertheless surprising to find that many experts, real and merely self-styled, have consistently overlooked the accomplishments and possibilities of the patrol plane. Perhaps this is understandable since the Navy itself has made no attempt to publicize the accomplishments of the patrol wing. For example, mass flights of patrol planes to Honolulu, Panama, Alaska, and even to the Philippine Islands, have been consistently described by the Navy Department as merely routine. Routine though they have been, they have nevertheless had more than their share of drama, and further, great promise of future accomplishment.

All naval officers are familiar with the sight of patrol planes, singly or in large groups, winging their way through fair weather and foul, over and around the Fleet. Because the big planes look large and deliberate, there is, perhaps, a tendency to regard them as lumbering and slow and, on the whole, rather ineffective. What is not appreciated is the fact that they not only can and do operate at tremendous distances from their bases and tenders through all sorts of weather, but also that they can, and undoubtedly will, deliver a tremendous offensive blow should our country ever become involved in war.

Much has been written in recent months on the subject of bombing, including the bombing of battleships. Discussion of this latter subject seems to have suffered a decline recently, perhaps because the verdict may be so near. The question of whether bombers can sink battleships is, of itself, of little importance, but the incontrovertible fact that ships can be bombed and unquestionably damaged must be considered by those charged with the responsibility for the national defense. The factor in a discussion of bombing types that interests us most, as naval officers, is not that we ourselves may be bombed, but rather *what type of plane is best for use against an enemy.*

Dismissing, momentarily, our carrier-based bombers, which are admirably suited for their task and are easily the peer of any in existence elsewhere in the world, let us consider the patrol plane and its place in any naval war in which the United States might become involved. It has long

← Illustrations of above article

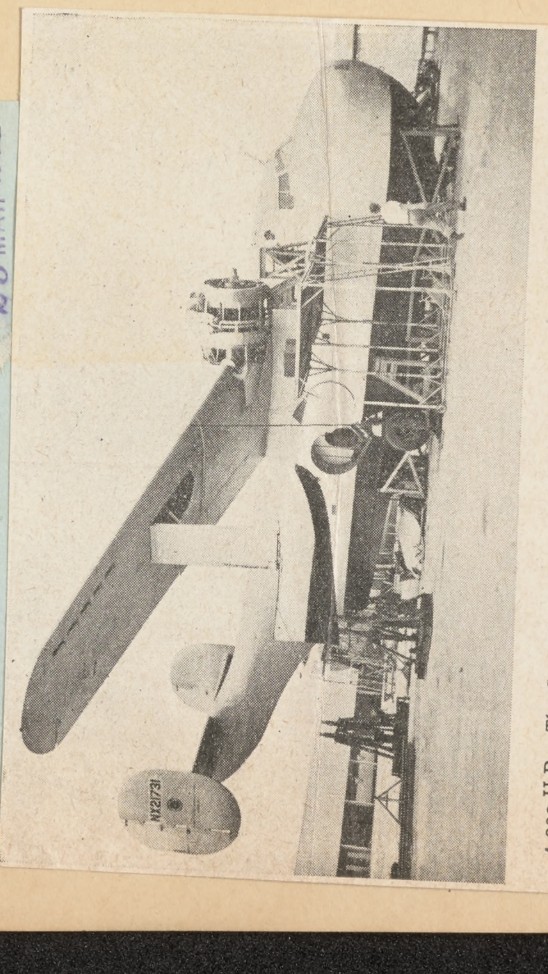
ROMEIKE & CURTICE LTD.
The Press Clipping Bureau
35 Shoe Lane
LONDON, E.C.4
Telephone: Central 2781

Consolidated Air

EXTRACT FROM
FLIGHT
The First Aero
Weekly in the World
EVERY THURSDAY 6d.
Flight Publishing Co. Ltd.
Dorset House, Stamford Street, London, S.E.1

8 AUG 1940

23 MAR 1939



4,000 H.P. The Consolidated type 31 is powered by two of the new Wright two-row Duplex-Cyclone engines, and is probably the world's most powerful twin-engined flying boat. The "retractable tricycle undercarriage" is a beaching trolley. The struts of the outboard floats fold into the wing. The machine has accommodation for 52 passengers in the daytime and 28 at night.

do is to pull until something lets go. The area around the weld will develop cracks as indicated.

The solution is shown in the lower sketch of Fig. 1. The hole of passage for the tube was made considerably undersize and flanged with a generous radius inwardly. Then the welding was done along the flange edge. Thus constructed, the flange radius allows bending to take place in the flange both in expansion and contraction and allows absorption of the shrinkage easily. Actually, as at first designed, the chances were much against even the most skilled welder being able to complete the job satisfactorily. When changed to the flange solution, however, far less skillful welders experienced no trouble at all. Allowances for expansion, contraction and shrinkage must be designed in such cases in the work itself.

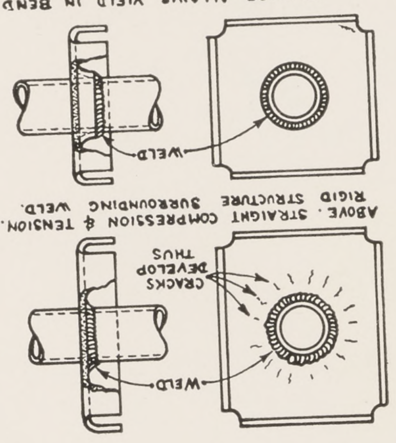

WELD
CRACKS DEVELOP THUS
ABOVE. STRAIGHT COMPRESSION & TENSION. RIGID STRUCTURE SURROUNDING WELD.
WELD
FLANGE ALLOWS YIELD IN BEND ADJACENT TO WELD, MODIFYING BOTH COMPRESSION FROM HEAT OF WELD AND TENSION FROM SHRINKAGE & COOLING.

FIG. 1

In a variation of the same princi-

run inside another with a very close fit between them. On the outer tube a fitting was welded. On cooling a crack was apt to be found in the outer tube at any place on its circumference adjacent to the welding. The explanation being that in welding, the outer tube was heated first and expanded away from the inner tube. As the welding progressed the inner tube became as hot as the outer tube and brought the clearance in this dually expanded condition back to the original close fit. On cooling, however, the welded area of the outer tube tried to take up its expansion through contraction and, in addition, the weld shrinkage. The inner tube had little or no shrinkage since the weld did not penetrate this deep and, further, it could not contract as rapidly as the exposed outer tube. The net result being that the outer tube tried to shrink and contract but was prevented from doing so and simply split.

Normalizing

The above are cases in which the nature of the work itself caused the trouble to be immediately recognized as much above the limits of the metal. But even under ordinary circumstances the welding, being confined to a small area at a time that progresses from one end of the weld to the other, sets up strains in the welded piece and this is the reason for normalizing. The welded up structure with its strains is soaked in heat until it is uniformly relaxed and the strains ease out of the stressed areas. Unless precautions are taken in this normalizing, long or weighted pieces are apt to sag in the normalizing furnace and undesirable straightening

---

Hydrogen Protection

While most of the welding is done with the oxygen-acetylene flame, hydrogen is likewise brought into play with great benefit. Hydrogen is used for the welding of aluminium because it smothers the area surrounding the area of the weld with hydrogen to the exclusion of oxygen and prevents the aluminium from oxidizing. Two oxidized aluminium surfaces will not weld well even with the application of liberal amounts of flux. Hydrogen too, can be called to good turn simultaneously as a pre-heater and to prevent the formation of scale on thin steel pieces. While it actually heats of course, it seems to have the property of cooling, or at least of spreading the heat from a weld so that distortion is not so apt to occur. A simple hydrogen burner of copper tubing shaped to fit the work and used on the back side of a thin steel sheet being welded, largely prevents the formation of scale. See Fig. 2.

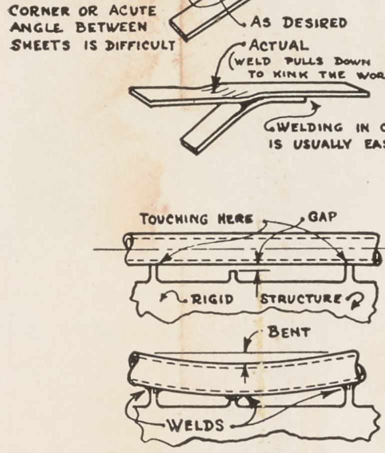

WELDING IN A CORNER OR ACUTE ANGLE BETWEEN SHEETS IS DIFFICULT
AS DESIRED
ACTUAL (WELD PULLS DOWN TO KINK THE WORK)
WELDING IN OPEN IS USUALLY EASY
TOUCHING HERE
GAP
RIGID STRUCTURE
BENT
WELDS

FIG. 3

A hydrogen burner placed above the oxy-acetylene torch and directing a flow of hydrogen down on the weld area helps also on the top side of the weld. Complex welds with sheet as thin as .035 can be accomplished by an airplane welder with comparative ease through the application of this principle.

If the welding could be made to take place over the entire line of the weld at one time, it is probable that many of the problems associated with welding would be eliminated. But, since it is necessary for the welding to progress along as a concentrated cone of heat from one end of the weld to the other, difficulties are multiplied. The direction of the progress of the weld has much to do with its successful completion. One direction will work perfectly, the reverse will split the work.

Welding in the trough of an acute angle is difficult, because the weld puddle should be in the very bottom and this is where the most heat should be concentrated but actually the hot flame cone is always closer to the adjacent walls. The result is that the bottom of the weld is apt to be not fully molten, the sides burned or melted away.

Welding in a confined area such as a pocket or inside a tube is another condition or predicament hard for the welder to cope with to the full extent of his skill. Here the torch tip becomes excessively heated. Water-cooled welding torch tips have been rigged up with gratifying results.

AIRCRAFT CONSOLIDATION

All physical assets, as well as the name and good will of the Hall-Aluminum Aircraft Corporation, of Bristol, Pa., have been merged through purchase with Consolidated Aircraft Corporation. Thus tersely may be stated the fact that Hall-Aluminum Corporation is now a part of Consolidated Aircraft Corporation, San Diego, Calif.

Some 32 key men of the eastern airplane plant have joined the new organization, and all patent rights, material and equipment of the former company have been acquired through the purchase.

Hall-Aluminum Aircraft Corporation had its beginning in Charles Ward Hall, Inc., in 1916. Since that time and until the formation of Hall-Aluminum Aircraft Corporation, Inc., in 1927, Charles Ward Hall, president and sole stockholder, had been continuously engaged in research in the use of aluminum alloys in connection with the design and construction of aircraft. Mr. Hall applied for and was granted numerous basic patents relating to this field.

Along with the airplanes built, there were developed a complete line of draw bench shapes and other parts of strong aluminum alloys which were perfected and continuously produced and sold since 1923 to various airplane manufacturers.

In 1927 Hall-Aluminum Corporation was incorporated through the purchase from the late Charles Ward Hall of all assets belonging to Charles Ward Hall, Inc. The new company, until its acquisition by Consolidated Aircraft Corporation, has been engaged in the design and manufacture of aircraft, particularly flying boats and seaplanes, aircraft parts and sections, and in overhaul and repair work.

Clinging rather tenaciously to the naval side of aviation construction, Hall-Aluminum Aircraft has produced principally seaplanes and flying boats, pioneering in many phases of the work and particularly in all-metal construction. In 1920 metal wings were constructed for HS-3 flying boats. In 1924 there were built in conjunction with the Curtiss Aeroplane and Motor Company, two U. S. Navy F4C-1 fighter airplanes . . . the first all-metal aircraft used by the U. S. Navy. Other airplanes built included the C-333, XFH-1, XPH-1, PH-1s, PH-2s, PH-3s, and XP2H-1, a four-engine long range patrol or bomber boat with four liquid cooled engines. In 1933 it made the longest non-stop flight up to that time by the Navy, from Norfolk, Va., to Coco Solo in the Canal Zone.

The Company also made the twin float monoplane torpedo bomber, the XPTBH-2. Throughout this period and to the present time the corporation produced and supplied parts and standardized aircraft sections to all principal manufacturers and producers in the United States and Canada. Besides supplying the U. S. Navy with many of its aircraft the company has also supplied the Coast Guard with numerous craft.

Archibald M. Hall, president and director of the Hall-Aluminum Aircraft Corporation, now merged with Consolidated Aircraft Corporation, is the son of Charles Ward Hall, who founded Charles Ward Hall, Inc., the pioneering aluminum alloy aircraft manufacturing company.

Among those also joining Consolidated from the roster of executives of Hall-Aluminum Aircraft Corporation are: Charles F. Pape, who was vice-president, treasurer and director; Henry S. Deichert, factory superintendent, and John H. Smith and John Sangster, general foremen.

U. S. COAST GUARD November 1940

The Air Log October, 1940.

FLYING-FORTRESSES AND NAVAL PATROL-BOMBERS.
To Be Sold To England.

It is reported from America that, under a trade-in arrangement whereby the U.S. Government shall sell back to the manufacturers, in part-payment for other craft, a considerable number of Army and Navy bombers — Boeing four-engined "Flying Fortresses" and Consolidated twin-engined PBY flying-boats — the manufacturers, under Government permit, shall, in turn, put them in virtual brand-new order and sell them to England.

An initial shipment of twenty-five of each is declared imminent.

Heavily armed, with five machine-gun positions in "blisters" above, on the sides and below, as well as mounting forward-firing guns and being able to carry heavy bomb loads great distances at fairly high speeds, the Boeing "Flying Fortresses" would be difficult customers for ordinary fighting craft to come up against. They could operate over extreme ranges and attack enemy plants much further afield than those now being bombed from England by the Royal Air Force.

Similarly, the PBY's., with extreme range of about 4,000 miles as reconnaissance craft and able to carry a substantial bomb load for little short of that distance, should prove most useful adjuncts in both northern and Mediterranean areas.

(over)

Tenth Anniversary Number

is necessary after the normalizing. To avoid much of this the welders tack weld re-enforcing pieces which are cut loose after the heat treatment.

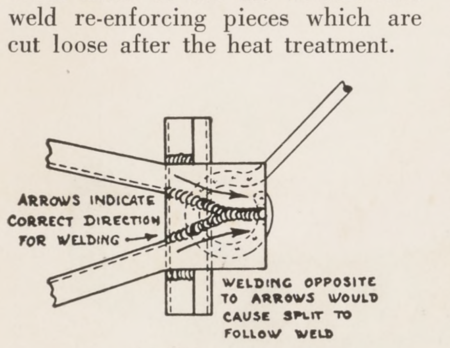

ARROWS INDICATE CORRECT DIRECTION FOR WELDING
WELDING OPPOSITE TO ARROWS WOULD CAUSE SPLIT TO FOLLOW WELD
HYDROGEN OVERFLAME PREVENTS BURNING
WELDING TIP
HYDROGEN BURNER PREVENTS SCALING OF UNDER SIDE, LIMITS WARPING ALSO

FIG. 2

Another phase of welding in which normalizing plays a large part is in the welding of large or complex assemblies in which it is desired to hold the work to close finish dimensions for subsequent machining. If the entire assembly is welded up immediately as a single unit, the strains set up and the interaction of them during the normalizing may easily warp the structure all out of shape. To avoid this the assembly is broken down into sub-assemblies in which the welding becomes more or less self-contained. Then these subassemblies are normalized after welding to remove the strains. Allowances are made in welding to allow for fitting the subassemblies together and they are straightened in themselves if found out of alignment. Then in the final assembly of the sub-assemblies into the one whole structure, only simple strains can be set up, rather than the danger of compounded strains and the likelihood of the structure being warped beyond recovery is averted. Fig. 3 indicates two simple shrinkage or warping effects which can be compounded into a lot of trouble in an intricate structure.

(Continued on page 96)

Flight 7/18/40

THE MYSTERY AEROFOIL
An American Invention

I HAVE before me as I write an article entitled "Mystery Airfoil"; it is the story of the Davis aerofoil and its inventor, David R. Davis.

All readers of *Flight* will readily recall the phenomenal Consolidated 31 flying-boat with its Davis wing and, more recently, the B-24 4-engined bomber of the same make. Until I read the story of the Davis foil I did not fully appreciate the fact that it was destined to go down in history as one of the epic inventions of our time with the most far-reaching effect on the design of aircraft.

Here, indeed, is an enthralling and inspiring story: "A curve, he perceived, was not a dead geometric figure. IT WAS A LIVING, MECHANICAL, OPERATING THING. On the basis of this, he could not but depart from what now seemed an archaic process of obtaining the most efficient curve for an airplane wing—the so-called 'cut and try' methods." Again, "A curve, he saw, was the product of mechanical action—rotation at infinite speed. 'A circle,' he said, 'is not an inert object. It is something going around—a radius arm (or lever arm) rotating about a centre.'

"Having stumbled on this hypothesis, he discovered that the most efficient mechanical action to produce lift would result from the proper relation between the rotational speed of the radius arm and the translational velocity of the point about which the radius arm rotates.

"Two factors must be borne in mind . . . one is rotation—MOVEMENT of the radius arm around the centre of a circle. The other is translation—movement of the centre itself.

"Mark a dot on a piece of paper, designating it as the centre of a circle. Place the point of a pencil on that dot, then lay the pencil down to form a radius, or lever arm. Now turn the pencil clockwise and, at the same time, move the point in a straight line to the left (thus indicating movement of the circle's centre by the latter motion). The curve formed by the top of the pencil as result of this simultaneous action is fundamentally part of a Davis airfoil profile—the product of two *steady movements*.

"Steadiness is important. 'If you rotate a flywheel steadily it takes less effort to keep it moving,' Davis explains. 'If done jerkily more H.P. will be required. The same is true of translation. The centre of the circle must move at a steady rate. The combined steady actions will trace the top curve of an airfoil, and a million of these (an abstract number) will form the wing's cover.'

"A wing surface is no more inert than a buzz-saw, Davis declares. It is a mechanical device whipping the tar out of the airstream, smashing all its resistance and converting it into work for the 'plane. That, stripped of elegant technical terms, is 'lift.' To illustrate this, Davis uses the golfer. The golf club rotates around the hand as a centre. Both hand and club are moving—translation and rotation. If the swing is not smooth the ball won't travel far. A weakling with a steady swing will send the ball farther than a muscular gent. with jerky style.

"An airfoil is the golf club in opposite action—seizing the ball as it would come to it in a reverse motion picture and killing its resistance. The more smoothly the wing does this with air the faster the 'plane will travel with least effort. A wing in flight, to Davis at least, is nothing more than millions of lever arms grabbing and taking the punch out of the air.

"Where is the mystery in an airfoil so readily explained by its creator? Ah, that is the formula which expresses the most perfect relationship between the rotational and translation speeds. With the seemingly endless possibilities involved no less than an Einstein, one would surmise, could arrive at this formula. But Davis calls it a natural conclusion reached once the old ideas of airfoil design are junked."

The article goes on to tell of the innumerable and possibly inevitable difficulties Davis encountered in trying to get people interested, how the N.A.C.A. were flabbergasted when they observed for themselves the amazing efficiency of the Davis foil when compared with the super-foils they had evolved.

In discussing foreign interest in the Davis wing, the following is relevant: ". . . negotiations with one particular country (reliably reported to be ENGLAND.—Ed.), whose name he cannot disclose, because of the international situation, have reached such an advanced stage that before this is published the Davis section may be putting new wings on European aircraft."

Apparently, Davis is not enamoured by the Dictators, or anybody who has discarded the democratic ideal.

Whether or no we are already building 'planes with this new aerofoil, I thought that I would bring this article to the notice of *Flight* readers.

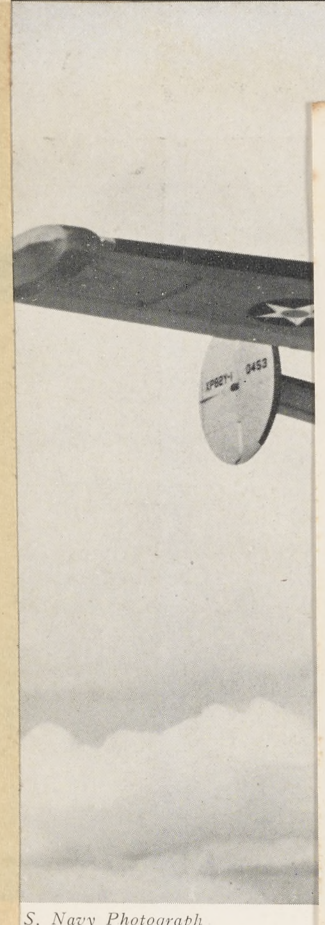
JOHN W. MORRISON.

London, N.W.3.

Flying-boat "Ferry" between U.S. and England

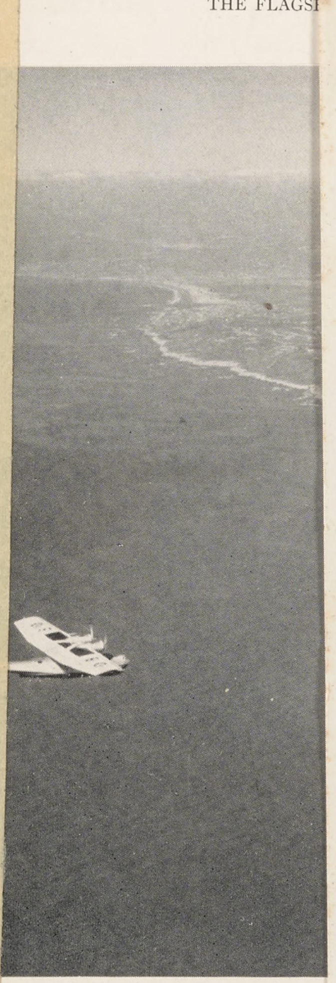
Mr. Richard Archbold, the former explorer, has announced in New York that he has sold his flying-boat, Guba, which he has used on scientific expeditions in Africa and New Guinea, to the British Government for transporting aluminium from the United States to England. The Guba will make trips twice a week. The American airman, Clyde Pangborn will head the crew.

Romeike & Curtice Ltd
35, Shoe Lane
LONDON, E.C.4.
Telephone CENTRAL 2781 (2 Lines.)
EXTRACT FROM
Irish Press.
22 AUG 40



S. Navy Photograph

THE FLAGS



Consolidated Aircraft Corporation

THE NAVY'S LAND-BASED AIR POWER CAPABLE OF LONG-RANGE SCOUTING AND BOMBING OPERATIONS

The recent acquisition of Atlantic bases will enable the patrol plane to guard every approach to our vital areas.

been recognized that the patrol plane, because of its great range, and ability to stay in the air for long periods, is a superb scout. Information is the first need of any commander, and hence the primary duty of the patrol plane is, as the name suggests, scouting or patrolling. Supply of vital information is such an important duty that, in the writer's opinion, successful discharge of this function has tended to obscure the patrol plane's value as a bomber.

What are the characteristics of the patrol plane which make it so well suited for its tasks? What are the characteristics of the airplane which cause public imagination to seize upon it so readily as the ideal instrument of war? The suggestion is ventured that these are the ease and speed with which an airplane can reach an objective and, under certain circumstances, the relative invulnerability it possesses while delivering a destructive and nerve-shattering blow to its target. In considering any instrument of war, the layman is handicapped by a lack of intimate knowledge of the engineering *principals* which go into the design of the weapon. This is particularly true of the airplane, because the engineering which goes into its design is so very intimately interwoven with the characteristics desired in the finished product. Certainly no instrument of war is more carefully and perfectly engineered for its intended purpose! It is believed that this fact underlies a great many misconceptions concerning the airplane, and particularly the patrol plane. The mere fact that a large airplane can sustain itself in the air is still a source of some astonishment to many; is it surprising, therefore, that some amateur strategists reach incorrect conclusions when they evaluate desirable strategic or tactical considerations without regard to the engineering possibilities of the airplane? On the contrary such errors are quite natural, and it is with hope of clearing up some of these misconceptions that this article is written.

Without reference to their order of relative importance, the main characteristics of any airplane are:

(*a*) Its top and cruising speeds
(*b*) Its landing speed
(*c*) Its range
(*d*) Its endurance in the air
(*e*) Its load-carrying capacity
(*f*) Its size
(*g*) Its cost

Other features which are of particular importance for military or naval use are the facility with which the airplane can be handled, both in the air and on the ground, and the defensive or offensive characteristics which can be provided.

It is not proposed to go into the above characteristics in great detail, but merely to outline a few of the underlying relationships and their connection with certain aspects of usefulness which the finished airplane should possess. The question of speed is one of the most difficult and important ones which we should consider. It is, in a way, unfortunate that speed has become so highly emphasized, because it has given rise, in some cases, to entirely erroneous impressions of the value and utility of various types of aircraft. Press reports from abroad early in the war frequently described the success of French pilots in American built Curtiss Hawks against faster Messerschmidt 109's. In the single-seater type, where admittedly speed is a primary requisite, it must be conceded that speed alone is not sufficient.

The bomber must depend primarily upon altitude and surprise to get home his attacks successfully. Speed will always be most welcome as a means of cutting down losses from enemy fighters and reducing the time under anti-aircraft fire should the effort at surprise fail. However, since bombers can never hope to have as much speed as the fighters, they can never hope to elude the fighters by this means. In any event, far at sea, which is where we want to do any bombing of the enemy, the bombers have only carrier-based

fighters to face, and it is unlikely that their number will be comparable to that which would be expected in an attack on a strongly defended shore base. Losses must be expected, but should the bombers be fortunate enough to hit their first objective, the enemy carriers, they can then expect to operate almost without opposition.

This principle of neutralizing and preventing operations from the enemy's air bases is one which the German Air Force has followed with great success in the present war. Dunkerque was an exception. R.A.F. fighters were able to operate from their bases in England and the German Air Force was consequently unable to prevent the evacuation of hundreds of thousands of troops. This particular operation, in which the high performance German bombers were prevented by R.A.F. fighter interference from stopping the evacuation, proves that high speed alone for the bomber is not sufficient to permit operations in the face of determined fighter opposition.

In any consideration of bombing aircraft, greater attention should be paid to the bomb-carrying capacity and the range of the airplane than to the speed alone. Recognizing that the bomber is essentially a load-carrying aircraft, aeronautical authorities agree that sufficient power cannot be included to make the bomber superior or even equal in speed to a fighter or specially designed interceptor.

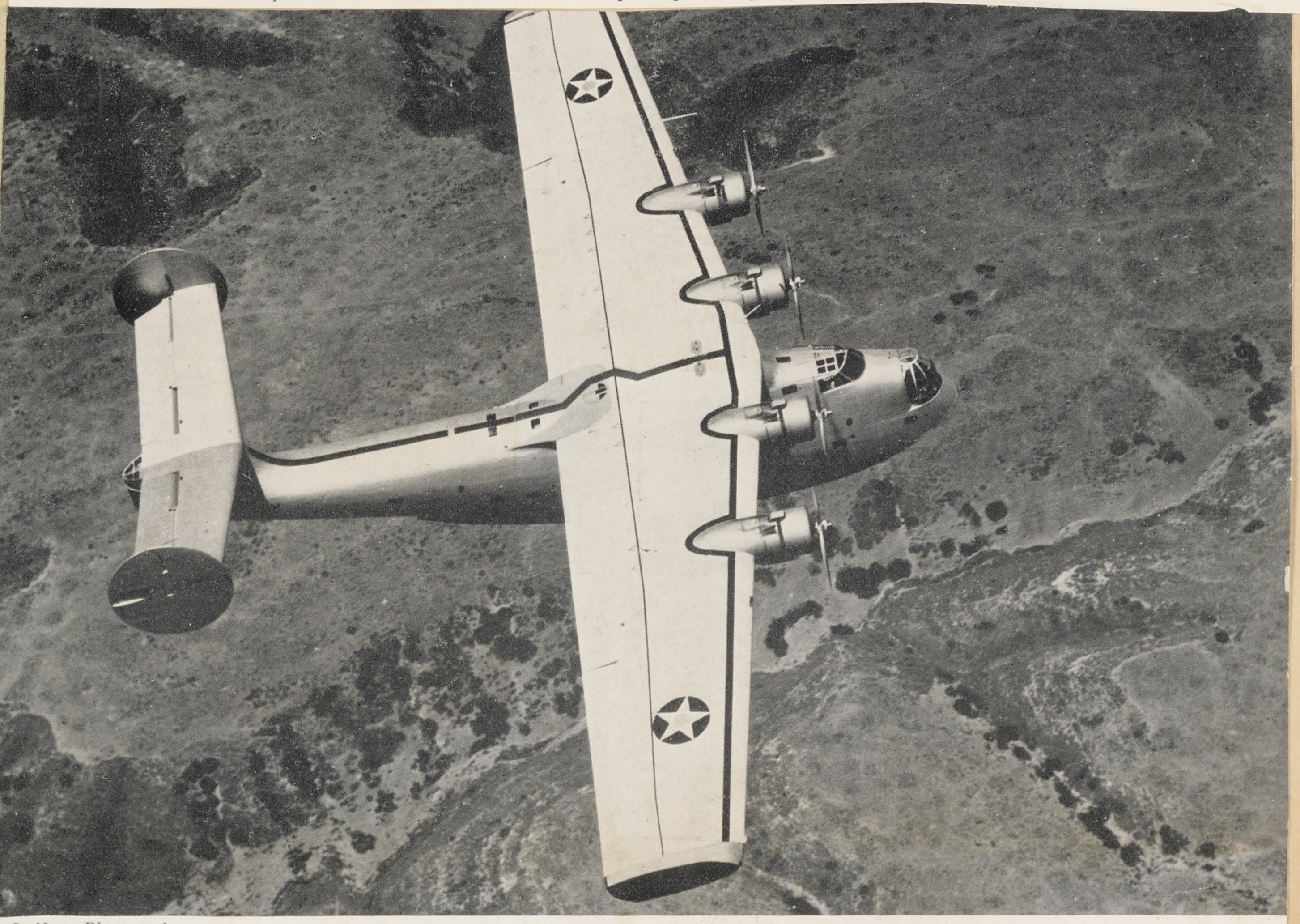
Common misconception has the speed of an airplane directly related to its load-carrying capacity. While the two are related, the relationship is neither simple nor direct. What connection there is derives principally from the fact that the load-carrying airplane is generally designed with a larger wing area, and, in addition, frequently employs an airfoil section in which lifting capacity rather than low drag is emphasized. Likewise, in order to enclose its load, the load-carrying airplane has a large hull or fuselage, which increases frontal resistance as well as parasite drag. Both factors are prejudicial to high speed. From this the reader may deduce that the flying boat falls in the classification of the heavy load-carrying airplane. This is true, although the patrol plane's greater size comes automatically from its dependence upon a boat hull for landing and taking off. This greater size automatically results in a greater volumetric capacity for the large flying boat, but, quite unexpectedly, a further advantage results in a reduction of the necessary structural weight. This is because the hull of the boat not only serves to enclose the crew but also serves as a landing and taking-off medium. The landplane, on the other hand, must carry landing gear which is only so much dead weight when it is in the air.

The Lilienthal Memorial Lecture, in 1938, was delivered by Mr. Igor I. Sikorsky upon the subject of "The Large Flying Boat." In the course of his paper he analyzed the problem of long-range air transport very fully, comparing the large landplane with the flying boat from both the theoretical and practical standpoints. Mr. Sikorsky is recognized as one of the world's foremost designers of aircraft and the fact that he was invited to Berlin to deliver the Memorial Lecture at the annual meeting of the Lilienthal Society indicates the authority with which he speaks. The following extracts are quoted from his lecture: (The italics have been added.)

"These and other conditions are responsible for the fact that medium or small size flying boats are in general less efficient than corresponding types of landplanes, the advantages of the landplanes being particularly pronounced in small ships. *However, in the very large machines, the conditions become different.* In view of the importance of this question, it appears desirable at this time to make a brief study of the influence of size on the relative efficiency of landplanes and flying boats.

"In medium sizes, between ten and

← Illustrations of above article



l U. S. Navy Photograph

A POWERFUL OFFENSIVE WEAPON WITH ITS LARGE LOAD-CARRYING ABILITY

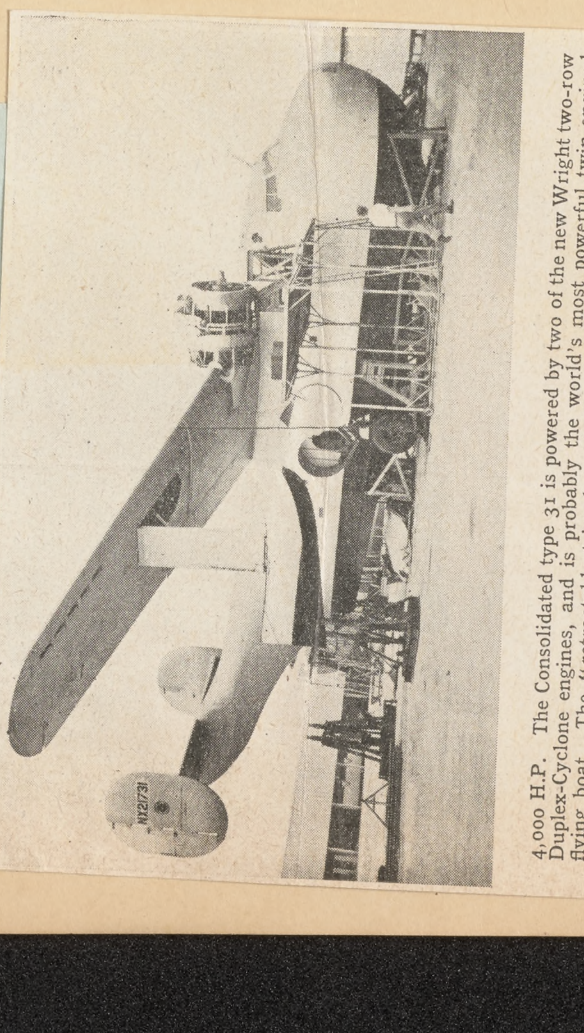
Gun turrets in every conceivabl [illegible] area increase its ability for self-defens

ROMEIKE & CURTICE LTD.
The Press Clipping Bureau
35 Shoe Lane
LONDON, E.C.4
Telephone: Central 2781

Consolidated Air

EXTRACT FROM
FLIGHT
The First Aero
Weekly in the World
EVERY THURSDAY 6d.
Flight Publishing Co. Ltd.
Dorset House, Stamford Street, London, S.E.1

8 AUG 1940
~~23 MAR 1939~~



4,000 H.P. The Consolidated type 31 is powered by two of the new Wright two-row Duplex-Cyclone engines, and is probably the world's most powerful twin-engined flying boat. The "retractable tricycle undercarriage" is a beaching trolley. The struts of the outboard floats fold into the wing. The machine has accommodation for 52 passengers in the daytime and 28 at night.

Welding Problems in Aviation

Typical of the transport and bombing type of plane is this Model 28 produced by the Consolidated Aircraft Corporation now in service in trans-Pacific operations. Welding plays a significant part in its construction.

ALL welding fixtures are made oversize and allowances are made for the shrinkage to be expected. Sometimes the design of the work itself brings about a condition in which both the expansion and contraction, plus the shrinkage, bring about trouble with the welding operation and results. There must be allowance for expansion, contraction and shrinkage, or some part of the weld will suffer.

A simple and excellent example of this is shown in Fig. 1. Here it was desired to run a tube through a boxlike structure of considerable stiffness (with the flanges, as well as the area of the bottom, contributing to this stiffness) and to weld around the point of passage of the tube through the box. Due to the stiffness of the box around the weld, the expansion forces the metal in the area surrounding the weld to be compressed. The outer areas remain cool and resist this expansion with their full strength. In the areas between, which are progressively cooler toward the outside, the force of expansion acts upon the metal in what amounts to cold working. Here the crystal structure of the metal is crushed and compacted together. Then, as the immediate area of the weld cools, it contracts more than it expanded, pulling with great strength upon the very structure it has just compressed, also pulling forward and back around the weld. Being restricted in contraction as it was in expansion, and with no allowance for the added shrinkage possible, all it can

From Reports of The Consolidated Aircraft Corporation,
San Diego, California

Oct. 1940

(over)

Hydrogen Protection

While most of the welding is done with the oxygen-acetylene flame, hydrogen is likewise brought into play with great benefit. Hydrogen is used for the welding of aluminium because it smothers the area surrounding the area of the weld with hydrogen to the exclusion of oxygen and prevents the aluminium from oxidizing. Two oxidized aluminium surfaces will not weld well even with the application of liberal amounts of flux. Hydrogen too, can be called to good turn simultaneously as a pre-heater and to prevent the formation of scale on thin steel pieces. While it actually heats of course, it seems to have the property of cooling, or at least of spreading the heat from a weld so that distortion is not so apt to occur. A simple hydrogen burner of copper tubing shaped to fit the work and used on the back side of a thin steel sheet being welded, largely prevents the formation of scale. See Fig. 2.

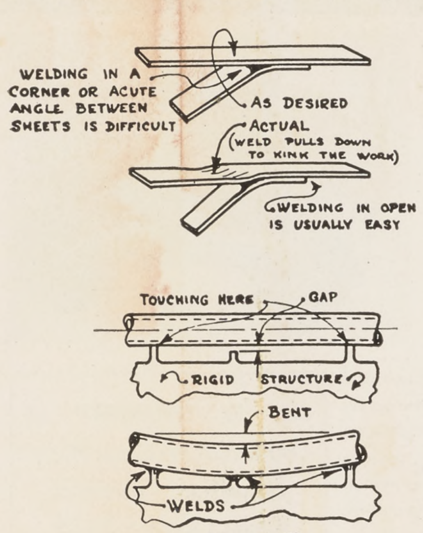

WELDING IN A CORNER OR ACUTE ANGLE BETWEEN SHEETS IS DIFFICULT
AS DESIRED
ACTUAL (WELD PULLS DOWN TO KINK THE WORK)
WELDING IN OPEN IS USUALLY EASY
TOUCHING HERE
GAP
RIGID STRUCTURE
BENT
WELDS

FIG. 3

A hydrogen burner placed above the oxy-acetylene torch and directing a flow of hydrogen down on the weld area helps also on the top side of the weld. Complex welds with sheet as thin as .035 can be accomplished by an airplane welder with comparative ease through the application of this principle.

If the welding could be made to take place over the entire line of the weld at one time, it is probable that many of the problems associated with welding would be eliminated. But, since it is necessary for the welding to progress along as a concentrated cone of heat from one end of the weld to the other, difficulties are multiplied. The direction of the progress of the weld has much to do with its successful completion. One direction will work perfectly, the reverse will split the work.

Welding in the trough of an acute angle is difficult, because the weld puddle should be in the very bottom and this is where the most heat should be concentrated but actually the hot flame cone is always closer to the adjacent walls. The result is that the bottom of the weld is apt to be not fully molten, the sides burned or melted away.

Welding in a confined area such as a pocket or inside a tube is another condition or predicament hard for the welder to cope with to the full extent of his skill. Here the torch tip becomes excessively heated. Water-cooled welding torch tips have been rigged up with gratifying results.

---

is necessary after the normalizing. To avoid much of this the welders tack weld re-enforcing pieces which are cut loose after the heat treatment.

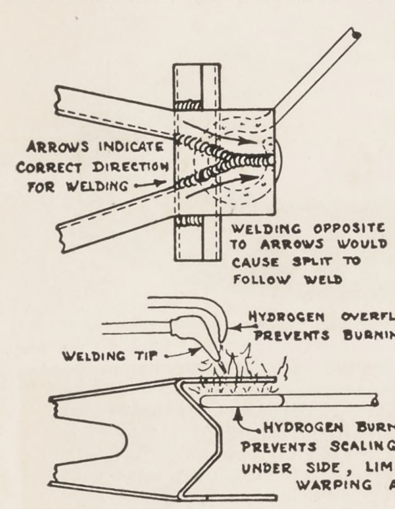

ARROWS INDICATE CORRECT DIRECTION FOR WELDING
WELDING OPPOSITE TO ARROWS WOULD CAUSE SPLIT TO FOLLOW WELD
HYDROGEN OVERFLAME PREVENTS BURNING
WELDING TIP
HYDROGEN BURNER PREVENTS SCALING OF UNDER SIDE, LIMITS WARPING ALSO

FIG. 2

Another phase of welding in which normalizing plays a large part is in the welding of large or complex assemblies in which it is desired to hold the work to close finish dimensions for subsequent machining. If the entire assembly is welded up immediately as a single unit, the strains set up and the interaction of them during the normalizing may easily warp the structure all out of shape. To avoid this the assembly is broken down into sub-assemblies in which the welding becomes more or less self-contained. Then these subassemblies are normalized after welding to remove the strains. Allowances are made in welding to allow for fitting the subassemblies together and they are straightened in themselves if found out of alignment. Then in the final assembly of the sub-assemblies into the one whole structure, only simple strains can be set up, rather than the danger of compounded strains and the likelihood of the structure being warped beyond recovery is averted. Fig. 3 indicates two simple shrinkage or warping effects which can be compounded into a lot of trouble in an intricate structure.

(Continued on page 96)

Flight 7/18/40

THE MYSTERY AEROFOIL

An American Invention

I HAVE before me as I write an article entitled "Mystery Airfoil"; it is the story of the Davis aerofoil and its inventor, David R. Davis.

All readers of *Flight* will readily recall the phenomenal Consolidated 31 flying-boat with its Davis wing and, more recently, the B-24 4-engined bomber of the same make. Until I read the story of the Davis foil I did not fully appreciate the fact that it was destined to go down in history as one of the epic inventions of our time with the most far-reaching effect on the design of aircraft.

Here, indeed, is an enthralling and inspiring story: "A curve, he perceived, was not a dead geometric figure. IT WAS A LIVING, MECHANICAL, OPERATING THING. On the basis of this, he could not but depart from what now seemed an archaic process of obtaining the most efficient curve for an airplane wing—the so-called 'cut and try' methods." Again, "A curve, he saw, was the product of mechanical action—rotation at infinite speed. 'A circle,' he said, 'is not an inert object. It is something going around—a radius arm (or lever arm) rotating about a centre.'

"Having stumbled on this hypothesis, he discovered that the most efficient mechanical action to produce lift would result from the proper relation between the rotational speed of the radius arm and the translational velocity of the point about which the radius arm rotates.

"Two factors must be borne in mind . . . one is rotation—MOVEMENT of the radius arm around the centre of a circle. The other is translation—movement of the centre itself.

"Mark a dot on a piece of paper, designating it as the centre of a circle. Place the point of a pencil on that dot, then lay the pencil down to form a radius, or lever arm. Now turn the pencil clockwise and, at the same time, move the point in a straight line to the left (thus indicating movement of the circle's centre by the latter motion). The curve formed by the top of the pencil as result of this simultaneous action is fundamentally part of a Davis airfoil profile—the product of two *steady movements*.

"Steadiness is important. 'If you rotate a flywheel steadily it takes less effort to keep it moving,' Davis explains. 'If done jerkily more H.P. will be required. The same is true of translation. The centre of the circle must move at a steady rate. The combined steady actions will trace the top curve of an airfoil, and a million of these (an abstract number) will form the wing's cover.'

"A wing surface is no more inert than a buzz-saw, Davis declares. It is a mechanical device whipping the tar out of the airstream, smashing all its resistance and converting it into work for the 'plane. That, stripped of elegant technical terms, is 'lift.' To illustrate this, Davis uses the golfer. The golf club rotates around the hand as a centre. Both hand and club are moving—translation and rotation. If the swing is not smooth the ball won't travel far. A weakling with a steady swing will send the ball farther than a muscular gent. with jerky style.

"An airfoil is the golf club in opposite action—seizing the ball as it would come to it in a reverse motion picture and killing its resistance. The more smoothly the wing does this with air the faster the 'plane will travel with least effort. A wing in flight, to Davis at least, is nothing more than millions of lever arms grabbing and taking the punch out of the air.

"Where is the mystery in an airfoil so readily explained by its creator? Ah, that is the formula which expresses the most perfect relationship between the rotational and translation speeds. With the seemingly endless possibilities involved no less than an Einstein, one would surmise, could arrive at this formula. But Davis calls it a natural conclusion reached once the old ideas of airfoil design are junked."

The article goes on to tell of the innumerable and possibly inevitable difficulties Davis encountered in trying to get people interested, how the N.A.C.A. were flabbergasted when they observed for themselves the amazing efficiency of the Davis foil when compared with the super-foils they had evolved.

In discussing foreign interest in the Davis wing, the following is relevant: ". . . negotiations with one particular country (reliably reported to be ENGLAND.—ED.), whose name he cannot disclose, because of the international situation, have reached such an advanced stage that before this is published the Davis section may be putting new wings on European aircraft."

Apparently, Davis is not enamoured by the Dictators, or anybody who has discarded the democratic ideal.

Whether or no we are already building 'planes with this new aerofoil, I thought that I would bring this article to the notice of *Flight* readers.

JOHN W. MORRISON.

London, N.W.3.

AIRCRAFT CONSOLIDATION

All physical assets, as well as the name and good will of the Hall-Aluminum Aircraft Corporation, of Bristol, Pa., have been merged through purchase with Consolidated Aircraft Corporation. Thus tersely may be stated the fact that Hall-Aluminum Corporation is now a part of Consolidated Aircraft Corporation, San Diego, Calif.

Some 32 key men of the eastern airplane plant have joined the new organization, and all patent rights, material and equipment of the former company have been acquired through the purchase.

Hall-Aluminum Aircraft Corporation had its beginning in Charles Ward Hall, Inc., in 1916. Since that time and until the formation of Hall-Aluminum Aircraft Corporation, Inc., in 1927, Charles Ward Hall, president and sole stockholder, had been continuously engaged in research in the use of aluminum alloys in connection with the design and construction of aircraft. Mr. Hall applied for and was granted numerous basic patents relating to this field.

Along with the airplanes built, there were developed a complete line of draw bench shapes and other parts of strong aluminum alloys which were perfected and continuously produced and sold since 1923 to various airplane manufacturers.

In 1927 Hall-Aluminum Corporation was incorporated through the purchase from the late Charles Ward Hall of all assets belonging to Charles Ward Hall, Inc. The new company, until its acquisition by Consolidated Aircraft Corporation, has been engaged in the design and manufacture of aircraft, particularly flying boats and seaplanes, aircraft parts and sections, and in overhaul and repair work.

Clinging rather tenaciously to the naval side of aviation construction, Hall-Aluminum Aircraft has produced principally seaplanes and flying boats, pioneering in many phases of the work and particularly in all-metal construction. In 1920 metal wings were constructed for HS-3 flying boats. In 1924 there were built in conjunction with the Curtiss Aeroplane and Motor Company, two U. S. Navy F4C-1 fighter airplanes . . . the first all-metal aircraft used by the U. S. Navy. Other airplanes built included the C-333, XFH-1, XPH-1, PH-1s, PH-2s, PH-3s, and XP2H-1, a four-engine long range patrol or bomber boat with four liquid cooled engines. In 1933 it made the longest non-stop flight up to that time by the Navy, from Norfolk, Va., to Coco Solo in the Canal Zone.

The Company also made the twin float monoplane torpedo bomber, the XPTBH-2. Throughout this period and to the present time the corporation produced and supplied parts and standardized aircraft sections to all principal manufacturers and producers in the United States and Canada. Besides supplying the U. S. Navy with many of its aircraft the company has also supplied the Coast Guard with numerous craft.

Archibald M. Hall, president and director of the Hall-Aluminum Aircraft Corporation, now merged with Consolidated Aircraft Corporation, is the son of Charles Ward Hall, who founded Charles Ward Hall, Inc., the pioneering aluminum alloy aircraft manufacturing company.

Among those also joining Consolidated from the roster of executives of Hall-Aluminum Aircraft Corporation are: Charles F. Pape, who was vice-president, treasurer and director; Henry S. Deichert, factory superintendent, and John H. Smith and John Sangster, general foremen.

U. S. COAST GUARD November 1940

The Airlog October, 1940.

FLYING-FORTRESSES AND NAVAL PATROL-BOMBERS.

To Be Sold To England.

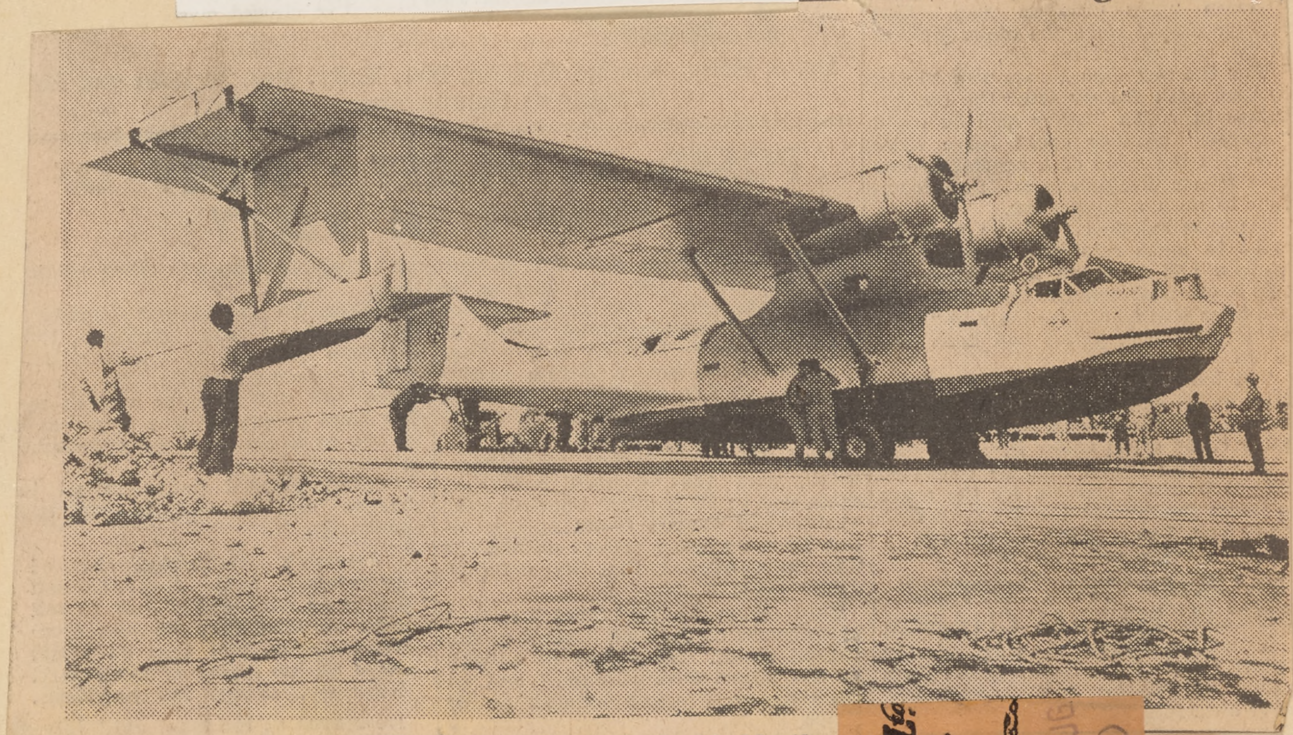
It is reported from America that, under a trade-in arrangement whereby the U.S. Government shall sell back to the manufacturers, in part-payment for other craft, a considerable number of Army and Navy bombers — Boeing four-engined "Flying Fortresses" and Consolidated twin-engined PBY flying-boats — the manufacturers, under Government permit, shall, in turn, put them in virtual brand-new order and sell them to England.

An initial shipment of twenty-five of each is declared imminent.

Heavily armed, with five machine-gun positions in "blisters" above, on the sides and below, as well as mounting forward-firing guns and being able to carry heavy bomb loads great distances at fairly high speeds, the Boeing "Flying Fortresses" would be difficult customers for ordinary fighting craft to come up against. They could operate over extreme ranges and attack enemy plants much further afield than those now being bombed from England by the Royal Air Force.

Similarly, the PBY's., with extreme range of about 4,000 miles as reconnaissance craft and able to carry a substantial bomb load for little short of that distance, should prove most useful adjuncts in both northern and Mediterranean areas.

Flying-boat "Ferry" between U.S. and England

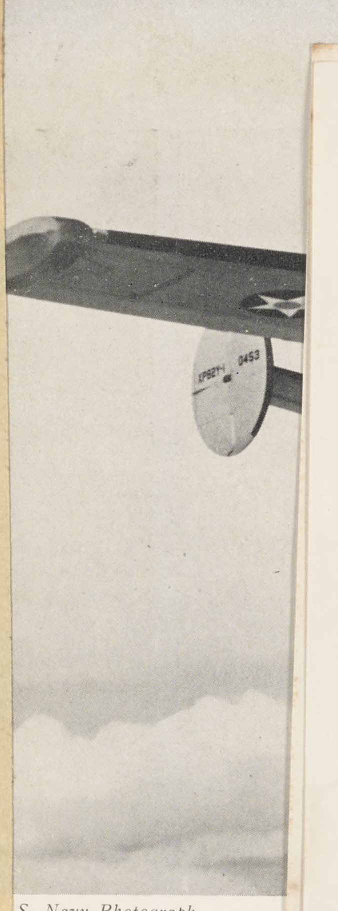


Mr. Richard Archbold, the former explorer, has announced in New York that he has sold his flying-boat, Guba, which he has used on scientific expeditions in Africa and New Guinea, to the British Government for transporting aluminium from the United States to England. The Guba will make trips twice a week. The American airman, Clyde Pangborn will head the crew.

Romeike & Curtice Ltd.
35. Shoe Lane LONDON. E.C.4.
Telephone CENTRAL 2781 (2 Lines.)
EXTRACT FROM

Irish Press.

2 AUG 40



S. Navy Photograph

THE FLA

twenty tons, a well-designed flying boat would normally have a somewhat smaller structural weight. In large sizes the flying boat becomes the substantially lighter one of the two.

"As the size increases, the structural weight of the flying boat hull, with side floats, decreases in per cent of the gross weight. The weight of the landplane fuselage may decrease slightly, or it may remain the same according to the design. The weight of the landing gear tends to increase substantially. This can be understood from the fact that the structural weight of the wheels increases faster than the carrying capacity. Furthermore, the height of the aircraft above the ground becomes greater which calls for an increase in the structural weight of the supporting members on top of the increase in proportion to loads carried. Finally, heavy concentrated loads, huge doors to permit retracting the landing gear, etc., also call for an unproportionately heavier structural weight.

Table 4

	1	2	3
	Flying Boat	Land-plane	Land-plane
Gross Weight, Kg.	100,000	100,000	106,000
Wing Area, m^2...	449	449	476
Pay load, Kg. ...	11,400	11,400	11,400
Fuel and Oil, Kg..	30,000	25,000	30,000
Total Power, BHP	12,500	12,500	12,500
High Speed, S.L., Km./H.	403	411	401
Speed at 60% BHP, S.L., Km./H.	320	325	317
Maximum Range, KM.*	9,070	7,480	8,650
Initial Rate of Climb, m/s....	4.07	4.17	3.73
L/D Max.......	21.05	21.50	21.6

* /Range of L/D maximum

"Investigations of large ships disclose that under similar conditions of pay load, accommodations on board, power plant, gross weight, etc., the landplane would have a structural weight of at least 5 to 6 tons more in the class of 100-ton aircraft.

"Table 4 represents performances that may be expected from a flying boat and two landplanes of similar power and useful load. Column 1 gives the performance of the 100-ton flying boat; column 2 represents a landplane with the same wing area and the same gross weight. In view of the greater structural weight and in spite of lesser parasite drag, this ship will have a substantially smaller range with the same pay load, or would have to *carry about 40 per cent less pay load for the same range.* Column 3 represents data of another landplane of generally similar type but with the wing area increased so as to permit carrying the same useful load as in the case of the flying boat and maintaining the same wing loading. The larger wing is assumed to have the same aspect ratio. *It may be noticed that this plane will have performance characteristics generally inferior to the flying boat.*

"These figures are based on a study completed by our organization and are believed to represent fairly well the characteristics of a 100-ton, long-range transport flying boat which can be produced on the basis of our present-day engineering. As for the landplane, the writer considers that the structural weight may be even greater than has been assumed. Furthermore, the wing loading was assumed to be equal in all cases. Actually, it is believed that in view of practically unlimited take-off and landing spaces the flying boat can, under similar conditions, stand a heavier wing loading than the landplanes, in which case its lead in performance will be further increased.

"For the landplane the conditions are not the same. The structural weight of the landing gear would require a greater percentage from the total as the weight increases. *Furthermore, the size of the airports*

would create limitations in the size and wing loading of the aircraft. This and other considerations point to the conclusion that the largest landplanes will remain substantially below the size and weight of flying boats.

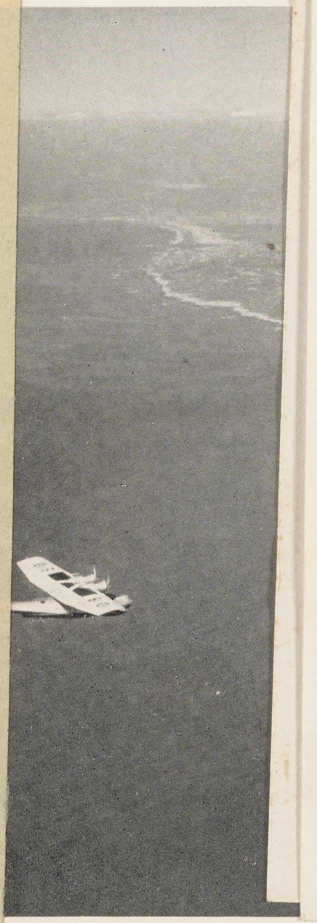
"The results of the study of relative efficiency of sea and landplanes of different sizes may now be briefly summarized as follows: *In small sizes the landplane is more efficient. In intermediate sizes the two types become comparable* with the landplane having a greater operating speed, while the flying boat, a better useful lifting capacity, because of small structural weight. *In larger sizes* of about 100 ton or more, *the flying boat becomes superior in nearly every respect,* as it has been shown above. While other assumptions with respect to range, useful volume allowance, etc., may alter the figures, yet the conclusions and trends as expressed above are believed to be generally correct.

"A résumé of the analysis brings us to the following conclusion:

"The service in general strongly suggests a large aircraft in preference to a series of small ones. This is dictated by the necessity for large, competent flying crews and extensive radio and navigation equipment that are necessarily independent of the size of the ship and cargo carried. It is further necessitated by the ample room needed. *In larger sizes the flying boat appears to be definitely superior with respect to its general efficiency and all-around performance characteristics.* Besides offering greater actual safety and a better feeling of security for long over-water flights, the ship offers better protection from forced landing because its lighter weight will insure superior performance and higher ceiling with part of the power units out of commission. It further offers advantages in safety and service by the fact that it has at its disposal thousands of square kilometers of inland water in case of bad weather near its destination, as compared with the few airports of hardly a couple of square kilometers for the landplane. *In view of all this, the author believes that the huge flying boat will represent the more efficient and practical type of transport aircraft for future intercontinental travel.*"

The bombing plane is essentially a long-range gun, its principal utility being its range; its weakness, the fact that it must return to its base to reload. The natural effort is, therefore, to increase the *range* so that the enemy may be destroyed long before he threatens our coast, to increase the *bomb load* to increase the hitting power, and lastly, to increase the *speed* to assist in evading enemy interference and to hasten the return in case further attacks are necessary. The first two of the desirable objectives enumerated above force us to a large airplane, and since the large seaplane, as has been pointed out, is superior to the large landplane in all three of the fundamental respects, the reasons for its preference are clear.

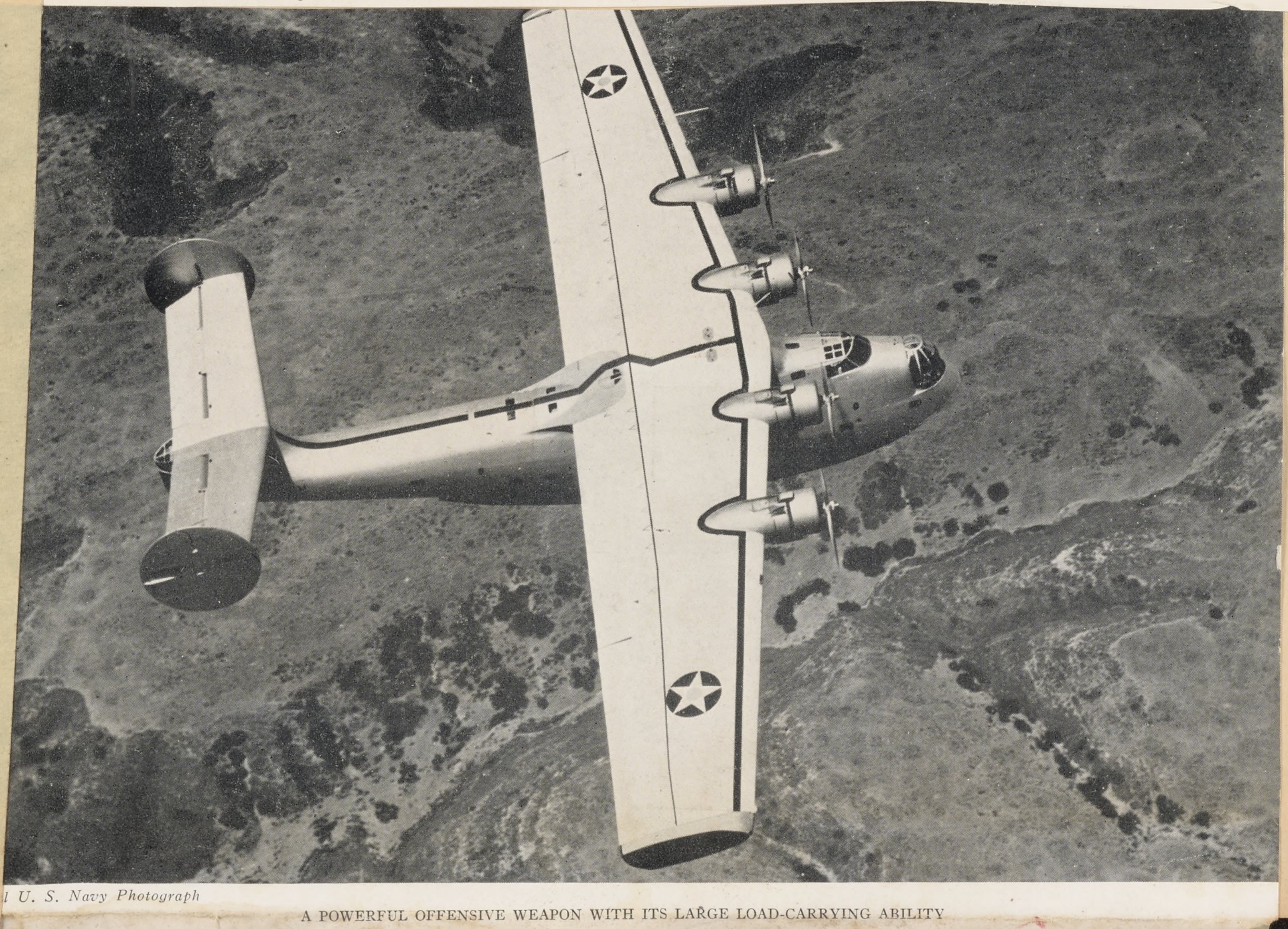
So much for the flight characteristics of the airplane itself. Even though the suitability of the patrol plane for its primary mission of scouting and its secondary one of bombing be granted, the picture is not complete without considering the logistic problem. It is in operating flexibility and the comparative ease with which the logistic problem may be handled that the patrol plane is without a peer. Naval officers are acutely aware of the vital necessity for proper fleet bases, supply depots, and an adequate train. All aircraft need comparable facilities, although the patrol plane is as nearly independent of fixed bases as any type of craft can be. While patrol planes must have base facilities, the fact is not well recognized that since these planes operate from the surface of the water, they need not in war time be restricted to large prepared fields, hangars, or supply depots. They can be, and are, effectively and efficiently operated from movable tenders and are thus relieved of the neces-



Consolidated Aircraft Corporation

THE NAVY'S LAND-BASED AIR POWER CAPABLE OF LONG-RANGE SCOUTING AND BOMBING OPERATIONS

The recent acquisition of Atlantic bases will enable the patrol plane to guard every approach to our vital areas.



l U. S. Navy Photograph

A POWERFUL OFFENSIVE WEAPON WITH ITS LARGE LOAD-CARRYING ABILITY

Gun turrets in every conceivabl[illegible] area increase its ability for self-defens

← Illustrations of above article

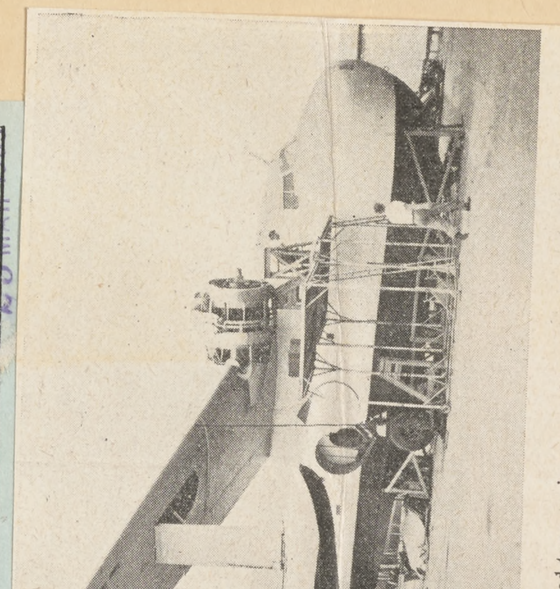
ROMEIKE & CURTICE LTD.
The Press Clipping Bureau
35 Shoe Lane
LONDON, E.C.4
Telephone: Central 2781

Consolidated Air

EXTRACT FROM
FLIGHT
The First Aero Weekly in the World
EVERY THURSDAY 6d.
Flight Publishing Co. Ltd.
Dorset House, Stamford Street, London, S.E.1

8 AUG 1940

~~23 MAR 1939~~



4,000 H.P. The Consolidated type 31 is powered by two of the new Wright two-row Duplex-Cyclone engines, and is probably the world's most powerful twin-engined flying boat. The "retractable tricycle undercarriage" is a beaching trolley. The struts of the outboard floats fold into the wing. The machine has accommodation for 52 passengers in the daytime and 28 at night.

Welding Problems in Aviation

Typical of the transport and bombing type of plane is this Model 28 produced by the Consolidated Aircraft Corporation now in service in trans-Pacific operations. Welding plays a significant part in its construction.

ALL welding fixtures are made oversize and allowances are made for the shrinkage to be expected. Sometimes the design of the work itself brings about a condition in which both the expansion and contraction, plus the shrinkage, bring about trouble with the welding operation and results. There must be allowance for expansion, contraction and shrinkage, or some part of the weld will suffer.

A simple and excellent example of this is shown in Fig. 1. Here it was desired to run a tube through a boxlike structure of considerable stiffness (with the flanges, as well as the area of the bottom, contributing to this stiffness) and to weld around the point of passage of the tube through the box. Due to the stiffness of the box around the weld, the expansion forces the metal in the area surrounding the weld to be compressed. The outer areas remain cool and resist this expansion with their full strength. In the areas between, which are progressively cooler toward the outside, the force of expansion acts upon the metal in what amounts to cold working. Here the crystal structure of the metal is crushed and compacted together. Then, as the immediate area of the weld cools, it contracts more than it expanded, pulling with great strength upon the very structure it has just compressed, also pulling forward and back around the weld. Being restricted in contraction as it was in expansion, and with no allowance for the added shrinkage possible, all it can

From Reports of The Consolidated Aircraft Corporation, San Diego, California

Oct. 1940

(over)

Tenth Anniversary Number

is necessary after the normalizing. To avoid much of this the welders tack weld re-enforcing pieces which are cut loose after the heat treatment.

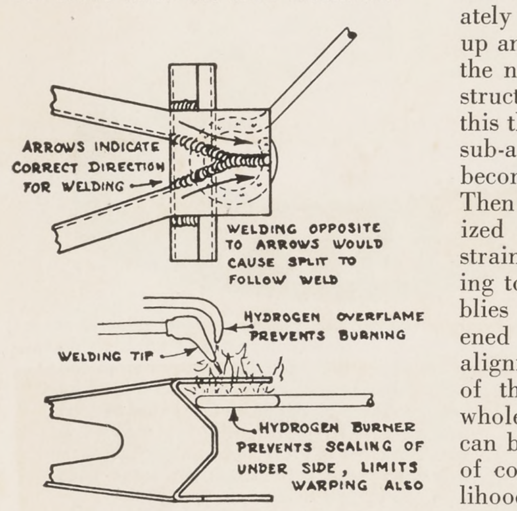

ARROWS INDICATE CORRECT DIRECTION FOR WELDING
WELDING OPPOSITE TO ARROWS WOULD CAUSE SPLIT TO FOLLOW WELD
HYDROGEN OVERFLAME PREVENTS BURNING
WELDING TIP
HYDROGEN BURNER PREVENTS SCALING OF UNDER SIDE, LIMITS WARPING ALSO

FIG. 2

Another phase of welding in which normalizing plays a large part is in the welding of large or complex assemblies in which it is desired to hold the work to close finish dimensions for subsequent machining. If the entire assembly is welded up immediately as a single unit, the strains set up and the interaction of them during the normalizing may easily warp the structure all out of shape. To avoid this the assembly is broken down into sub-assemblies in which the welding becomes more or less self-contained. Then these subassemblies are normalized after welding to remove the strains. Allowances are made in welding to allow for fitting the subassemblies together and they are straightened in themselves if found out of alignment. Then in the final assembly of the sub-assemblies into the one whole structure, only simple strains can be set up, rather than the danger of compounded strains and the likelihood of the structure being warped beyond recovery is averted. Fig. 3 indicates two simple shrinkage or warping effects which can be compounded into a lot of trouble in an intricate structure.

(Continued on page 96)

Hydrogen Protection

While most of the welding is done with the oxygen-acetylene flame, hydrogen is likewise brought into play with great benefit. Hydrogen is used for the welding of aluminium because it smothers the area surrounding the area of the weld with hydrogen to the exclusion of oxygen and prevents the aluminium from oxidizing. Two oxidized aluminium surfaces will not weld well even with the application of liberal amounts of flux. Hydrogen too, can be called to good turn simultaneously as a pre-heater and to prevent the formation of scale on thin steel pieces. While it actually heats of course, it seems to have the property of cooling, or at least of spreading the heat from a weld so that distortion is not so apt to occur. A simple hydrogen burner of copper tubing shaped to fit the work and used on the back side of a thin steel sheet being welded, largely prevents the formation of scale. See Fig. 2.

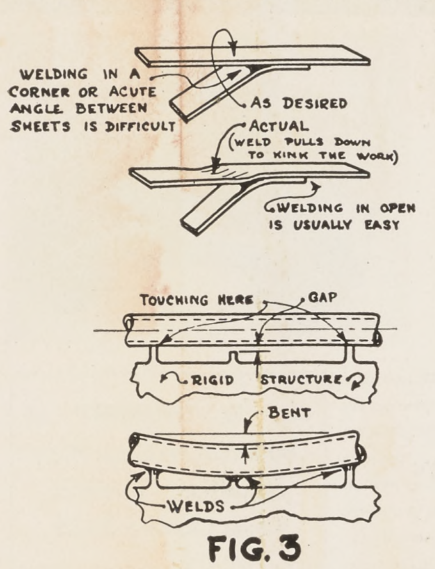

WELDING IN A CORNER OR ACUTE ANGLE BETWEEN SHEETS IS DIFFICULT
AS DESIRED
ACTUAL (WELD PULLS DOWN TO KINK THE WORK)
WELDING IN OPEN IS USUALLY EASY
TOUCHING HERE
GAP
RIGID STRUCTURE
BENT
WELDS

FIG. 3

A hydrogen burner placed above the oxy-acetylene torch and directing a flow of hydrogen down on the weld area helps also on the top side of the weld. Complex welds with sheet as thin as .035 can be accomplished by an airplane welder with comparative ease through the application of this principle.

If the welding could be made to take place over the entire line of the weld at one time, it is probable that many of the problems associated with welding would be eliminated. But, since it is necessary for the welding to progress along as a concentrated cone of heat from one end of the weld to the other, difficulties are multiplied. The direction of the progress of the weld has much to do with its successful completion. One direction will work perfectly, the reverse will split the work.

Welding in the trough of an acute angle is difficult, because the weld puddle should be in the very bottom and this is where the most heat should be concentrated but actually the hot flame cone is always closer to the adjacent walls. The result is that the bottom of the weld is apt to be not fully molten, the sides burned or melted away.

Welding in a confined area such as a pocket or inside a tube is another condition or predicament hard for the welder to cope with to the full extent of his skill. Here the torch tip becomes excessively heated. Water-cooled welding torch tips have been rigged up with gratifying results.

Flight 7/18/40

THE MYSTERY AEROFOIL

An American Invention

I HAVE before me as I write an article entitled "Mystery Airfoil"; it is the story of the Davis aerofoil and its inventor, David R. Davis.

All readers of *Flight* will readily recall the phenomenal Consolidated 31 flying-boat with its Davis wing and, more recently, the B-24 4-engined bomber of the same make. Until I read the story of the Davis foil I did not fully appreciate the fact that it was destined to go down in history as one of the epic inventions of our time with the most far-reaching effect on the design of aircraft.

Here, indeed, is an enthralling and inspiring story: "A curve, he perceived, was not a dead geometric figure. IT WAS A LIVING, MECHANICAL, OPERATING THING. On the basis of this, he could not but depart from what now seemed an archaic process of obtaining the most efficient curve for an airplane wing—the so-called 'cut and try' methods." Again, "A curve, he saw, was the product of mechanical action—rotation at infinite speed. 'A circle,' he said, 'is not an inert object. It is something going around—a radius arm (or lever arm) rotating about a centre.'

"Having stumbled on this hypothesis, he discovered that the most efficient mechanical action to produce lift would result from the proper relation between the rotational speed of the radius arm and the translational velocity of the point about which the radius arm rotates.

"Two factors must be borne in mind . . . one is rotation—MOVEMENT of the radius arm around the centre of a circle. The other is translation—movement of the centre itself.

"Mark a dot on a piece of paper, designating it as the centre of a circle. Place the point of a pencil on that dot, then lay the pencil down to form a radius, or lever arm. Now turn the pencil clockwise and, at the same time, move the point in a straight line to the left (thus indicating movement of the circle's centre by the latter motion). The curve formed by the top of the pencil as result of this simultaneous action is fundamentally part of a Davis airfoil profile—the product of two *steady movements.*

"Steadiness is important. 'If you rotate a flywheel steadily it takes less effort to keep it moving,' Davis explains. 'If done jerkily more H.P. will be required. The same is true of translation. The centre of the circle must move at a steady rate. The combined steady actions will trace the top curve of an airfoil, and a million of these (an abstract number) will form the wing's cover.'

"A wing surface is no more inert than a buzz-saw, Davis declares. It is a mechanical device whipping the tar out of the airstream, smashing all its resistance and converting it into work for the 'plane. That, stripped of elegant technical terms, is 'lift.' To illustrate this, Davis uses the golfer. The golf club rotates around the hand as a centre. Both hand and club are moving—translation and rotation. If the swing is not smooth the ball won't travel far. A weakling with a steady swing will send the ball farther than a muscular gent. with jerky style.

"An airfoil is the golf club in opposite action—seizing the ball as it would come to it in a reverse motion picture and killing its resistance. The more smoothly the wing does this with air the faster the 'plane will travel with least effort. A wing in flight, to Davis at least, is nothing more than millions of lever arms grabbing and taking the punch out of the air.

"Where is the mystery in an airfoil so readily explained by its creator? Ah, that is the formula which expresses the most perfect relationship between the rotational and translation speeds. With the seemingly endless possibilities involved no less than an Einstein, one would surmise, could arrive at this formula. But Davis calls it a natural conclusion reached once the old ideas of airfoil design are junked."

The article goes on to tell of the innumerable and possibly inevitable difficulties Davis encountered in trying to get people interested, how the N.A.C.A. were flabbergasted when they observed for themselves the amazing efficiency of the Davis foil when compared with the super-foils they had evolved.

In discussing foreign interest in the Davis wing, the following is relevant: ". . . negotiations with one particular country (reliably reported to be ENGLAND.—ED.), whose name he cannot disclose, because of the international situation, have reached such an advanced stage that before this is published the Davis section may be putting new wings on European aircraft."

Apparently, Davis is not enamoured by the Dictators, or anybody who has discarded the democratic ideal.

Whether or no we are already building 'planes with this new aerofoil, I thought that I would bring this article to the notice of *Flight* readers. JOHN W. MORRISON.

London, N.W.3.

AIRCRAFT CONSOLIDATION

All physical assets, as well as the name and good will of the Hall-Aluminum Aircraft Corporation, of Bristol, Pa., have been merged through purchase with Consolidated Aircraft Corporation. Thus tersely may be stated the fact that Hall-Aluminum Corporation is now a part of Consolidated Aircraft Corporation, San Diego, Calif.

Some 32 key men of the eastern airplane plant have joined the new organization, and all patent rights, material and equipment of the former company have been acquired through the purchase.

Hall-Aluminum Aircraft Corporation had its beginning in Charles Ward Hall, Inc., in 1916. Since that time and until the formation of Hall-Aluminum Aircraft Corporation, Inc., in 1927, Charles Ward Hall, president and sole stockholder, had been continuously engaged in research in the use of aluminum alloys in connection with the design and construction of aircraft. Mr. Hall applied for and was granted numerous basic patents relating to this field.

Along with the airplanes built, there were developed a complete line of draw bench shapes and other parts of strong aluminum alloys which were perfected and continuously produced and sold since 1923 to various airplane manufacturers.

In 1927 Hall-Aluminum Corporation was incorporated through the purchase from the late Charles Ward Hall of all assets belonging to Charles Ward Hall, Inc. The new company, until its acquisition by Consolidated Aircraft Corporation, has been engaged in the design and manufacture of aircraft, particularly flying boats and seaplanes, aircraft parts and sections, and in overhaul and repair work.

Clinging rather tenaciously to the naval side of aviation construction, Hall-Aluminum Aircraft has produced principally seaplanes and flying boats, pioneering in many phases of the work and particularly in all-metal construction. In 1920 metal wings were constructed for HS-3 flying boats. In 1924 there were built in conjunction with the Curtiss Aeroplane and Motor Company, two U. S. Navy F4C-1 fighter airplanes . . . the first all-metal aircraft used by the U. S. Navy. Other airplanes built included the C-333, XFH-1, XPH-1, PH-1s, PH-2s, PH-3s, and XP2H-1, a four-engine long range patrol or bomber boat with four liquid cooled engines. In 1933 it made the longest non-stop flight up to that time by the Navy, from Norfolk, Va., to Coco Solo in the Canal Zone.

The Company also made the twin float monoplane torpedo bomber, the XPTBH-2. Throughout this period and to the present time the corporation produced and supplied parts and standardized aircraft sections to all principal manufacturers and producers in the United States and Canada. Besides supplying the U. S. Navy with many of its aircraft the company has also supplied the Coast Guard with numerous craft.

Archibald M. Hall, president and director of the Hall-Aluminum Aircraft Corporation, now merged with Consolidated Aircraft Corporation, is the son of Charles Ward Hall, who founded Charles Ward Hall, Inc., the pioneering aluminum alloy aircraft manufacturing company.

Among those also joining Consolidated from the roster of executives of Hall-Aluminum Aircraft Corporation are: Charles F. Pape, who was vice-president, treasurer and director; Henry S. Deichert, factory superintendent, and John H. Smith and John Sangster, general foremen.

U. S. COAST GUARD November 1940

The Air Log October, 1940.

FLYING-FORTRESSES AND NAVAL PATROL-BOMBERS.
To Be Sold To England.

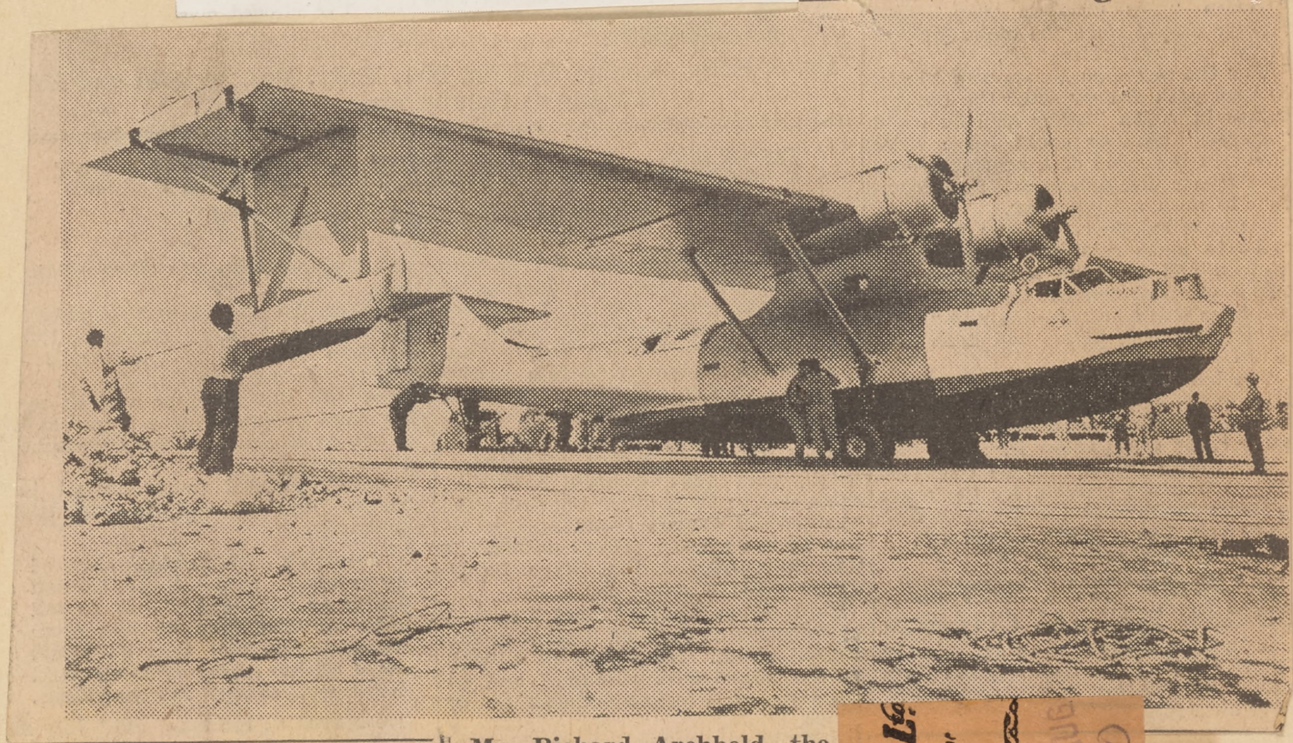
It is reported from America that, under a trade-in arrangement whereby the U.S. Government shall sell back to the manufacturers, in part-payment for other craft, a considerable number of Army and Navy bombers — Boeing four-engined "Flying Fortresses" and Consolidated twin-engined PBY flying-boats — the manufacturers, under Government permit, shall, in turn, put them in virtual brand-new order and sell them to England.

An initial shipment of twenty-five of each is declared imminent.

Heavily armed, with five machine-gun positions in "blisters" above, on the sides and below, as well as mounting forward-firing guns and being able to carry heavy bomb loads great distances at fairly high speeds, the Boeing "Flying Fortresses" would be difficult customers for ordinary fighting craft to come up against. They could operate over extreme ranges and attack enemy plants much further afield than those now being bombed from England by the Royal Air Force.

Similarly, the PBY's., with extreme range of about 4,000 miles as reconnaissance craft and able to carry a substantial bomb load for little short of that distance, should prove most useful adjuncts in both northern and Mediterranean areas.

Flying-boat "Ferry" between U.S. and England



Mr. Richard Archbold, the former explorer, has announced in New York that he has sold his flying-boat, Guba, which he has used on scientific expeditions in Africa and New Guinea, to the British Government for transporting aluminium from the United States to England. The Guba will make trips twice a week. The American airman, Clyde Pangborn will head the crew.

Romeike & Curtice Ltd.
35, Shoe Lane
LONDON.
E.C.4.
Telephone
CENTRAL 2781
(2 Lines.)
EXTRACT FROM
Irish Press.
2 AUG 40

S. Navy Photograph

THE FLA

sity of returning always to a certain fixed locality. The importance of this in a war in which air bases, and particularly their landing areas, are vulnerable to bombing attacks is readily apparent.

Until recently the United States Navy has been woefully short of aircraft tenders. This deficiency is now rapidly being corrected and, once the process is complete, the resulting increase in flexibility and efficiency of operations should be truly surprising. Ships can carry surprisingly large amounts of supplies and personnel, and in an emergency tankers, freighters, and passenger vessels are available for this service in profusion. Thus in war time the patrol plane will be able to go wherever ships can go. It is this release from fixed ground facilities that gains for the patrol plane its great advantage. Any small harbor, cove, little-used fishing port, island, river, or coral atoll can be made suitable for patrol plane operations if there is good holding ground for the anchors and sufficient room for planes to taxi to and from their take-off area. Such facilities are improved if conditions permit tenders and supply vessels to enter, but this is not an absolute necessity, since such bases as those enumerated can be prepared at any time by caching ashore sufficient stocks of fuel and bombs to provide for contemplated operations.

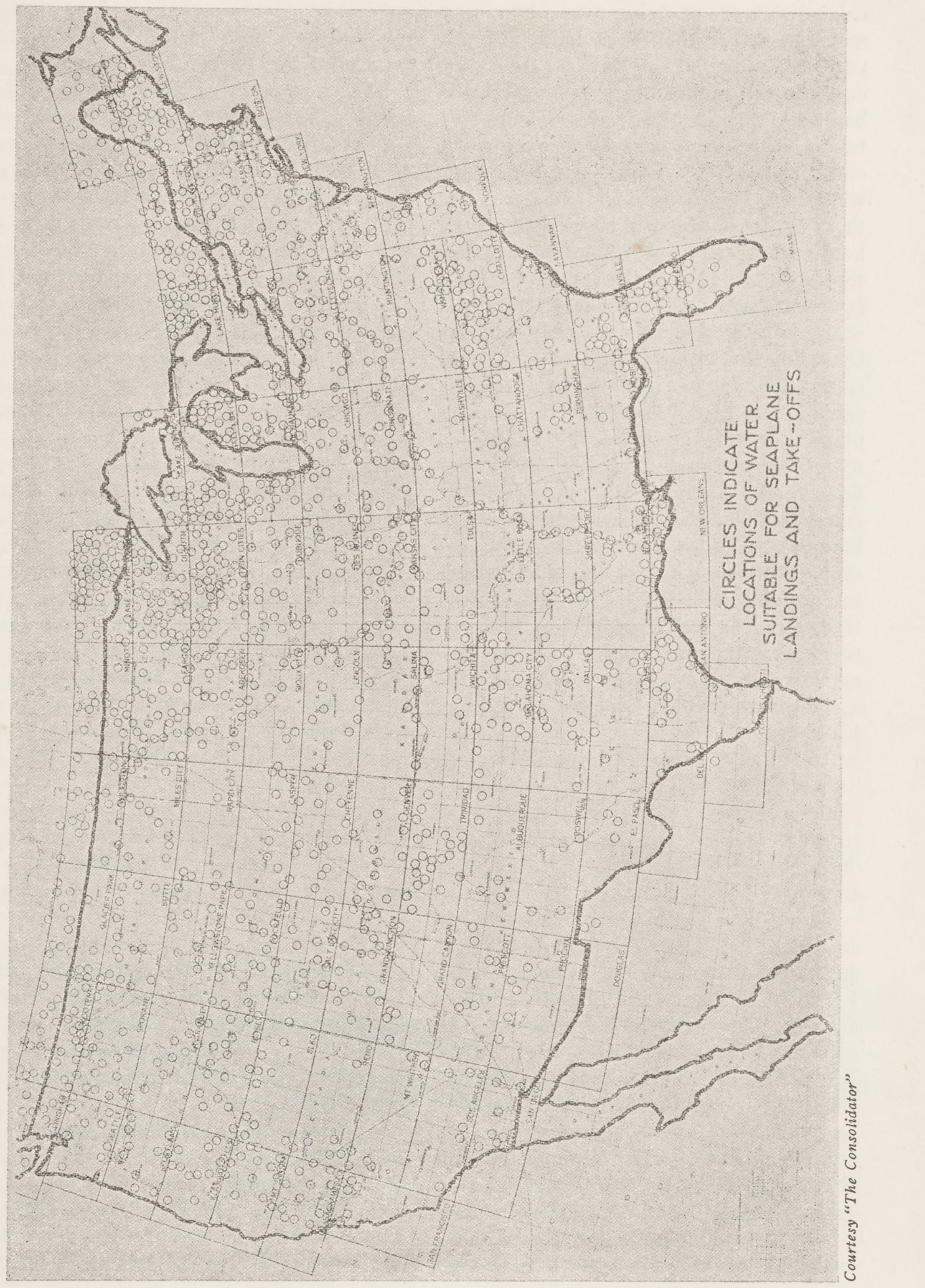
Some regard the patrol plane solely as a scouting airplane. While it is true that the patrol plane, because of its range and endurance, is superbly fitted to act as the long-range scout or air cruiser, it also represents one of the few successful dual-purpose types afloat, either in the air or in the water. Consider the suitability of the patrol plane as a bomber as well as a long-range scout. This dual suitability automatically arises from its great weight-carrying capacity, range, and ability to reach high ceilings which are results of its inherent characteristics as well as its speed advantage over the large landplane.

Several other fortunate circumstances result automatically from the necessary features of patrol plane design. The first of these is the greater protective gun power inherent in patrol planes, their size and shape making it easy to provide gun stations in adequate number and to equip these with guns of larger caliber. An important corollary is that additional space makes the guns easier to serve, further augmenting the value of the defensive armament provided. Another consideration is that gun mounts, particularly the larger power-operated mounts, fair in better in the nose, tail, and tunnel gun positions, with less drag penalty upon their use in a patrol plane design than in a smaller airplane.

The foregoing applies to the newest patrol planes only. Improvements are being made in the present models of the PBY series now in wide service use and those in manufacture will be delivered with much improved defensive armament. Enemy fighters required to attack any of the Navy's new patrol planes will find them extremely formidable antagonists, with no blind angles whatever and with a concentration of fire in the areas most subject to attack. Patrol planes in formation should be immune to attack except by vastly superior numbers of enemy fighters.

A second element inherent in patrol plane design (size) permits installation of excellent personnel accommodations. The accommodations, even in our new patrol planes, are neither luxurious nor commodious, yet comfortable bunks are provided, a certain amount of room is available in which to move around and shake out the kinks, and there are limited galley facilities. These accommodations are sufficient to maintain the crew at a high degree of personal efficiency, particularly in war time, and provide the added advantage that the crews will be able to live aboard their airplanes for limited periods.

The psychological, as well as the practi-



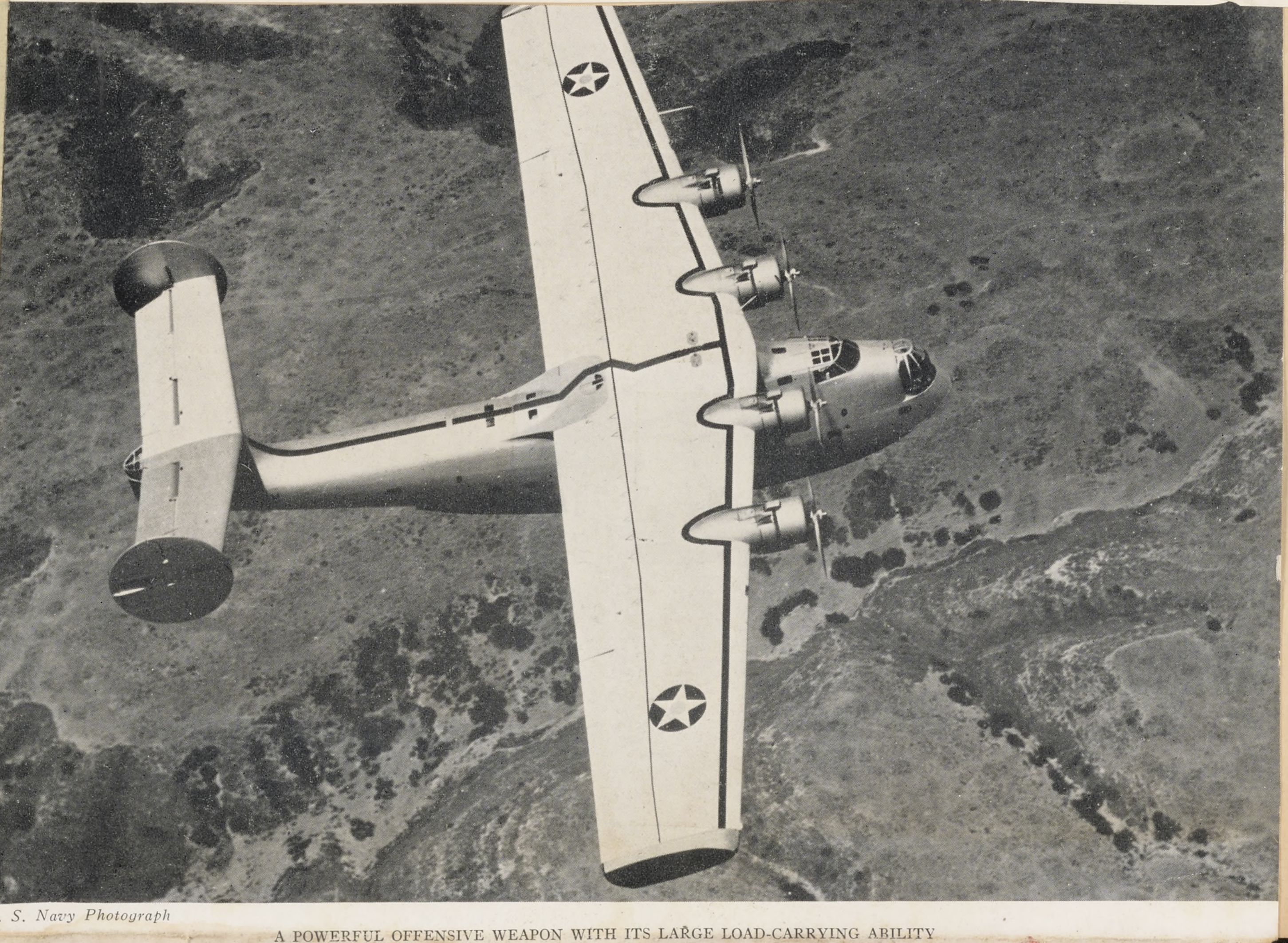
CIRCLES INDICATE LOCATIONS OF WATER SUITABLE FOR SEAPLANE LANDINGS AND TAKE-OFFS

Courtesy "The Consolidator"

Consolidated Aircraft Corporation

THE NAVY'S LAND-BASED AIR POWER CAPABLE OF LONG-RANGE SCOUTING AND BOMBING OPERATIONS

The recent acquisition of Atlantic bases will enable the patrol plane to guard every approach to our vital areas.



U. S. Navy Photograph

A POWERFUL OFFENSIVE WEAPON WITH ITS LARGE LOAD-CARRYING ABILITY

Gun turrets in every conceivabl area increase its ability for self-defen

← Illustrations of above article

ROMEIKE & CURTICE LTD.

The Press Clipping Bureau

35 Shoe Lane

LONDON, E.C.4

Telephone: Central 2781

Consolidated Air

EXTRACT FROM

FLIGHT

The First Aero Weekly in the World

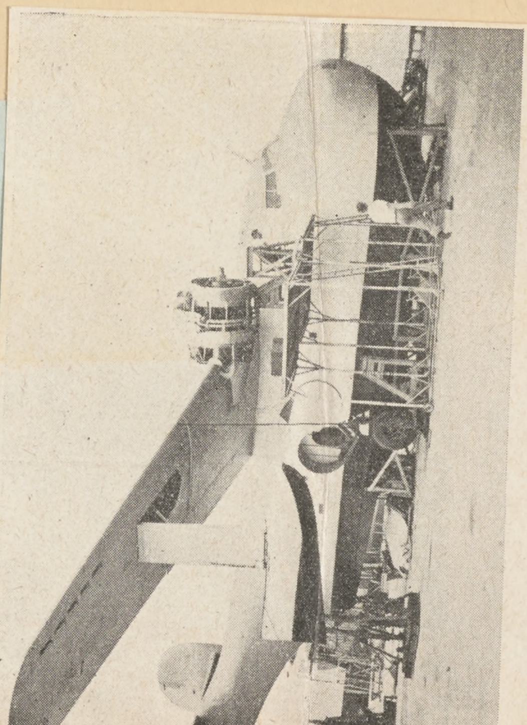
EVERY THURSDAY 6d.

Flight Publishing Co. Ltd.

Dorset House, Stamford Street, London, S.E.1

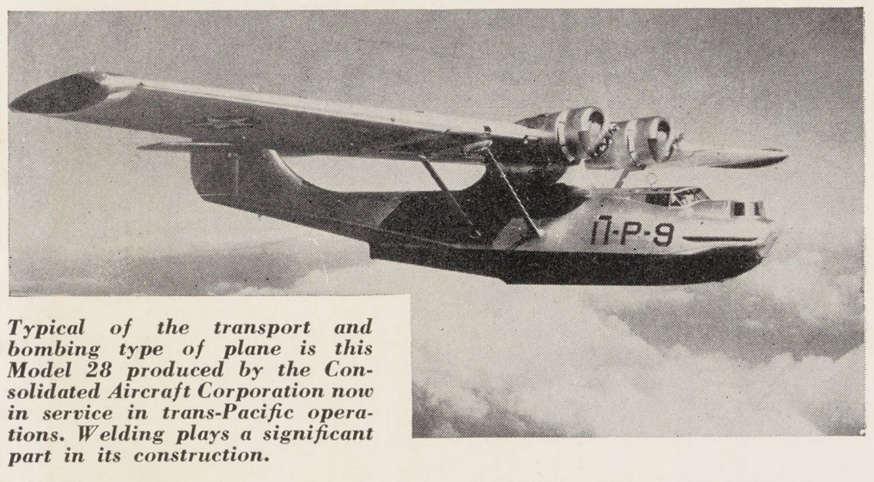
8 AUG 1940

~~23 MAR 1939~~



4,000 H.P. The Consolidated type 31 is powered by two of the new Wright two-row Duplex-Cyclone engines, and is probably the world's most powerful twin-engined flying boat. The "retractable tricycle undercarriage" is a beaching trolley. The struts of the outboard floats fold into the wing. The machine has accommodation for 52 passengers in the daytime and 28 at night.

Welding Problems in Aviation



Typical of the transport and bombing type of plane is this Model 28 produced by the Consolidated Aircraft Corporation now in service in trans-Pacific operations. Welding plays a significant part in its construction.

ALL welding fixtures are made oversize and allowances are made for the shrinkage to be expected. Sometimes the design of the work itself brings about a condition in which both the expansion and contraction, plus the shrinkage, bring about trouble with the welding operation and results. There must be allowance for expansion, contraction and shrinkage, or some part of the weld will suffer.

A simple and excellent example of this is shown in Fig. 1. Here it was desired to run a tube through a boxlike structure of considerable stiffness (with the flanges, as well as the area of the bottom, contributing to this stiffness) and to weld around the point of passage of the tube through the box. Due to the stiffness of the box around the weld, the expansion forces the metal in the area surrounding the weld to be compressed. The outer areas remain cool and resist this expansion with their full strength. In the areas between, which are progressively cooler toward the outside, the force of expansion acts upon the metal in what amounts to cold working. Here the crystal structure of the metal is crushed and compacted together. Then, as the immediate area of the weld cools, it contracts more than it expanded, pulling with great strength upon the very structure it has just compressed, also pulling forward and back around the weld. Being restricted in contraction as it was in expansion, and with no allowance for the added shrinkage possible, all it can

From Reports of The Consolidated Aircraft Corporation,
San Diego, California

Oct. 1940

(over)

Hydrogen Protection

While most of the welding is done with the oxygen-acetylene flame, hydrogen is likewise brought into play with great benefit. Hydrogen is used for the welding of aluminium because it smothers the area surrounding the area of the weld with hydrogen to the exclusion of oxygen and prevents the aluminium from oxidizing. Two oxidized aluminium surfaces will not weld well even with the application of liberal amounts of flux. Hydrogen too, can be called to good turn simultaneously as a pre-heater and to prevent the formation of scale on thin steel pieces. While it actually heats of course, it seems to have the property of cooling, or at least of spreading the heat from a weld so that distortion is not so apt to occur. A simple hydrogen burner of copper tubing shaped to fit the work and used on the back side of a thin steel sheet being welded, largely prevents the formation of scale. See Fig. 2.

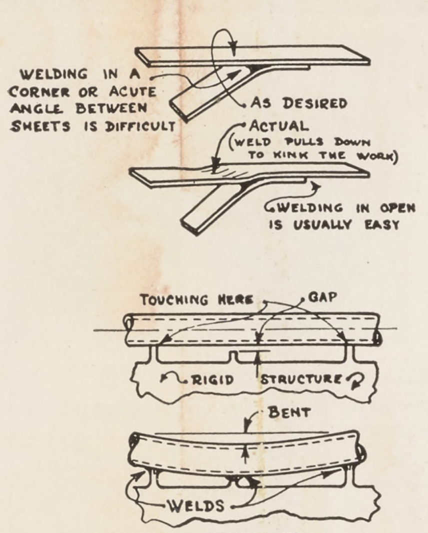

WELDING IN A CORNER OR ACUTE ANGLE BETWEEN SHEETS IS DIFFICULT
AS DESIRED
ACTUAL (WELD PULLS DOWN TO KINK THE WORK)
WELDING IN OPEN IS USUALLY EASY
TOUCHING HERE
GAP
RIGID STRUCTURE
BENT
WELDS

FIG. 3

A hydrogen burner placed above the oxy-acetylene torch and directing a flow of hydrogen down on the weld area helps also on the top side of the weld. Complex welds with sheet as thin as .035 can be accomplished by an airplane welder with comparative ease through the application of this principle.

If the welding could be made to take place over the entire line of the weld at one time, it is probable that many of the problems associated with welding would be eliminated. But, since it is necessary for the welding to progress along as a concentrated cone of heat from one end of the weld to the other, difficulties are multiplied. The direction of the progress of the weld has much to do with its successful completion. One direction will work perfectly, the reverse will split the work.

Welding in the trough of an acute angle is difficult, because the weld puddle should be in the very bottom and this is where the most heat should be concentrated but actually the hot flame cone is always closer to the adjacent walls. The result is that the bottom of the weld is apt to be not fully molten, the sides burned or melted away.

Welding in a confined area such as a pocket or inside a tube is another condition or predicament hard for the welder to cope with to the full extent of his skill. Here the torch tip becomes excessively heated. Water-cooled welding torch tips have been rigged up with gratifying results.

---

is necessary after the normalizing. To avoid much of this the welders tack weld re-enforcing pieces which are cut loose after the heat treatment.

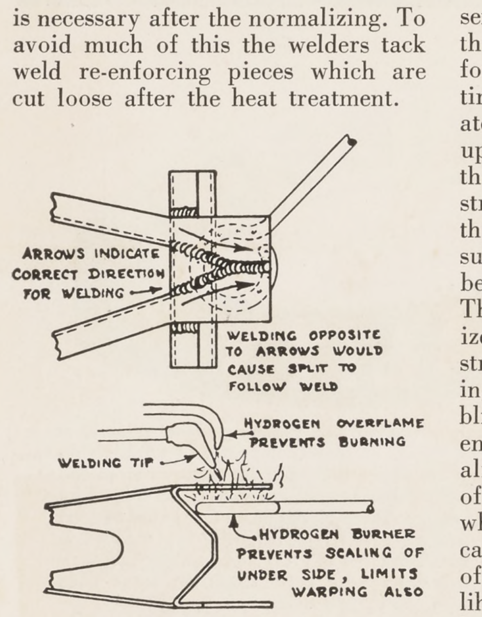

ARROWS INDICATE CORRECT DIRECTION FOR WELDING
WELDING OPPOSITE TO ARROWS WOULD CAUSE SPLIT TO FOLLOW WELD
HYDROGEN OVERFLAME PREVENTS BURNING
WELDING TIP
HYDROGEN BURNER PREVENTS SCALING OF UNDER SIDE, LIMITS WARPING ALSO

FIG. 2

Another phase of welding in which normalizing plays a large part is in the welding of large or complex assemblies in which it is desired to hold the work to close finish dimensions for subsequent machining. If the entire assembly is welded up immediately as a single unit, the strains set up and the interaction of them during the normalizing may easily warp the structure all out of shape. To avoid this the assembly is broken down into sub-assemblies in which the welding becomes more or less self-contained. Then these subassemblies are normalized after welding to remove the strains. Allowances are made in welding to allow for fitting the subassemblies together and they are straightened in themselves if found out of alignment. Then in the final assembly of the sub-assemblies into the one whole structure, only simple strains can be set up, rather than the danger of compounded strains and the likelihood of the structure being warped beyond recovery is averted. Fig. 3 indicates two simple shrinkage or warping effects which can be compounded into a lot of trouble in an intricate structure.

(Continued on page 96)

Flight
7/18/40

THE MYSTERY AEROFOIL

An American Invention

I HAVE before me as I write an article entitled "Mystery Airfoil"; it is the story of the Davis aerofoil and its inventor, David R. Davis.

All readers of *Flight* will readily recall the phenomenal Consolidated 31 flying-boat with its Davis wing and, more recently, the B-24 4-engined bomber of the same make. Until I read the story of the Davis foil I did not fully appreciate the fact that it was destined to go down in history as one of the epic inventions of our time with the most far-reaching effect on the design of aircraft.

Here, indeed, is an enthralling and inspiring story: "A curve, he perceived, was not a dead geometric figure. IT WAS A LIVING, MECHANICAL, OPERATING THING. On the basis of this, he could not but depart from what now seemed an archaic process of obtaining the most efficient curve for an airplane wing—the so-called 'cut and try' methods." Again, "A curve, he saw, was the product of mechanical action—rotation at infinite speed. 'A circle,' he said, 'is not an inert object. It is something going around—a radius arm (or lever arm) rotating about a centre.'

"Having stumbled on this hypothesis, he discovered that the most efficient mechanical action to produce lift would result from the proper relation between the rotational speed of the radius arm and the translational velocity of the point about which the radius arm rotates.

"Two factors must be borne in mind . . . one is rotation—MOVEMENT of the radius arm around the centre of a circle. The other is translation—movement of the centre itself.

"Mark a dot on a piece of paper, designating it as the centre of a circle. Place the point of a pencil on that dot, then lay the pencil down to form a radius, or lever arm. Now turn the pencil clockwise and, at the same time, move the point in a straight line to the left (thus indicating movement of the circle's centre by the latter motion). The curve formed by the top of the pencil as result of this simultaneous action is fundamentally part of a Davis airfoil profile—the product of two *steady movements*.

"Steadiness is important. 'If you rotate a flywheel steadily it takes less effort to keep it moving,' Davis explains. 'If done jerkily more H.P. will be required. The same is true of translation. The centre of the circle must move at a steady rate. The combined steady actions will trace the top curve of an airfoil, and a million of these (an abstract number) will form the wing's cover.'

"A wing surface is no more inert than a buzz-saw, Davis declares. It is a mechanical device whipping the tar out of the airstream, smashing all its resistance and converting it into work for the 'plane. That, stripped of elegant technical terms, is 'lift.' To illustrate this, Davis uses the golfer. The golf club rotates around the hand as a centre. Both hand and club are moving—translation and rotation. If the swing is not smooth the ball won't travel far. A weakling with a steady swing will send the ball farther than a muscular gent. with jerky style.

"An airfoil is the golf club in opposite action—seizing the ball as it would come to it in a reverse motion picture and killing its resistance. The more smoothly the wing does this with air the faster the 'plane will travel with least effort. A wing in flight, to Davis at least, is nothing more than millions of lever arms grabbing and taking the punch out of the air.

"Where is the mystery in an airfoil so readily explained by its creator? Ah, that is the formula which expresses the most perfect relationship between the rotational and translation speeds. With the seemingly endless possibilities involved no less than an Einstein, one would surmise, could arrive at this formula. But Davis calls it a natural conclusion reached once the old ideas of airfoil design are junked."

The article goes on to tell of the innumerable and possibly inevitable difficulties Davis encountered in trying to get people interested, how the N.A.C.A. were flabbergasted when they observed for themselves the amazing efficiency of the Davis foil when compared with the super-foils they had evolved.

In discussing foreign interest in the Davis wing, the following is relevant: ". . . negotiations with one particular country (reliably reported to be ENGLAND.—ED.), whose name he cannot disclose, because of the international situation, have reached such an advanced stage that before this is published the Davis section may be putting new wings on European aircraft."

Apparently, Davis is not enamoured by the Dictators, or anybody who has discarded the democratic ideal.

Whether or no we are already building 'planes with this new aerofoil, I thought that I would bring this article to the notice of *Flight* readers. JOHN W. MORRISON.

London, N.W.3.

AIRCRAFT CONSOLIDATION

All physical assets, as well as the name and good will of the Hall-Aluminum Aircraft Corporation, of Bristol, Pa., have been merged through purchase with Consolidated Aircraft Corporation. Thus tersely may be stated the fact that Hall-Aluminum Corporation is now a part of Consolidated Aircraft Corporation, San Diego, Calif.

Some 32 key men of the eastern airplane plant have joined the new organization, and all patent rights, material and equipment of the former company have been acquired through the purchase.

Hall-Aluminum Aircraft Corporation had its beginning in Charles Ward Hall, Inc., in 1916. Since that time and until the formation of Hall-Aluminum Aircraft Corporation, Inc., in 1927, Charles Ward Hall, president and sole stockholder, had been continuously engaged in research in the use of aluminum alloys in connection with the design and construction of aircraft. Mr. Hall applied for and was granted numerous basic patents relating to this field.

Along with the airplanes built, there were developed a complete line of draw bench shapes and other parts of strong aluminum alloys which were perfected and continuously produced and sold since 1923 to various airplane manufacturers.

In 1927 Hall-Aluminum Corporation was incorporated through the purchase from the late Charles Ward Hall of all assets belonging to Charles Ward Hall, Inc. The new company, until its acquisition by Consolidated Aircraft Corporation, has been engaged in the design and manufacture of aircraft, particularly flying boats and seaplanes, aircraft parts and sections, and in overhaul and repair work.

Clinging rather tenaciously to the naval side of aviation construction, Hall-Aluminum Aircraft has produced principally seaplanes and flying boats, pioneering in many phases of the work and particularly in all-metal construction. In 1920 metal wings were constructed for HS-3 flying boats. In 1924 there were built in conjunction with the Curtiss Aeroplane and Motor Company, two U. S. Navy F4C-1 fighter airplanes . . . the first all-metal aircraft used by the U. S. Navy. Other airplanes built included the C-333, XFH-1, XPH-1, PH-1s, PH-2s, PH-3s, and XP2H-1, a four-engine long range patrol or bomber boat with four liquid cooled engines. In 1933 it made the longest non-stop flight up to that time by the Navy, from Norfolk, Va., to Coco Solo in the Canal Zone.

The Company also made the twin float monoplane torpedo bomber, the XPTBH-2. Throughout this period and to the present time the corporation produced and supplied parts and standardized aircraft sections to all principal manufacturers and producers in the United States and Canada. Besides supplying the U. S. Navy with many of its aircraft the company has also supplied the Coast Guard with numerous craft.

Archibald M. Hall, president and director of the Hall-Aluminum Aircraft Corporation, now merged with Consolidated Aircraft Corporation, is the son of Charles Ward Hall, who founded Charles Ward Hall, Inc., the pioneering aluminum alloy aircraft manufacturing company.

Among those also joining Consolidated from the roster of executives of Hall-Aluminum Aircraft Corporation are: Charles F. Pape, who was vice-president, treasurer and director; Henry S. Deichert, factory superintendent, and John H. Smith and John Sangster, general foremen.

U. S. COAST GUARD November 1940

The Air Log October, 1940.

FLYING-FORTRESSES AND NAVAL PATROL-BOMBERS.

To Be Sold To England.

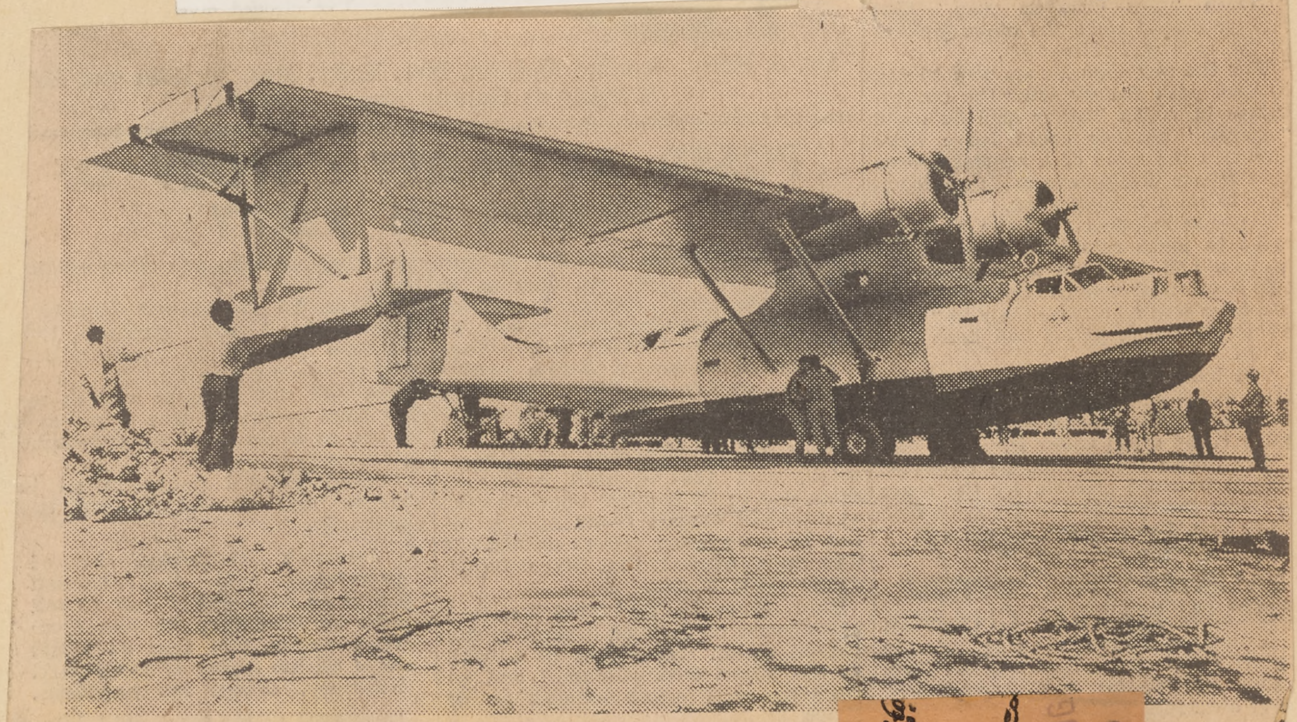
It is reported from America that, under a trade-in arrangement whereby the U.S. Government shall sell back to the manufacturers, in part-payment for other craft, a considerable number of Army and Navy bombers — Boeing four-engined "Flying Fortresses" and Consolidated twin-engined PBY flying-boats — the manufacturers, under Government permit, shall, in turn, put them in virtual brand-new order and sell them to England.

An initial shipment of twenty-five of each is declared imminent.

Heavily armed, with five machine-gun positions in "blisters" above, on the sides and below, as well as mounting forward-firing guns and being able to carry heavy bomb loads great distances at fairly high speeds, the Boeing "Flying Fortresses" would be difficult customers for ordinary fighting craft to come up against. They could operate over extreme ranges and attack enemy plants much further afield than those now being bombed from England by the Royal Air Force.

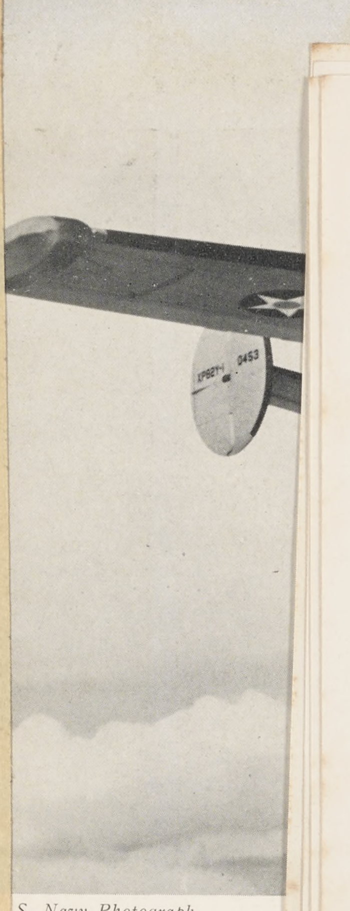
Similarly, the PBY's., with extreme range of about 4,000 miles as reconnaissance craft and able to carry a substantial bomb load for little short of that distance, should prove most useful adjuncts in both northern and Mediterranean areas.

Flying-boat "Ferry" between U.S. and England



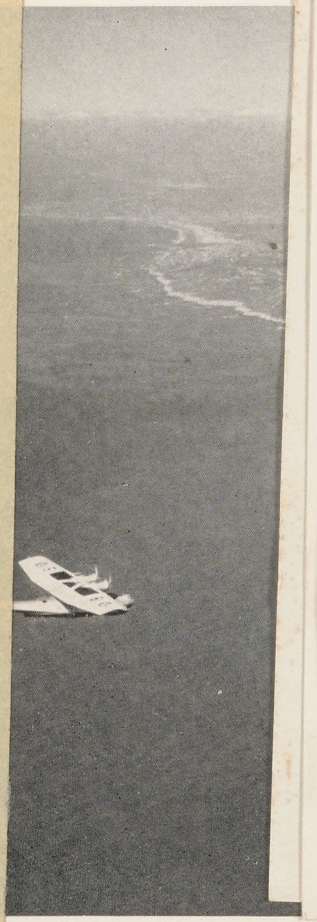
Mr. Richard Archbold, the former explorer, has announced in New York that he has sold his flying-boat, Guba, which he has used on scientific expeditions in Africa and New Guinea, to the British Government for transporting aluminium from the United States to England. The Guba will make trips twice a week. The American airman, Clyde Pangborn will head the crew.

Romeike & Curtice Ltd.
35, Shoe Lane
LONDON, E.C.4.
Telephone
CENTRAL 2781
(2 Lines.)
EXTRACT FROM
Irish Press.
22 AUG 40



S. Navy Photograph

THE FLA



Consolidated Aircraft Corporation

THE NAVY'S LAND-BASED AIR POWER CAPABLE OF LONG-RANGE SCOUTING AND BOMBING OPERATIONS

The recent acquisition of Atlantic bases will enable the patrol plane to guard every approach to our vital areas.

cal, advantages of flying over water in a seaplane rather than in a landplane are perfectly apparent. A patrol plane shot down in the immediate theater of action has some chance of effecting repairs and taking off again, or at least of having the crew rescued by some friendly ship; whereas a landplane down at sea under these circumstances will be washed off the books 99 times out of a hundred, whether the forced landing is the result of enemy action or accident. It is an interesting and commonly overlooked fact that whereas the landplane without flotation commonly suffers fatal damage in a landing at sea, the same is not true with respect to the seaplane forced down upon the land. The flying boat would probably suffer less damage than a large landplane from an emergency landing ashore, because the landplane's wheels are of little value, except on prepared fields, and if a "wheels up" landing is made, the landplane fuselage is not as well equipped to take the shock as is the seaplane hull. In this connection the *accompanying chart* shows the astonishing number of water landing places, suitable for use by large seaplanes, scattered over almost the entire United States. The existence of these landing places has been well recognized for some time and accounts for the large number of "big boats" which have flown directly across the United States.

Besides the *Guba* which made several crossings, the XPB2Y-1 flew across nonstop in an elapsed time of 13 hours for the President's inspection in 1939, then turned around and went back the same way. An export version of the PBY type for the Royal Air Force was flown across the continent by Consolidated Aircraft incident to its delivery, as was American Exports' survey airplane. The airplane for the R.A.F. landed at Buffalo to rest the crew and to refuel before proceeding to Botwood, Newfoundland, for the Atlantic crossing. There have also been several unheralded flights of patrol planes across the southern part of the United States from San Diego to the Gulf of Mexico.

The exploits of the *Guba*, Mr. Richard Archbold's commercial version of a standard Navy PBY converted for use as a unit of the American Museum of Natural History expedition to New Guinea, were reported rather extensively in the aeronautical magazines at the time. Its cruise has, however, never been generally recognized as the magnificent achievement it was. This cruise was so prophetic of what has here been said of the adaptability and flexibility of large flying boat operations that it is considered worth while to retell the story briefly.

Mr. Archbold's first *Guba* was flown cross-country to New York for the installation of certain special radio equipment and, while there, was purchased by the Soviet Government. With Sir Hubert Wilkins in command the plane engaged in the arctic search for Levanevsky, the Russian explorer lost there with his crew.

A similar plane was immediately purchased by Mr. Archbold and in preparatory training flights the plane was flown cross-country to New York once and to Miami twice.

On June 10, 1938, the new *Guba* completed its 3-lap flight to New Guinea, the stops en route being at Hawaii and Wake Island, and the 7,178-mile flight was completed without incident in 51 hours and 5 minutes.

The principal need for an airplane on this expedition (to the interior of New Guinea to collect zoological data pertaining to birds, mammals, and plants) was in transferring supplies and personnel inland to the otherwise almost inaccessible scene of the exploration.

Approximately 150 flights were made from Hollandia (the base of the expedition) on the north coast of New Guinea to Lake Habbema and the Eidenberg River. Lake Habbema is approximately 300 miles inland and at an altitude of 12,000

feet, and the fact that the *Guba* repeatedly landed and took off at this altitude is a real tribute to the airplane and pilots. During one 10-day period 110 men and 60,000 pounds of supplies were transported by air. Some idea of how this must have expedited matters for the explorers can be gained from the fact that this trip is reported to take 3 months on foot through the jungle!

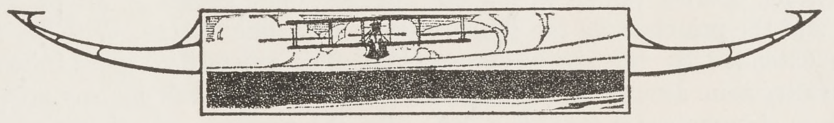
It is obvious that just an airplane would not have been enough. It had to be a seaplane in order to use the only possible take-off and landing areas in the midst of the jungle, the lakes and rivers provided by nature.

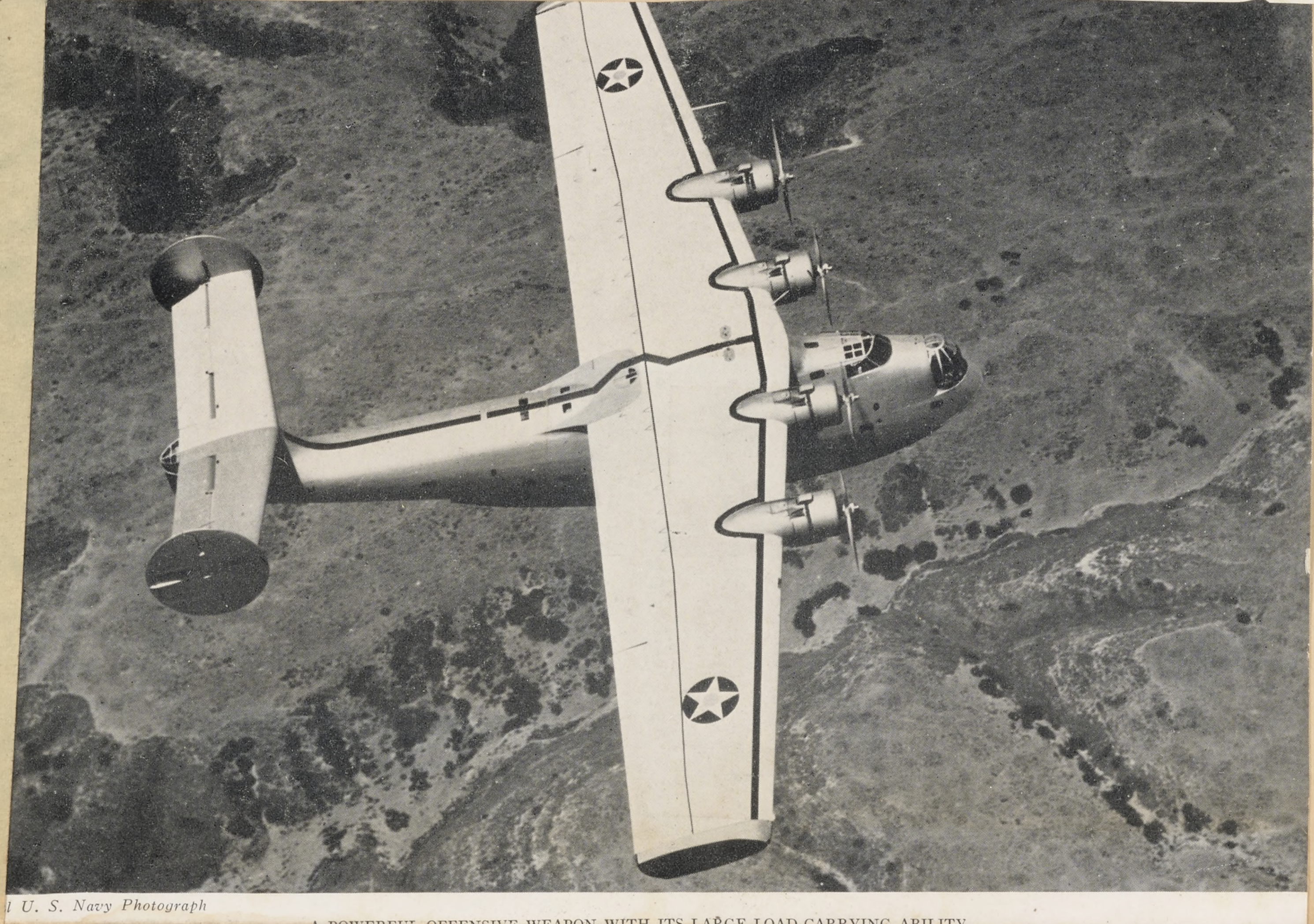
The expedition ended in May, 1939, and shortly thereafter, having been commissioned by the Australian Government to make a survey flight across the Indian Ocean, the *Guba* started out on its homeward-bound trip, around the world! The route was to Australia; thence across the Indian Ocean to Mombasa, Kenya Colony on the African East Coast; thence across Africa to Dakar, Senegal, in French Africa; and from there nonstop to St. Thomas, Virgin Islands. The plane then went to New York for a stop at the World's Fair [illegible] finally returned to San Diego, com[illegible] 24,130 miles of flying from New Guinea.

Interesting as a more complete account of the feats of the *Guba* would undoubtedly be, the above facts speak for themselves. The *Guba* was in all essential respects a standard Navy PBY. The obvious conclusion is that the patrol planes now in the fleet can go practically anywhere and can perform their mission when they get there.

It is hoped that the facts and figures herein presented will serve to inform those not in close touch with aviation progress of the capabilities and possibilities inherent in large patrol planes. Developments are of course continuing, and the new patrol planes are expected to be superior to the PBY type which has set up such remarkable records of performance and still constitutes the bulk of our patrol plane strength.

The trend is unquestionably toward larger aircraft as well as larger surface ships and, as the author has attempted to show, this trend is fundamentally correct, for it is the direction in which lies greater performance and greater military capabilities and is not simply an endeavor to build airplanes "bigger and better." The questions of cost and handling technique can, it is believed, safely be left to the future, for if larger planes are needed we shall have to have them whatever they cost. If their size makes them difficult to handle we can count upon American ingenuity and resourcefulness to develop the necessary methods.





U. S. Navy Photograph

A POWERFUL OFFENSIVE WEAPON WITH ITS LARGE LOAD-CARRYING ABILITY

Gun turrets in every conceivabl[illegible] area increase its ability for self-defen

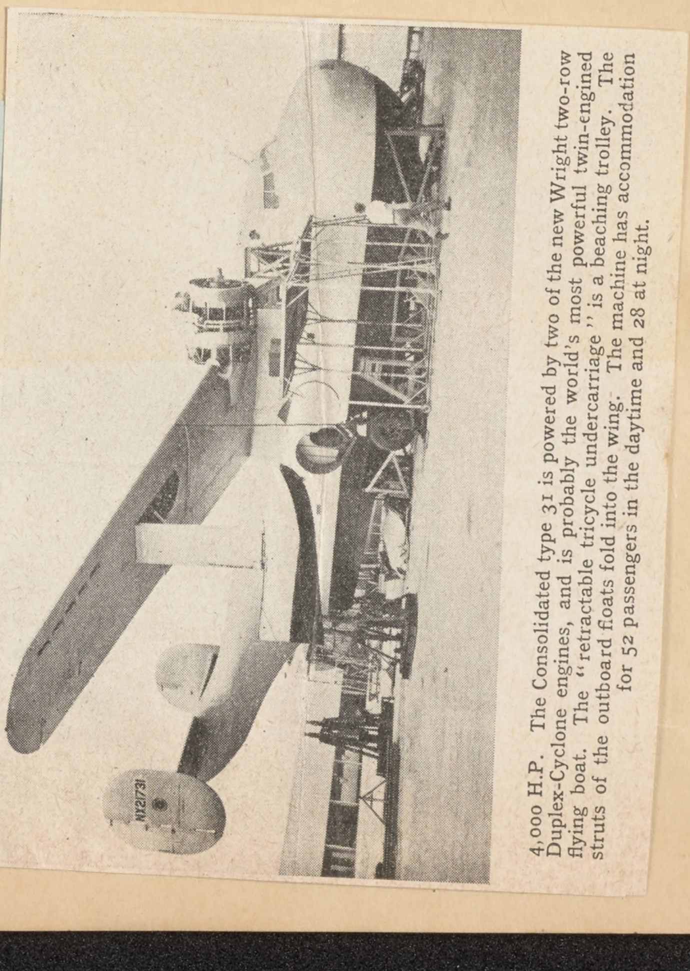
← Illustrations of above article

ROMEIKE & CURTICE LTD.
The Press Clipping Bureau
Consolidated Air
35 Shoe Lane
LONDON, E.C.4
Telephone: Central 2781

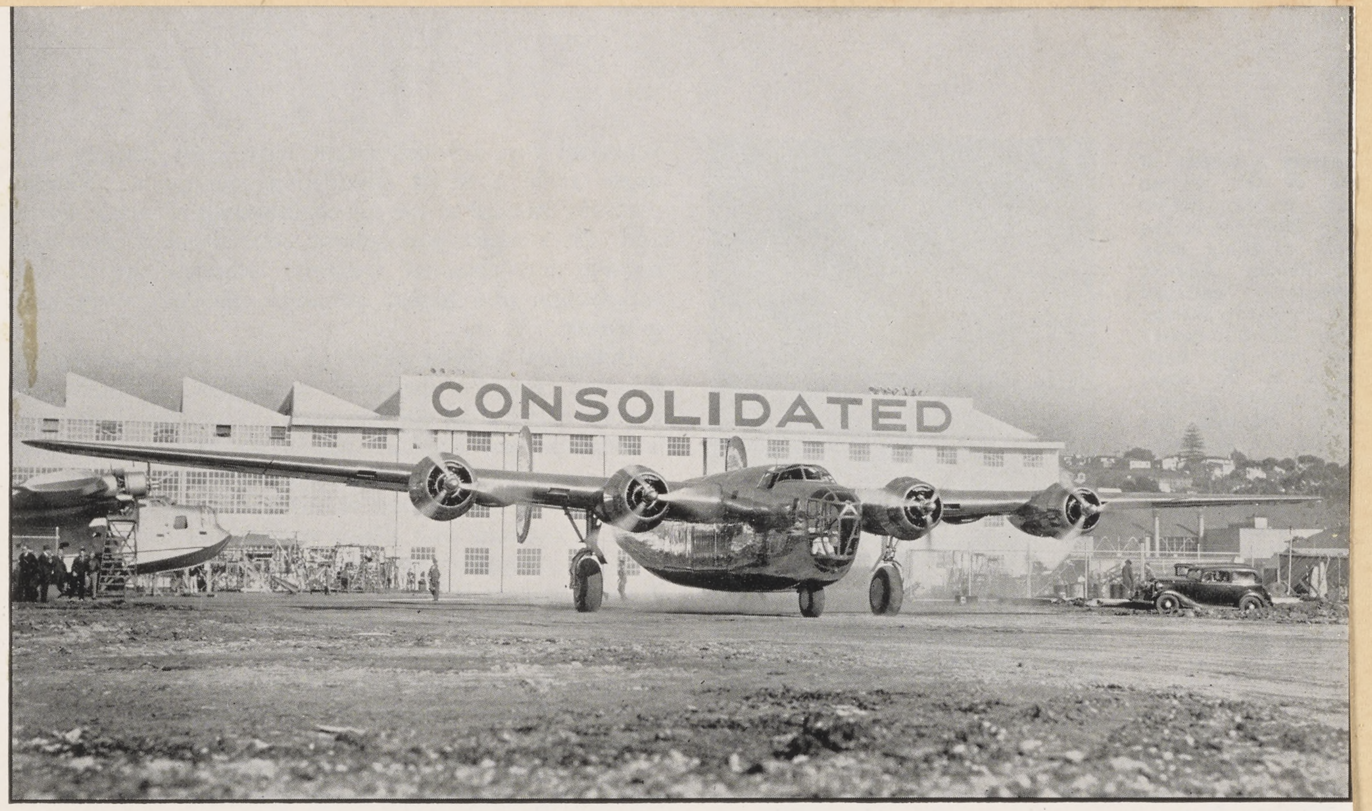
EXTRACT FROM
FLIGHT
The First Aero Weekly in the World
EVERY THURSDAY 6d.
Flight Publishing Co. Ltd.
Dorset House, Stamford Street, London, S.E.1

8 AUG 1940

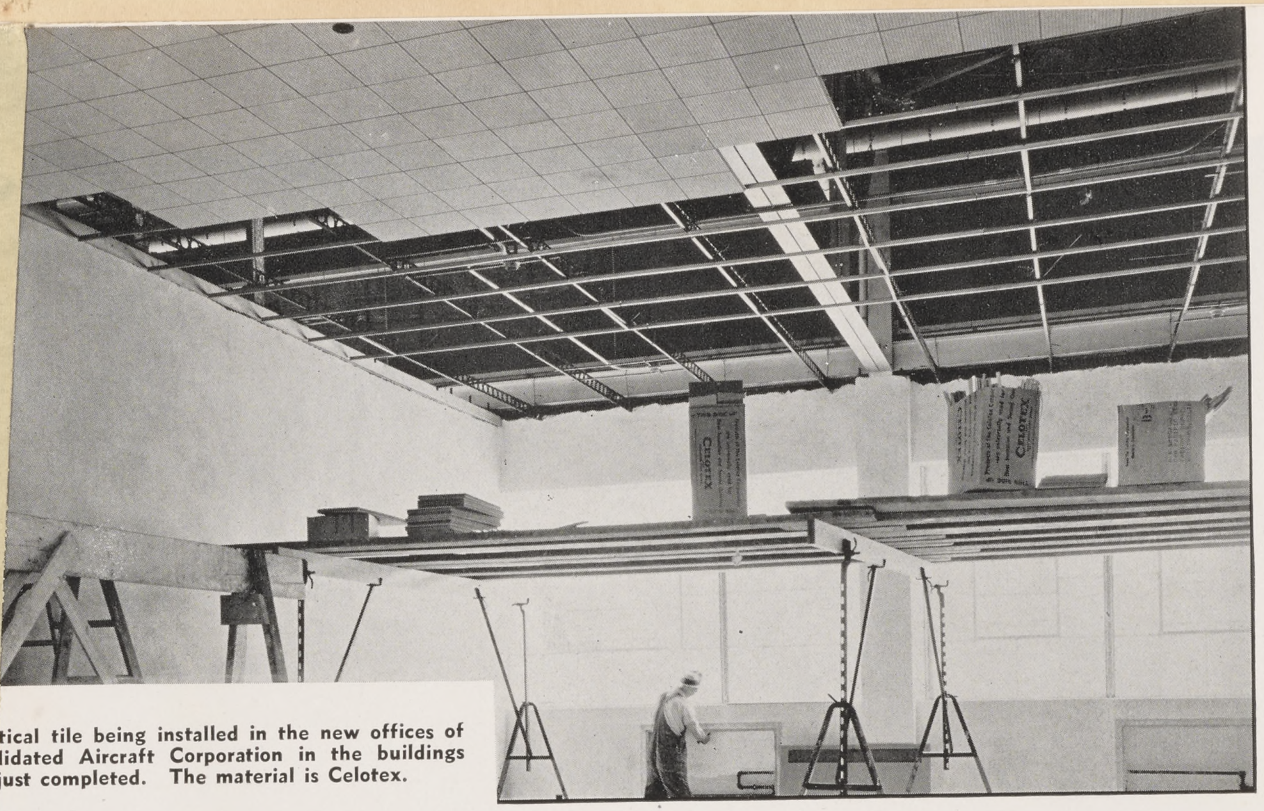
~~23 MAR 1939~~



4,000 H.P. The Consolidated type 31 is powered by two of the new Wright two-row Duplex-Cyclone engines, and is probably the world's most powerful twin-engined flying boat. The "retractable tricycle undercarriage" is a beaching trolley. The struts of the outboard floats fold into the wing. The machine has accommodation for 52 passengers in the daytime and 28 at night.



Consolidated's latest plane marks its re-entry into the land plane field. This is the Consolidated Model 32, or U. S. Army XB-24, four engined land bomber. It is here shown swinging out of the plant yard under its own power.

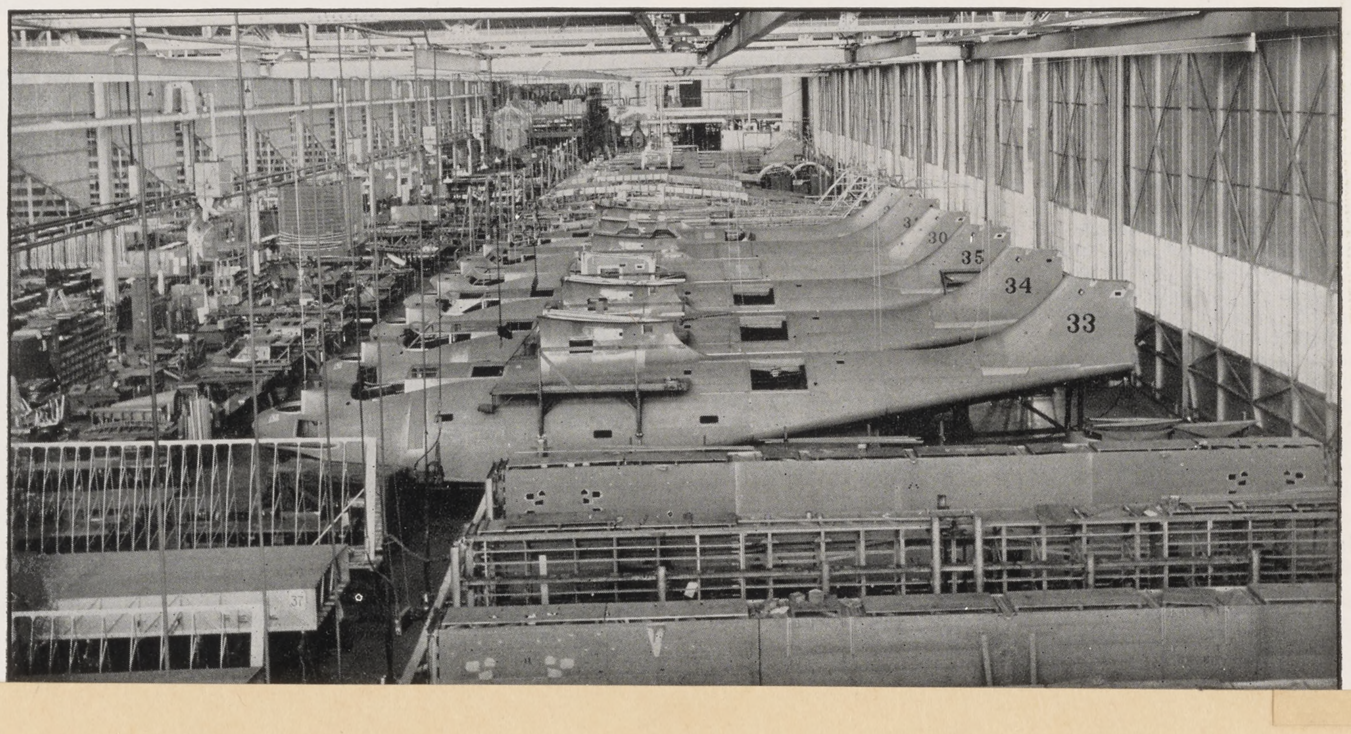


tical tile being installed in the new offices of
lidated Aircraft Corporation in the buildings
just completed. The material is Celotex.

CONSOLIDATED AIRCRAFT

EXPANDED WITHOUT INTERRUPTING PRODUCTION

Assembly line of Consolidated Aircraft Model 28 twin engined flying boat hulls, wing center sections in foreground. These planes were built for the U. S. Navy and set remarkable massed, non-stop flight records from San Diego to Hawaii and from San Diego to Coco Solo in the Canal zone.



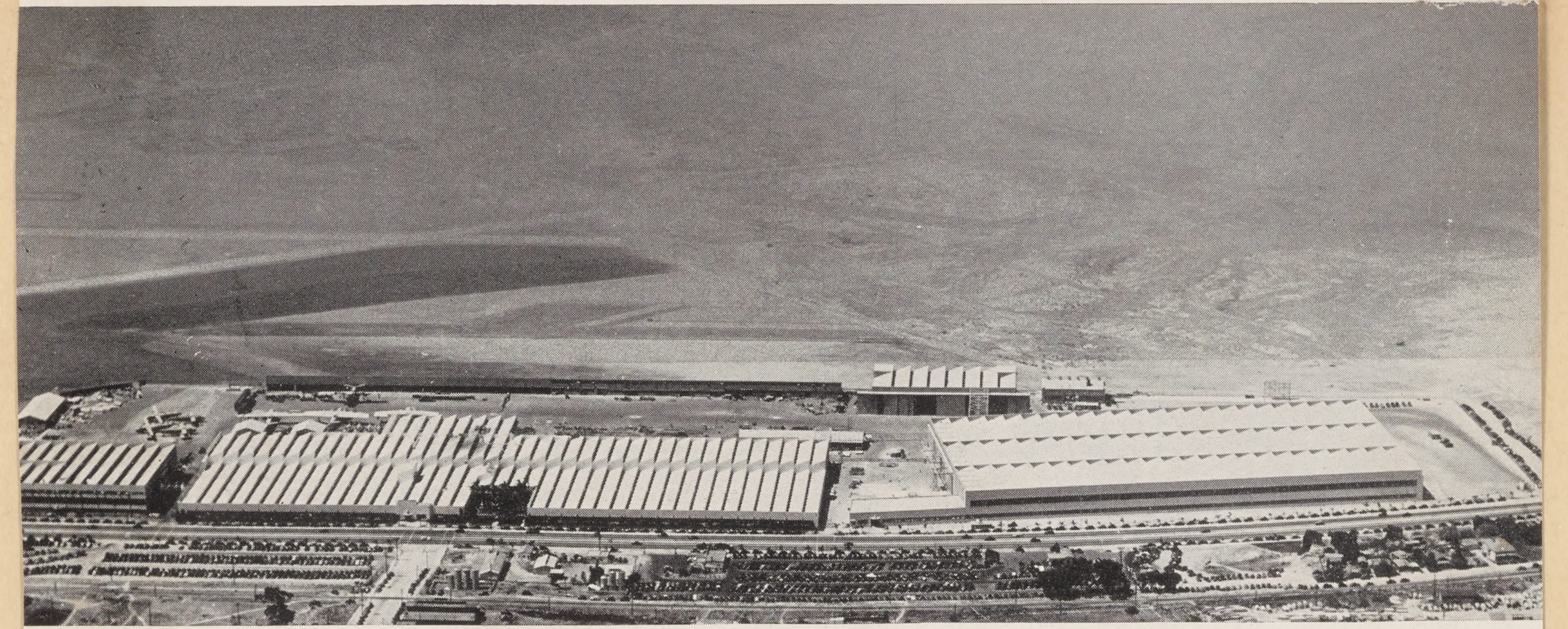
Faced with the task of expanding 87% in area without interference with plant operations, the mammoth Consolidated organization succeeded in a most difficult task.

Var emergency production demands swept into the
isolidated Aircraft plant at San Diego, California,
produced an immediate and urgent requirement of
eased production capacity. At the same time, it was
ally imperative that the expansion be attained with-
curtailing existing production schedules in the
htest degree. The photographic presentation on the
owing pages shows how this work was undertaken
l successfully completed.

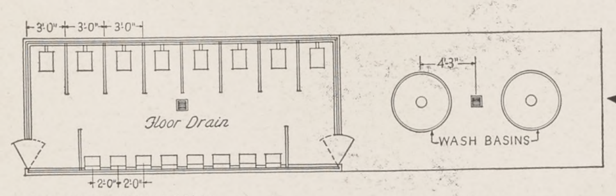
The 1940 expansion program, rushed to completion
h full manufacturing facilities estimated as com-
ted on August 1, brought this organization into full
gnment with the Administration program for in-
asing aircraft facilities. Excluding ramp, airport and
ing facilities, the program covered by this article in-
ded expansion to 1,910,000 square feet of manufac-
ing space, with 954,440 square feet of contiguous air-
rt land under option for further expansion if
cessary.

The great preponderance of Consolidated contracts
nsists of U. S. Government work and in undertaking
expansion program a closing agreement was entered
to with the U. S. Treasury Department which provided that the cost of certain excess addition facilities, less depreciation, required to meet deliveries may be charged to the cost of performing contracts received by the company, thus, in effect, amortizing much of its expansion.

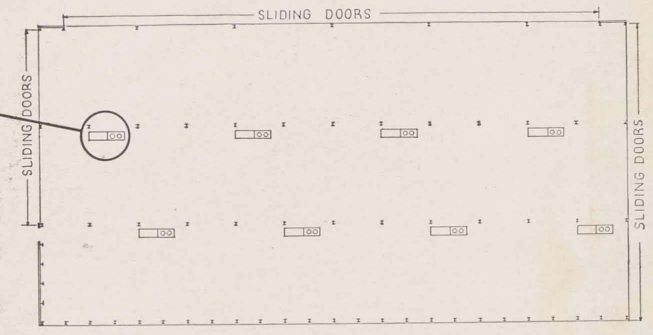
Founded in 1923, Consolidated made a rapid advance to its present position as the world's largest manufacturer of flying boats, with special importance in the field of planes having a wing span of 100 feet or more. Reentry of Consolidated into the land plane field was marked by the Model 32 four engined land bomber known as the U.S. Army's XB-24, with an approximate gross weight of 40,000 pounds, speed of over 300 miles per hour and 4 ton bomb carrying capacity.



EDWARD AND ELLIS TAYLOR, ARCHITECTS & ENGINEERS.   B. O. LARSON, GENERAL CONTRACTOR

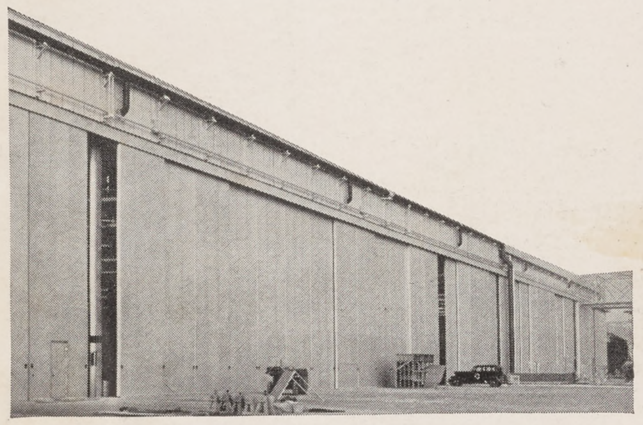


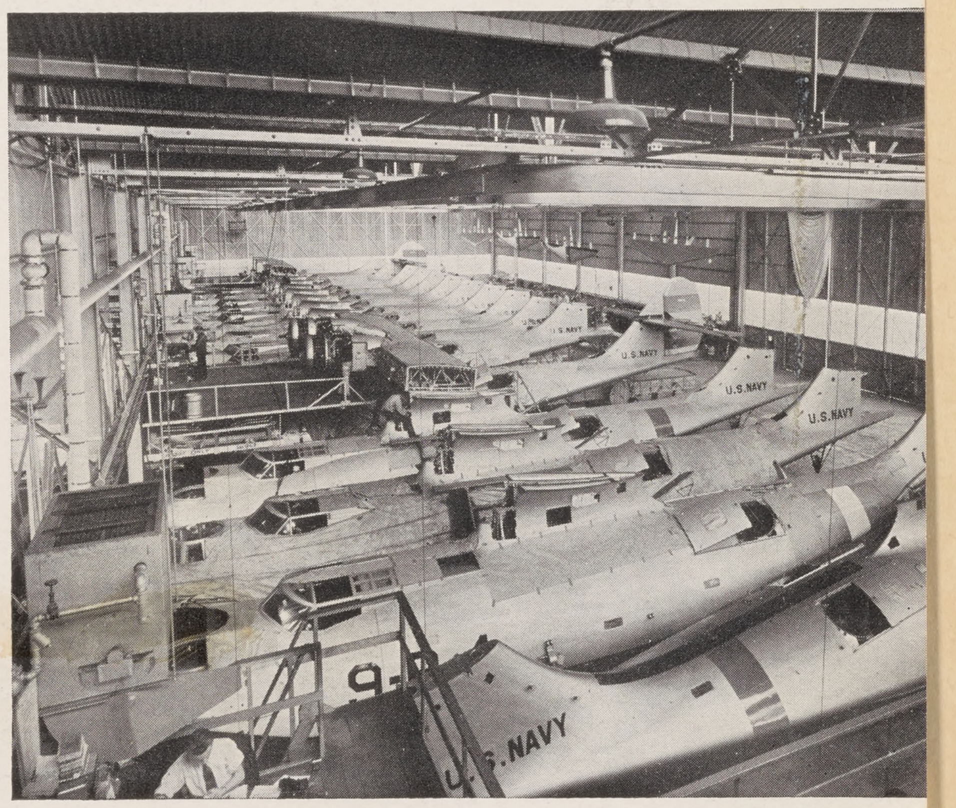
PLAN OF TOILET ROOMS



FLOOR PLAN

Four separate buildings, and additions to several others were incorporated in this $2,500,000 expansion program. Besides a 281,600 sq. ft. final assembly building, the program called for an experimental building, office building and final finish building. Because of its size, heating of the assembly building offered the chief problem of technical interest. It called for keeping the heating units above the 36 ft. clearance and providing for additional loads due to the habit of leaving the large hangar doors open. It was solved by high velocity, high output unit heaters located above the bottom chords of the trusses. As in all line production plane plants, the assembly building makes maximum use of overhead cranes for handling parts after they have left the sub-assembly areas. The final finish building is used for final adjustments and painting after planes have completed experimental tests. All buildings make use of high intensity incandescent lighting for night shifts.



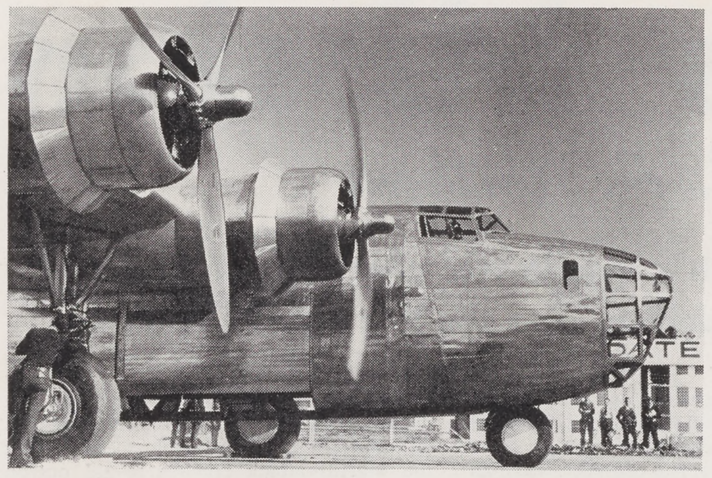


Architectural Forum

FLYING & POPULAR AVIATION DECEMBER '40

Whopper

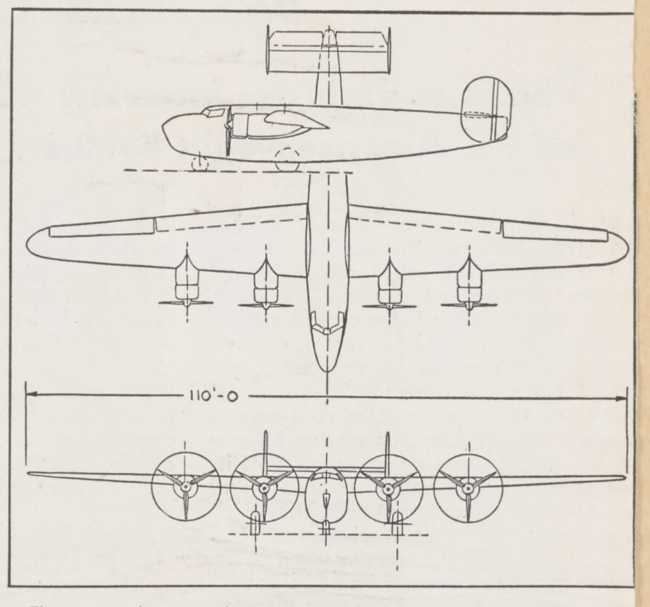
The B-24, technically Consolidated's Model 32, has four air-cooled engines totalling about 5,000 h.p.



DEADLIEST long-range heavy bomber now being built for the U.S. Army Air Corps is not the much-touted Douglas B-19 that has the Sunday supplements gasping, but the ungainly-looking Consolidated B-24 pictured on this page. The B-24 and its many new developments, both secret and public, is expected to do for our military air strength what the Boeing *Flying Fortress* did several years ago. Fully loaded the B-24 weighs 41,000 pounds; with its crew of from six to nine it is said to have a loaded range of some 4,000 miles which is almost 50 per cent better than anything flying today. Notable innovations are the B-24's tricycle gear and radical wing (see "Mystery Airfoil," June, 1940)

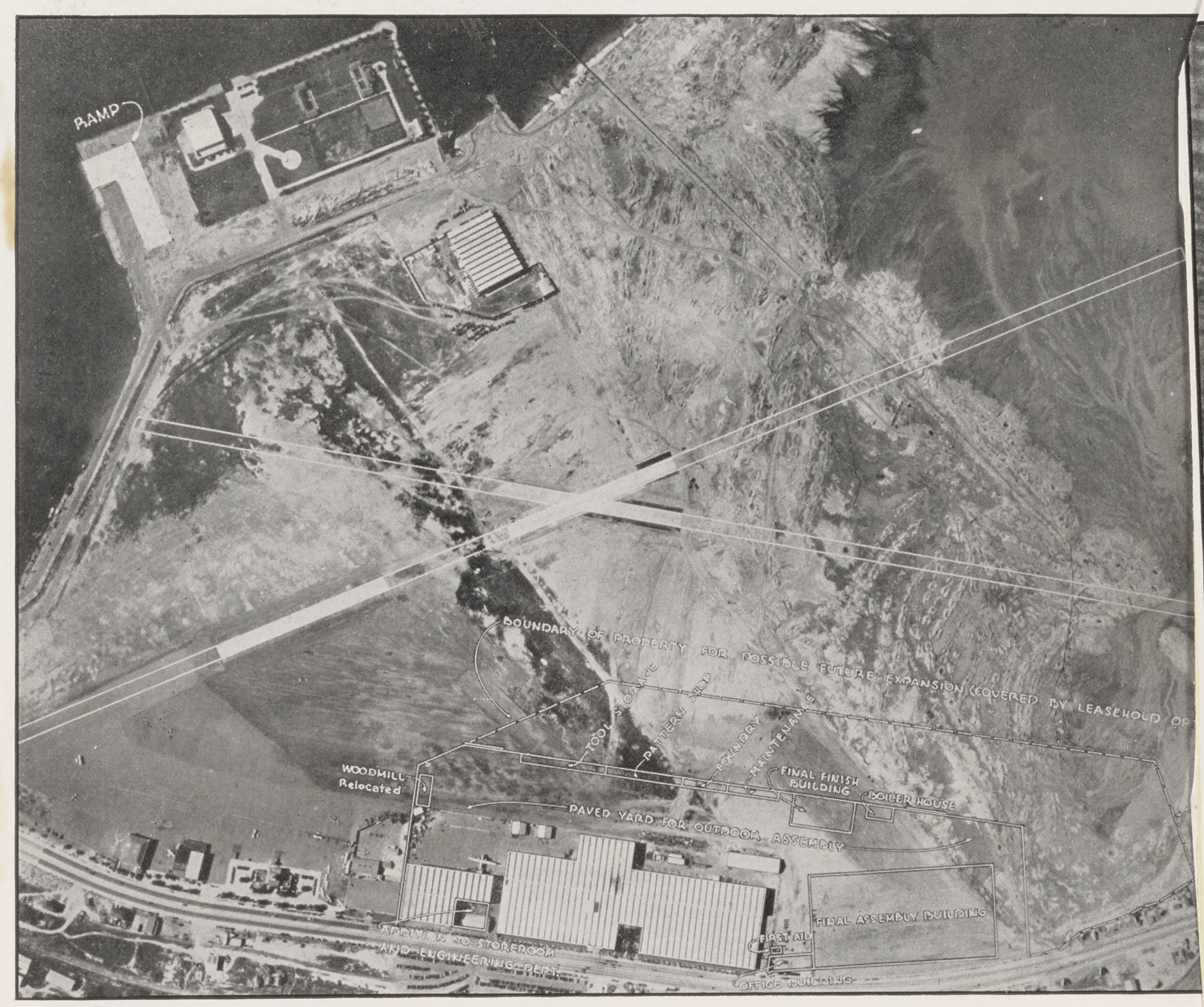
Retractable landing gear makes B-24 well-streamlined in flight. But conspicuous in picture below is relatively large frontal area presented by radial engines; in-the-wing engines would be ideal.

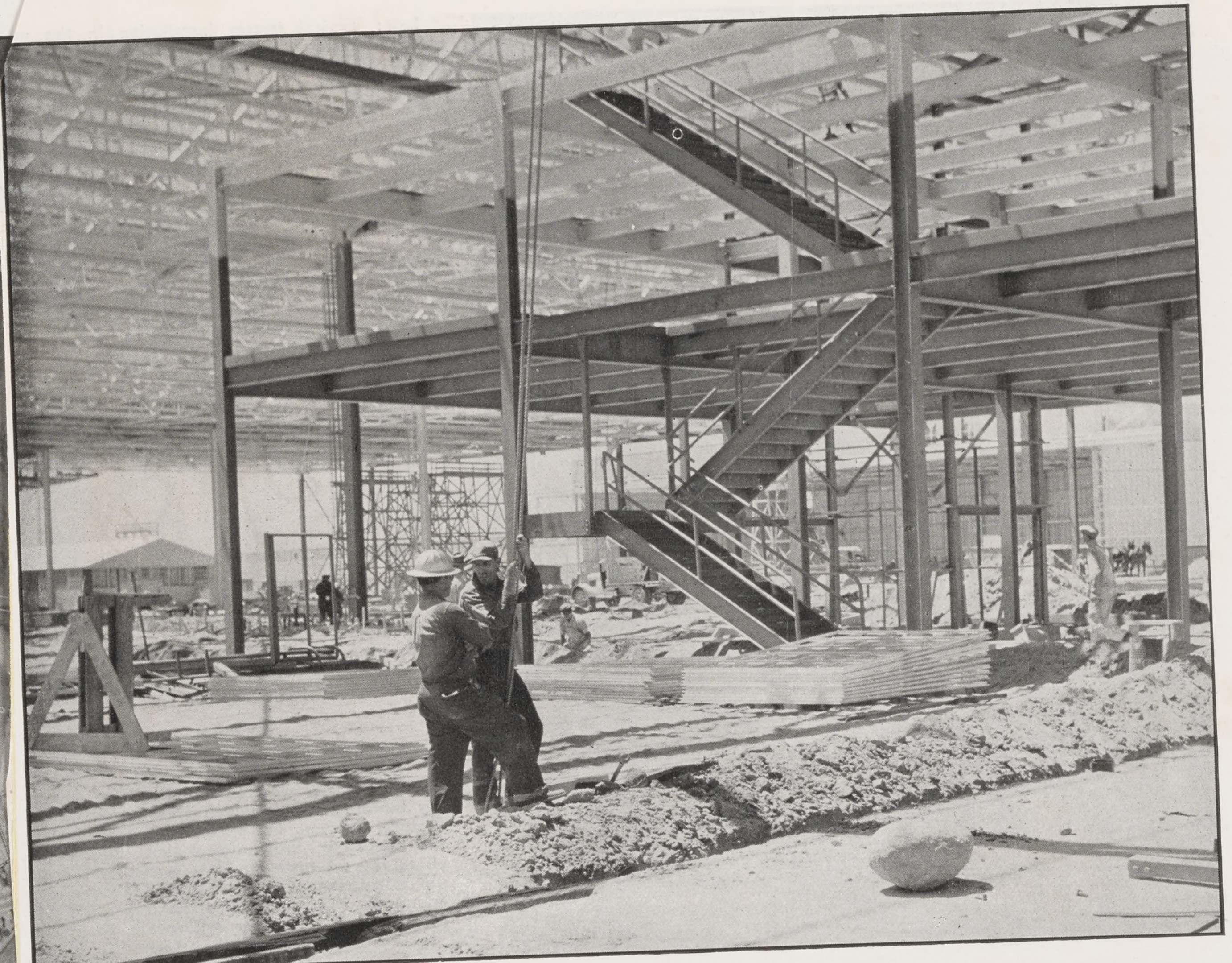
An export version of the B-24 is being built in large quantities for the British R.A.F.



Three-view drawing of B-24 shows relative narrowness of the wing to rest of the ship. A gun emplacement is between rudders.

CONSOLIDATED

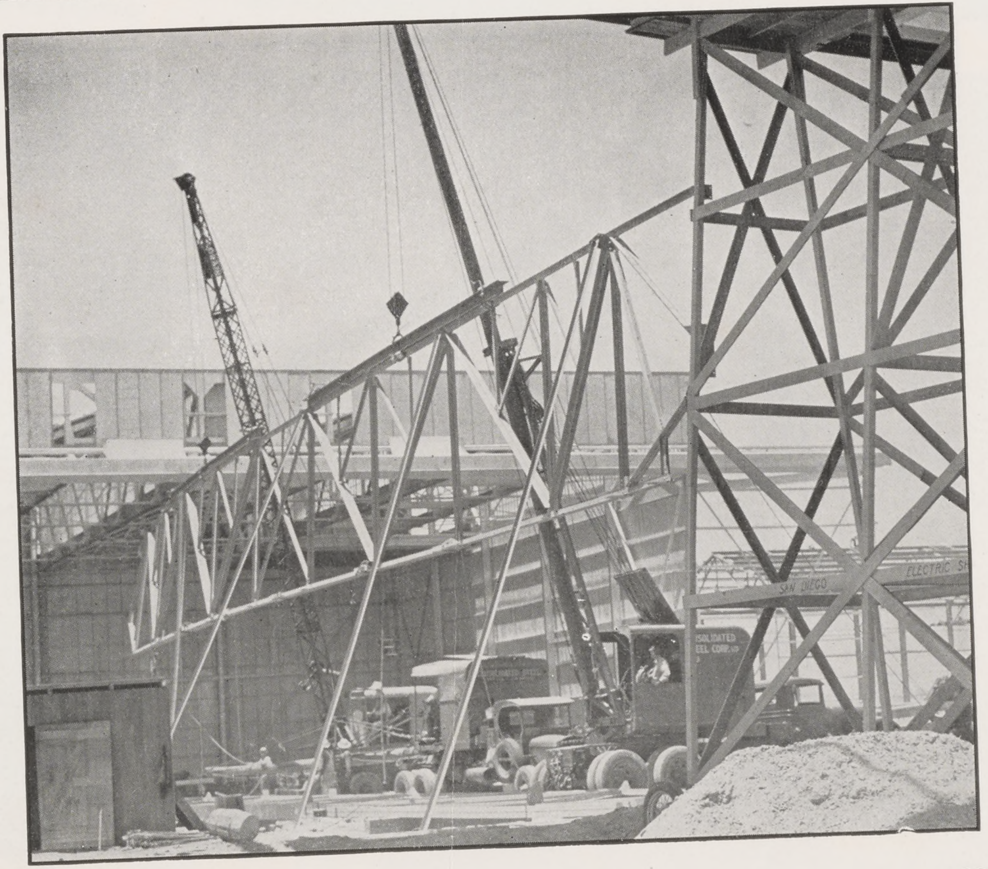

RAMP
BOUNDARY OF PROPERTY FOR POSSIBLE FUTURE EXPANSION (COVERED BY LEASEHOLD OF
TOOL STORAGE
PATTERN SHOP
FOUNDRY
MAINTENANCE
WOODMILL Relocated
FINAL FINISH BUILDING
BOILER HOUSE
PAVED YARD FOR OUTDOOR ASSEMBLY
FINAL ASSEMBLY BUILDING
FIRST AID
ADDITION TO STOREROOM AND ENGINEERING DEPT.
OFFICE BUILDING



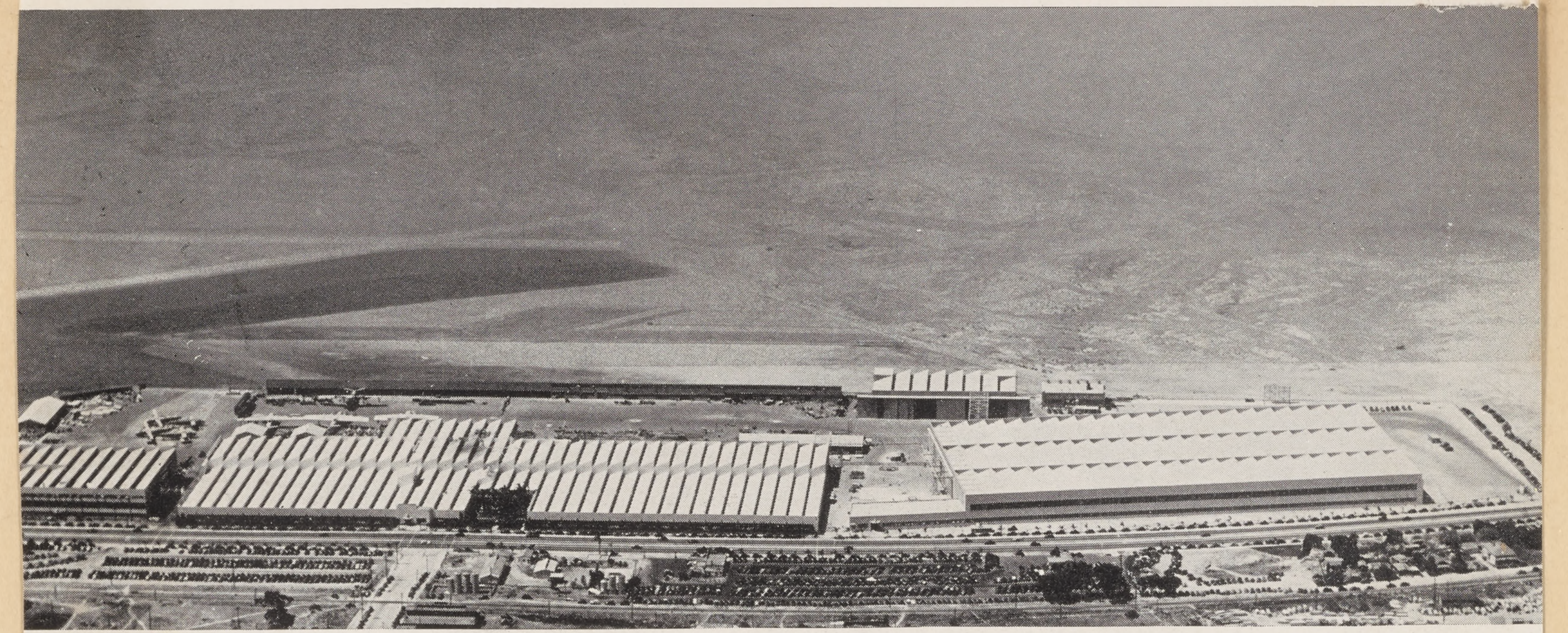
Above: Vertical view of th solidated Aircraft plant loc Lindberg Field at San Die prior to the construction of t buildings showing their locat names.

Above: Building within a building . . the structure in the foreground is the final parts stores, is three stories high, yet does not reach the lower chord of the roof of the huge final assembly building which houses it. The final assembly roof members and upper floor of the final parts stores structure have received their coat of aluminum paint.

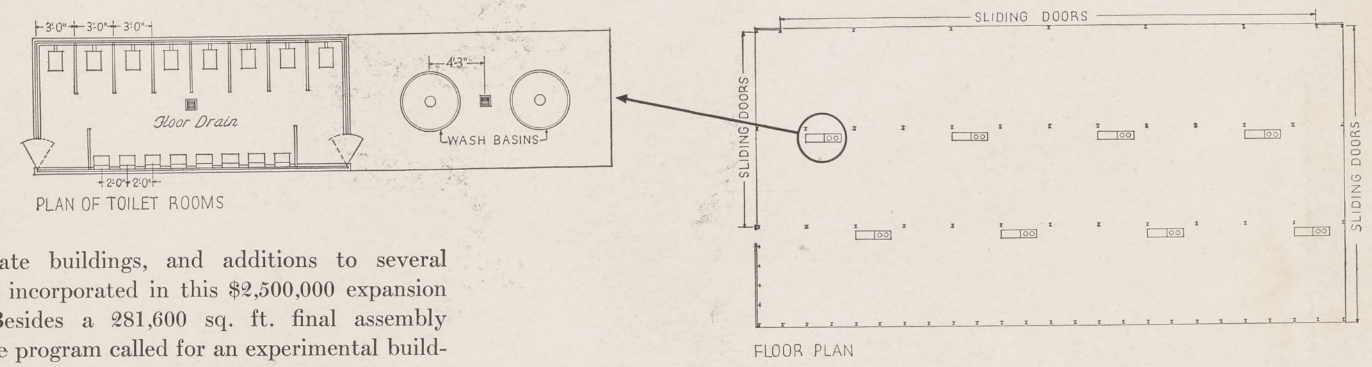
Left: The Consolidated Aircra poration plant with the new ings in course of constructi the left the new final a building measuring 360 by 7 is partially erected in the stee Final finish building back of the highway is likewise in t stage. Behind the main b the 1,000 foot long shed is having the iron sheathing Work on the filling in of for storeroom and engineeri partment in the experimental ing is nearing completio



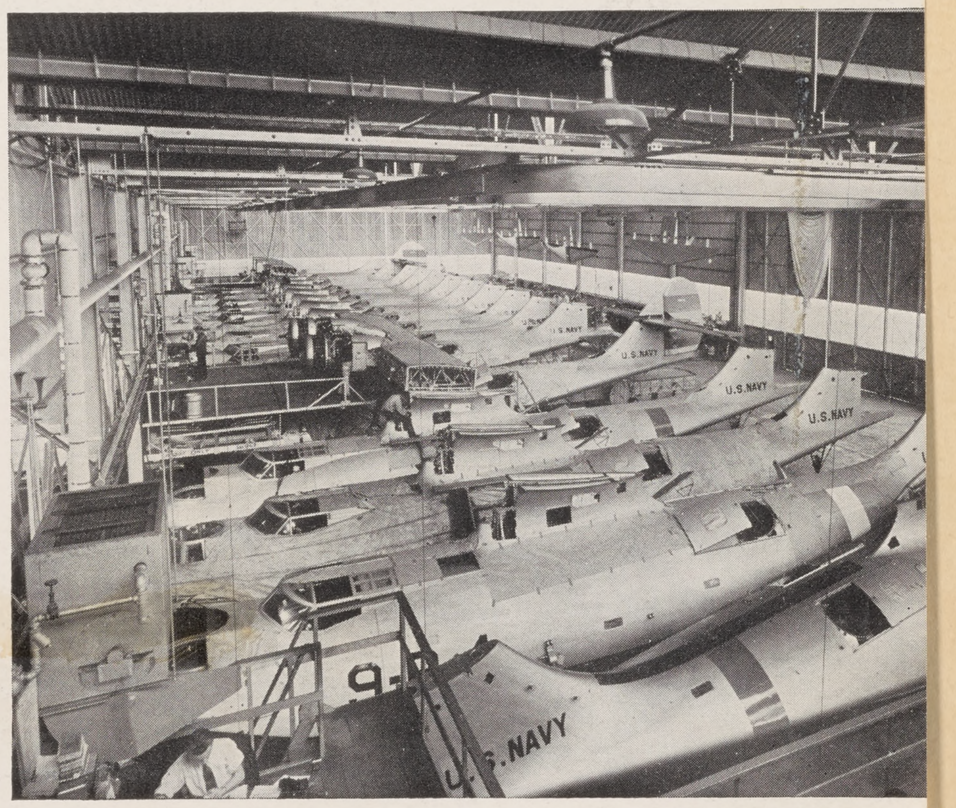
Right: Hoisting a section of monorail support connecting the final assembly and the final finish buildings at Consolidated Aircraft Corporation.

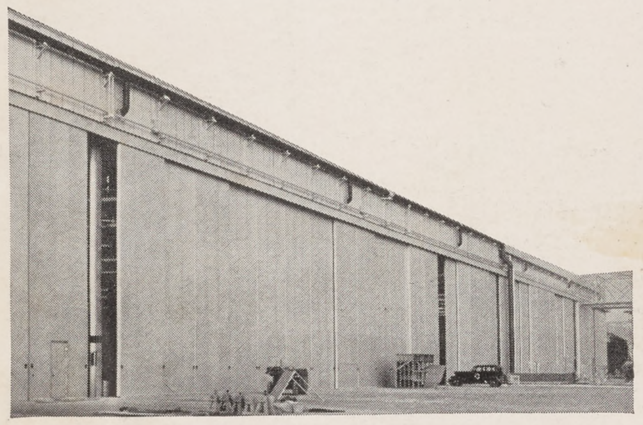


EDWARD AND ELLIS TAYLOR, ARCHITECTS & ENGINEERS. **B. O. LARSON, GENERAL CONTRACTOR**



Four separate buildings, and additions to several others were incorporated in this $2,500,000 expansion program. Besides a 281,600 sq. ft. final assembly building, the program called for an experimental building, office building and final finish building. Because of its size, heating of the assembly building offered the chief problem of technical interest. It called for keeping the heating units above the 36 ft. clearance and providing for additional loads due to the habit of leaving the large hangar doors open. It was solved by high velocity, high output unit heaters located above the bottom chords of the trusses. As in all line production plane plants, the assembly building makes maximum use of overhead cranes for handling parts after they have left the sub-assembly areas. The final finish building is used for final adjustments and painting after planes have completed experimental tests. All buildings make use of high intensity incandescent lighting for night shifts.



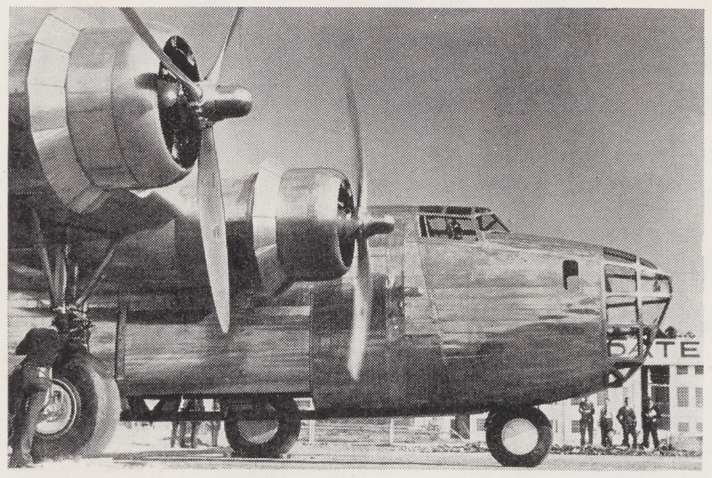


Architectural Forum

FLYING & POPULAR AVIATION DECEMBER '40

Whopper

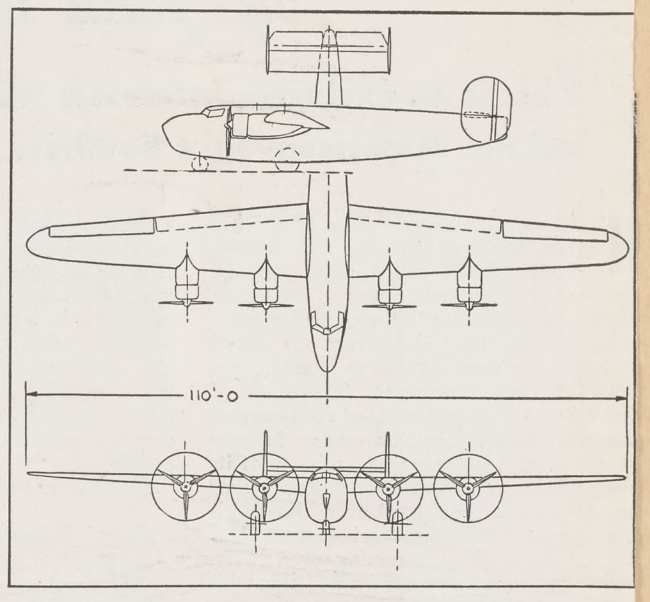
The B-24, technically Consolidated's Model 32, has four air-cooled engines totalling about 5,000 h.p.



An export version of the B-24 is being built in large quantities for the British R.A.F.

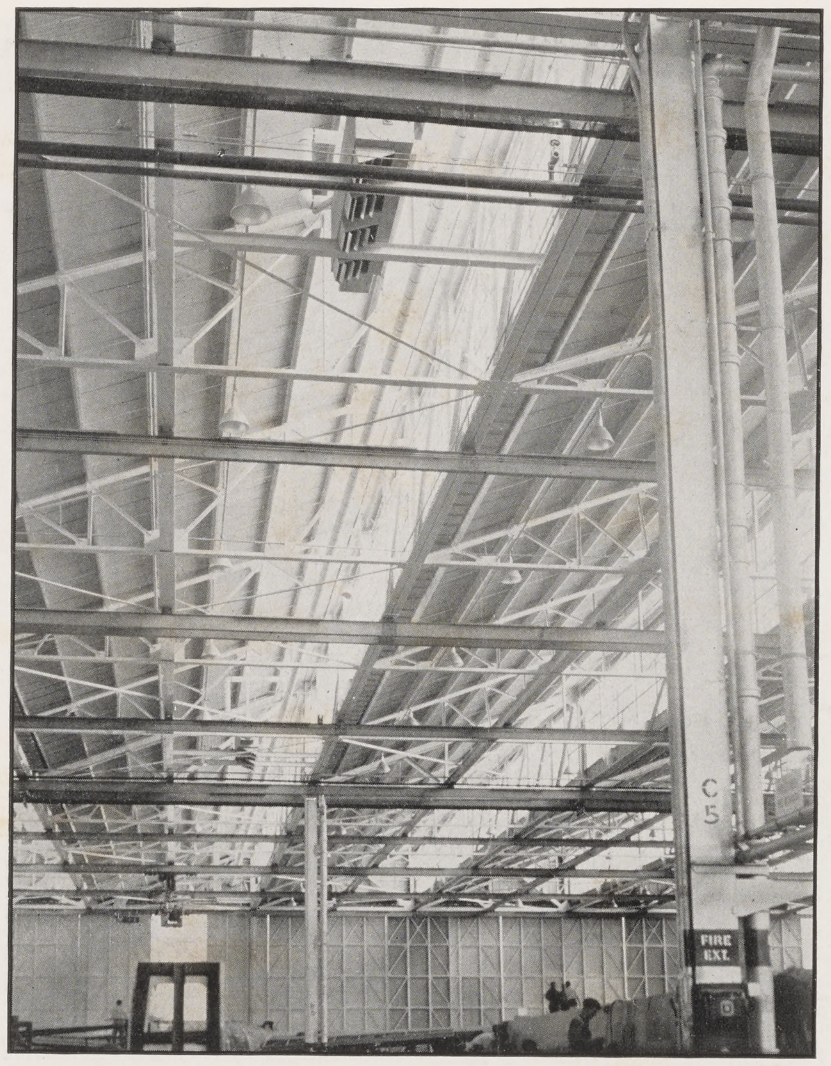
DEADLIEST long-range heavy bomber now being built for the U.S. Army Air Corps is not the much-touted Douglas B-19 that has the Sunday supplements gasping, but the ungainly-looking Consolidated B-24 pictured on this page. The B-24 and its many new developments, both secret and public, is expected to do for our military air strength what the Boeing *Flying Fortress* did several years ago. Fully loaded the B-24 weighs 41,000 pounds; with its crew of from six to nine it is said to have a loaded range of some 4,000 miles which is almost 50 per cent better than anything flying today. Notable innovations are the B-24's tricycle gear and radical wing (see "Mystery Airfoil," June, 1940)

Retractable landing gear makes B-24 well-streamlined in flight. But conspicuous in picture below is relatively large frontal area presented by radial engines; in-the-wing engines would be ideal.



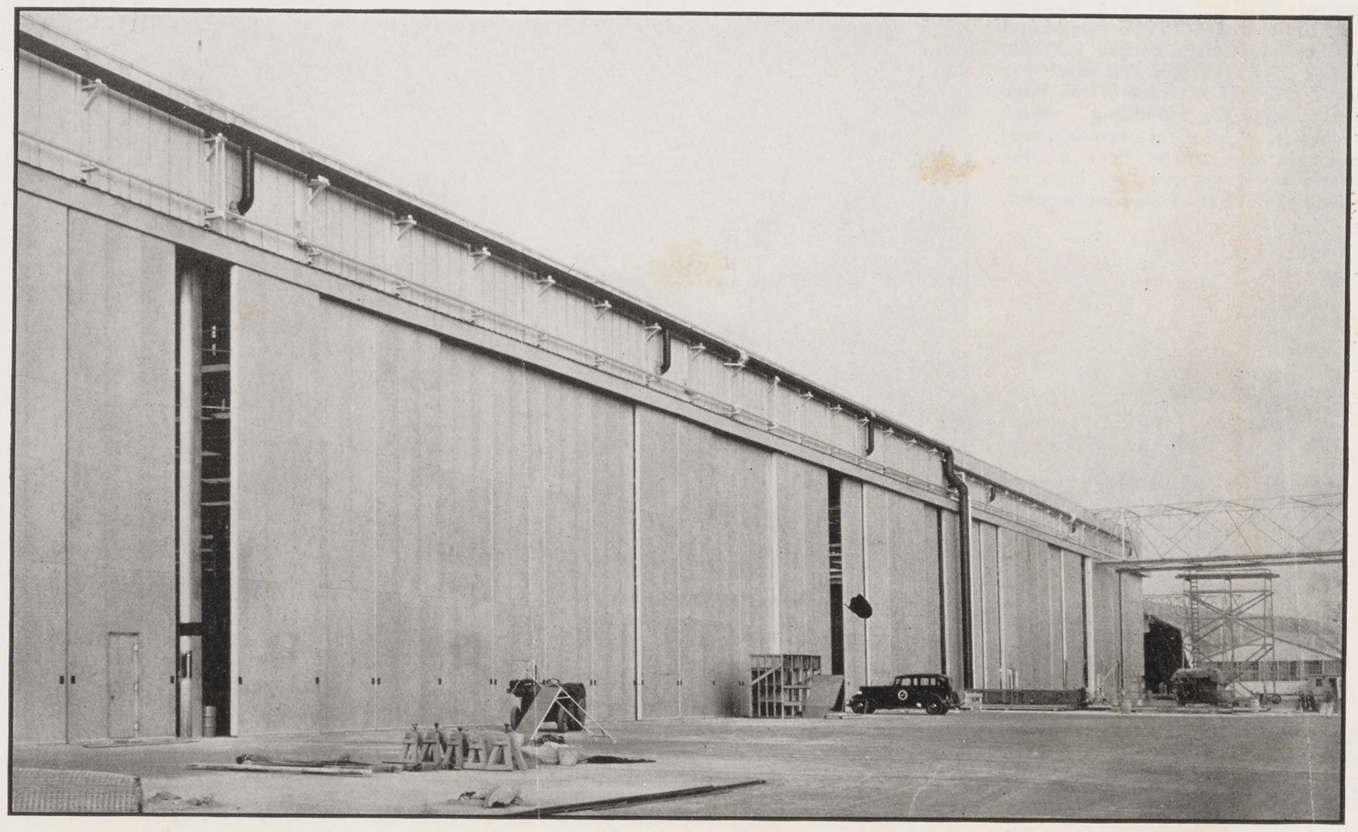
Three-view drawing of B-24 shows relative narrowness of the wing to rest of the ship. A gun emplacement is between rudders.

CONSOLIDATED

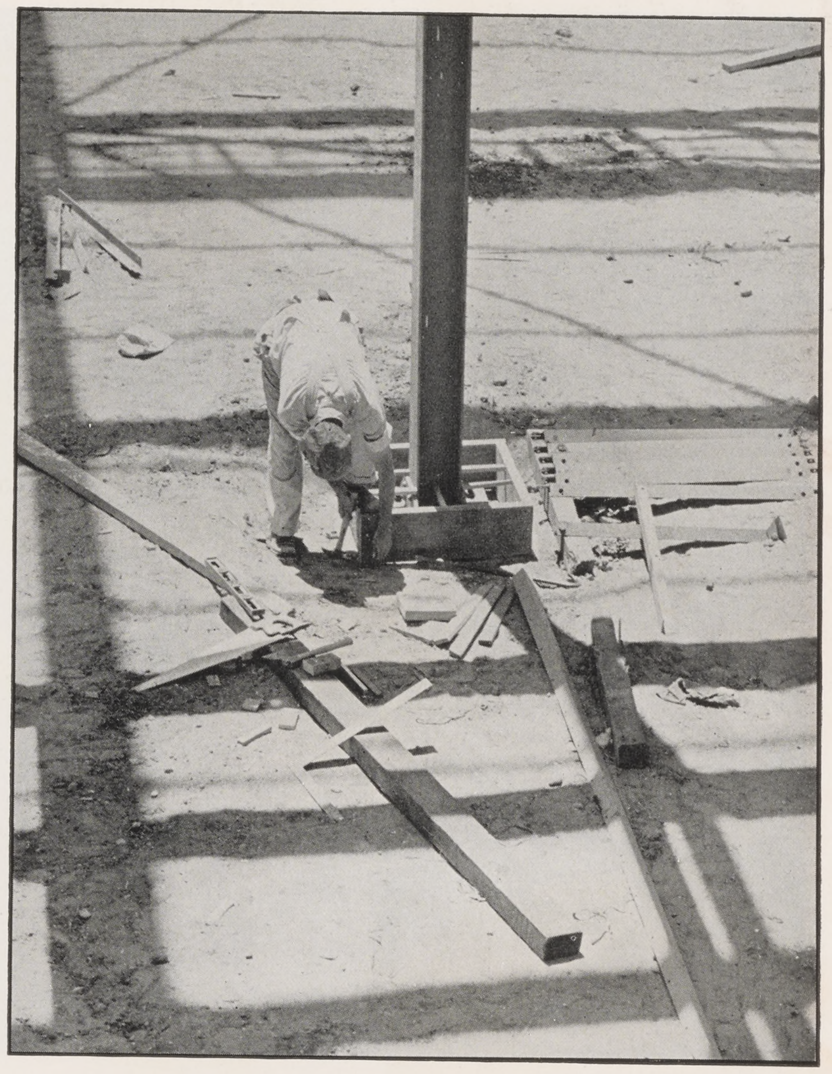


Left: Typical heater installation in the new final assembly building of Consolidated Aircraft Corporation. Heater and all pipes are located above the bottom chord line of the roof trusses so that unobstructed space is allowed below for overhead transportation of parts and assembly and hoists, thus bringing wide freedom to the production processes and methods without interference. Lighting may also be noted above the chord line. Windows are in the north vertical face of the sawtooth construction.

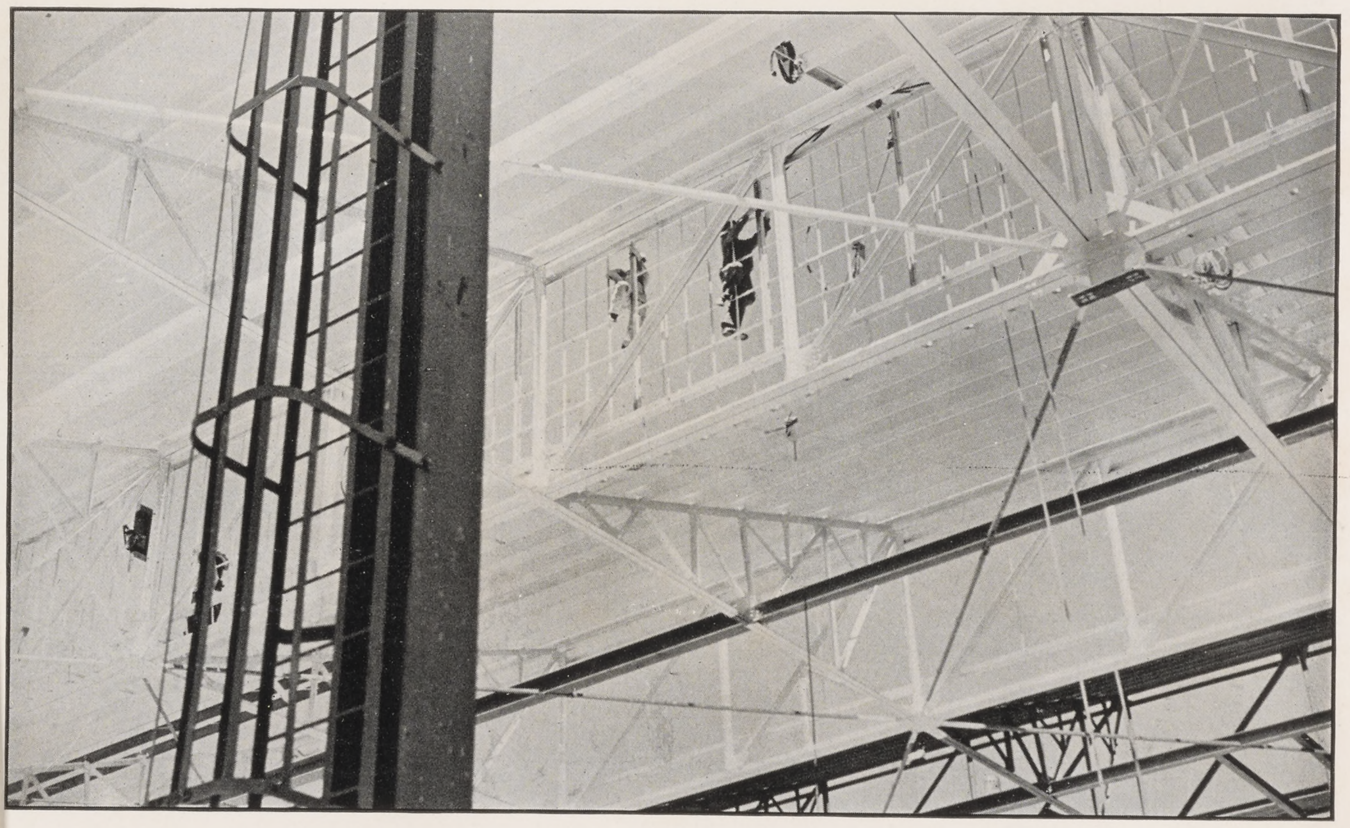
Below: Exterior view of the new Final Assembly building showing how steam main line is brought up from the outside and carried along the outside of the building above the bottom chord line of the roof trusses so that there is no obstructing of the exceptionally large door openings. The large doors can provide 120 feet of clear space for rolling out the planes with their wings attached.

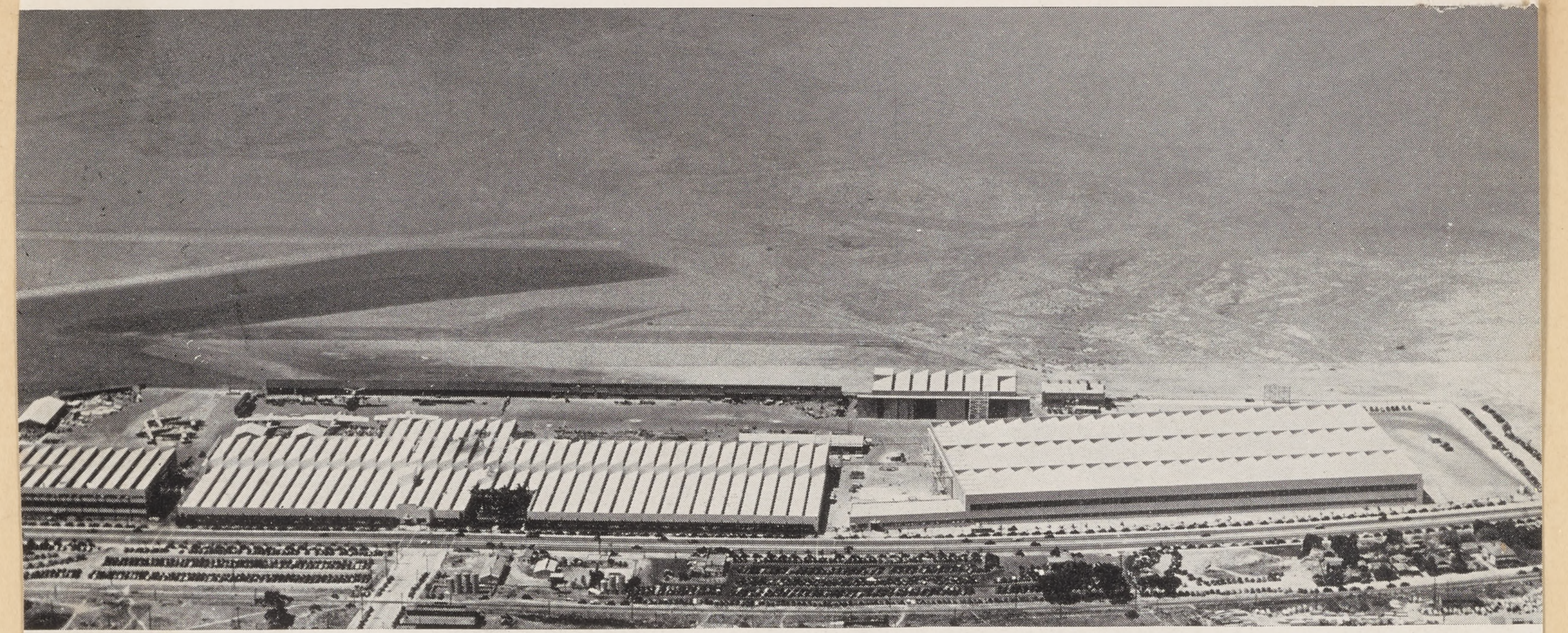


Right: Shaping up a concrete footing abutment at the base of one of the columns of the final stores department within the final assembly building. This 'building within a building' is three stories high, the size of an average three story office building.

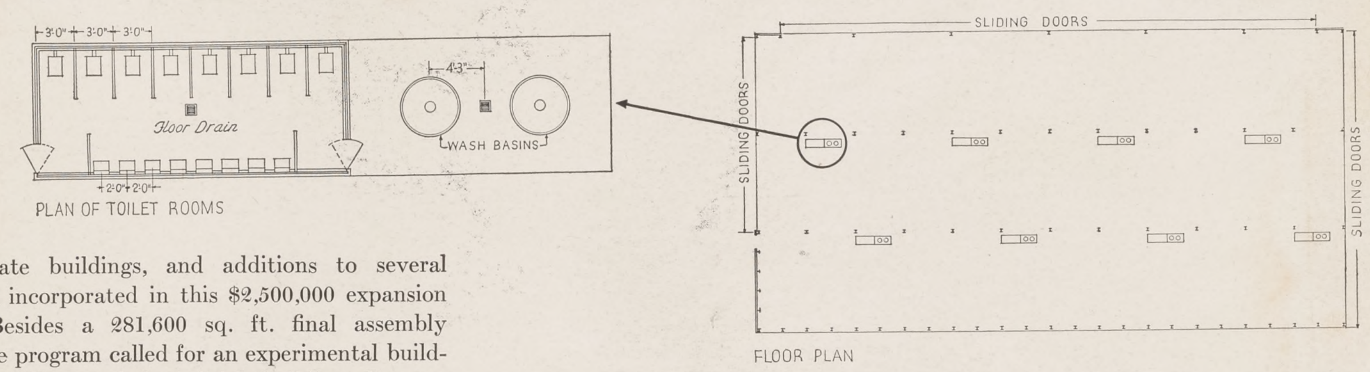


Below: The entire interior of the Consolidated Aircraft plant's new final assembly building structure is aluminum painted. Daylight is admitted thru windows in the north faces of the saw tooth construction. Sash is here being installed along with the painting.

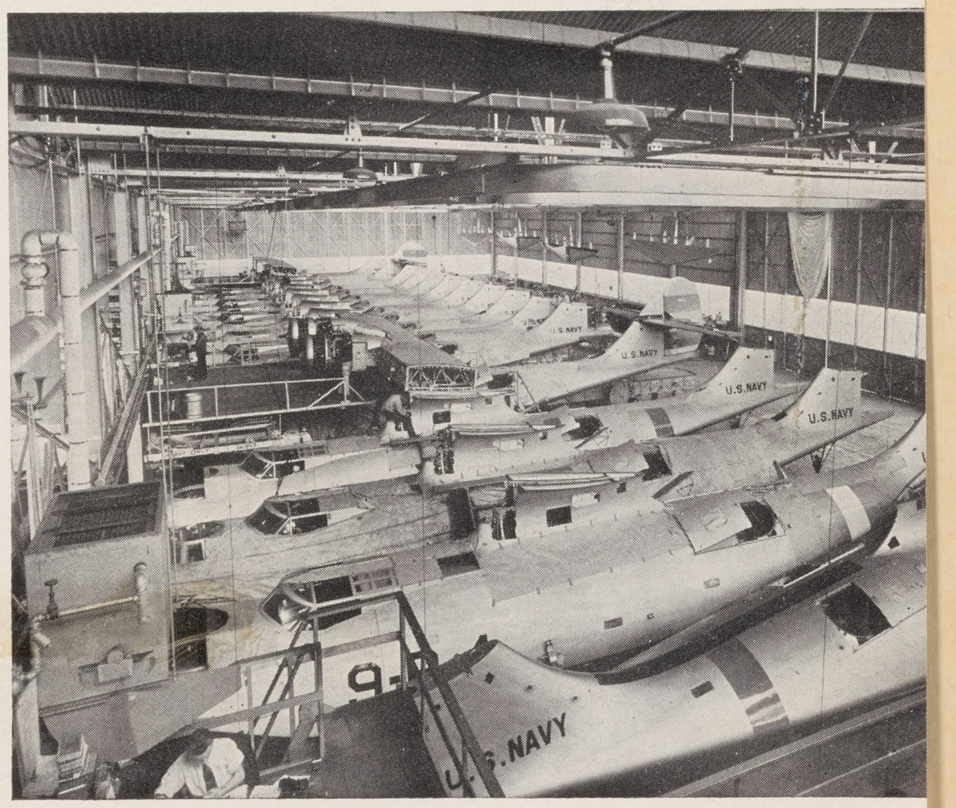


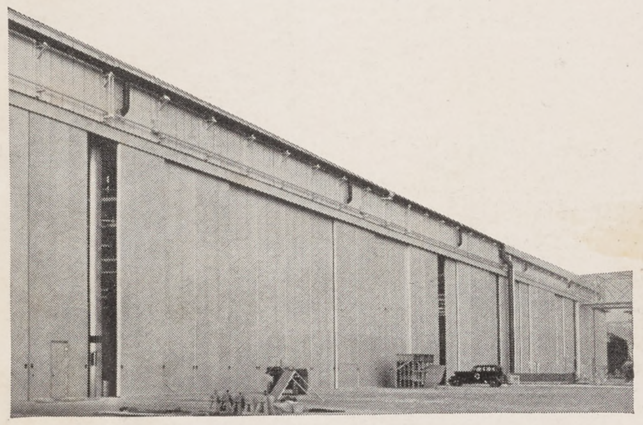


EDWARD AND ELLIS TAYLOR, ARCHITECTS & ENGINEERS. B. O. LARSON, GENERAL CONTRACTOR



Four separate buildings, and additions to several others were incorporated in this $2,500,000 expansion program. Besides a 281,600 sq. ft. final assembly building, the program called for an experimental building, office building and final finish building. Because of its size, heating of the assembly building offered the chief problem of technical interest. It called for keeping the heating units above the 36 ft. clearance and providing for additional loads due to the habit of leaving the large hangar doors open. It was solved by high velocity, high output unit heaters located above the bottom chords of the trusses. As in all line production plane plants, the assembly building makes maximum use of overhead cranes for handling parts after they have left the sub-assembly areas. The final finish building is used for final adjustments and painting after planes have completed experimental tests. All buildings make use of high intensity incandescent lighting for night shifts.

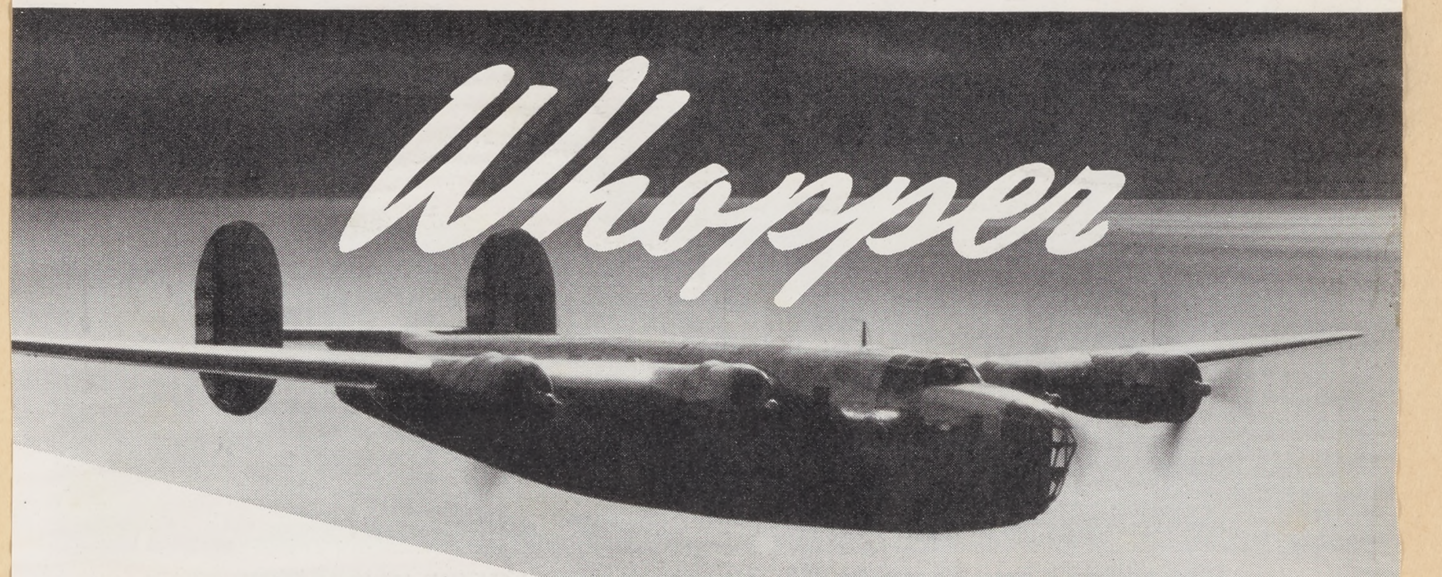




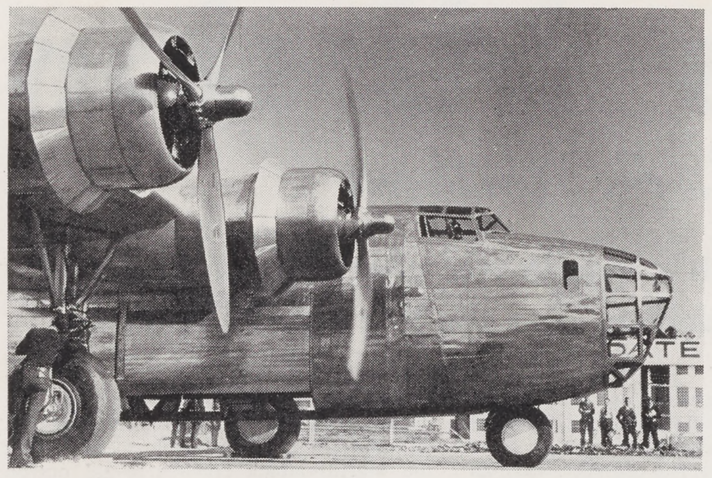
Architectural Forum

FLYING & POPULAR AVIATION DECEMBER '40

Whopper



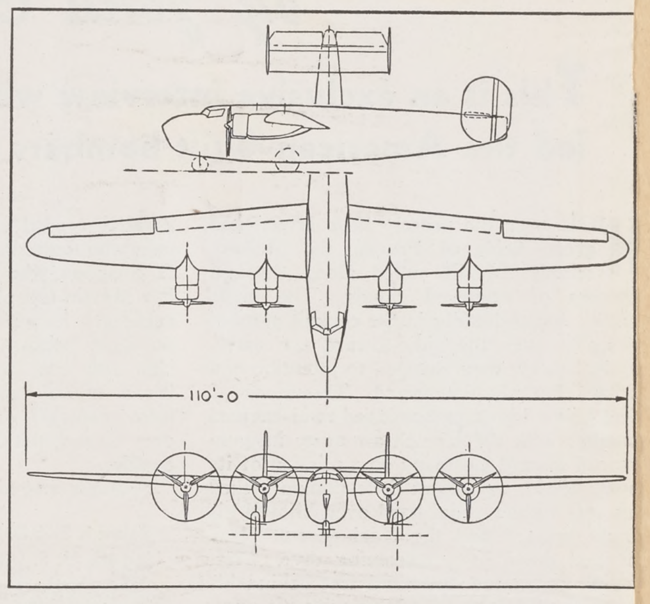
The B-24, technically Consolidated's Model 32, has four air-cooled engines totalling about 5,000 h.p.



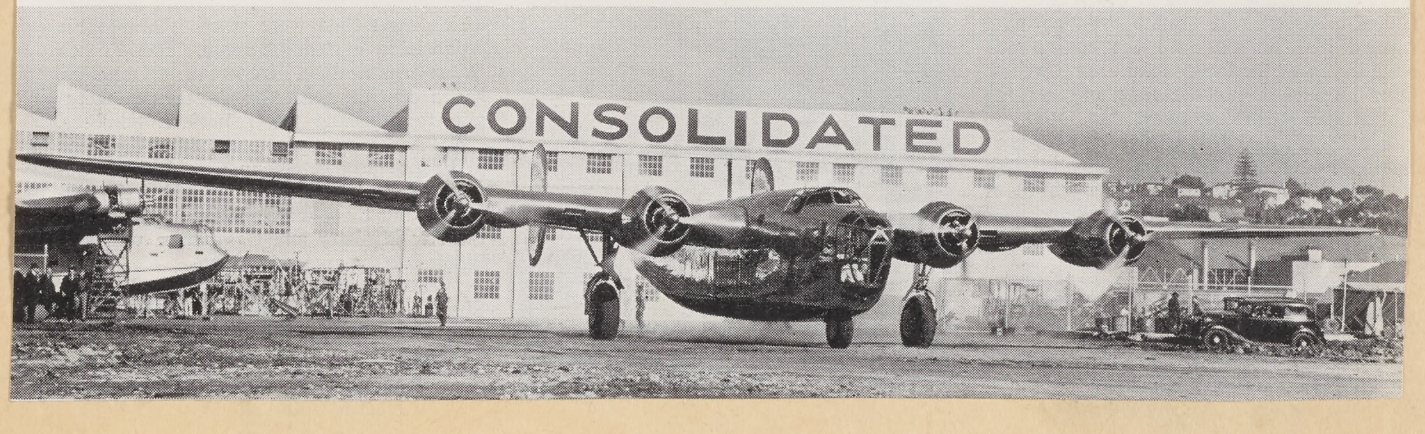
DEADLIEST long-range heavy bomber now being built for the U.S. Army Air Corps is not the much-touted Douglas B-19 that has the Sunday supplements gasping, but the ungainly-looking Consolidated B-24 pictured on this page. The B-24 and its many new developments, both secret and public, is expected to do for our military air strength what the Boeing *Flying Fortress* did several years ago. Fully loaded the B-24 weighs 41,000 pounds; with its crew of from six to nine it is said to have a loaded range of some 4,000 miles which is almost 50 per cent better than anything flying today. Notable innovations are the B-24's tricycle gear and radical wing (see "Mystery Airfoil," June, 1940)

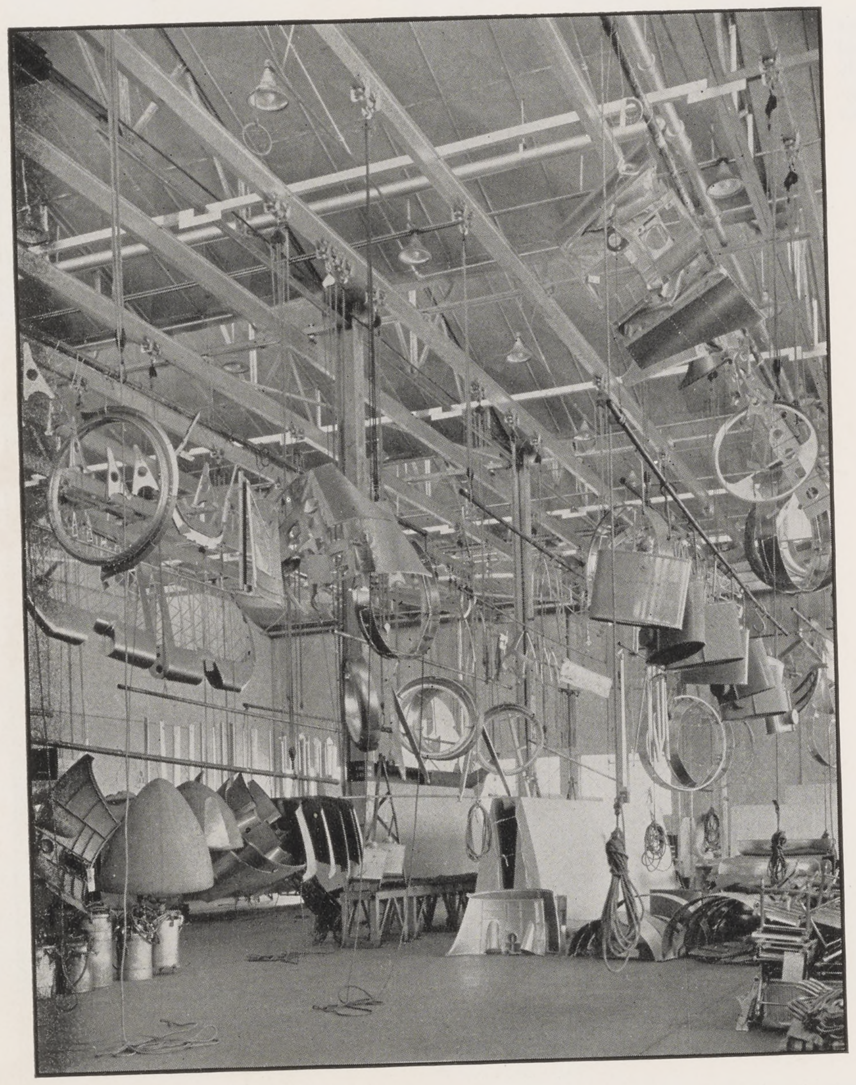
Retractable landing gear makes B-24 well-streamlined in flight. But conspicuous in picture below is relatively large frontal area presented by radial engines; in-the-wing engines would be ideal.

An export version of the B-24 is being built in large quantities for the British R.A.F.



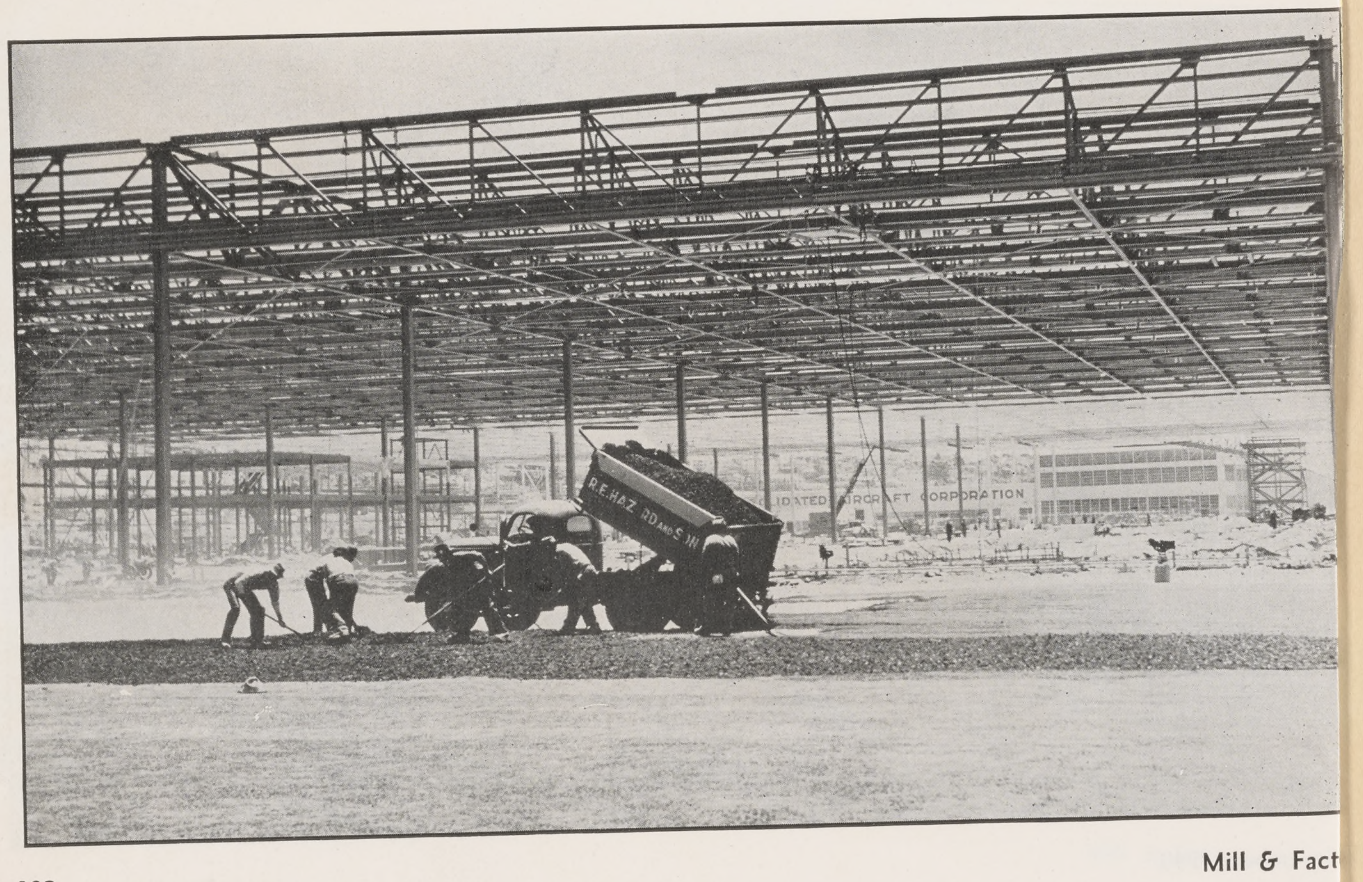
Three-view drawing of B-24 shows relative narrowness of the wing to rest of the ship. A gun emplacement is between rudders.

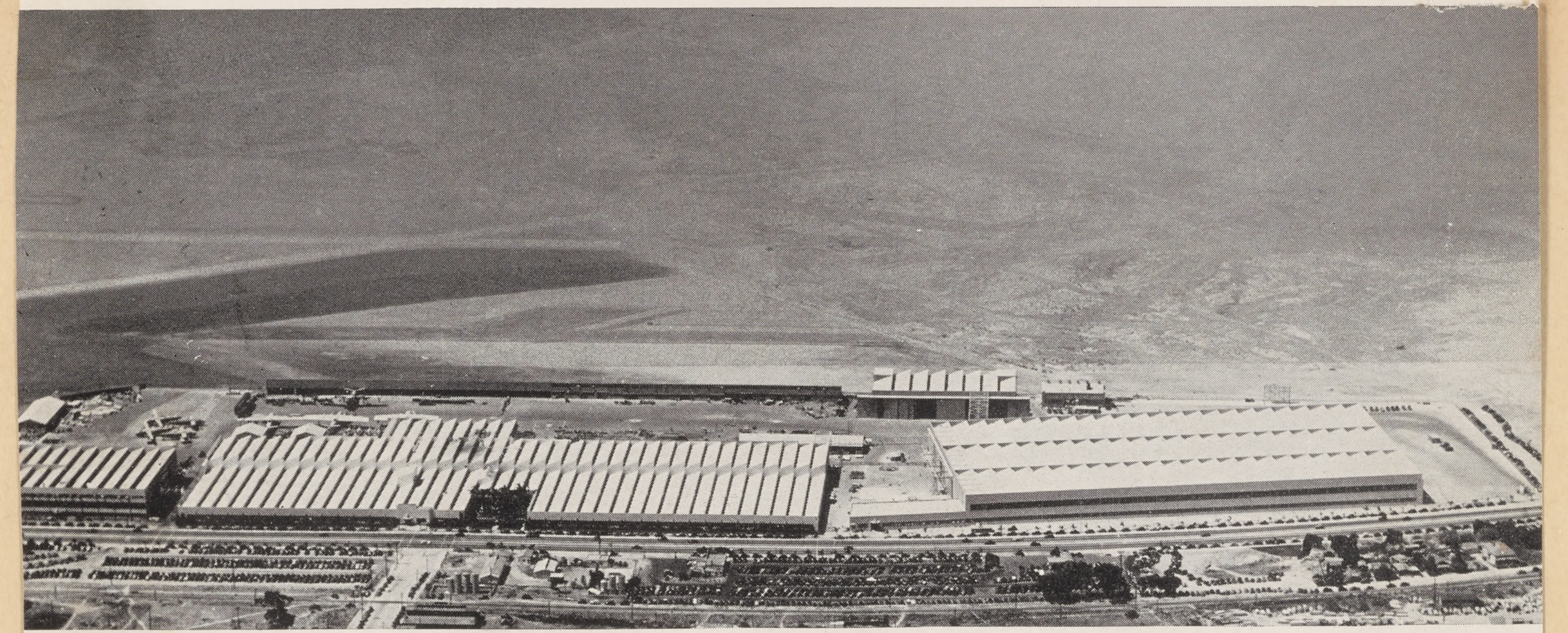




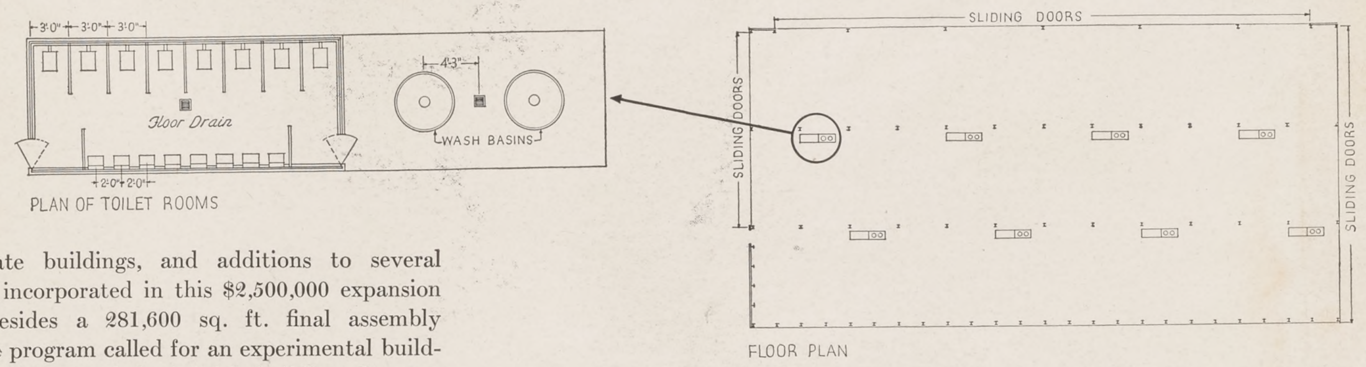
Left: Paint Department showing the full use of the complete overhead monorail system which enables a large volume of work to be accommodated in the department without interference with the painting operations. Parts may be hoisted up out of the way while drying or awaiting delivery elsewhere.

Below: The entire yard is paved with asphalti concrete. Due to the equable climate at Sa Diego, fully 30% of the manufacturing opera tions may be conducted out of doors, lendin a greater freedom for manufacturing.

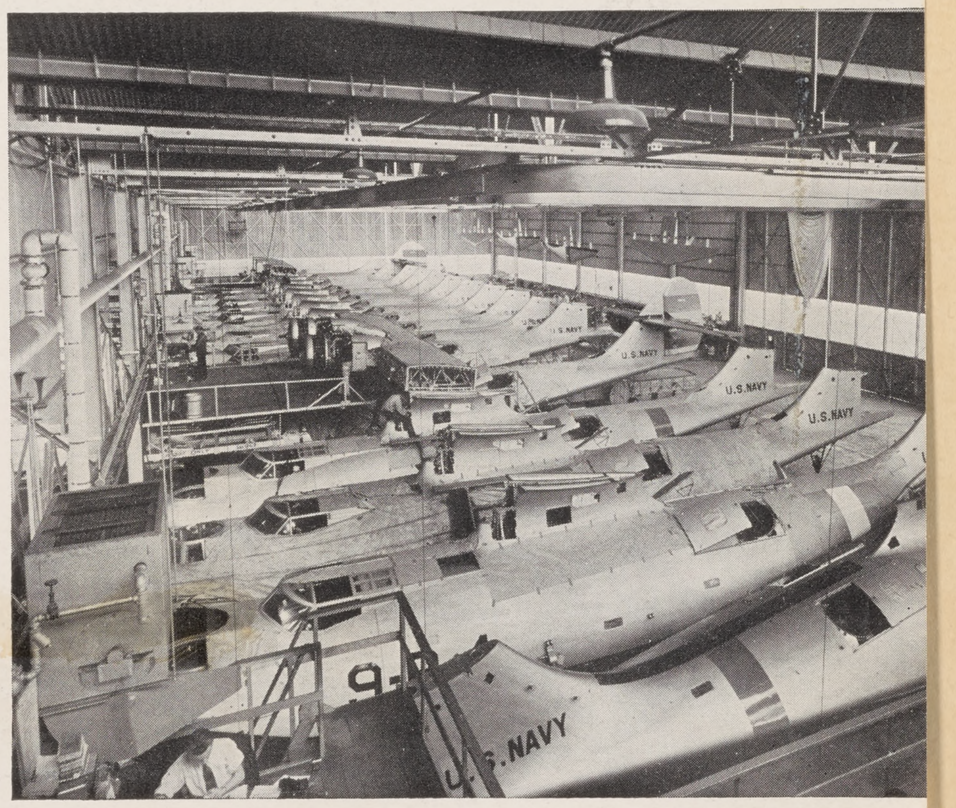


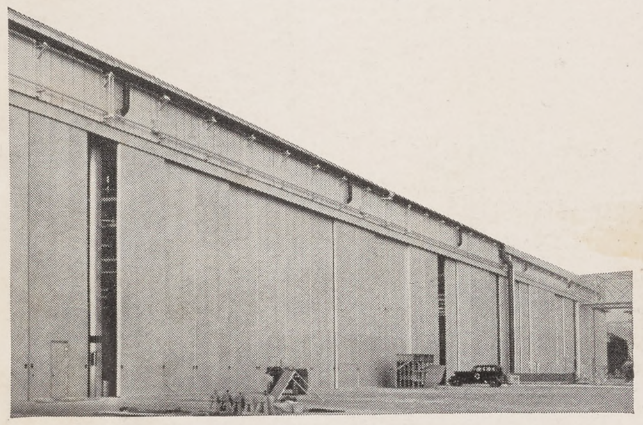


EDWARD AND ELLIS TAYLOR, ARCHITECTS & ENGINEERS. **B. O. LARSON, GENERAL CONTRACTOR**



Four separate buildings, and additions to several others were incorporated in this $2,500,000 expansion program. Besides a 281,600 sq. ft. final assembly building, the program called for an experimental building, office building and final finish building. Because of its size, heating of the assembly building offered the chief problem of technical interest. It called for keeping the heating units above the 36 ft. clearance and providing for additional loads due to the habit of leaving the large hangar doors open. It was solved by high velocity, high output unit heaters located above the bottom chords of the trusses. As in all line production plane plants, the assembly building makes maximum use of overhead cranes for handling parts after they have left the sub-assembly areas. The final finish building is used for final adjustments and painting after planes have completed experimental tests. All buildings make use of high intensity incandescent lighting for night shifts.



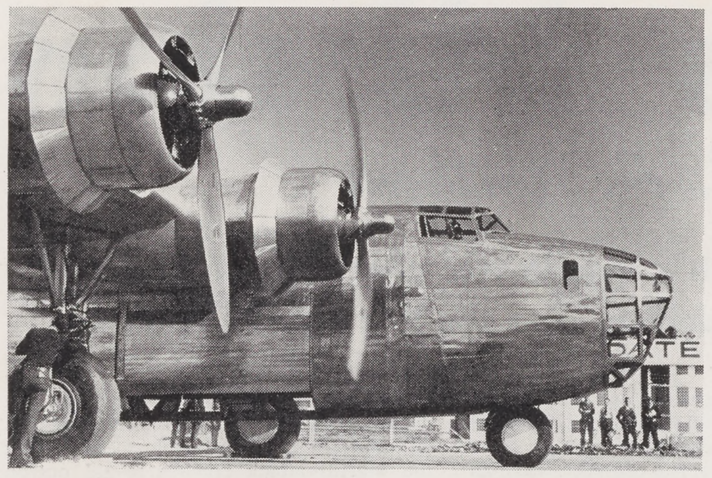


Architectural Forum

FLYING & POPULAR AVIATION DECEMBER '40

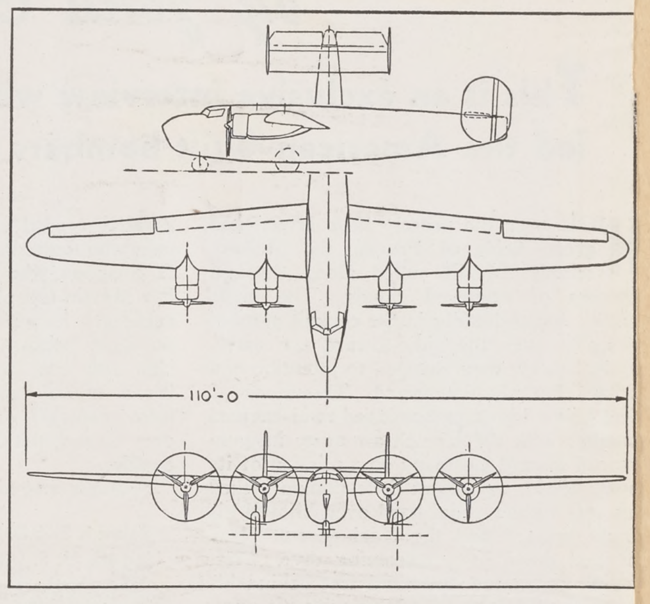
Whopper

The B-24, technically Consolidated's Model 32, has four air-cooled engines totalling about 5,000 h.p.



An export version of the B-24 is being built in large quantities for the British R.A.F.

DEADLIEST long-range heavy bomber now being built for the U.S. Army Air Corps is not the much-touted Douglas B-19 that has the Sunday supplements gasping, but the ungainly-looking Consolidated B-24 pictured on this page. The B-24 and its many new developments, both secret and public, is expected to do for our military air strength what the Boeing *Flying Fortress* did several years ago. Fully loaded the B-24 weighs 41,000 pounds; with its crew of from six to nine it is said to have a loaded range of some 4,000 miles which is almost 50 per cent better than anything flying today. Notable innovations are the B-24's tricycle gear and radical wing (see "Mystery Airfoil," June, 1940)



Three-view drawing of B-24 shows relative narrowness of the wing to rest of the ship. A gun emplacement is between rudders.

Retractable landing gear makes B-24 well-streamlined in flight. But conspicuous in picture below is relatively large frontal area presented by radial engines; in-the-wing engines would be ideal.

CONSOLIDATED

THE AIR SERVICES

Navy's Dirigible Program Revives Controversy

Office of General Information, Navy Department, formally declared last month that the various stories about the Naval lighter-than-air expansion program are without official sanction. The statement specifically denies that any decision has been reached concerning dirigible construction, or about the establishment of bases for dirigible airships. According to the Office of General Information, the whole matter is in the hands of the General Board for analysis and discussion.

This statement reveals that there is a mix-up in signals in the Navy Department, and that the old controversy about lighter-than-air military craft has come to life again.

The new Secretary of Navy Charles Edison in his annual report to the President submitted in December urged a 15% expansion in personnel to staff the expanding fleet, stressed the "ever-increasing importance" of naval aviation, and suggested that a moderate increase in the program of lighter-than-air activities should be continued.

The moderate program was based on the recommendations of the Navy's Bureau of Aeronautics for airship building. The suggested program provided for the establishment of 11 strategic patrol stations manned by dirigibles placed at Brooklyn, Providence, Miami, New Orleans, San Diego, San Francisco, Seattle, the Panama Canal Zone, Southeastern Alaska, Hawaii and Puerto Rico.

The plan has the support of Chairman Vinson, House Naval Affairs Committee, who has announced he will ask Congress to provide funds to build a fleet of 36 dirigibles, of various sizes.

Secretary Edison and the Bureau of Aeronautics have stressed the need to train personnel for dirigible craft. They attribute the lighter-than-air troubles chiefly to lack of schooled personnel.

During December the Navy held maneuvers with four rigid and semi-rigid dirigibles along the Jersey Coast. The ships participated in patrol and in rescue work, and performed satisfactorily, according to Mr. Edison's information.

Army Gives Gen. Kilner Farewell Dinner

On the eve of his retirement from active service, Brig.-Gen. Walter G. Kilner, Assistant to the Chief of the Air Corps, was the guest of honor at a farewell dinner attended by 131 Army officers and held at the Officers' Club, Bolling Field.

Principal speaker of the evening was Major-General Henry H. Arnold, Chief of the Air Corps, who has been more closely associated with Gen. Kilner than any officer in the Army. Present at the dinner were Brig.-Gen. Barton K. Yount, who acted as master of ceremonies; and Col. John H. Jouett, president of the Aeronautical Chamber of Commerce.

As a memento of the occasion, Gen. Kilner was the recipient of an attractive sterling silver cigarette box. Gen. Kilner is continuing to make his home in Washington.

9000 Mechs to Be Trained

During the seven-month period from Dec. 1, 1939 to June 30, 1940, it is estimated that a total of 9292 enlisted men will be graduated from the various courses of instruction being given at Army technical schools and civilian mechanical schools.

The civilian schools are expected to turn out 1000 men, Scott Field 4217, Chanute Field 2654, and Lowry Field 1421. These figures are not adjusted for men who may be relieved from instruction prior to their completion of the course.

Towers Gets Permanent Rank of Rear Admiral

Three outstanding members of the aviation personnel of the Navy were chosen for promotion last month. Chief of the Bureau of Aeronautics, John Henry Towers, one of the first pilots in the Navy, will be advanced to the permanent rank of Rear Admiral. He was chosen by one of the toughest "plucking" boards that have functioned in the Navy for years. They turned him down in 1938. Towers, native of Georgia, is 54, was graduated in 1906 from Annapolis. He has been head of the Bureau of Aeronautics for a year. The other new Rear Admiral is former Capt. Aubrey Wray Fitch, of Michigan, 56, commandant of the Pensacola, Fla., Naval Air Station.

Commander Charles E. Rosendahl, one of the world's outstanding lighter-than-air authorities, recently sent to sea, has been promoted to the rank of Captain. It is understood Capt. Rosendahl will be recalled to Washington to take over the command of the program for the expansion of the lighter-than-air program.

Petty Officers Meet

The annual election of officers of the Clinton E. Hart Petty Officers' Association, composed of rated men of the U. S. Naval Aviation Reserve, Squadrons 3 and 4, based at Floyd Bennett Field, Brooklyn, N. Y., was held last month at the field.

Elected to serve for the ensuing year were: T. J. Keene, president; C. Ruhwedel, vice-president; R. Martone, treasurer; A. Eschner, secretary; J. Krupa, master-at-arms.

Army Aircraft on View In Washington This Month

Congress will be given an exhibition of Air Corps planes and equipment and flying skill at Bolling Field the week-end of January 20. The show, to be given exclusively to Congress and official Washington, is designed to demonstrate what aviation appropriations are spent for, and to show the world at large how ready we are in the air.

Planes will be brought from every military air base in the United States. On the program are the Curtiss P-40 and P-42; the P-37, and the P-36A. The new Bell XFM-1 (Airacuda) and Vultee YA-19 newest attack plane will be shown. Bombers will include the four-engined Boeing B-17, the twin-engined Douglas B-18, and the four-engined B-15.

Fickel Now Assistant Chief

The War Department announced late last month that Brig.-Gen. Jacob E. Fickel has been appointed Assistant to the Chief of the Air Corps, succeeding Brig.-Gen. Walter G. Kilner, who is retiring. General Fickel, Wing Commander of the First Wing, GHQ Air Force, is being succeeded in that post by Col. Frank E. Lackland who is promoted to Brigadier-General.

Navy May Get More Aircraft This Year

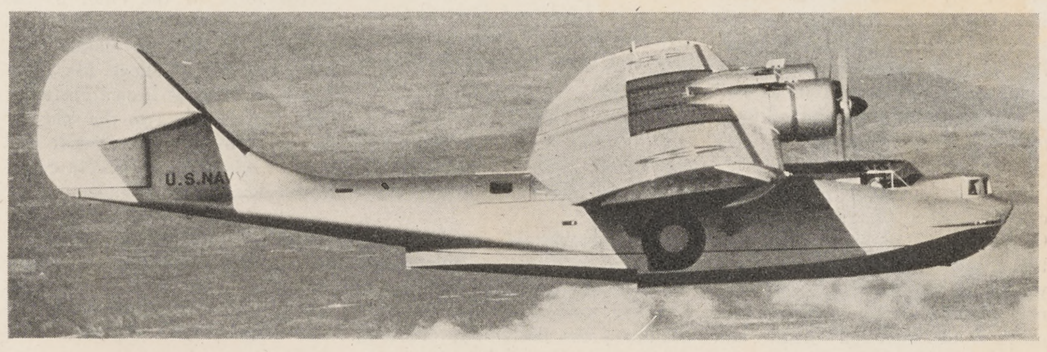
The Navy will receive funds to purchase 218 planes for neutrality patrol duty, 150 primary trainers and 150 advanced trainers, when Congress enacts the Army and Navy Deficiency Bill for $275,000,000. The airplane allocation totals $28,560,000.

The Army also plans new and larger bombers for which it has asked an appropriation of $4,000,000. It is hoped one of the superfortresses may be brought from Santa Monica in January. It weighs 150,000 lbs.

Navy Tests Amphibion

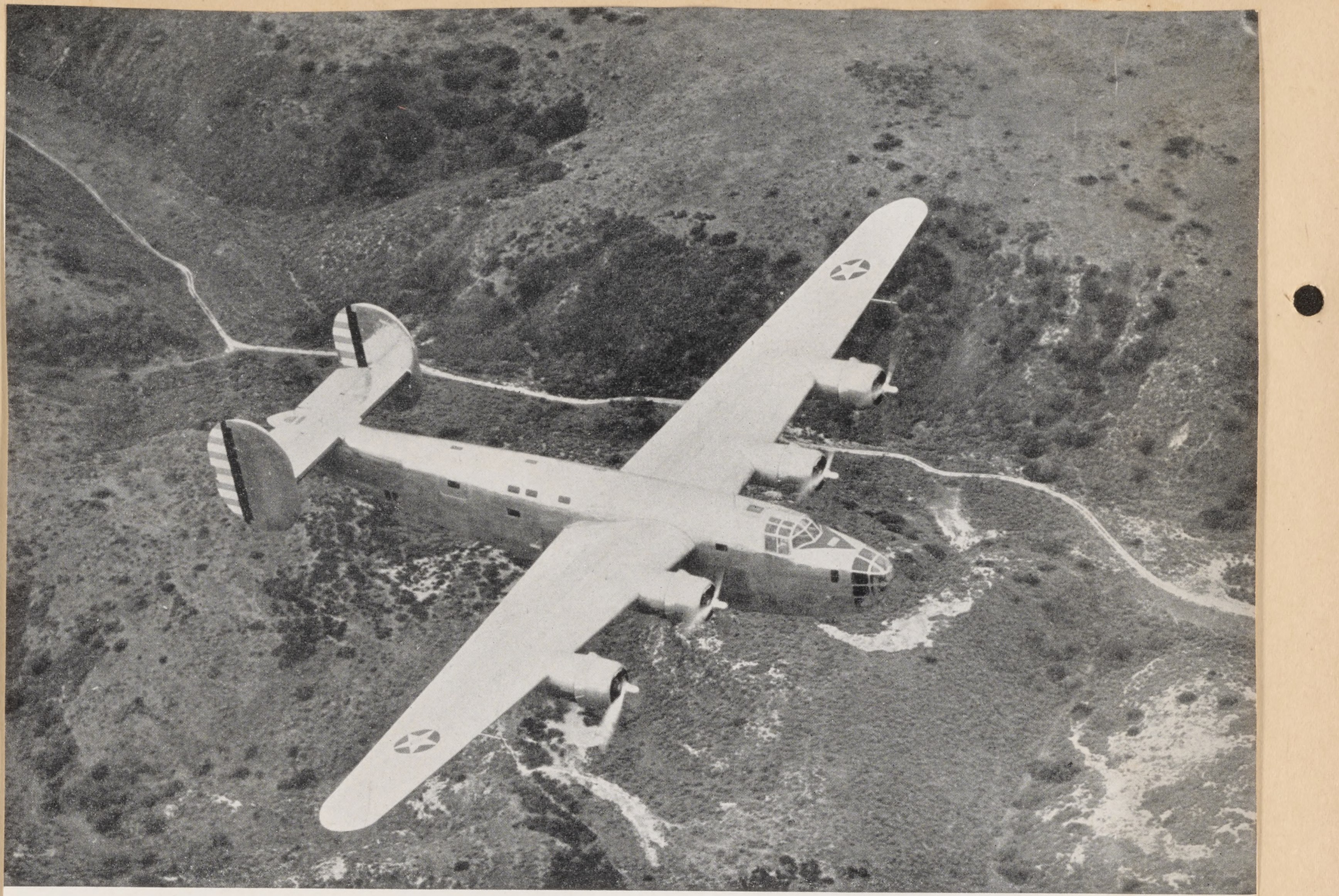
Completion of flight tests of the new XPBY-5A was announced last month by Consolidated Aircraft Corp., which built this new twin-engined amphibion patrol boat for the U. S. Navy.

Basically, the new airplane is the familiar PBY type with the exception of its tricycle landing gear which has a single wheel forward and two aft, all retractable. The side wheel and supporting mechanism complete with oleo shock struts, retract into wells in the side of the hull; the nose wheel, when retracted, is completely enclosed.



The Navy's newest patrol boat, the Consolidated XPBY-5A amphibion, in flight over California

Jan. 1940



CONSOLIDATED AIRCRAFT CORPORATION'S BOMBER IN FLIGHT. THIS FIGHTING AIRCRAFT IS ONE OF A SERIES ON ORDER FOR THE UNITED STATES ARMY AIR CORPS

This Photograph Shows the New Consolidated Model 32, Equipped with Four Pratt & Whitney 14-Cylinder, Twin-row Radial Air-Cooled Engines, Each Rated at 1,200 h-p., Giving the Plane 4,800 Available Horsepower in Flight. Propellers are Hamilton-Standard of the Three-bladed, Hydromatic, Constant-Speed Type. Gross Weight of the Plane is About 40,000 Pounds; Wing Span, 110 Feet; Length of Fuselage, 64 Feet; Overall Height, 19 Feet. Practical Requirements are for Crew of from Six to Nine Persons, Depending Upon the Mission

U.S. Air Services June, 1940

Aviation 10/40

Aircraft Buying Plan Becomes Definite

Nearly two months after it was first announced that the armed forces had settled on just what planes and engines they wanted to standardize on, the public is beginning to get a glimpse of the program. Only phase definitely announced is the plan for air-cooled big engines: 40,000 are wanted in the next two years about equally divided between Wright and Pratt & Whitney designs. This follows the accepted procedure of having two types of each item needed.

Still largely unsettled is the program for liquid-cooled engines, though it is generally assumed that GM's Allison will take about half the load and Packard's Rolls Royce the other half—with Ford's unofficial and still theoretical liquid engine still an unknown factor. About 6,000 Rolls Royces are believed definitely scheduled.

No authoritative statements have been made on plane types desired, but orders on the early program for which appropriations were completed in June, and first orders under the full program seem to reveal some phases of the pattern.

Definitely part of Army's pursuit squadrons will be Lockheed's P-38E, Curtiss's P-40D, Republic's P-44, and Bell's P-39; Army has apparently resolved its doubts about the radical design of Bell's Airacobra and is buying them in quantity.

As a two-engine ship there is the P-38E. Lockheed's ship is a new two-seater version of the P-38 and is said to be capable of 500 m.p.h.

The P-40 and P-39 are both single-place single-engine jobs using liquid-cooled engines. The P-44 provides an air-cooled engine alternative and is, moreover, especially designed for the high altitudes at which bombers are now operating.

Navy fighter plans are not so well established, but it is clear that a Grumman (probably the Skyrocket) will occupy an important place.

On heavy bombers, Boeing's four-engine B-17E has been bought in largest quantities, but Consolidated's similar B-24D has also been ordered. Medium bombers and attack bombers are still open.

North America's AT-6A is the main reliance for advanced trainers, while Vultee, with its BT-13A, provides most of the basic trainers. Primary trainers, as might be expected, are more split up.

Army and Navy between them want 41,500 air-cooled engines in the 500-2,000 hp. range, and have made arrangements to get them from Wright, Pratt & Whitney, and Ford. P & W, which is doing all its negotiation with Navy, will furnish 17,000 of the engines. Ford is settling details with the Army on a program to build 4,500 engines on the P & W 2,000-hp. design. Wright, which is also dealing with Army, will handle 20,000 Cyclone and Whirlwind engines.

To handle its share, Pratt & Whitney will undertake a 400,000-sq.ft. plant expansion (additional to 700,000 sq.ft. already this year). The company will meet the $15,000,000 cost of buildings, while Navy will pay for and retain title to $7,000,000 or $8,000,000 worth of tools.

Ford is paying for his own $11,000,000 plant (of which about $7,000,000 is for tools.) He is to pay P & W a nominal license fee of a dollar an engine.

The Wright engines involve expansion of more than 1,000,000 sq.ft. and will cost about $90,000,000 to be financed through an RFC defense loan.

Consolidated Air TM

Romeike & Curtice Ltd.

The Press Cutting Agency

35, Shoe Lane, London, E.C.4

Telegrams: "ROMEIKE"

Telephone: CENTRAL 2781

This cutting is from the

Daily Sketch

the paper that gives you

"INSIDE INFORMATION"

The Reliable News-in-advance-of-the-news feature which has won itself an international reputation.

Date of Issue 21.11.40

U.S. Sending 26 Giant Bombers To Aid Britain

THE U.S. Army High Command has given Britain priority on the delivery of 26 four-engined bombers at present at the factory of the Consolidated Aircraft Company at San Diego, California.

The High Command also announces that negotiations are under way for giving Britain 20 four-engined Boeing bombers of the "flying fortress" type already completed.

The machines of the Consolidated Aircraft Company are reported to be very similar to the "flying fortresses," both types being capable of a range of 3,000 miles, says Reuter. The first deliveries are understood to have been made to the British last Saturday. It is officially stated that the Sperry Bombsight has also been released to Britain.

Naval bases obtained from Britain are already being used by the U.S., said Colonel Knox, U.S. Secretary of the Navy, yesterday. Naval patrol bombers were operating from Bermuda and ships were using the base at Newfoundland.

A new British request for over-age destroyers is likely to be made by Lord Lothian, British Ambassador to the U.S. The number mentioned in well-informed quarters is 50.

The Navy's Newest Patrol Bomber Arrives for Tests

T. N. SANDIFER

RATED AS THE WORLD'S LARGEST AMPHIBIAN AIRPLANE, Consolidated Aircraft Corporation's newest patrol bomber for the Navy, the XPBY-5A, roared up from Pensacola Naval Air Station, on December 16, to land without circling at the Anacostia, District of Columbia, air station for a series of performance flights by naval pilots there.

Flown by Lieut. Carl E. Giese, with Lieut. Roy Jackson as co-pilot, both Navy flyers, and with a Navy crew aboard, as well as Consolidated's mechanical expert G. R. Tibbs, the huge ship made the hop in 6½ hours, as the final lap of a transcontinental journey from the West Coast plant where she was built.

Long-range flights over land or ocean are a part of this big plane's heritage. Basically this is Consolidated's Model 28, two-engined flying boat, which in service as a Navy patrol bomber type has established a remarkable series of mass flight records, and other sustained performance records. The latest of the type is therefore a continuation of the series which has made mass flight records to Hawaii, Panama, and over other distances.

This particular plane, which probably will set the pace for others of similar capabilities, is able to fly from San Francisco to New York, and continue on for 1,000 miles beyond, and has other possibilities about which the Navy is decidedly uncommunicative. The new Model 28-5A Amphibian, as it is officially designated, is in fact, decidedly a mystery ship.

A hardy newsman, after the plane's arrival at Anacostia, soon found this out when he asked one of the pilots what his plane's top speed is.

"Sorry, I can't say," was the answer. All the record shows is that the ship took off from San Diego, Calif., December 14, and made overnight stops at Randolph Field, Texas, and Pensacola.

Some commonplace details are available; the ship is a high wing monoplane, all-metal construction, of an approximate gross weight of 12 tons, but capable of taking off with a much heavier load. It has a wing spread of 104 feet, is 65 feet overall, and has wingtip floats which are retractable.

The ship is powered with two Pratt & Whitney *Twin Wasp* engines, but the Navy and its builders are chary of any more detailed facts about technical equipment, including its armament. The big plane has a gun turret forward of the cockpit, in addition to other armament.

✣ ✣

A CONSPICUOUS FEATURE OF THE BIG PLANE as it stands on a landing field is one of its most visible points of difference from certain other types of patrol bombers. This is its new tricycle landing gear, which, like its wingtip floats, is retractable and covered by flush metal hatches when the plane is in flight.

This item of the plane's construction is important, so far as the plane's service qualifications are augmented. As will be shown in a detailed explanation of this device, the new landing wheels, in addition to the wing floats, make the plane remarkably versatile. It not only can operate at sea, and with much greater seaworthiness in some respects, because of this land equipment, but can be used inland, as it is equally able to take off from a land station, as from the water.

The plane is thus adapted to service under many different conditions, especially in remote ocean areas where it might be required to operate from some island base, lacking any of the usual requisites for such purpose. First, the landing gear on this new plane makes it independent of a beaching crew. The new ship can climb up a ramp from the water under its own power, if it has landed offshore, or if there is no ramp, it can roll up a beach. It can descend a ramp, or a beach, with perfect safety because of brake power, in the same way.

✣ ✣

THIS EQUIPMENT enables the plane to utilize atolls and remote beaches with the same facility as the more formal ramps and landing fields of the mainland. Furthermore, the gear is so constructed, and so operated, as to be easily serviced, and the whole plane is so designed, in fact, as to require a minimum of servicing, and that only such as can be given under active operating conditions.

It will be recalled that the Navy has paid particular attention to the possibilities for its patrol bombers in operating under service conditions from such advance bases as those being developed in Alaska, or those which might be improvised in the Caribbean or far Pacific, for instance. The latest in the series of Consolidated Model 28's therefore appears especially designed for duty of this nature.

Some of the secondary advantages of the landing gear addition relate more to its seagoing qualities perhaps than otherwise. For example, it was found that the extended tricycle gear, when the plane is on the surface of the water, has a stabilizing effect, acting as a sort of sea-anchor, and assisting to control the big hull when in open rough water, or facilitating the approach to a landing ramp or beach, against the wind.

In making turns within a short radius on open water, the pilot, by extending his landing wheels, acquires a sort of centerboard device which checks skid tendencies, and permits application of more engine power in turns, without undue acceleration.

✣ ✣

THIS TRICYCLE LANDING GEAR consists of a single wheel forward, with two aft. All three wheels are retractable by operation of a single lever, the wheels, supporting mechanism, including oleo shock struts, all disappearing into the hull, in wells which are covered by automatically closing hatches. When retracted, the hull presents a smooth planing surface, and as noted earlier, even the wingtip floats, for water use, are retractable.

New Air Bases and Depots Named

PURSUANT TO THE RECOMMENDATIONS of a Board of Officers appointed by the Chief of the Air Corps, new Army Air Corps Stations which are formed, or in the process of being built, have been named as follows:

Northeast Air Base, Holyoke, Mass.—Westover Field, named for the late Maj. Gen. Oscar Westover, former Chief of the Air Corps.

Southeast Air Base, Tampa, Fla.—MacDill Field, named for the late Col. Leslie MacDill, Air Corps.

Bruja Point Air Base, Panama—Howard Field, named for the late Maj. Charles H. Howard, Air Corps.

Puerto Rican Air Base—Borinquen Field, so named because it is the original name of the island of Puerto Rico and its inhabitants were called Borinquenos or Borincuas.

Sacramento Air Depot, Calif.—McClellan Field, named for the late Maj. Hez McClellan, Air Corps.

Ogden Air Depot, Utah—Hill Field, named for the late Capt. Ployer P. Hill, Air Corps.

New Transatlantic Air Service Recommended by CAA Examiner

American Export Airlines Wins Initial Approval Subject to Final Decision by Authority

PROSPECTS of a second passenger and mail transportation service by air over the Atlantic drew nearer when, on April 19th, recommendations were made to the Civil Aeronautics Authority by C. A. Leasure, one of its examiners, that American Export Airlines, Inc., an affiliate of American Export Steamship Company, of New York, be granted a certificate for passengers and mail between New York, or alternatively Baltimore or Charleston, and Rome, Italy, subject to showing of availability of landing rights. Application for other routes was held for later consideration.

This company, using a type of over-ocean cruising airplane developed originally for Navy use as a patrol bomber, has made extensive survey flights; the first and second east and westbound over the New York-Marseilles route via Horta (Azores), Lisbon (Portugal), and Biscarrosse (France); the third, New York-Marseilles via Botwood (Newfoundland), Foynes (Ireland), and Biscarrosse; and the fourth Marseilles-New York via Biscarrosse, Foynes, and Halifax; fifth New York to Biscarrosse via Botwood, and sixth, Biscarrosse to New York via Lisbon and Horta. Between the fifth and sixth flights a side flight was made to St. Nazaire, 225 miles north from Biscarrosse, to test its potentialities as an additional landing place. It has the requisite landing rights, the company states.

These flights were made during July and August of last year, and used a Consolidated Model 28 flying boat, released by the U. S. Navy from the production line of the Consolidated Aircraft Corporation, San Diego, Calif., in order that this proposed transatlantic service could have early delivery of one of these long-range PBY-4 patrol bomber types made famous by the Navy. The Model 28 is a commercial version of this outstanding aircraft type made for Export Airlines, through the interest of Maj. Reuben Fleet, president of Consolidated. The Navy has some 200 of this same type of ship on order with Consolidated.

American Export Airlines, following its successful experience over the proposed routes using this type of craft, and having in mind its intention to pioneer actual nonstop service over these routes, with obvious advantages in shorter flight time and convenience, then placed an order for three tremendous flying boats, adapted for such service from the Navy's XPBS-1, one of the longest range, fastest airplanes of its kind known. Early in January of this year, W. H. Coverdale, president of the new air line, signed a contract involving $2,000,000 with the Vought-Sikorsky Division of United Aircraft for these ships.

Meanwhile, the line proposes to use the Model 28, which made the survey flights, on its preliminary twice monthly service to Italy, via Portugal and Spain, as provided in the pending recommendation for a certificate, until delivery of the new nonstop airplanes from United, when the twice-weekly passenger service will be inaugurated.

✣ ✣

THE DATA AND FINDINGS resulting from the six survey flights enumerated earlier, gave American Export Airlines the information on which it went into the extensive hearings on its application for a certificate from CAA, which were only recently concluded. The proposed service, for which application was made, contemplates some five routes in all; transportation of passengers, mail, and property between New York and Marseilles, via Biscarrosse, France; New York and Southampton, England, via Foynes, Ireland; New York and Marseilles, via Horta, Lisbon, and Biscarrosse; New York and Rome, via Lisbon and Barcelona; and New York and Rome via Horta, Lisbon, and Barcelona. The first two were covered by requests for permanent certificates, the latter three, temporary.

The third and fifth routes contemplated carriage of property and mail only. The findings of Examiner Leasure held that service to France, England and the Irish Free State were debarred by the Neutrality Proclamation at this time, and that the proposed transportation of mail and property only between New York and Rome, via intermediate points, was found not to be required by public convenience and necessity.

However, Export Airlines had contended, and Examiner Leasure found as stated in his recommendations, that evidence points to the Atlantic routes to Europe as the most heavily traveled in normal times, and the one on which traffic of all kinds predominates. Accordingly, the examiner held that "additional air transportation between the United States and Europe (was) found required by the public convenience and necessity," and his essential recommendation stated that (the) "proposed air transportation of mail, persons, and property between the terminal point New York, N. Y. (or Baltimore, Md.), Lisbon, Portugal, Barcelona, Spain, and the terminal point, Rome, Italy, (is) found to be required by the public convenience and necessity. Subject to a showing that the necessary landing rights are available, applicant (is) found fit, willing, and able to perform such service. Recommended that a certificate of public convenience and necessity authorizing such transportation be issued to American Export Airlines, Inc., upon a showing that landing rights are available."

Counsel for this line had placed on record data showing that landing rights were available, or in negotiation. There now remains a short period before final action by the CAA on these recommendations, and upon another important factor in these plans.

✣ ✣

JUAN T. TRIPPE, president of Pan American Airways, was a vigorous objector to this whole proceeding, and during this ensuing interval has the privilege of further objecting to final approval of plans for a competing service such as American Export Airlines intends to offer.

The contentions of his company were, in summary: that Pan American pioneered all these ocean services, including the service it now operates to Europe; that the competition it anticipates from government-subsidized European lines, beginning with resumption of mail and property transport by British Overseas Airways scheduled for this summer, entry

---

Names in the News

. . B.G.
. . VEGA
. . STINSON
. . LOCKHEED
. . CONSOLIDATED
. . PRATT & WHITNEY
. . CHANDLER EVANS
. . HAMILTON STANDARD

Represented throughout Australia, New Zealand and Territories by

BROWN & DUREAU
PTY. LTD.
TEMPLE COURT, 422 COLLINS STREET,
MELBOURNE, C.1.

Also at—
Sydney, Brisbane, Perth, Wellington, Auckland and Christchurch.

Aircraft 12/40

Military Aircraft Sources in the U. S.

Beech Aircraft Corp., East Central Ave., Wichita Kansas.

Bell Aircraft Corp., 2050 Elmwood Ave., Buffalo, New York.

Bellanca Aircraft Corp., New Castle, Delaware.

Boeing Aircraft Company, Georgetown Station, Seattle, Wash.

Brewster Aeronautical Corp., Northern Blvd., 35th St., Long Island, N.Y.

Cessna Aircraft Company, 5800 Franklin Rd., Wichita, Kansas.

Consolidated Aircraft Corp., Lindbergh Field, San Diego, Cal.

Curtiss Aeroplane Div., Curtiss-Wright Corp., Buffalo, N.Y.

Curtiss-Wright Corp., St. Louis Airplane Div., Robertson, Mo.

Douglas Aircraft Co. Inc., Santa Monica, Cal.

Fairchild Aircraft Div., Fairchild Engine & Airplane Corp., Park Lane, Hagerstown, Md.

Grumman Aircraft Engineering Corp., Bethpage, L. I., N.Y.

Harlow Aircraft Co., Alhambra, Cal.

Howard Aircraft Corp., 5301 West 65th St., Chicago, Ill.

Lockheed Aircraft Corp., Burbank, Cal.

The Glenn L. **Martin** Co., Baltimore, Md. (Plant: Middle River, Md.)

North American Aviation, Inc., 5701 Imperial Highway, Inglewood, Cal.

Northrop Aircraft, Inc., Hawthorne, Cal.

Republic Aviation Corporation, Conklin St., Farmingdale, L. I., N.Y.

Ryan Aeronautical Company, Lindbergh Field, San Diego, Cal.

Stearman Aircraft, Div. of Boeing Aircraft Co., Wichita, Kansas.

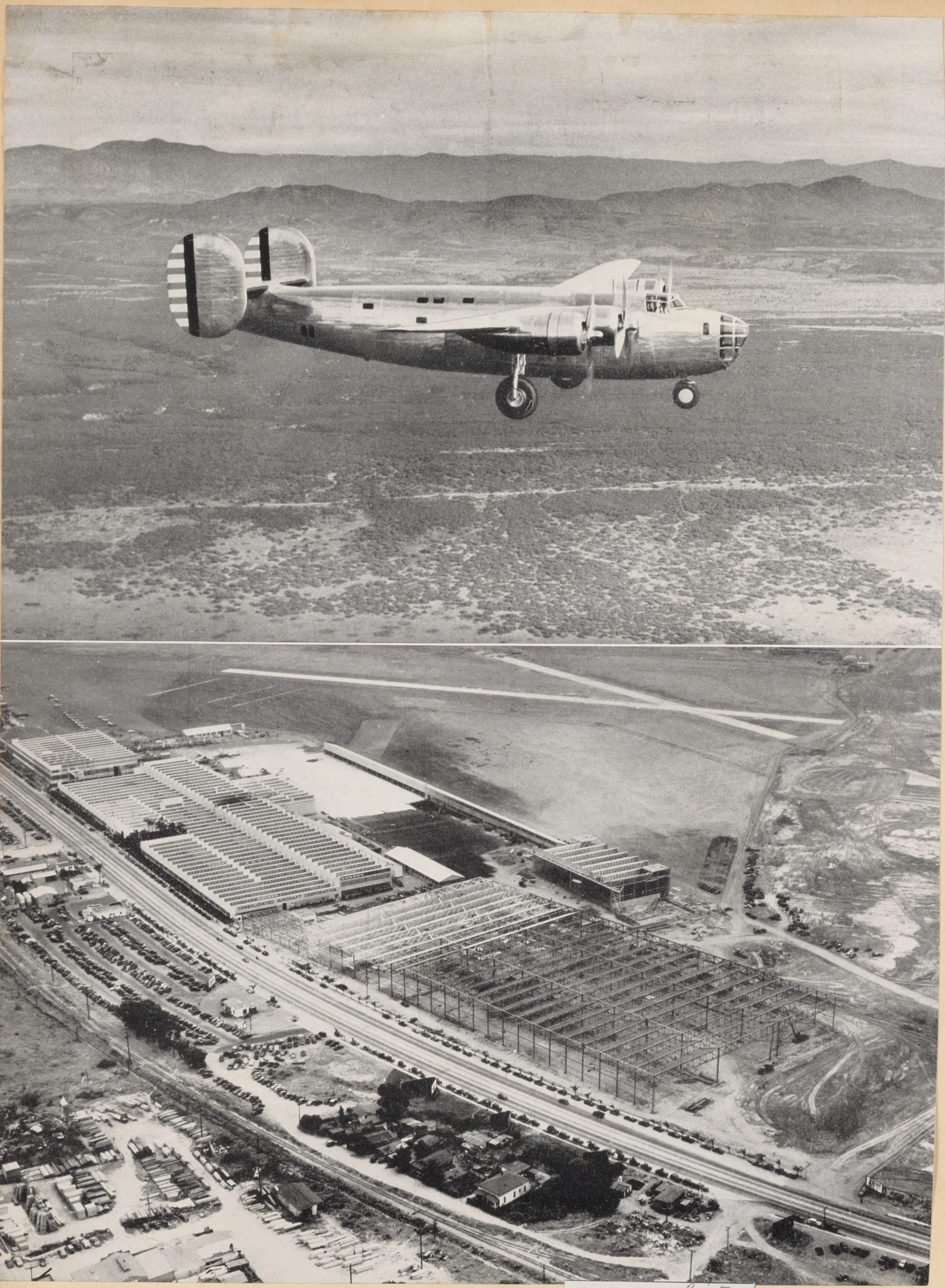
Stinson Division, Vultee Aircraft Inc., Nashville, Tenn.

Vought-Sikorsky Aircraft, Div. of United Aircraft Corp., Stratford, Conn.

Vultee Aircraft Inc., Downey, Cal.

The **Waco** Aircraft Company, Peters Ave., Troy, Ohio.

Canadian Aviation 12/40



CONSOLIDATED TAKES STEPS

Consolidated Aircraft Corporation Works Fast to Keep Abreast of Tremendous New Developments Demanded by the Nation's Defense Program. By the 1st of Next Month It Is Estimated That the Company's Expansion Program Will Bring This Large Plant into Full Alignment With the Recently Announced Emergency Defense Program for Building an Unlimited Number of Aircraft. Consolidated Will Have 1,910,000 Square Feet of Covered and Uncovered Manufacturing Space and 954,440 Square Feet of Adjacent Airport Land Under Option for Further Expansion if Necessary. This Plant Becomes One of the Largest in the World. It is Located at San Diego, Calif. The Upper Photograph Shows Consolidated's New XB-24 Army Bomber in Flight With Landing Gear Extended

U.S. Air Services - July 1940

Industry Backlog

Aviation 12/40

Unfilled orders of the aircraft industry now approximate $3,500,000,000, an increase of $385,000,000 in the past month consisting mainly of U.S. Navy orders. Only a year ago the industry was expanding its plant capacity to take care of a backlog which had crossed the $500,000,000 mark for the first time. Now that the U.S. Government's current aircraft purchasing program is nearly completed, plans already are being formulated in Washington for a new 20,000 military plane program to be presented to Congress early next year. Meanwhile Great Britain plans to order an additional 12,000 planes and the Dutch East Indies, among other nations, also are shopping around for more war planes. Contracts held by domestic plants come to a grand total of about 39,000 fighting craft; 25,000 for the American military and naval forces, and 14,000 for the British. The following table gives the latest approximate unfilled orders in dollar volume of 23 primary producers of planes or aircraft engines.

Allison (General Motors)	$100,000,000
Aviation Corp.	20,000,000
Beech	22,000,000
Bell	60,000,000
Boeing	203,000,000
Brewster	100,000,000
Cessna	11,000,000
Consolidated	300,000,000
Continental Motors	35,000,000
Curtiss-Wright	520,000,000
Douglas	400,000,000
Fairchild	15,000,000
Ford	122,000,000
Grumman	20,000,000
Lockheed	211,000,000
Martin	322,000,000
North American	225,000,000
Northrop	24,000,000
Packard	217,000,000
Republic	65,000,000
Ryan	12,000,000
United Aircraft	430,000,000
Vultee	95,000,000
	$3,529,000,000

ALL EQUIPPED WITH STAINLESS MANIFOLDS

HERE ARE *a few types of ships recently added to the U.S. Navy fleet. Each is equipped with a manifolding system of lightweight stainless steel, resistant to corrosion and oxidation. U. S. Navy Official Photographs.*

Why STAINLESS?

Because stainless is both strong and fatigue-resistant at elevated temperatures.

Because it produces no oxidation scale up to 1650°F., well above all normal exhaust temperatures.

Because it resists the corrosive attack of modern "doped" fuel products, as well as exposure to atmosphere.

Because it effectively resists surface abrasion at points of metal-to-metal contact.

Because it offers excellent fabrication qualities—for deep-drawing, bending, and welding.

THESE are the principal reasons why leading aeronautical engineers have adopted U·S·S Stainless Steel as a standard material for exhaust manifolds and collector rings. This construction using the stabilized material, which is not subject to intergranular corrosion, has proved itself in actual service records of 7000 hours and more. Today, the stainless manifold is serving successfully as standard equipment on most of America's famous airplanes, both in civil transport and in Army and Navy fighting craft.

U·S·S STAINLESS STEEL

AMERICAN STEEL & WIRE COMPANY, *Cleveland, Chicago and New York*
CARNEGIE-ILLINOIS STEEL CORPORATION, *Pittsburgh and Chicago*
NATIONAL TUBE COMPANY, *Pittsburgh*
Columbia Steel Company, San Francisco, *Pacific Coast Distributors*
United States Steel Export Company, New York · Scully Steel Products Company, Chicago, *Warehouse Distributors*

UNITED STATES STEEL

AVIATION, October, 1940 117

Also Aviation June, 1940

The Patrol Bomber Expertly Analyzed

THE STRIKING FEAT of British naval aviation in releasing a substantial portion of Britain's Mediterranean surface fleet for badly needed service elsewhere, by a single attack which destroyed Italian naval strength in that theatre of operations, has thrown into new prominence all naval air forces, in which branch our Navy is admittedly dominant.

It also brings to the forefront the as yet untried potentialities of the American naval air service's Patrol Bomber squadrons, a force unique among the world's navies, both as to the type of ocean-ranging aircraft used, and the capabilities which those airplanes have demonstrated in the American Navy.

While varied interpretations are current concerning the part to be played by these giant patrol bombers, which hop the Pacific Ocean regularly over long reaches and operate independently in the Arctic from Alaskan bases, the magazine *U. S. Naval Institute Proceedings* in its November issue has a timely and obviously authentic discussion of the subject, written by Lieut. Comdr. A. B. Vosseller, who recently completed a period of duty in the Bureau of Aeronautics, and at this writing commands a squadron of patrol bombers.

In this article, "The Patrol Plane and the Future," after detailing the unusual flight and other characteristics of the type, and including an extensive quotation from Igor Sikorskey's Lilienthal Memorial Lecture delivered in 1938, dealing with "The Large Flying Boat" reported by U. S. AIR SERVICES at the time, Lieutenant Commander Vosseller significantly points out that "The bombing plane is essentially a long-range gun."

The U. S. Navy's patrol bomber type has proved so valuable as a long-range scout, he wrote, as to obscure for many its value as a bomber.

"Consider the suitability of the patrol plane as a bomber as well as a long-range scout," he says. "This dual suitability automatically arises from its great weight-carrying capacity, range, and ability to reach high ceilings which are results of its inherent characteristics as well as its speed advantage over the large landplane . . ."

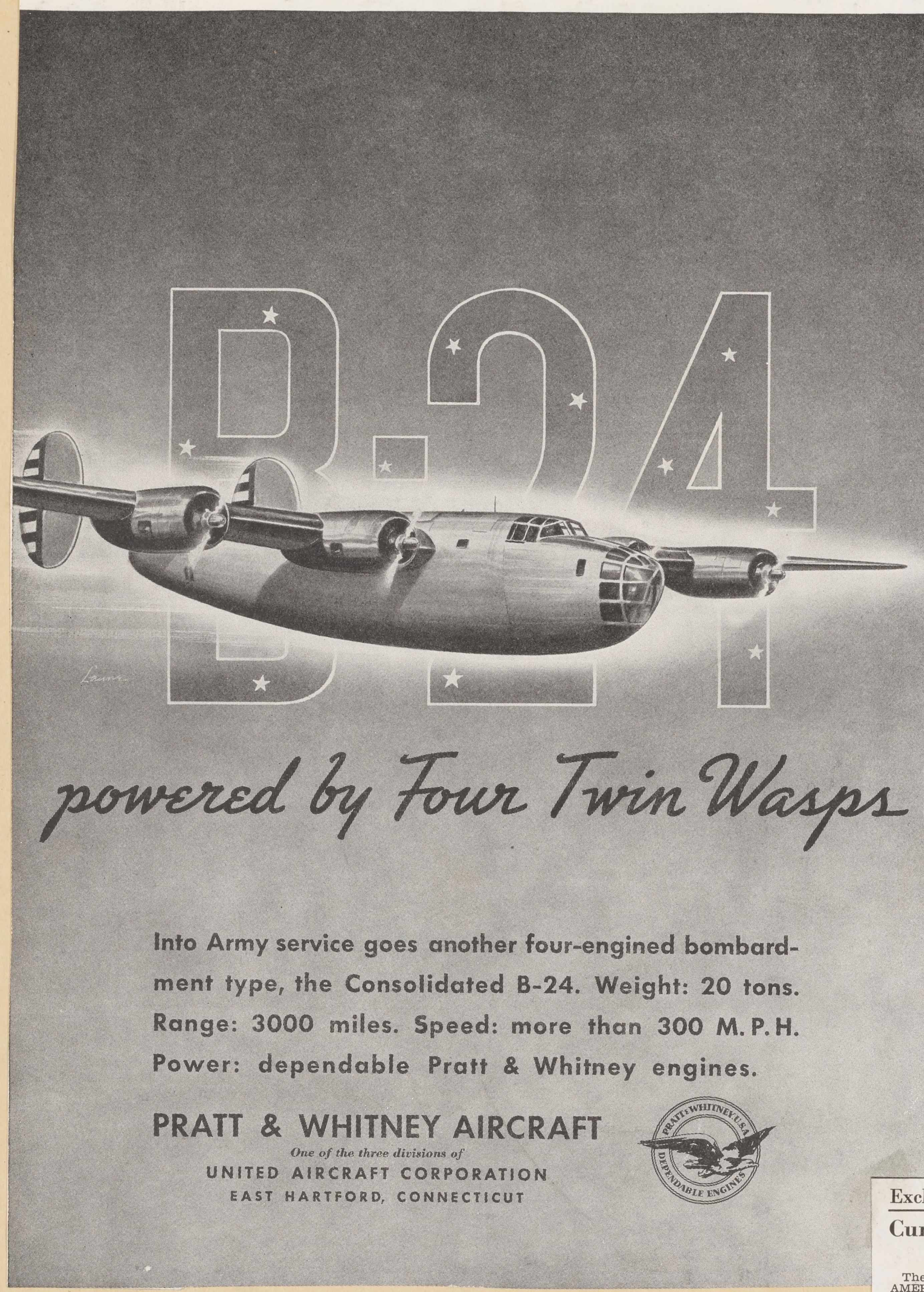
These qualities, he points out, make this the type to reach out and attack an enemy naval force far at sea, "which is where we want to do any bombing of the enemy," while being relatively secure against enemy countermeasures.

Citing improvements in the later models of the famous PBY series of aircraft turned out for the Navy by Glenn Martin, Consolidated, or other manufacturers, constituting the patrol bomber squadrons, this author asserts that "Enemy fighters required to attack any of the Navy's new patrol planes will find them extremely formidable antagonists, with no blind angles whatever, and with a concentration of fire in the areas most subject to attack. Patrol planes in formation should be immune to attack except by vastly superior numbers of enemy fighters."

Lieutenant Commander Vosseller, referring to advances in American naval aviation, states: "The fact that the American Navy is the only one having any sizeable and effective air component which can accompany the Fleet is eloquent testimony to the efficiency with which these developments have been carried on." U.S. Air Services 12/40

American Aviation for April 1, 1940

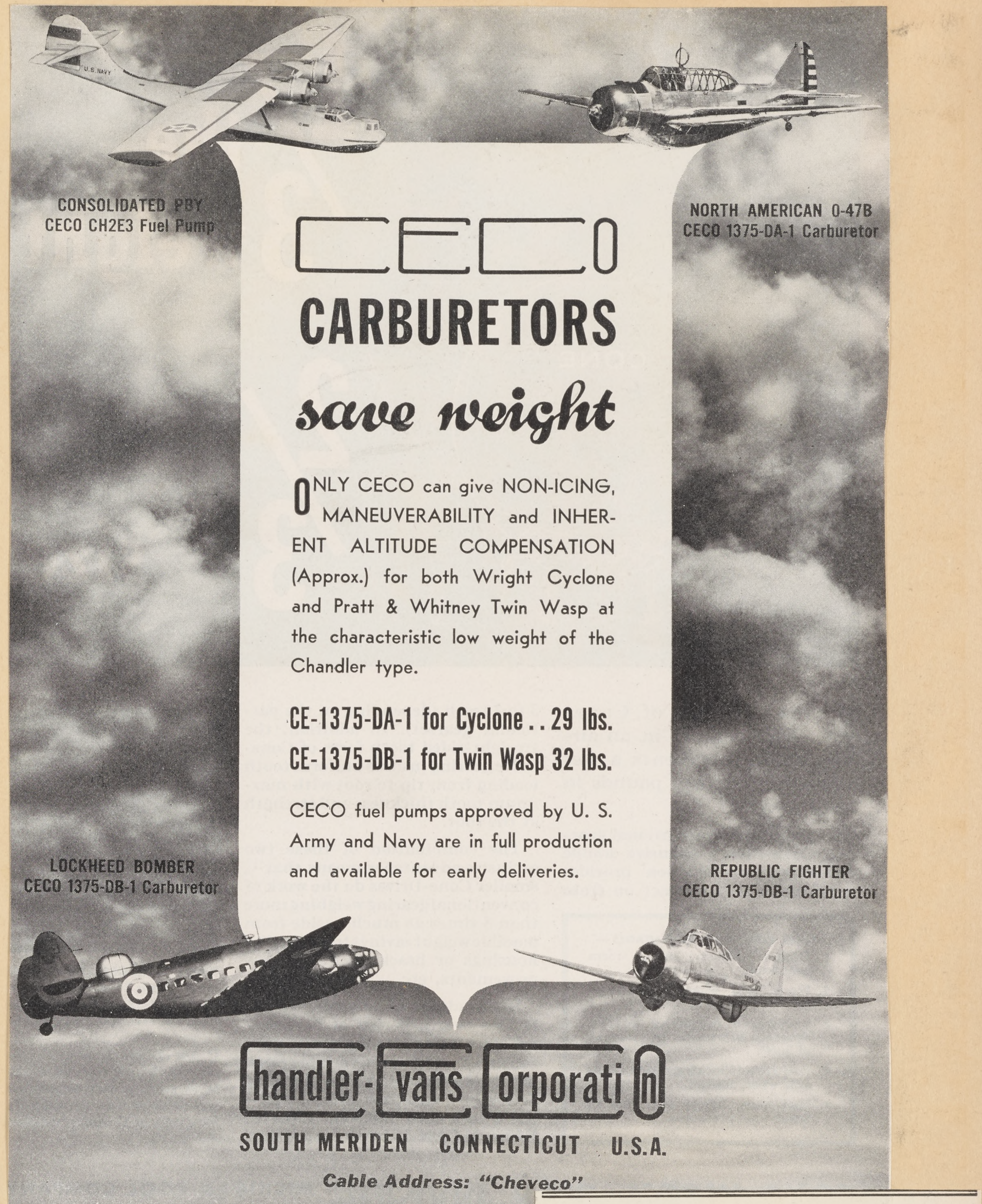
Also U.S. Air Services April, 1940
Aero Digest April, 1940



Into Army service goes another four-engined bombardment type, the Consolidated B-24. Weight: 20 tons. Range: 3000 miles. Speed: more than 300 M.P.H. Power: dependable Pratt & Whitney engines.

PRATT & WHITNEY AIRCRAFT
One of the three divisions of
UNITED AIRCRAFT CORPORATION
EAST HARTFORD, CONNECTICUT

Also Aero Digest – Sept. 1940



CECO CARBURETORS

save weight

ONLY CECO can give NON-ICING, MANEUVERABILITY and INHERENT ALTITUDE COMPENSATION (Approx.) for both Wright Cyclone and Pratt & Whitney Twin Wasp at the characteristic low weight of the Chandler type.

CE-1375-DA-1 for Cyclone . . 29 lbs.
CE-1375-DB-1 for Twin Wasp 32 lbs.

CECO fuel pumps approved by U. S. Army and Navy are in full production and available for early deliveries.

Chandler-Evans Corporation
SOUTH MERIDEN CONNECTICUT U.S.A.
Cable Address: "Cheveco"

AVIATION
August, 1940
144

Western Flying 12/40

NATIONAL DEFENSE CONTRACTS FOR MONTH BOOST INDUSTRY TOTALS

National defense contracts during the past month continued to boost backlogs in the industry as plant expansion still held the stage. Government awards to companies for expansion activities began to appear in official tabulations of contract awards.

Following is a list of contracts during the past month — the tabulation beginning where *Western Flying's* November list left off:

Week Ending Oct. 26:

Bell Aircraft Corp., armament, $229,245.

Bendix Aviation (Eclipse), switches, $5,663,167.

Bendix Radio, radio equipment, $2,713,067.

Bendix Aviation, armament, $12,671,030.

Electric Storage Battery Co., aircraft batteries, $552,224.

Irving Air Chute Co., parachutes, $646,065.

Pioneer Parachute Co., parachutes, $307,508.

Switlik Parachute & Equipment Co., parachutes, $417,622.

United Aircraft Corp., airplane maintenance parts, $632,459.

United Aircraft Corp. (Vought-Sikorsky Div.), airplanes, $28,679,070.

Vultee Aircraft, airplane maintenance parts, $327,792.

Week Ending Nov. 2:

Aero Spark Plug Co., Inc., aircraft spark plugs, $165,836.

BG Corp., aircraft spark plugs, $32,866.

The Glenn L. Martin Co., airplanes, $106,125,396.

United Aircraft Corp. (Pratt & Whitney Div.), aircraft engines, $101,377,284.

Wright Aeronautical Corp., aircraft engines, $119,870,920.

Week Ending Nov. 9:

Barnard Aviation Equipment Co., generators, $30,700.

Bendix Aviation (Pioneer Div.), instruments, $10,543,035.

Bendix Aviation (B. Products Div.), brakes, $235,526.

Consolidated Aircraft Corp., aircraft, $75,313,000.

Ford Motor Co., aircraft engines, $122,323,020.

Link Aviation Devices, Link trainers, $662,044.

RCA Mfg. Co., radio receivers, $187,166.

Square D Co. (Kollsman Div.), instruments, $2,967,985.

United Aircraft Corp. (Pratt & Whitney Div.), engines, $3,315,845.

Vultee Aircraft Inc., plant expansion, $4,294,798.

Wright Aeronautical Corp., engines and maintenance parts, $11,654,893.

Week Ending Nov. 16:

Bendix Aviation (Eclipse Div.), generators, $60,258.

Bendix Aviation (Pioneer Div.), instruments, $808,000.

Consolidated Aircraft Corp., aircraft, $18,529,500.

Curtiss-Wright Corp. (Propeller Div.), blade assemblies, $97,110.

Curtiss-Wright Corp. (Aeroplane Div.), aircraft, $29,139,793.

Douglas Aircraft Co., plant expansion, $11,254,700.

Sperry Gyroscope Co., gyro equipment, $3,243,716.

Square D Co. (Kollsman Div.), $1,409,323.

United Aircraft Corp. (Pratt & Whitney Div.), aircraft engines and maintenance parts, $58,336,203.

Week Ending November 23:

Aviation Mfg. Corp. (Lycoming Div.), maintenance parts, $63,950.

Bell Aircraft Corp., assemblies, $249,375.

Bendix Aviation (Pioneer Div.), oxygen assemblies, $2,200,967.

Grumman Aircraft, wings, $30,888; plant expansion, $3,500,000.

Exclusive Amer Aviation 11/15/41 **Revised**

Current Figures on Backlogs, Production Areas and Employment

The following exclusive figures have been compiled by the staff of AMERICAN AVIATION ASSOCIATES and were gathered from numerous reliable sources. Backlog figures, in many cases, are estimates, and others, because of Army or Navy restrictions, are unofficial but are believed to be as accurate and as current as any on record:

Company	Backlog	Production Area Sq. Ft.	Employes
Adel Precision	$750,000	36,000	....
Beech	22,360,000	181,500	1,769
Bell	65,000,000	430,000	3,500
Bellanca	500,000	70,000	190
Boeing	184,000,000	1,400,000	7,700
Brewster	100,000,000	884,000	6,000
Cessna	11,000,000	225,000	600
Consolidated	235,000,000	1,900,000	12,275
Continental Motors	52,000,000	....	3,000
Curtiss Aero	....	765,000	9,000
Curtiss Propeller	....	590,000	2,500
C-W St. Louis	....	179,000	2,000
Douglas	350,000,294	1,500,000	18,053
Fairchild Aircraft	9,690,000	97,136	1,120
Fairchild Aviation	5,343,345	....	....
Fleetwings	....	200,000	1,100
Grumman	20,010,818	....	....
Hardman Aircraft Products	700,000	....	2,000
Harlow	....	30,000	55
Kinner Motors	700,000	40,000	150
Lockheed	210,000,000	....	12,258
Luscombe	100,000	42,000	371
Lycoming	9,100,000	380,000	1,150
Martin	322,255,396	1,250,000	12,867
Menasco	2,765,000	43,000	....
Monocoupe	130,000	22,500	35
North American	105,000,000*	740,000	6,545
Northrop	24,117,586	216,280	1,450
Piper	1,000,000	125,000	1,150
Porterfield	....	52,000	150
Ranger Engines	7,500,000	100,000	380
Republic	68,000,000	228,000	2,600
Rohr Aircraft	750,000	....	250
Ryan	11,400,000	160,000	1,400
Stearman	19,020,211	205,000	1,300
Taylorcraft	372,000	13,468	347
Timm	1,047,639	....	140
Vega	31,000,000	....	2,207
Vultee (includes Stinson)	85,027,792	550,000	6,100
Waco	....	98,960	657
Warner Engines	1,000,000	33,000	140
Wright Aero	356,306,962	2,733,000	14,000

---

* Does not include U. S. Govt. order totaling approximately $111,000,000 on which final approved contracts have not been received.

FINANCIAL NOTES

Aero Digest 11/40

Financial Briefs

The aviation business of Doehler Die Casting, while relatively small in relation to total sales thus far this year, is expected to be more important due to the company's new division for the manufacture of magnesium alloy castings for aircraft. . . . Beech currently has a backlog of unfilled orders totalling $22,450,000. . . . Aviation Mfg. Corp. has been awarded a War Department contract for $6,703,539 for aircraft engines. . . . Menasco is building a new plant in Burbank, Cal. . . . Bendix has purchased the old Graham-Paige plant at Wayne, Mich. . . . It is reported that approximately 100 dive-bombers, originally built by Republic for the Swedish Government have been shipped to Great Britain. . . . Wright has received an additional order for $81,569,140 for engines from the War Department. . . . Net assets of Aeronautical Securities, Inc. as of Sept. 30, 1940, were equivalent to $8.35 per share, against $8.08 per share on June 30, 1940. . . . As of Sept. 1, unfilled orders of Fairchild Aviation amounted to $5,343,345.

New business received recently by United Aircraft Products brought the backlog of unfilled orders to $1,635,900, with the bulk placed by Consolidated, Douglas, Vultee, Northrop, Lockheed. . . . It is estimated that American Airlines earned about $4.20 a share in the first nine months of 1940, against actual earnings of $3.21 for the first nine months of 1939. . . . Leading investment trusts made little, if any, changes in their aviation holdings during the third quarter of the current year. . . . In the first six months of the current year, Liberty Aircraft Products earned 28c a common share. . . . Options to purchase 25,500 shares of Grumman at $9 a share were exercised between Jan. 1 and July 1, 1940, the proceeds being added to working capital. . . . Cessna currently has a record backlog, unfilled orders totalling more than $11,000,000, with $9,500,000 of the orders for the Royal Canadian Air Force. . . . Consolidated currently has unfilled orders of approximately $220,000,000. . . . Waco currently is operating at a weekly production rate of 21 planes. . . . The latest order for Douglas amounted to $141,320,610 for U. S. Army planes. . . . Fairchild Engine & Airplane has U. S. Government orders on hand for Army trainers

CONSOLIDATED AIRCRAFT "B-24" LAND BOMBER

gets hair-trigger control on
"NORMA-HOFFMANN"
PRECISION BEARINGS

● The planes in this series, built for U. S. Army Air Corps by Consolidated Aircraft Corp'n., San Diego, Calif., are powered by four 1200 H. P. motors and are designed for a speed of over 300 M. P. H. The builder states:—

"Smooth, strong and quick response to all controls through every bearing point is of paramount importance with a plane of this power and speed. * * * * Many of the bearings are, in simile, the reins or bridle points which control the enormous energy of this number (4800) of horses packed into one man-made machine."

The builder's recognition of the proved dependability of NORMA-HOFFMANN BEARINGS is shown in the fact that upwards of 60 of these PRECISION units are used in the "B-24" Bomber — in the controls, wings, power plant installation, and elsewhere in the plane.

"Where the bearings must not fail", NORMA-HOFFMANN PRECISION BEARINGS are the choice of the engineers and designers of practically every representative American builder of planes — for military, commercial, or private use.

There is a NORMA-HOFFMANN PRECISION BEARING for every load, speed and duty — 108 series and more than 3000 sizes. In this comprehensive line, American manufacturers serving the aviation industry find the solution of their bearing problems — employing these PRECISION BEARINGS in aircraft, engines, instruments, aircraft equipment and accessories, radio and photographic apparatus, and landing field equipment. Write for the Catalog. Let our engineers work with you.

NORMA-HOFFMANN BEARINGS CORP'N., STAMFORD, CONN., U. S. A.

183-04

Aero Digest – Western Flying – Aviation July, August

CONSOLIDATED AIRCRAFT
11-P-9

CONSOLIDATED Aircraft CORPORATION

SAN DIEGO ESTABLISHED 1923

Gets Extra Value From Available Storage Space with LYON Steel Storage Equipment

● When rapidly expanding production schedules on its famous flying boats, such as the PBY and the PB2Y, created the dual problem of providing increased material storage facilities while conserving all available floor space for manufacturing operations, Lyon Storage Engineers promptly provided a practical solution. By using the lower tier of rigid Standard Lyon Shelving to support a mezzanine floor, they doubled the capacity of the floor area devoted to storage.

A half century of experience in applying steel equipment to thousands of plant production and storage problems, qualifies Lyon to provide plans and equipment that will help any manufacturer save floor space, reduce cost and time of handling tools and materials, cut inventories and losses due to loss and damage of tools and stock. Mail coupon for full facts about Lyon's industry-proved Survey Service. LYON METAL PRODUCTS, INCORPORATED, (General Offices) Aurora, Illinois.

District and Sales Offices in All Major Cities

Bench Legs—Exceptionally sturdy construction. Permit attachment of tops, shelves and stringers at almost any desired location.

Steel Benches—Will not cut, splinter or become oil-soaked. Accessory parts include back end and stops, drawer, half or full depth shelves, or foot rest. Available in many sizes.

Portable Tool Stands—Can be loaded with tools and parts and taken anywhere in the plant. Top has flanged edges to prevent tools falling off.

Other *Lyon* Favorites

- Bar Racks
- Shop Desks
- Tool Trays
- Tool Storage Inserts
- Tool Cabinets
- Shop Boxes

LYON METAL PRODUCTS, INCORPORATED
5811 River Street, Aurora, Illinois

Send full particulars on items checked:
☐ Lyon Storage Survey Service; ☐ Steel Benches; ☐ Steel Bench Legs; ☐ Bar Racks; ☐ Tool Stands; ☐ Shop Boxes; ☐ Toolroom Equipment.

Name__________
Address__________
City__________
State__________

LYON SHOP EQUIPMENT *Service*

LYON METAL PRODUCTS, INCORPORATED, Aurora, Illinois

AVIATION, November, 1940

Air Consolidated Air

Romeike & Curtice Ltd.

Telephone CENTRAL 2781 (2 Lines.)
35, Snoe Lane LONDON. E.C.4.

EXTRACT FROM Evening news

Date 30 JUL 1940

ALUMINIUM PLANE

New York to England Twice a Week

Three and a half tons of aluminium will soon be flown from New York to Englan twice a week by the American airman Clyde Pangborn, in the 14-tons flying boat Guba.

The Guba, veteran of many scientific expeditions, has just been bought from Dr. Richard Archbold, of New York, for Lord Beaverbrook, Minister of Aircraft Production.

Mr. Harold James, Lord Beaverbrook's representative in the United States, has completed the deal.

RY
25-29 Albion Street, Leicester

Date 29 JUL 1940

To Fly Aluminium To Britain

CLYDE PANGBORN

New York, Monday.

Mr. Richard Archbold, the explorer, announced here that he has sold his flying boat Guba—which he has used on scientific expeditions in the jungle areas of Africa and New Guinea—to the British Government for the purpose of transporting aluminium from the United States to England.

The flying boat will make trips twice a week. The aviator, Clyde Pangborn, will head the crew.

The Guba, a fourteen-ton craft, cost 250,000 dollars.—Reuter.

---

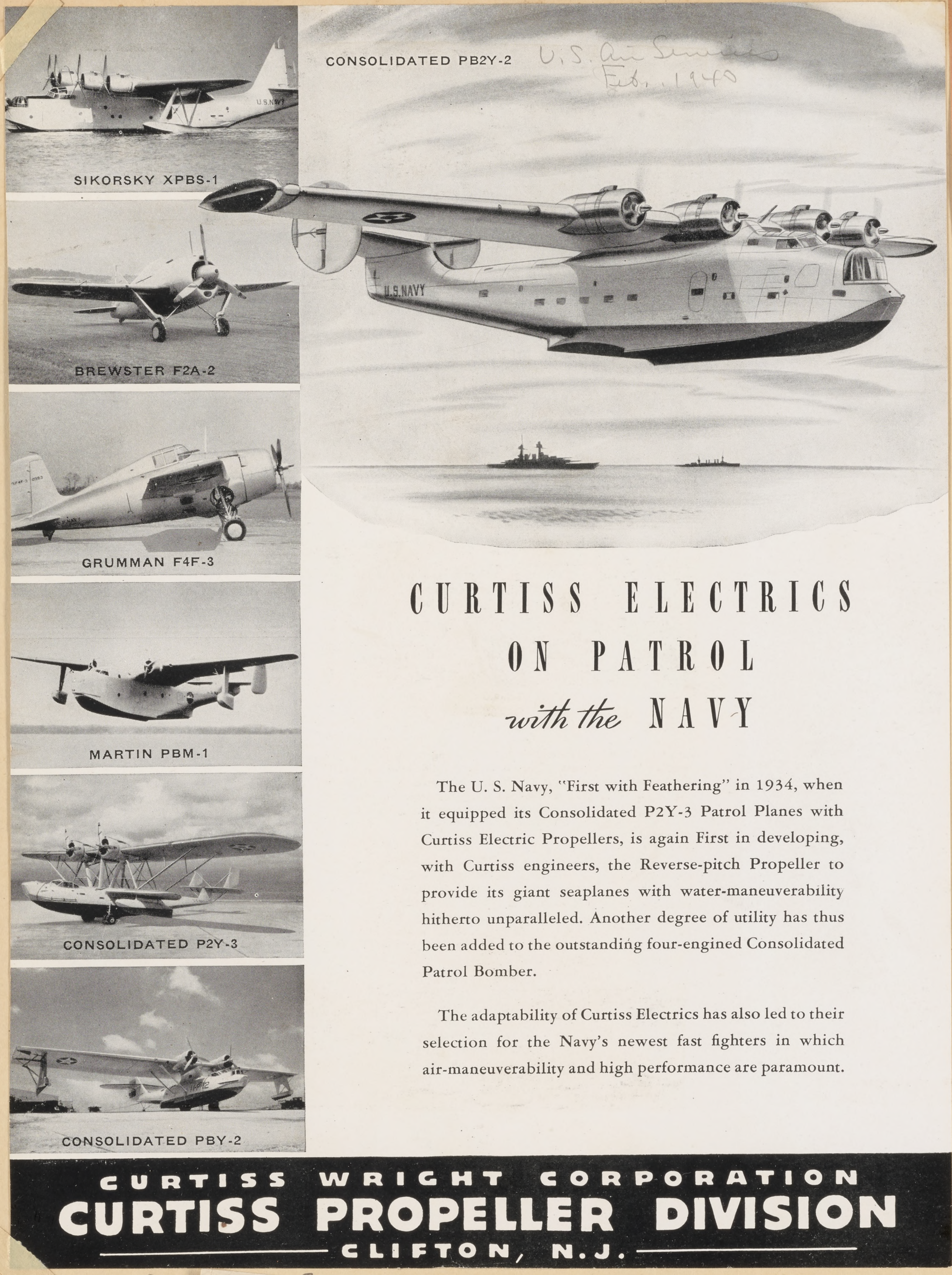
admixture of the civilian elemen
include Sir Percy Bates, the shi
men from our large scale industr
Tobacco Company. Mr. R. J. S
already Director-General of Arr
sit on the Army Council.

This approach to modern bu
Office comes nearly eleven mont
two changes in the Secretaryship
the Higher Command. Even m
whole breakdown of the strategi
based on the defensive offens
unbreakable Maginot Line. Th
borders of France and Belgium.

Mr. Richard Archbold, ...lorer, announced at New York that he has sold his flying boat Guba—which he has used on scientific expeditions in the jungle areas of Africa and New Guinea—to the British Government for the purpose of transporting aluminium from the United States to England.

The flying boat will make trips twice a week. The aviator, Clyde Pangborn.

Date



U.S. Air Services
Feb. 1940

CURTISS ELECTRICS ON PATROL *with the* NAVY

The U. S. Navy, "First with Feathering" in 1934, when it equipped its Consolidated P2Y-3 Patrol Planes with Curtiss Electric Propellers, is again First in developing, with Curtiss engineers, the Reverse-pitch Propeller to provide its giant seaplanes with water-maneuverability hitherto unparalleled. Another degree of utility has thus been added to the outstanding four-engined Consolidated Patrol Bomber.

The adaptability of Curtiss Electrics has also led to their selection for the Navy's newest fast fighters in which air-maneuverability and high performance are paramount.

CURTISS WRIGHT CORPORATION
CURTISS PROPELLER DIVISION
CLIFTON, N.J.

Also Aero ... Feb 1940

Consolidated Air 7

Romeike & Curtice Ltd
Telephone CENTRAL 2781 (2 Lines.)
R&C
35. Shoe Lane LONDON. E.C.4.

EXTRACT FROM
Modern Transport

3 AUG 1940

Aluminium by Flying-boat.

The Ministry of Aircraft Production has purchased a large privately owned flying-boat in which 3½-ton cargoes of aluminium will be transported from the United States to Great Britain twice a week. It is reported that the well-known American airman Clyde Pangborn will head the crew of four operating the machine. According to Reuter the aircraft purchased is the 14-ton flying-boat the Guba, belonging to the American explorer, Mr. Richard Archbold.

Consolidated Air

Romeike & Curtice Ltd
Telephone CENTRAL 2781 (2 Lines.)
R&C
35. Shoe Lane. LONDON. E.C.4.

EXTRACT FROM
LANCASHIRE DAILY POST
127 Fishergate, Preston

Date 30 JUL 1940

Mr. Richard Archbold, the American explorer, has sold his famous flying boat, Guba, which he has used on scientific expeditions, to the British Government for transporting aluminium from the United States to England.

Consolidated Air

Romeike & Curtice Ltd
Telephone CENTRAL 2781 (2 Lines.)
R&C
35. Shoe Lane. LONDON. E.C.4.

EXTRACT FROM
DORSET DAILY ECHO,
57, St. Thomas Street, Weymouth.

29 JUL 1940

Date 1940

BRITAIN PURCHASES FLYING BOAT

WILL BRING ALUMINIUM FROM AMERICA

New York, Monday.

Mr. Richard Archbold, the explorer, announced here that he has sold his flying boat Guba—which he has used on scientific expeditions in the jungle areas of Africa and New Guinea—to the British Government for the purpose of transporting aluminium from the United States to England. The flying boat will make trips twice a week. The aviator Clyde Pangborn will head the crew.

The Guba, a 14-ton craft, cost 250,000 dollars.—Reuter.

Consolidated Air

Romeike & Curtice Ltd
Telephone CENTRAL 2781 (2 Lines.)
R&C
35. Shoe Lane LONDON. E.C.4.

EXTRACT FROM
WESTERN EVENING HERALD,
Plymouth.

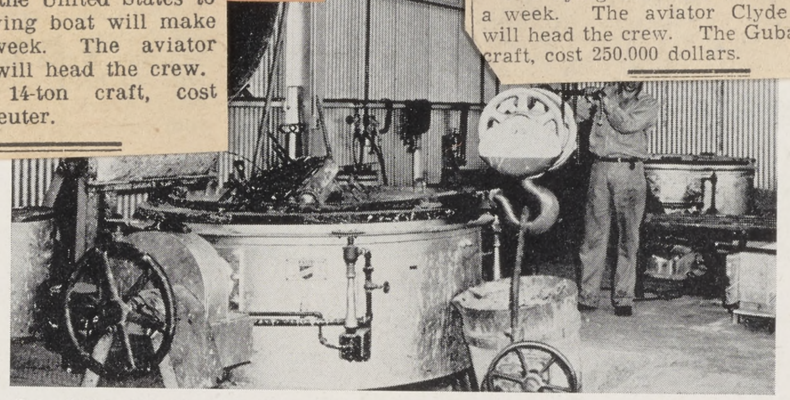
Date 29 JUL 1940

ALUMINIUM FROM U.S.

Famous Flying Boat Sold To Britain.

Mr. Richard Archbold, the explorer, announced in New York that he has sold his flying boat Guba—which he has used on scientific expeditions in the jungle areas of Africa and New Guinea—to the British Government for the purpose of transporting aluminium from the United States to England.

The flying boat will make trips twice a week. The aviator Clyde Panghorn will head the crew. The Guba, a 14-tons craft, cost 250.000 dollars.



Two of Four 54" Diameter Tilting Melting Furnaces for Lead and Zinc at Consolidated Aircraft, San Diego, California.

Many leading aircraft companies have standardized on KNAPP tilting melting furnaces for melting lead, zinc, or Kirksite in their drop hammer departments, for casting dies.

Illustration shows 54" diameter size with capacity 12,000 lbs. lead or 8,000 lbs. zinc.

These units are made also in two smaller standard sizes.

KNAPP furnaces also used in aircraft plants for all kinds of heat treating and normalizing work.

Your heat treating or melting problems can be solved with KNAPP furnace designed for your particular problem.

JAMES H. KNAPP COMPANY
4920 LOMA VISTA AVE., LOS ANGELES
"INDUSTRIAL FURNACES THAT SATISFY"

WESTERN MACHINERY AND STEEL WORLD October 1940

Air
Consolidated Air

Romeike & Curtice Ltd
Telephone CENTRAL 2781 (2 Lines.)
R&C
35. Shoe Lane. LONDON. E.C.4.

EXTRACT FROM
Glasgow Hld

Date 30 JULY 1940

FAMOUS FLYING-BOAT FOR BRITAIN

TO CARRY ALUMINIUM FROM UNITED STATES

NEW YORK, Monday.

Mr Richard Archbold, the explorer, announced here that he has sold his flying-boat Guba—which he has used on scientific expeditions in the jungle areas of Africa and New Guinea—to the British Government for the purpose of transporting aluminium from the United States to Britain.

The flying-boat will make trips twice a week. The aviator, Clyde Pangborn, will head the crew. The Guba, a 14-ton craft, cost 250,000 dollars.—Reuter.

~~Air~~ Wash 7
9

Romeike & Curtice Ltd
Telephone CENTRAL 2781 (2 Lines.)
R&C
35. Shoe Lane. LONDON. E.C.4.

EXTRACT FROM
SHEFFIELD DAILY TELEGRAPH
High Street, Sheffield

Date 27 JU

Noted Aircraft to Bring Aluminium

Mr. Richard Archbold, the explorer, announced in New York that he has sold his flying-boat Guba, which he has used on scientific expeditions in the jungle areas of Africa and New Guinea, to the British Government for the purpose of transporting aluminium from the United States to England.

The flying boat will make trips twice a week.

Clyde Pangborn will head the crew.

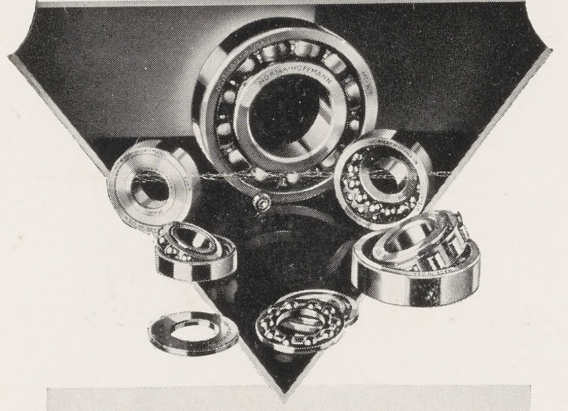
The Guba, a 14-ton craft, cost 250.000 dollars.—Reuter.

CONSOLIDATED AIRCRAFT "B-24" LAND BOMBER

gets hair-trigger control on

"NORMA-HOFFMANN"

PRECISION BEARINGS



● The planes in this series, built for U. S. Army Air Corps by Consolidated Aircraft Corp'n., San Diego, Calif., are powered by four 1200 H. P. motors and are designed for a speed of over 300 M. P. H. The builder states:—

"Smooth, strong and quick response to all controls through every bearing point is of paramount importance with a plane of this power and speed. * * * * Many of the bearings are, in simile, the reins or bridle points which control the enormous energy of this number (4800) of horses packed into one man-made machine."

The builder's recognition of the proved dependability of NORMA-HOFFMANN BEARINGS is shown in the fact that upwards of 60 of these PRECISION units are used in the "B-24" Bomber — in the controls, wings, power plant installation, and elsewhere in the plane.

"Where the bearings must not fail", NORMA-HOFFMANN PRECISION BEARINGS are the choice of the engineers and designers of practically every representative American builder of planes — for military, commercial, or private use.

There is a NORMA-HOFFMANN PRECISION BEARING for every load, speed and duty — 108 series and more than 3000 sizes. In this comprehensive line, American manufacturers serving the aviation industry find the solution of their bearing problems — employing these PRECISION BEARINGS in aircraft, engines, instruments, aircraft equipment and accessories, radio and photographic apparatus, and landing field equipment. Write for the Catalog. Let our engineers work with you.

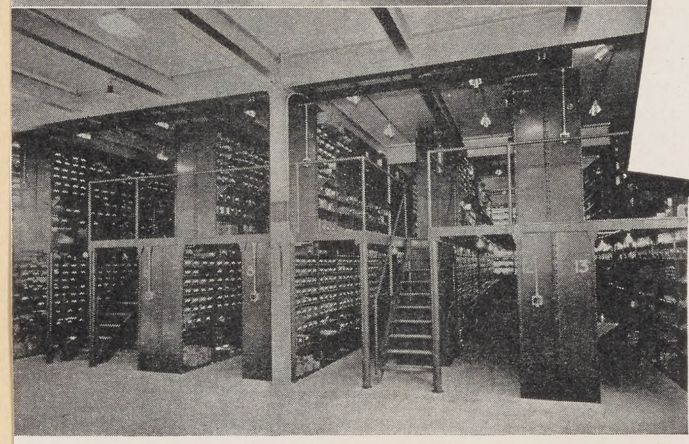
NORMA-HOFFMANN BEARINGS CORP'N., STAMFORD, CONN., U. S. A.

183-04

Aero Digest - Western Flying - Aviation July, August

CONSOLIDATED Aircraft CORPORATION

SAN DIEGO ESTABLISHED 1923

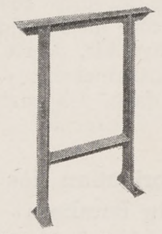


Gets Extra Value From Available Storage Space with LYON Steel Storage Equipment

● When rapidly expanding production schedules on its famous flying boats, such as the PBY and the PB2Y, created the dual problem of providing increased material storage facilities while conserving all available floor space for manufacturing operations, Lyon Storage Engineers promptly provided a practical solution. By using the lower tier of rigid Standard Lyon Shelving to support a mezzanine floor, they doubled the capacity of the floor area devoted to storage.

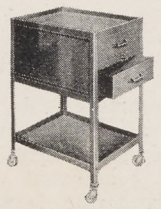
A half century of experience in applying steel equipment to thousands of plant production and storage problems, qualifies Lyon to provide plans and equipment that will help any manufacturer save floor space, reduce cost and time of handling tools and materials, cut inventories and losses due to loss and damage of tools and stock. Mail coupon for full facts about Lyon's industry-proved Survey Service. LYON METAL PRODUCTS, INCORPORATED, (General Offices) Aurora, Illinois.

District and Sales Offices in All Major Cities



Bench Legs—Exceptionally sturdy construction. Permit attachment of tops, shelves and stringers at almost any desired location.

Steel Benches — Will not cut, splinter or become oil-soaked. Accessory parts include back end and stops, drawer, half or full depth shelves, or foot rest. Available in many sizes.



Portable Tool Stands —Can be loaded with tools and parts and taken anywhere in the plant. Top has flanged edges to prevent tools falling off.

Other *Lyon* Favorites

- Bar Racks
- Shop Desks
- Tool Trays
- Tool Storage Inserts
- Tool Cabinets
- Shop Boxes

LYON METAL PRODUCTS, INCORPORATED
5811 River Street, Aurora, Illinois

Send full particulars on items checked:
☐ Lyon Storage Survey Service; ☐ Steel Benches; ☐ Steel Bench Legs; ☐ Bar Racks; ☐ Tool Stands; ☐ Shop Boxes; ☐ Toolroom Equipment.

Name__________

Address__________

City__________

State__________

LYON SHOP EQUIPMENT *Service*

LYON METAL PRODUCTS, INCORPORATED, Aurora, Illinois

AVIATION, November, 1940

Air Consolidated

Air

Romeike & Curtice Ltd

Date

perhaps, that until the 19th
living from choice on the
although they had nothing to
shipping or fishing. There
marked migration seaward,
larly to the South Coast.
The towns found new busi
the year round in catering
needs of retired and leisure
and they grew and grew.
The migration to the coa
partly of folk who had do
made, their bit in the big cit
partly of old soldiers, sailo
officials who, of old, would p
have retired to their home to
have settled down in inland
Both migrations meant a c
able redistribution of pop

the
the
are
Mr.
bout
ions
rain
tion
has
is
it
the
im-

Consolidated

Romeike & Curtice Ltd

Telephone CENTRAL 2781 (2 Lines)

35, Shoe Lane, LONDON, E.C.4.

EXTRACT FROM

LEICESTER DAILY MERCURY

25-29 Albion Street, Leicester

Date 29 JUL 1940

To Fly Aluminium To Britain

CLYDE PANGBORN

New York, Monday.

Mr. Richard Archbold, the explorer, announced here that he has sold his flying boat Guba—which he has used on scientific expeditions in the jungle areas of Africa and New Guinea—to the British Government for the purpose of transporting aluminium from the United States to England.

The flying boat will make trips twice a week. The aviator, Clyde Pangborn, will head the crew.

The Guba, a fourteen-ton craft, cost 250,000 dollars.—Reuter.

---

admixture of the civilian elemen
include Sir Percy Bates, the shi
men from our large scale industr
Tobacco Company. Mr. R. J. S
already Director-General of Arı
sit on the Army Council.

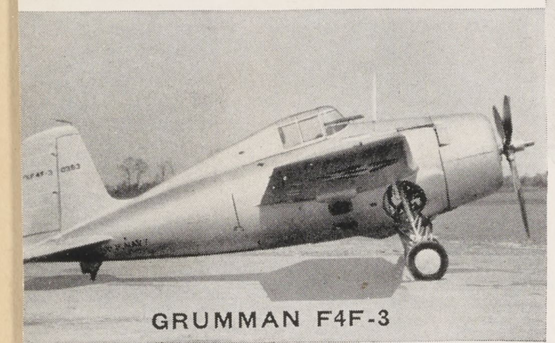
This approach to modern bu
Office comes nearly eleven mont
two changes in the Secretaryship
the Higher Command. Even m
whole breakdown of the strategi
based on the defensive offens
unbreakable Maginot Line. Th
borders of France and Belgium.

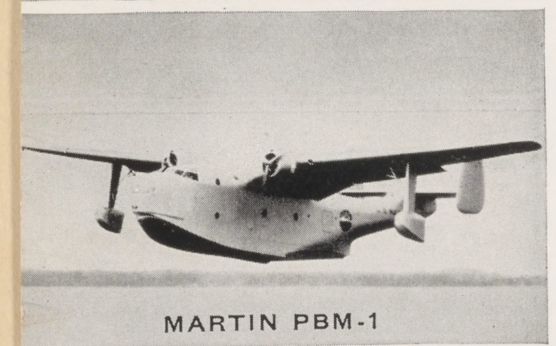
Mr. Richard Archbold, the explorer, announced at New York that he has sold his flying boat Guba—which he has used on scientific expeditions in the jungle areas of Africa and New Guinea—to the British Government for the purpose of transporting aluminium from the United States to England.

The flying boat will make trips twice a week. The aviator, Clyde Pangborn,

SIKORSKY XPBS-1

BREWSTER F2A-2


GRUMMAN F4F-3

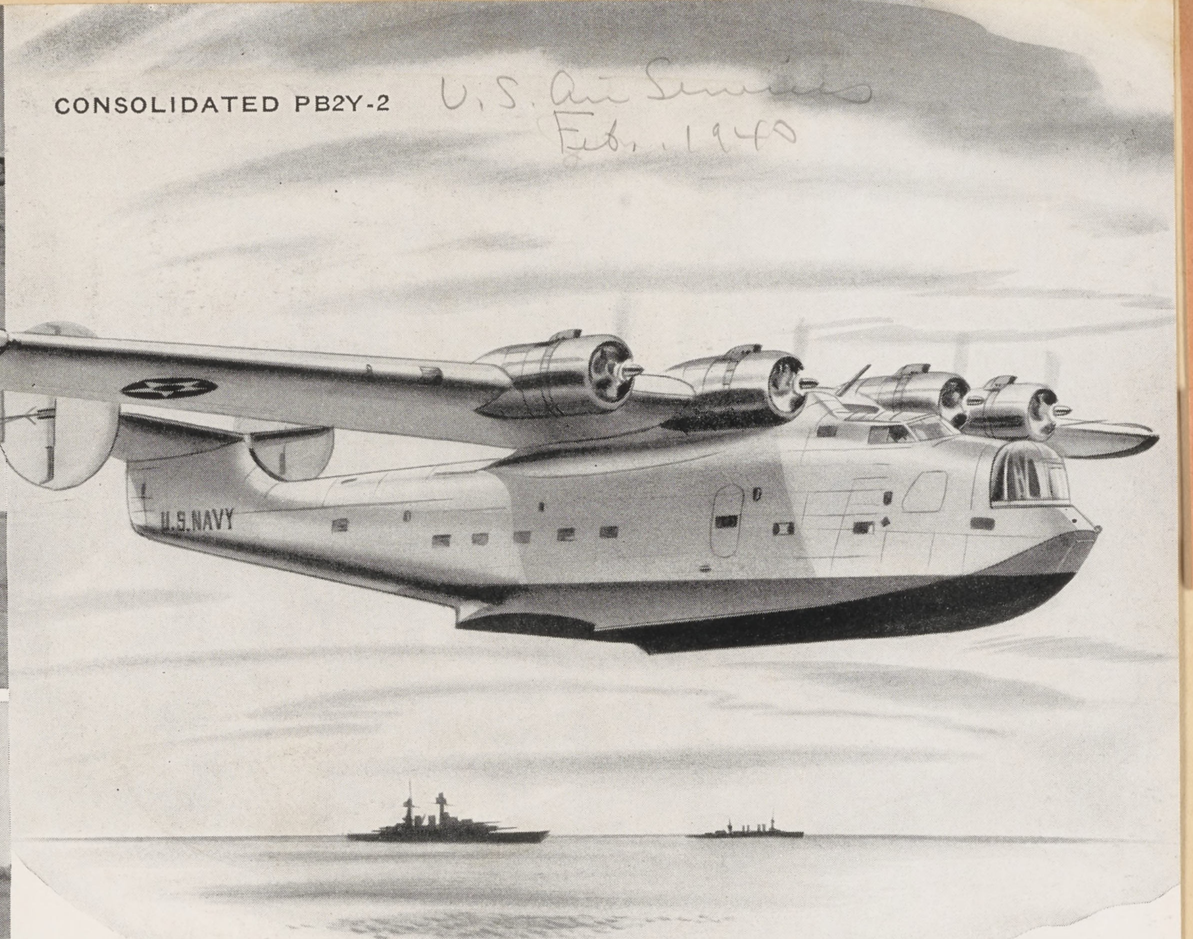

MARTIN PBM-1

CONSOLIDATED P2Y-3

CONSOLIDATED PBY-2

CONSOLIDATED PB2Y-2

U.S. Air Services
Feb. 1940



CURTISS ELECTRICS ON PATROL *with the* NAVY

The U. S. Navy, "First with Feathering" in 1934, when it equipped its Consolidated P2Y-3 Patrol Planes with Curtiss Electric Propellers, is again First in developing, with Curtiss engineers, the Reverse-pitch Propeller to provide its giant seaplanes with water-maneuverability hitherto unparalleled. Another degree of utility has thus been added to the outstanding four-engined Consolidated Patrol Bomber.

The adaptability of Curtiss Electrics has also led to their selection for the Navy's newest fast fighters in which air-maneuverability and high performance are paramount.

CURTISS WRIGHT CORPORATION
CURTISS PROPELLER DIVISION
CLIFTON, N.J.

Also Aero ... Feb 1940

Consolidated Air

7/-

Romeike & Curtice Ltd
Telephone CENTRAL 2781 (2 Lines.)
R&C
35. Shoe Lane LONDON. E.C.4.

EXTRACT FROM
Modern Transport

-3 AUG 1940

Aluminium by Flying-boat.

The Ministry of Aircraft Production has purchased a large privately owned flying-boat in which 3½-ton cargoes of aluminium will be transported from the United States to Great Britain twice a week. It is reported that the well-known American airman Clyde Pangborn will head the crew of four operating the machine. According to Reuter the aircraft purchased is the 14-ton flying-boat the Guba, belonging to the American explorer, Mr. Richard Archbold.

Consolidated Air ~~N.Y.~~

Romeike & Curtice Ltd
Telephone CENTRAL 2781 (2 Lines.)
R&C
35. Shoe Lane. LONDON. E.C.4.

EXTRACT FROM
LANCASHIRE DAILY POST
127 Fishergate, Preston

30 JUL 1940

Date

Mr. Richard Archbold, the American explorer, has sold his famous flying boat, Guba, which he has used on scientific expeditions, to the British Government for transporting aluminium from the United States to England.

Consolidated Air

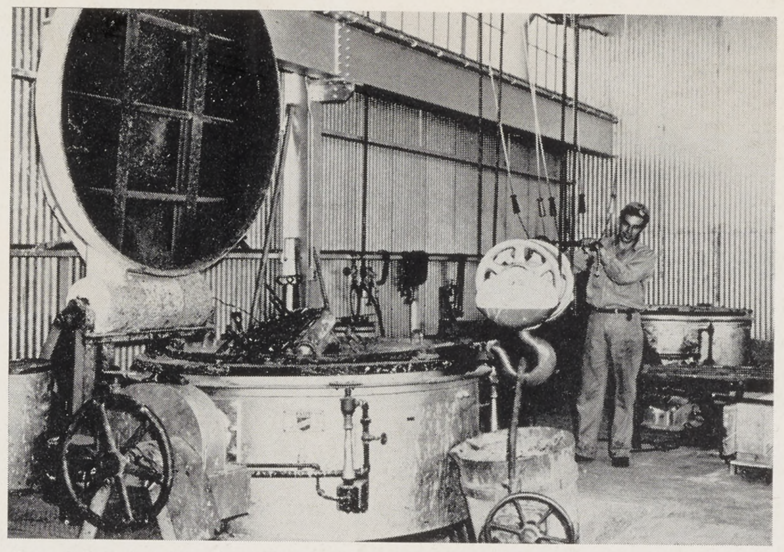
Romeike & Curtice Ltd

your ration will go further.
before pouring. If you do all this
time to brew, and stir it just
you should give the tea enough
not the kettle to the tea-pot; (3)
tea-pot should come to the kettle,

Consolidated Air

Romeike & Curtice Ltd
Telephone CENTRAL 2781 (2 Lines.)
R&C
35. Shoe Lane LONDON. E.C.4.

DANCING & WHIST
PIER PAVILION BALLROOM.—TONIGHT
(Monday), at 7.30. Greatest Novelt-
Two Bands. Enormous success of Pavi-
Ladies' Orchestra, direct from To-


Two of Four 54" Diameter Tilting Melting Furnaces for Lead and Zinc at Consolidated Aircraft, San Diego, California.

Many leading aircraft companies have standardized on KNAPP tilting melting furnaces for melting lead, zinc, or Kirksite in their drop hammer departments, for casting dies.

Illustration shows 54" diameter size with capacity 12,000 lbs. lead or 8,000 lbs. zinc.

These units are made also in two smaller standard sizes.

KNAPP furnaces also used in aircraft plants for all kinds of heat treating and normalizing work.

Your heat treating or melting problems can be solved with KNAPP furnace designed for your particular problem.

JAMES H. KNAPP COMPANY
4920 LOMA VISTA AVE., LOS ANGELES
"INDUSTRIAL FURNACES THAT SATISFY"

WESTERN MACHINERY AND STEEL WORLD October 1940

Air

Consolidated Air

Romeike & Curtice Ltd
Telephone CENTRAL 2781 (2 Lines.)
R&C
35. Shoe Lane. LONDON. E.C.4.

EXTRACT FROM
Glasgow Hld

Date 30 JULY 1940

FAMOUS FLYING-BOAT FOR BRITAIN

TO CARRY ALUMINIUM FROM UNITED STATES

NEW YORK, Monday.

Mr Richard Archbold, the explorer, announced here that he has sold his flying-boat Guba—which he has used on scientific expeditions in the jungle areas of Africa and New Guinea—to the British Government for the purpose of transporting aluminium from the United States to Britain.

The flying-boat will make trips twice a week. The aviator, Clyde Pangborn, will head the crew. The Guba, a 14-ton craft, cost 250,000 dollars.—Reuter.

~~Boat~~ 9 Wash 7

Romeike & Curtice Ltd
Telephone CENTRAL 2781 (2 Lines.)
R&C
35. Shoe Lane LONDON. E.C.4.

EXTRACT FROM
SHEFFIELD DAILY TELEGRAPH
High Street, Sheffield

Date 27

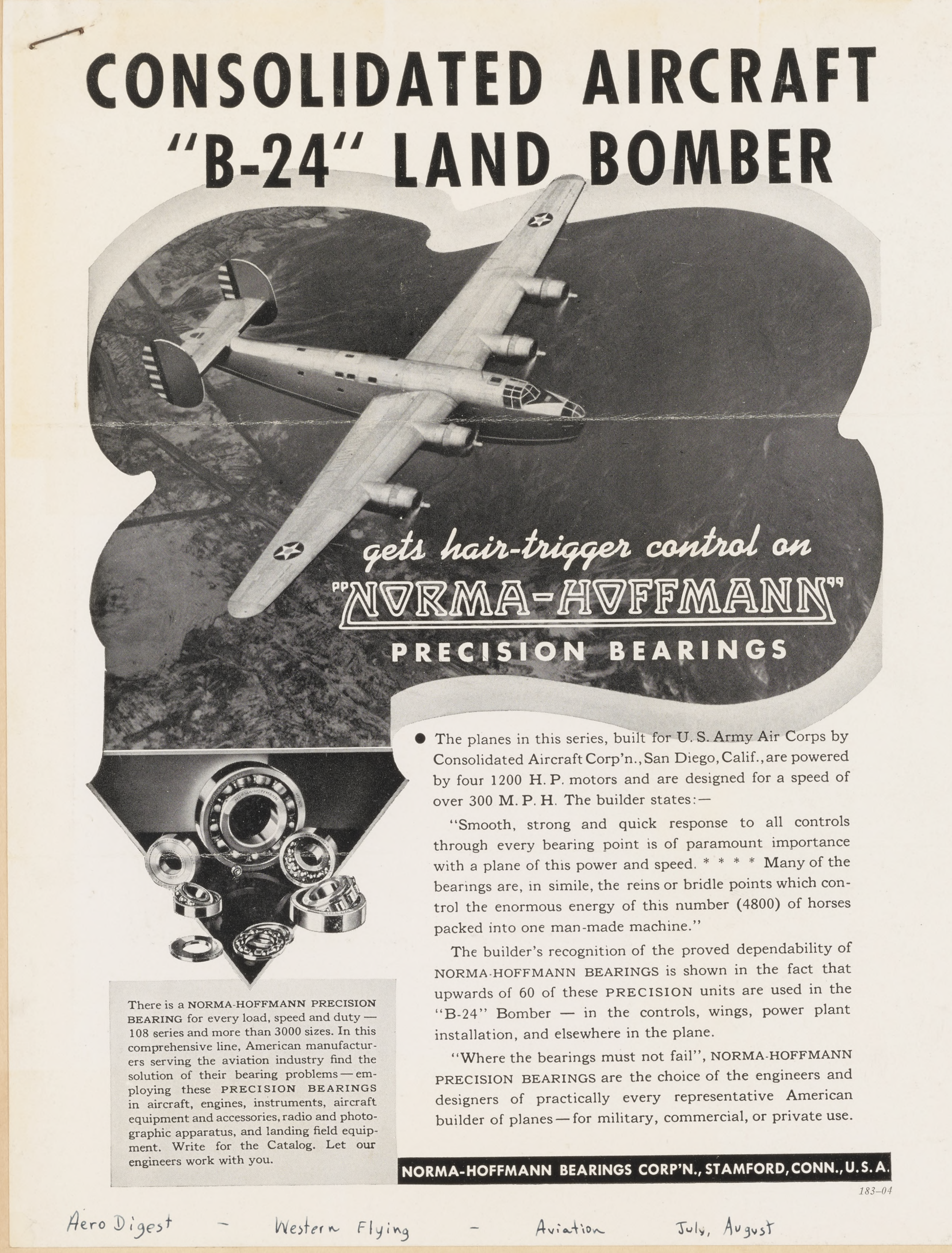
Noted Aircraft to Bring Aluminium

Mr. Richard Archbold, the explorer, announced in New York that he has sold his flying-boat Guba, which he has used on scientific expeditions in the jungle areas of Africa and New Guinea, to the British Government for the purpose of transporting aluminium from the United States to England.

The flying boat will make trips twice a week.

Clyde Pangborn will head the crew.

The Guba, a 14-ton craft, cost 250,000 dollars.—Reuter.



CONSOLIDATED AIRCRAFT "B-24" LAND BOMBER

gets hair-trigger control on

"NORMA-HOFFMANN"

PRECISION BEARINGS

● The planes in this series, built for U. S. Army Air Corps by Consolidated Aircraft Corp'n., San Diego, Calif., are powered by four 1200 H. P. motors and are designed for a speed of over 300 M. P. H. The builder states:—

"Smooth, strong and quick response to all controls through every bearing point is of paramount importance with a plane of this power and speed. * * * * Many of the bearings are, in simile, the reins or bridle points which control the enormous energy of this number (4800) of horses packed into one man-made machine."

The builder's recognition of the proved dependability of NORMA-HOFFMANN BEARINGS is shown in the fact that upwards of 60 of these PRECISION units are used in the "B-24" Bomber — in the controls, wings, power plant installation, and elsewhere in the plane.

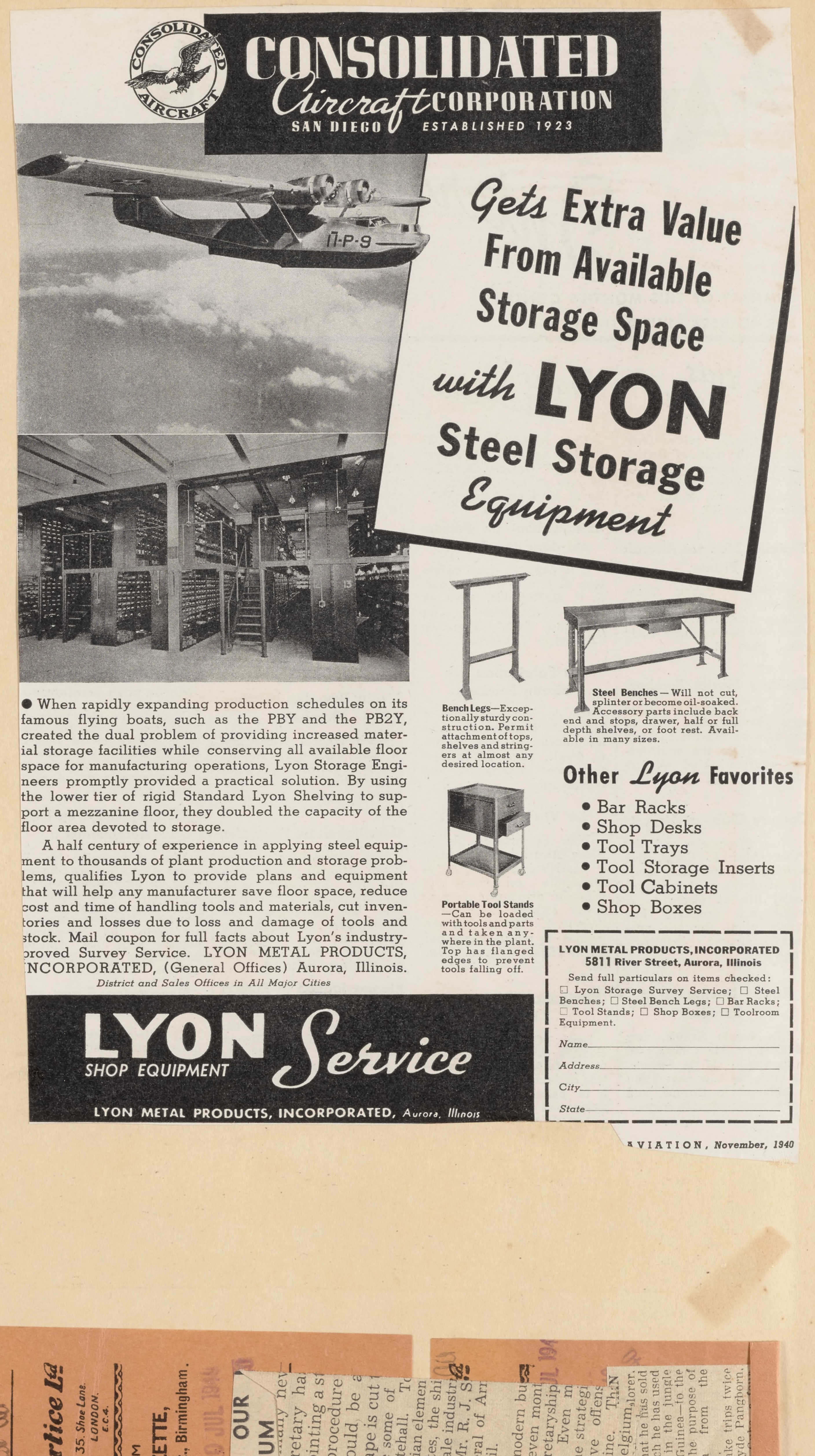
"Where the bearings must not fail", NORMA-HOFFMANN PRECISION BEARINGS are the choice of the engineers and designers of practically every representative American builder of planes — for military, commercial, or private use.

There is a NORMA-HOFFMANN PRECISION BEARING for every load, speed and duty — 108 series and more than 3000 sizes. In this comprehensive line, American manufacturers serving the aviation industry find the solution of their bearing problems — employing these PRECISION BEARINGS in aircraft, engines, instruments, aircraft equipment and accessories, radio and photographic apparatus, and landing field equipment. Write for the Catalog. Let our engineers work with you.

NORMA-HOFFMANN BEARINGS CORP'N., STAMFORD, CONN., U. S. A.

183-04

Aero Digest - Western Flying - Aviation July, August



CONSOLIDATED *Aircraft* **CORPORATION**
SAN DIEGO ESTABLISHED 1923

Gets Extra Value From Available Storage Space *with* LYON Steel Storage *Equipment*

● When rapidly expanding production schedules on its famous flying boats, such as the PBY and the PB2Y, created the dual problem of providing increased material storage facilities while conserving all available floor space for manufacturing operations, Lyon Storage Engineers promptly provided a practical solution. By using the lower tier of rigid Standard Lyon Shelving to support a mezzanine floor, they doubled the capacity of the floor area devoted to storage.

A half century of experience in applying steel equipment to thousands of plant production and storage problems, qualifies Lyon to provide plans and equipment that will help any manufacturer save floor space, reduce cost and time of handling tools and materials, cut inventories and losses due to loss and damage of tools and stock. Mail coupon for full facts about Lyon's industry-proved Survey Service. LYON METAL PRODUCTS, INCORPORATED, (General Offices) Aurora, Illinois.

District and Sales Offices in All Major Cities

Bench Legs—Exceptionally sturdy construction. Permit attachment of tops, shelves and stringers at almost any desired location.

Steel Benches—Will not cut, splinter or become oil-soaked. Accessory parts include back end and stops, drawer, half or full depth shelves, or foot rest. Available in many sizes.

Portable Tool Stands—Can be loaded with tools and parts and taken anywhere in the plant. Top has flanged edges to prevent tools falling off.

Other *Lyon* Favorites

- Bar Racks
- Shop Desks
- Tool Trays
- Tool Storage Inserts
- Tool Cabinets
- Shop Boxes

LYON METAL PRODUCTS, INCORPORATED
5811 River Street, Aurora, Illinois

Send full particulars on items checked: ☐ Lyon Storage Survey Service; ☐ Steel Benches; ☐ Steel Bench Legs; ☐ Bar Racks; ☐ Tool Stands; ☐ Shop Boxes; ☐ Toolroom Equipment.

Name__________

Address__________

City__________

State__________

LYON SHOP EQUIPMENT *Service*

LYON METAL PRODUCTS, INCORPORATED, *Aurora, Illinois*

AVIATION, *November, 1940*

Air Consolidated

perhaps, that people thou
living from choice on the
although they had nothing to
shipping or fishing. There
marked migration seaward,
larly to the South Coast.
The towns found new busi
the year round in catering
needs of retired and leisure
and they grew and grew.
The migration to the coa
partly of folk who had do
made, their bit in the big cit
partly of old soldiers, sailo
officials who, of old, would p
have retired to their home to
have settled down in inland
Both migrations meant a co
able redistribution of pop

1940

Founded Federation

He was the founder of the organisation known as the Discharged Sailors and Soldiers' Federation, from which grew the nation-wide British Legion movement. The Leicester branch of the Legion was the first to be formed.

"Charlie" will always be remembered as a pioneer of the movement. Over the course of years he held a number of offices, and was still vice-president of the Leicester branch of the British Legion.

Originally he was Area Chairman of the National Federation of the Discharged Sailers and Soldiers' Federation, and later in turn became President and Chairman of the Leicester branch of the Legion.

One of the happiest days in the life of "Charlie" was when King George V. visited Leicester in 1919. It had been arranged that his Majesty should make an inspection of the ex-servicemen's institute in Bond-street, but the official time table, arranged by the civic authorities, only allowed for a brief halt outside the premises.

Inside the building were many ex-servicemen, and "Charlie" told the King that it would break their hearts if he did not go inside.

That was sufficient for the King. He immediately left his car and was shown all over the building. During the tour "Charlie" even invited him to a day's fishing in Leicestershire.

When the late Earl Haig came to Leicester in 1922 to receive the freedom of the city, he spent much of his time at the British Legion Institute, where Mr. Col-

---

Air Consolidated Co

Romeike & Curtice Ltd
Telephone CENTRAL 2781 (2 Lines.)
R&C
35. Shoe Lane. LONDON. E.C.4.

EXTRACT FROM
BIRMINGHAM GAZETTE,
Newspaper House, Corporation St., Birmingham.

[illegible] JUL 1940

Date__________

TO BRING OUR ALUMINIUM

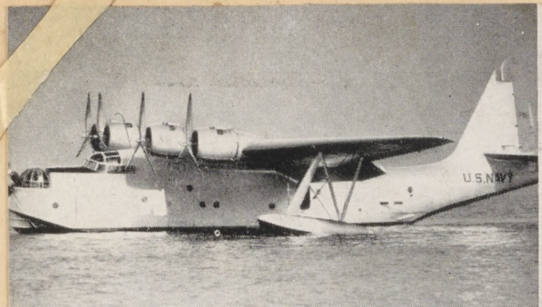
the War Secretary ha
necessity by appointing a st
simplify Army procedure
system. This should be a
which much red tape is cut
introduced to replace some of
hibernating in Whitehall. To
admixture of the civilian elemen
include Sir Percy Bates, the shi
men from our large scale industri
Tobacco Company. Mr. R. J. S
already Director-General of Arm
sit on the Army Council.

This approach to modern bu
Office comes nearly eleven mont
two changes in the Secretaryship
the Higher Command. Even m
whole breakdown of the strategi
based on the defensive offens
unbreakable Maginot Line. Th
borders of France and Belgium.

Mr. Richard Archbold, lorer, announced at New York that he has sold his flying boat Guba—which he has used on scientific expeditions in the jungle areas of Africa and New Guinea—to the British Government for the purpose of transporting aluminium from the United States to England.

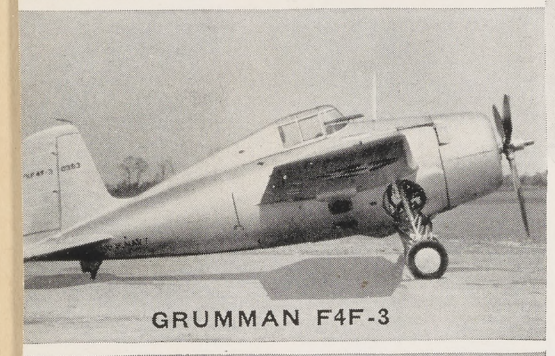
The flying boat will make trips twice a week. The aviator, Clyde Pangborn,

Date__________

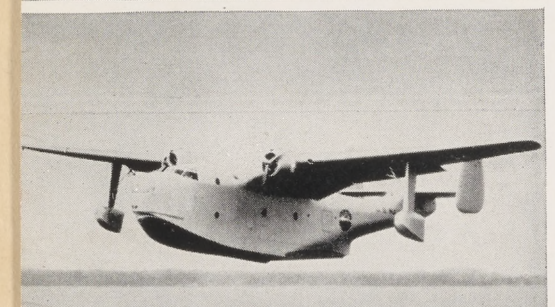


SIKORSKY XPBS-1

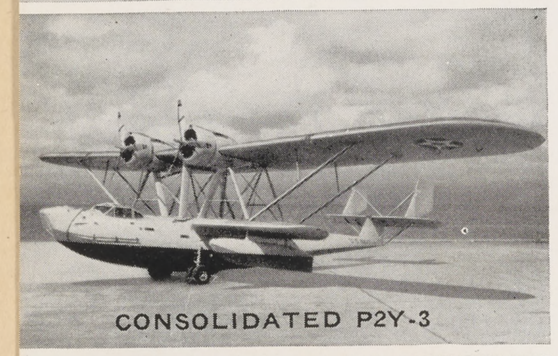
BREWSTER F2A-2



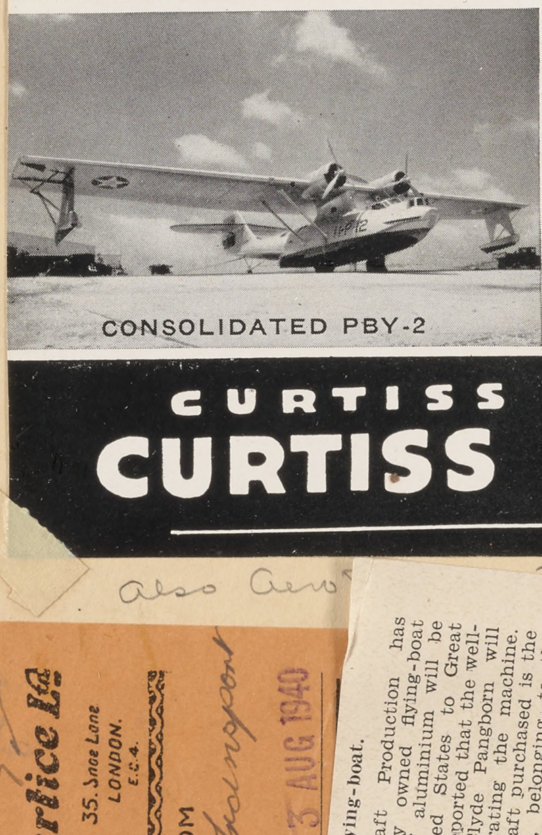
GRUMMAN F4F-3



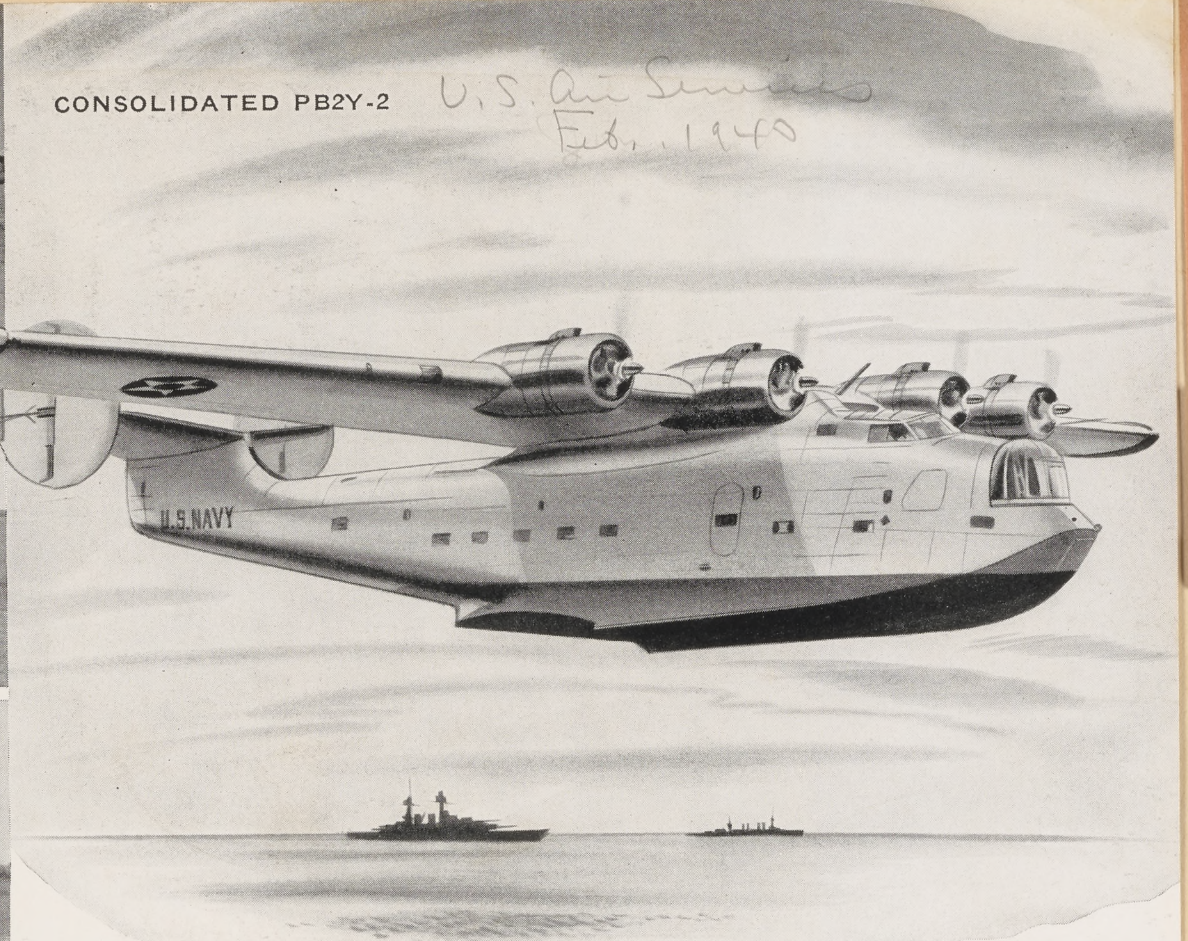
MARTIN PBM-1



CONSOLIDATED P2Y-3



CONSOLIDATED PBY-2



CONSOLIDATED PB2Y-2

U.S. Air Services Feb. 1940

CURTISS ELECTRICS ON PATROL *with the* NAVY

The U. S. Navy, "First with Feathering" in 1934, when it equipped its Consolidated P2Y-3 Patrol Planes with Curtiss Electric Propellers, is again First in developing, with Curtiss engineers, the Reverse-pitch Propeller to provide its giant seaplanes with water-maneuverability hitherto unparalleled. Another degree of utility has thus been added to the outstanding four-engined Consolidated Patrol Bomber.

The adaptability of Curtiss Electrics has also led to their selection for the Navy's newest fast fighters in which air-maneuverability and high performance are paramount.

CURTISS WRIGHT CORPORATION
CURTISS PROPELLER DIVISION
CLIFTON, N.J.

Also Aero — Feb. 1940

Consolidated Air 7

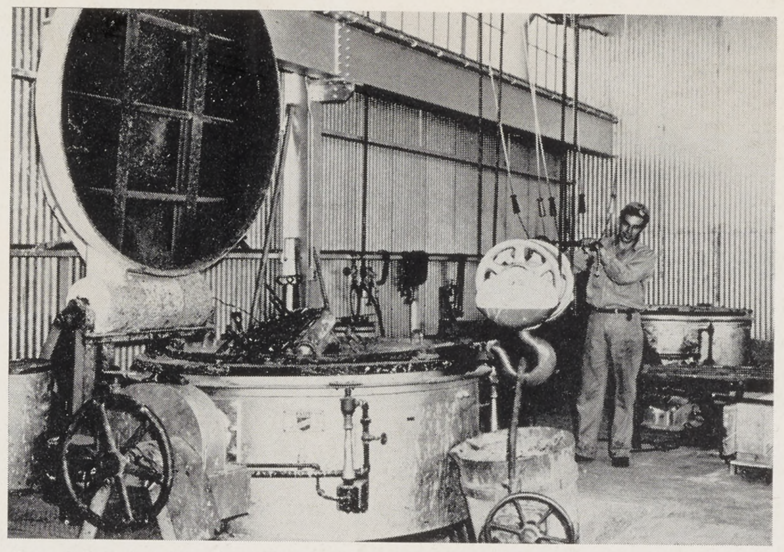
Romeike & Curtice Ltd

your ration will go further.
before pouring. If you do all this
time to brew, and stir it just
you should give the tea enough
not the kettle to the tea-pot; (3)
tea-pot should come to the kettle,

Consolidated Air 7

Romeike & Curtice Ltd
Telephone CENTRAL 2781 (2 Lines.)
35. Shoe Lane LONDON. E.C.4.

DANCING & WHIST
PIER PAVILION BALLROOM.—TONIGHT
(Monday), at 7.30. Greatest Novelt-
Two Bands. Enormous success of Pavi-
Ladies' Orchestra, direct from To



Two of Four 54" Diameter Tilting Melting Furnaces for Lead and Zinc at Consolidated Aircraft, San Diego, California.

Many leading aircraft companies have standardized on KNAPP tilting melting furnaces for melting lead, zinc, or Kirksite in their drop hammer departments, for casting dies.

Illustration shows 54" diameter size with capacity 12,000 lbs. lead or 8,000 lbs. zinc.

These units are made also in two smaller standard sizes.

KNAPP furnaces also used in aircraft plants for all kinds of heat treating and normalizing work.

Your heat treating or melting problems can be solved with KNAPP furnace designed for your particular problem.

JAMES H. KNAPP COMPANY
4920 LOMA VISTA AVE., LOS ANGELES
"INDUSTRIAL FURNACES THAT SATISFY"

WESTERN MACHINERY AND STEEL WORLD October 1940

Air
Consolidated Air 7

Romeike & Curtice Ltd
Telephone CENTRAL 2781 (2 Lines.)
35. Shoe Lane. LONDON. E.C.4.

EXTRACT FROM
Glasgow Hld
Date 30 JULY 1940

FAMOUS FLYING-BOAT FOR BRITAIN

TO CARRY ALUMINIUM FROM UNITED STATES

NEW YORK, Monday.

Mr Richard Archbold, the explorer, announced here that he has sold his flying-boat Guba—which he has used on scientific expeditions in the jungle areas of Africa and New Guinea—to the British Government for the purpose of transporting aluminium from the United States to Britain.

The flying-boat will make trips twice a week. The aviator, Clyde Pangborn, will head the crew. The Guba, a 14-ton craft, cost 250,000 dollars.—Reuter.

~~Bat~~ 9 Wash 7

Romeike & Curtice Ltd
Telephone CENTRAL 2781 (2 Lines.)
35. Shoe Lane LONDON. E.C.4.

EXTRACT FROM
SHEFFIELD DAILY TELEGRAPH
High Street, Sheffield
Date 27 J

Noted Aircraft to Bring Aluminium

Mr. Richard Archbold, the explorer, announced in New York that he has sold his flying-boat Guba, which he has used on scientific expeditions in the jungle areas of Africa and New Guinea, to the British Government for the purpose of transporting aluminium from the United States to England.

The flying boat will make trips twice a week.

Clyde Pangborn will head the crew.

The Guba, a 14-ton craft, cost 250,000 dollars.—Reuter.

Consolidated Air 7

Romeike & Curtice Ltd
Telephone CENTRAL 2781 (2 Lines.)
35. Shoe Lane LONDON. E.C.4.

EXTRACT FROM
Modern Transport
-3 AUG 1940

Aluminium by Flying-boat.

The Ministry of Aircraft Production has purchased a large privately owned flying-boat in which 3½-ton cargoes of aluminium will be transported from the United States to Great Britain twice a week. It is reported that the well-known American airman Clyde Pangborn will head the crew of four operating the machine. According to Reuter the aircraft purchased is the 14-ton flying-boat the Guba, belonging to the American explorer, Mr. Richard Archbold.

Consolidated Air 7

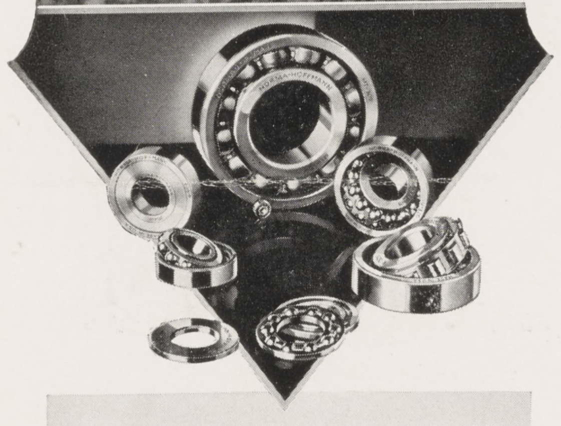
Romeike & Curtice Ltd
Telephone CENTRAL 2781 (2 Lines.)
35. Shoe Lane. LONDON. E.C.4.

EXTRACT FROM
LANCASHIRE DAILY POST
127 Fishergate, Preston
30 JUL 1940
Date

Mr. Richard Archbold, the American explorer, has sold his famous flying boat, Guba, which he has used on scientific expeditions, to the British Government for transporting aluminium from the United States to England.

CONSOLIDATED AIRCRAFT "B-24" LAND BOMBER

gets hair-trigger control on
"NORMA-HOFFMANN"
PRECISION BEARINGS



- The planes in this series, built for U. S. Army Air Corps by Consolidated Aircraft Corp'n., San Diego, Calif., are powered by four 1200 H. P. motors and are designed for a speed of over 300 M. P. H. The builder states:—

"Smooth, strong and quick response to all controls through every bearing point is of paramount importance with a plane of this power and speed. * * * * Many of the bearings are, in simile, the reins or bridle points which control the enormous energy of this number (4800) of horses packed into one man-made machine."

The builder's recognition of the proved dependability of NORMA-HOFFMANN BEARINGS is shown in the fact that upwards of 60 of these PRECISION units are used in the "B-24" Bomber — in the controls, wings, power plant installation, and elsewhere in the plane.

"Where the bearings must not fail", NORMA-HOFFMANN PRECISION BEARINGS are the choice of the engineers and designers of practically every representative American builder of planes—for military, commercial, or private use.

There is a NORMA-HOFFMANN PRECISION BEARING for every load, speed and duty — 108 series and more than 3000 sizes. In this comprehensive line, American manufacturers serving the aviation industry find the solution of their bearing problems—employing these PRECISION BEARINGS in aircraft, engines, instruments, aircraft equipment and accessories, radio and photographic apparatus, and landing field equipment. Write for the Catalog. Let our engineers work with you.

NORMA-HOFFMANN BEARINGS CORP'N., STAMFORD, CONN., U.S.A.

183–04

Aero Digest – Western Flying – Aviation July, August

CONSOLIDATED Aircraft CORPORATION

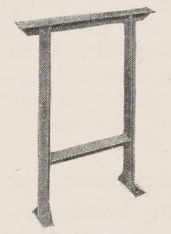
SAN DIEGO ESTABLISHED 1923

Gets Extra Value From Available Storage Space with LYON Steel Storage Equipment

- When rapidly expanding production schedules on its famous flying boats, such as the PBY and the PB2Y, created the dual problem of providing increased material storage facilities while conserving all available floor space for manufacturing operations, Lyon Storage Engineers promptly provided a practical solution. By using the lower tier of rigid Standard Lyon Shelving to support a mezzanine floor, they doubled the capacity of the floor area devoted to storage.

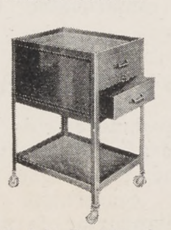
A half century of experience in applying steel equipment to thousands of plant production and storage problems, qualifies Lyon to provide plans and equipment that will help any manufacturer save floor space, reduce cost and time of handling tools and materials, cut inventories and losses due to loss and damage of tools and stock. Mail coupon for full facts about Lyon's industry-proved Survey Service. LYON METAL PRODUCTS, INCORPORATED, (General Offices) Aurora, Illinois.

District and Sales Offices in All Major Cities



Bench Legs—Exceptionally sturdy construction. Permit attachment of tops, shelves and stringers at almost any desired location.

Steel Benches — Will not cut, splinter or become oil-soaked. Accessory parts include back end and stops, drawer, half or full depth shelves, or foot rest. Available in many sizes.



Portable Tool Stands—Can be loaded with tools and parts and taken anywhere in the plant. Top has flanged edges to prevent tools falling off.

Other Lyon Favorites

- Bar Racks
- Shop Desks
- Tool Trays
- Tool Storage Inserts
- Tool Cabinets
- Shop Boxes

LYON METAL PRODUCTS, INCORPORATED
5811 River Street, Aurora, Illinois

Send full particulars on items checked:
☐ Lyon Storage Survey Service; ☐ Steel Benches; ☐ Steel Bench Legs; ☐ Bar Racks; ☐ Tool Stands; ☐ Shop Boxes; ☐ Toolroom Equipment.

Name__________
Address__________
City__________
State__________

LYON SHOP EQUIPMENT *Service*

LYON METAL PRODUCTS, INCORPORATED, Aurora, Illinois

IATION, November, 1940

Air Consolidated

Ro

Date

perhaps, that people thou living from choice on the although they had nothing to shipping or fishing. There marked migration seaward, larly to the South Coast.

The towns found new busi the year round in catering needs of retired and leisure and they grew and grew.

The migration to the coa partly of folk who had do made, their bit in the big cit partly of old soldiers, sailo officials who, of old, would p have retired to their home to have settled down in inland

Both migrations meant a c able redistribution of pop

the
are
Mr.
bout
ions
rain
tion
has
is
it
the
im-

Ltd

1940

D

Founded Federation

He was the founder of the organisation known as the Discharged Sailors and Soldiers' Federation, from which grew the nation-wide British Legion movement. The Leicester branch of the Legion was the first to be formed.

"Charlie" will always be remembered as a pioneer of the movement. Over the course of years he held a number of offices, and was still vice-president of the Leicester branch of the British Legion.

Originally he was Area Chairman of the National Federation of the Discharged Sailers and Soldiers' Federation, and later in turn became President and Chairman of the Leicester branch of the Legion.

One of the happiest days in the life of "Charlie" was when King George V visited Leicester in 1919. It had been arranged that his Majesty should make an inspection of the ex-servicemen's institute in Bond-street, but the official time table, arranged by the civic authorities, only allowed for a brief halt outside the premises.

Inside the building were many ex-servicemen, and "Charlie" told the King that it would break their hearts if he did not go inside.

That was sufficient for the King. He immediately left his car and was shown all over the building. During the tour "Charlie" even invited him to a day's fishing in Leicestershire.

When the late Earl Haig came to Leicester in 1922 to receive the freedom of the city, he spent much of his time at the British Legion Institute, where Mr. Col-

---

Air Consolidated Co

Romeike & Curtice Ltd

Telephone
CENTRAL 2781
(2 Lines.)

R&C

35. Shoe Lane.
LONDON.
E.C.4.

EXTRACT FROM

BIRMINGHAM GAZETTE,
Newspaper House, Corporation St., Birmingham.

30 JUL 1940

Date

TO BRING OUR ALUMINIUM

Mr. Richard Archbold, the former explorer, has announced in New York that he has sold his flying-boat, Guba, which he has used on scientific expeditions in the jungle areas of Africa and New Guinea, to the British Government for transporting aluminium from the United States to England. The Guba will make trips twice a week. The well-known American airman, Clyde Pangborn, will head the crew.

Ro

CENT

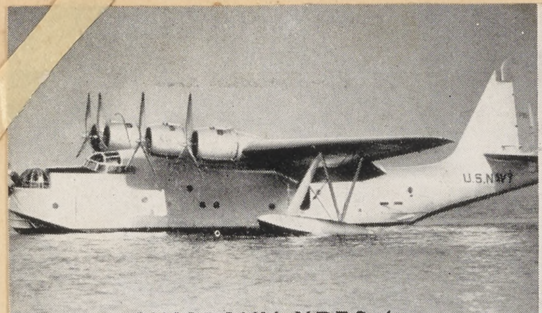
DE

Date

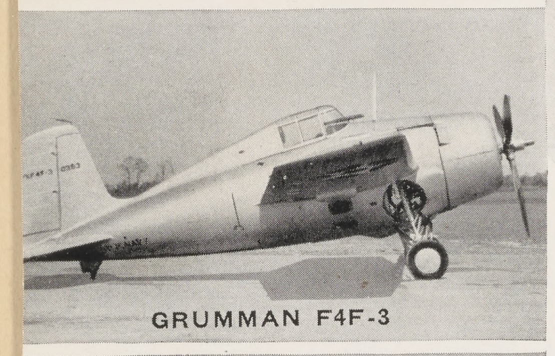
FLYING ALUMINIUM TO BRITAIN

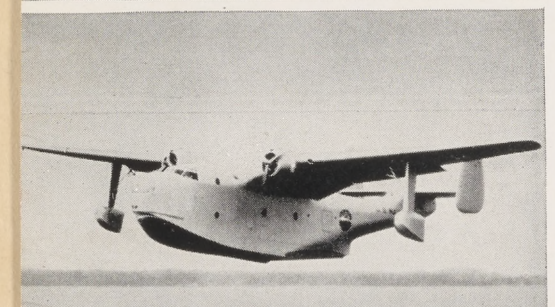
Mr. Richard Archbold, the explorer, announced at New York that he has sold his flying boat Guba—which he has used on scientific expeditions in the jungle areas of Africa and New Guinea—to the British Government for the purpose of transporting aluminium from the United States to England.

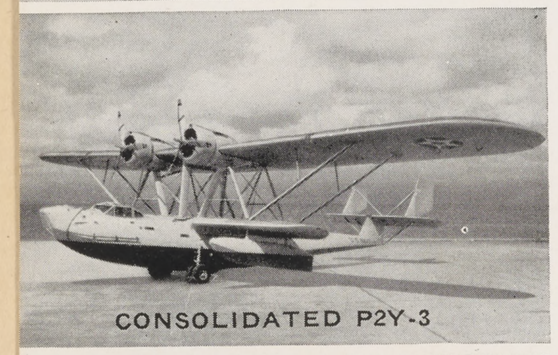
The flying boat will make trips twice a week. The aviator, Clyde Pangborn,

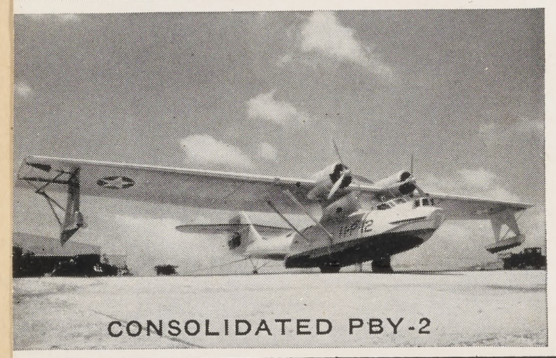

SIKORSKY XPBS-1

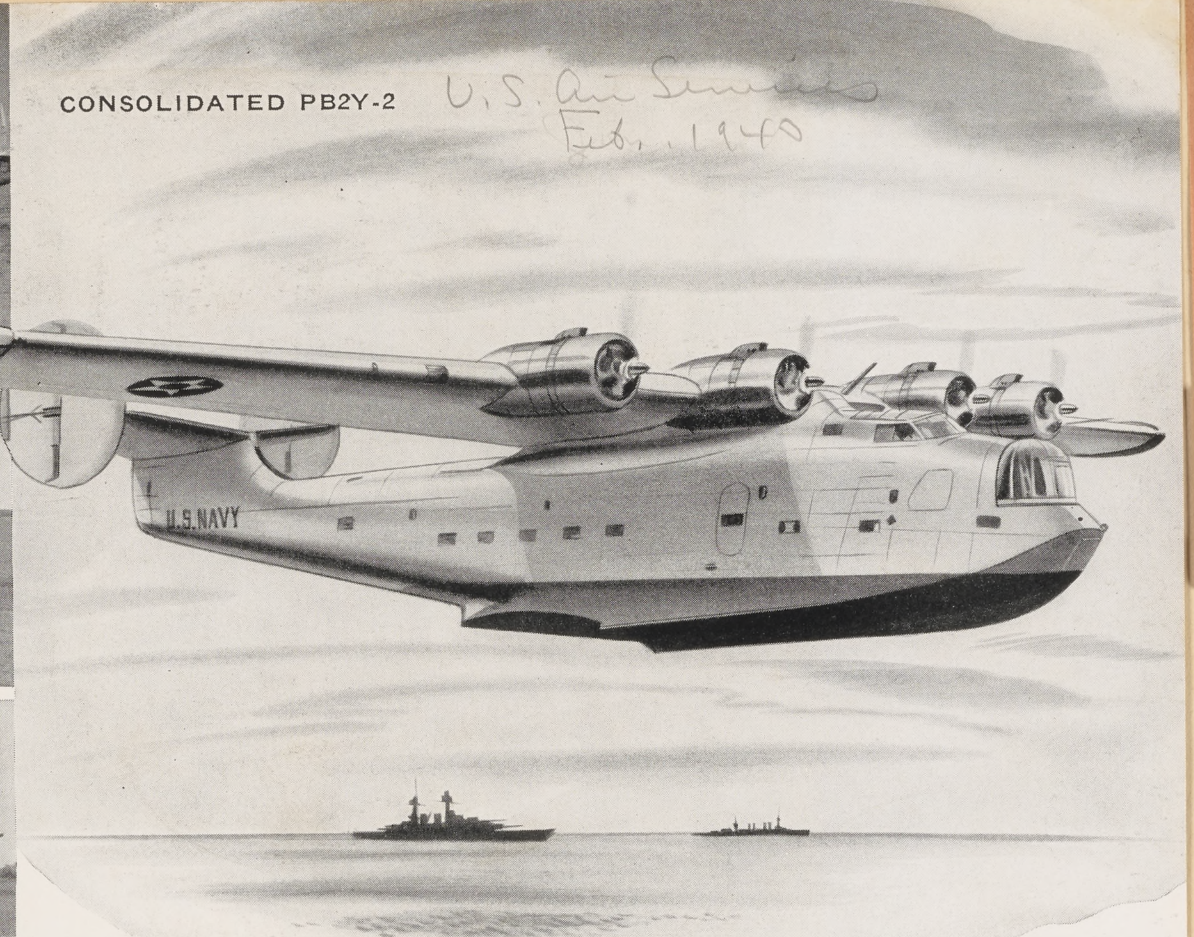
BREWSTER F2A-2


GRUMMAN F4F-3


MARTIN PBM-1


CONSOLIDATED P2Y-3


CONSOLIDATED PBY-2


CONSOLIDATED PB2Y-2

U.S. Air Services
Feb., 1940

CURTISS ELECTRICS ON PATROL *with the* NAVY

The U. S. Navy, "First with Feathering" in 1934, when it equipped its Consolidated P2Y-3 Patrol Planes with Curtiss Electric Propellers, is again First in developing, with Curtiss engineers, the Reverse-pitch Propeller to provide its giant seaplanes with water-maneuverability hitherto unparalleled. Another degree of utility has thus been added to the outstanding four-engined Consolidated Patrol Bomber.

The adaptability of Curtiss Electrics has also led to their selection for the Navy's newest fast fighters in which air-maneuverability and high performance are paramount.

CURTISS WRIGHT CORPORATION
CURTISS PROPELLER DIVISION
CLIFTON, N.J.

Consolidated Air 7

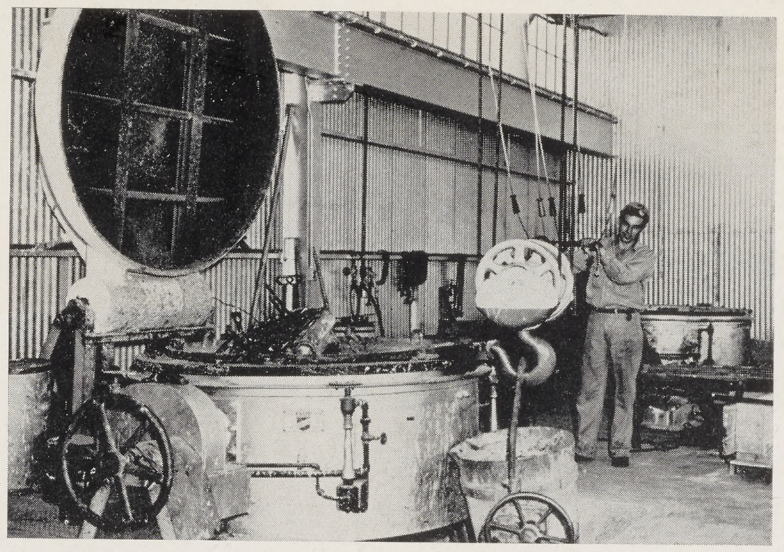
Romeike & Curtice Ltd
Telephone
35. Shoe Lane.

your ration will go further.
before pouring. If you do all this
time to brew, and stir it just
you should give the tea enough
not the kettle to the tea-pot; (3)
tea-pot should come to the kettle,

Consolidated Air 7

Romeike & Curtice Ltd
Telephone
CENTRAL 2781
(2 Lines.)
R&C
35. Shoe Lane
LONDON.
E.C.4.

DANCING & WHIST
PIER PAVILION BALLROOM.—TONIGHT
(Monday), at 7.30. Greatest Novelt-
Two Bands. Enormous success of Pavi-
Ladies' Orchestra, direct from To


Two of Four 54" Diameter Tilting Melting Furnaces for Lead and Zinc at Consolidated Aircraft, San Diego, California.

Many leading aircraft companies have standardized on KNAPP tilting melting furnaces for melting lead, zinc, or Kirksite in their drop hammer departments, for casting dies.

Illustration shows 54" diameter size with capacity 12,000 lbs. lead or 8,000 lbs. zinc.

These units are made also in two smaller standard sizes.

KNAPP furnaces also used in aircraft plants for all kinds of heat treating and normalizing work.

Your heat treating or melting problems can be solved with KNAPP furnace designed for your particular problem.

JAMES H. KNAPP COMPANY
4920 LOMA VISTA AVE., LOS ANGELES
"INDUSTRIAL FURNACES THAT SATISFY"

WESTERN MACHINERY AND STEEL WORLD October 1940

Air
Consolidated Air

Romeike & Curtice Ltd
Telephone
CENTRAL 2781
(2 Lines.)
R&C
35. Shoe Lane.
LONDON.
E.C.4.

EXTRACT FROM
Glasgow Hld

Date 30 JULY 1940

FAMOUS FLYING-BOAT FOR BRITAIN

TO CARRY ALUMINIUM FROM UNITED STATES

NEW YORK, Monday.

Mr Richard Archbold, the explorer, announced here that he has sold his flying-boat Guba—which he has used on scientific expeditions in the jungle areas of Africa and New Guinea—to the British Government for the purpose of transporting aluminium from the United States to Britain.

The flying-boat will make trips twice a week. The aviator, Clyde Pangborn, will head the crew. The Guba, a 14-ton craft, cost 250,000 dollars.—Reuter.

~~[illegible]~~ Wark 7
9

Romeike & Curtice Ltd
Telephone
CENTRAL 2781
(2 Lines.)
R&C
35. Shoe Lane
LONDON.
E.C.4.

EXTRACT FROM

SHEFFIELD DAILY TELEGRAPH
High Street, Sheffield

Date 27 JUL

Noted Aircraft to Bring Aluminium

Mr. Richard Archbold, the explorer, announced in New York that he has sold his flying-boat Guba, which he has used on scientific expeditions in the jungle areas of Africa and New Guinea, to the British Government for the purpose of transporting aluminium from the United States to England.

The flying boat will make trips twice a week.

Clyde Pangborn will head the crew.

The Guba, a 14-ton craft, cost 250.000 dollars.—Reuter.

Consolidated Air 7

Romeike & Curtice Ltd
Telephone
CENTRAL 2781
(2 Lines.)
R&C
35. Shoe Lane
LONDON.
E.C.4.

EXTRACT FROM
Modern Transport
3 AUG 1940

Aluminium by Flying-boat.

The Ministry of Aircraft Production has purchased a large privately owned flying-boat in which 3½-ton cargoes of aluminium will be transported from the United States to Great Britain twice a week. It is reported that the well-known American airman Clyde Pangborn will head the crew of four operating the machine. According to Reuter the aircraft purchased is the 14-ton flying-boat the Guba, belonging to the American explorer, Mr. Richard Archbold.

Also Aero
1940

~~Consolidated~~ Consolidated Air 7 NY

Romeike & Curtice Ltd
Telephone
CENTRAL 2781
(2 Lines.)
R&C
35. Shoe Lane.
LONDON.
E.C.4.

EXTRACT FROM

LANCASHIRE DAILY POST
127 Fishergate, Preston

30 JUL 1940
1940

Date

Mr. Richard Archbold, the American explorer, has sold his famous flying boat, Guba, which he has used on scientific expeditions, to the British Government for transporting aluminium from the United States to England.

CONSOLIDATED AIRCRAFT "B-24" LAND BOMBER

gets hair-trigger control on
"NORMA-HOFFMANN"
PRECISION BEARINGS

● The planes in this series, built for U. S. Army Air Corps by Consolidated Aircraft Corp'n., San Diego, Calif., are powered by four 1200 H. P. motors and are designed for a speed of over 300 M. P. H. The builder states:—

"Smooth, strong and quick response to all controls through every bearing point is of paramount importance with a plane of this power and speed. * * * * Many of the bearings are, in simile, the reins or bridle points which control the enormous energy of this number (4800) of horses packed into one man-made machine."

The builder's recognition of the proved dependability of NORMA-HOFFMANN BEARINGS is shown in the fact that upwards of 60 of these PRECISION units are used in the "B-24" Bomber — in the controls, wings, power plant installation, and elsewhere in the plane.

"Where the bearings must not fail", NORMA-HOFFMANN PRECISION BEARINGS are the choice of the engineers and designers of practically every representative American builder of planes—for military, commercial, or private use.

There is a NORMA-HOFFMANN PRECISION BEARING for every load, speed and duty—108 series and more than 3000 sizes. In this comprehensive line, American manufacturers serving the aviation industry find the solution of their bearing problems—employing these PRECISION BEARINGS in aircraft, engines, instruments, aircraft equipment and accessories, radio and photographic apparatus, and landing field equipment. Write for the Catalog. Let our engineers work with you.

NORMA-HOFFMANN BEARINGS CORP'N., STAMFORD, CONN., U.S.A.

183–04

Aero Digest – Western Flying – Aviation July, August

CONSOLIDATED *Aircraft* CORPORATION

SAN DIEGO ESTABLISHED 1923

Gets Extra Value From Available Storage Space with LYON Steel Storage *Equipment*

CONSOLIDATED AIRCRAFT
11-P-9

● When rapidly expanding production schedules on its famous flying boats, such as the PBY and the PB2Y, created the dual problem of providing increased material storage facilities while conserving all available floor space for manufacturing operations, Lyon Storage Engineers promptly provided a practical solution. By using the lower tier of rigid Standard Lyon Shelving to support a mezzanine floor, they doubled the capacity of the floor area devoted to storage.

A half century of experience in applying steel equipment to thousands of plant production and storage problems, qualifies Lyon to provide plans and equipment that will help any manufacturer save floor space, reduce cost and time of handling tools and materials, cut inventories and losses due to loss and damage of tools and stock. Mail coupon for full facts about Lyon's industry-proved Survey Service. LYON METAL PRODUCTS, INCORPORATED, (General Offices) Aurora, Illinois.

District and Sales Offices in All Major Cities

Bench Legs—Exceptionally sturdy construction. Permit attachment of tops, shelves and stringers at almost any desired location.

Steel Benches—Will not cut, splinter or become oil-soaked. Accessory parts include back end and stops, drawer, half or full depth shelves, or foot rest. Available in many sizes.

Portable Tool Stands—Can be loaded with tools and parts and taken anywhere in the plant. Top has flanged edges to prevent tools falling off.

Other *Lyon* Favorites

- Bar Racks
- Shop Desks
- Tool Trays
- Tool Storage Inserts
- Tool Cabinets
- Shop Boxes

LYON METAL PRODUCTS, INCORPORATED
5811 River Street, Aurora, Illinois

Send full particulars on items checked:
☐ Lyon Storage Survey Service; ☐ Steel Benches; ☐ Steel Bench Legs; ☐ Bar Racks; ☐ Tool Stands; ☐ Shop Boxes; ☐ Toolroom Equipment.

*Name*__________
*Address*__________
*City*__________
*State*__________

LYON SHOP EQUIPMENT *Service*

LYON METAL PRODUCTS, INCORPORATED, *Aurora, Illinois*

AVIATION, November, 1940

Air Consolidated

Romeike & Curtice Ltd

Date

the
the
are
Mr.
bout
ions
rain
tion
has
is
it
the
im-

perhaps, that people thou living from choice on the although they had nothing to shipping or fishing. There marked migration seaward, larly to the South Coast.

The towns found new busi the year round in catering needs of retired and leisure and they grew and grew.

The migration to the coa partly of folk who had do made, their bit in the big cit partly of old soldiers, sailo officials who, of old, would p have retired to their home to have settled down in inland

Both migrations meant a co able redistribution of pop

Romeike & Curtice Ltd

Date

1940

Founded Federation

He was the founder of the organisation known as the Discharged Sailors and Soldiers' Federation, from which grew the nation-wide British Legion movement. The Leicester branch of the Legion was the first to be formed.

"Charlie" will always be remembered as a pioneer of the movement. Over the course of years he held a number of offices, and was still vice-president of the Leicester branch of the British Legion.

Originally he was Area Chairman of the National Federation of the Discharged Sailers and Soldiers' Federation, and later in turn became President and Chairman of the Leicester branch of the Legion.

One of the happiest days in the life of "Charlie" was when King George V. visited Leicester in 1919. It had been arranged that his Majesty should make an inspection of the ex-servicemen's institute in Bond-street, but the official time table, arranged by the civic authorities, only allowed for a brief halt outside the premises.

Inside the building were many ex-servicemen, and "Charlie" told the King that it would break their hearts if he did not go inside.

That was sufficient for the King. He immediately left his car and was shown all over the building. During the tour "Charlie" even invited him to a day's fishing in Leicestershire.

When the late Earl Haig came to Leicester in 1922 to receive the freedom of the city, he spent much of his time at the British Legion Institute, where Mr. Col-

---

Air Consolidated Co

Romeike & Curtice Ltd

Telephone CENTRAL

Newspaper

Date

system. This should be a root and branch review in which much red tape is cut through and much new blood introduced to replace some of the stereotyped red tab warriors hibernating in Whitehall. To achieve this purpose a large admixture of the civilian element is to be introduced. These names include Sir Percy Bates, the shipping expert, and other business men from our large scale industries like the I.C.I. and the Imperial Tobacco Company. Mr. R. J. Sinclair, the latter representative already Director-General of Army Requirements is now also to sit on the Army Council.

This approach to modern business reorganisation at the War Office comes nearly eleven months after the war, and it follows two changes in the Secretaryship of War and several reshuffles in the Higher Command. Even more significantly it follows the whole breakdown of the strategical plan of campaign in France based on the defensive offensive behind the myth of the unbreakable Maginot Line. That line was not complete on the borders of France and Belgium.

Consolidated Air

Romeike & Curtice Ltd

Telephone
CENTRAL 2781
(2 Lines.)

R&C

35. Snoe Lane
LONDON.
E.C.4.

EXTRACT FROM 29 JUL 194

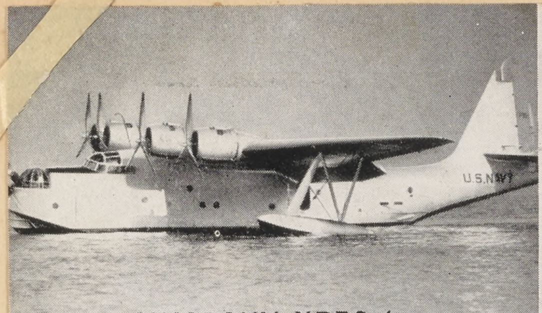
DERBY EVENING TELEGRAPH,
Northcliffe House, Derby.

Date

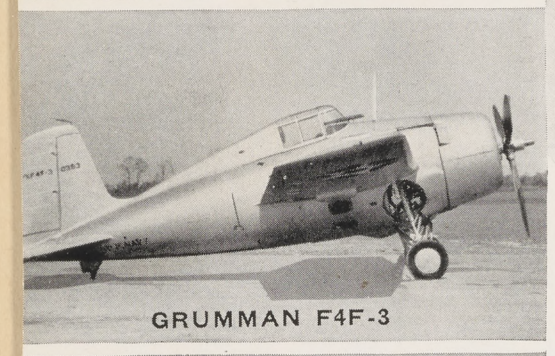
FLYING ALUMINIUM TO BRITAIN

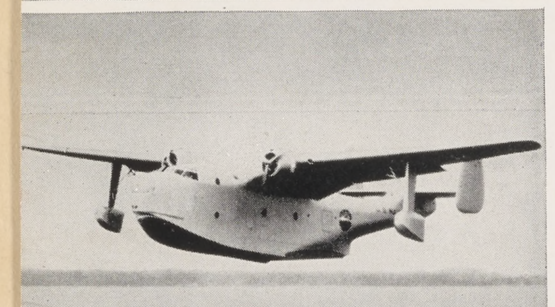
Mr. Richard Archbold, the explorer, announced at New York that he has sold his flying boat Guba—which he has used on scientific expeditions in the jungle areas of Africa and New Guinea—to the British Government for the purpose of transporting aluminium from the United States to England.

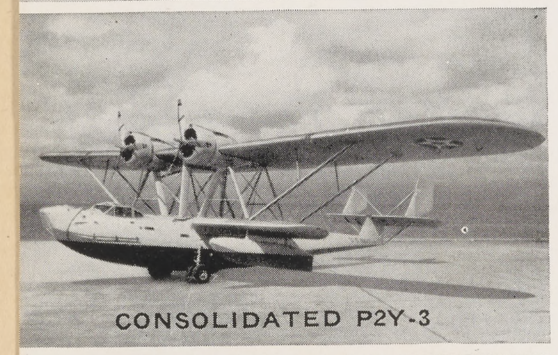
The flying boat will make trips twice a week. The aviator, Clyde Pangborn,

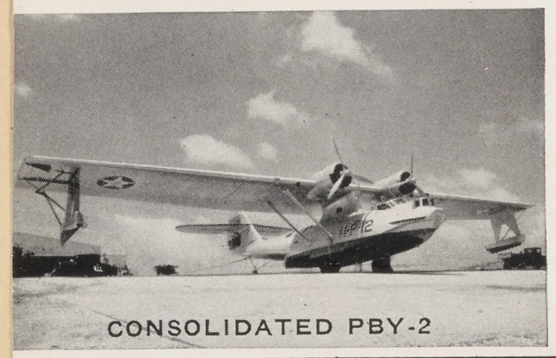

SIKORSKY XPBS-1

BREWSTER F2A-2


GRUMMAN F4F-3

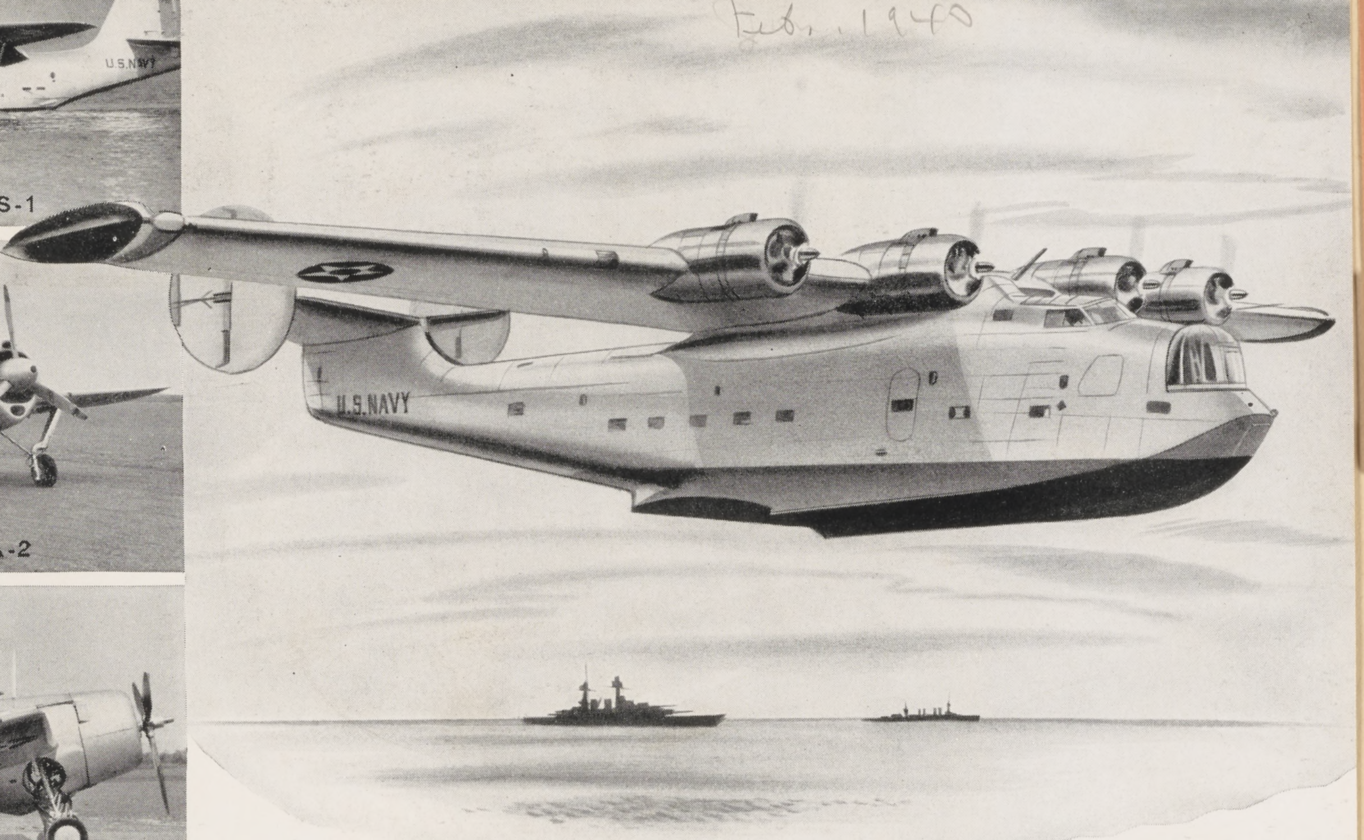

MARTIN PBM-1


CONSOLIDATED P2Y-3


CONSOLIDATED PBY-2

CONSOLIDATED PB2Y-2

U.S. Air Services
Feb., 1940



CURTISS ELECTRICS ON PATROL *with the* NAVY

The U. S. Navy, "First with Feathering" in 1934, when it equipped its Consolidated P2Y-3 Patrol Planes with Curtiss Electric Propellers, is again First in developing, with Curtiss engineers, the Reverse-pitch Propeller to provide its giant seaplanes with water-maneuverability hitherto unparalleled. Another degree of utility has thus been added to the outstanding four-engined Consolidated Patrol Bomber.

The adaptability of Curtiss Electrics has also led to their selection for the Navy's newest fast fighters in which air-maneuverability and high performance are paramount.

CURTISS WRIGHT CORPORATION
CURTISS PROPELLER DIVISION
CLIFTON, N.J.

Also Aero Feb. 1940

Consolidated Air

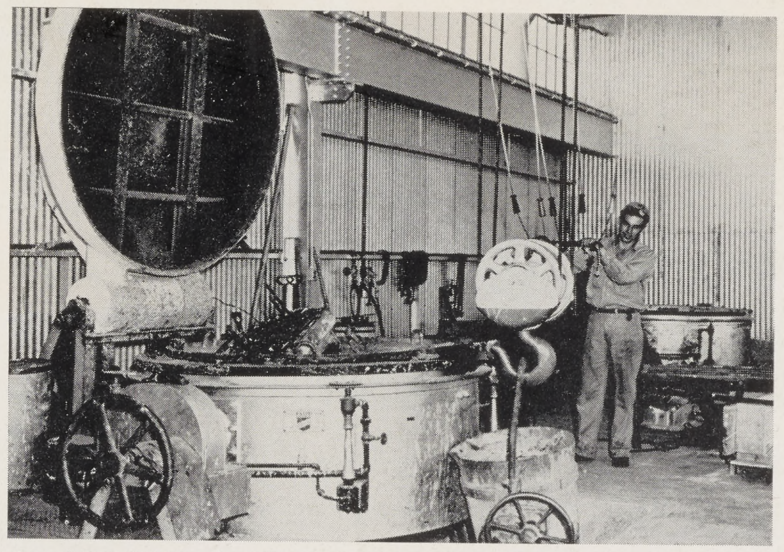
Romeike & Curtice Ltd.
Telephone
CENTRAL 2781
(2 Lines.)
35. Shoe Lane
LONDON.
E.C.4.

tea-pot should come to the kettle,
not the kettle to the tea-pot; (3)
you should give the tea enough
time to brew, and stir it just
before pouring. If you do all this
your ration will go further.

Consolidated Air

Romeike & Curtice Ltd.
Telephone
CENTRAL 2781
(2 Lines.)
35. Shoe Lane
LONDON.
E.C.4.

DANCING & WHIST
PIER PAVILION BALLROOM.—TONIGHT
(Monday), at 7.30. Greatest Novelt-
Two Bands. Enormous success of Pavi-
Ladies' Orchestra, direct from To-


Two of Four 54" Diameter Tilting Melting Furnaces for Lead and Zinc at Consolidated Aircraft, San Diego, California.

Many leading aircraft companies have standardized on KNAPP tilting melting furnaces for melting lead, zinc, or Kirksite in their drop hammer departments, for casting dies.

Illustration shows 54" diameter size with capacity 12,000 lbs. lead or 8,000 lbs. zinc.

These units are made also in two smaller standard sizes.

KNAPP furnaces also used in aircraft plants for all kinds of heat treating and normalizing work.

Your heat treating or melting problems can be solved with KNAPP furnace designed for your particular problem.

JAMES H. KNAPP COMPANY
4920 LOMA VISTA AVE., LOS ANGELES
"INDUSTRIAL FURNACES THAT SATISFY"

WESTERN MACHINERY AND STEEL WORLD October 1940

Air
Consolidated Air

Romeike & Curtice Ltd.
Telephone
CENTRAL 2781
(2 Lines.)
35. Shoe Lane
LONDON.
E.C.4.

EXTRACT FROM
Glasgow Hld
Date 30 JULY 1940

FAMOUS FLYING-BOAT FOR BRITAIN

TO CARRY ALUMINIUM FROM UNITED STATES

NEW YORK, Monday.

Mr Richard Archbold, the explorer, announced here that he has sold his flying-boat Guba—which he has used on scientific expeditions in the jungle areas of Africa and New Guinea—to the British Government for the purpose of transporting aluminium from the United States to Britain.

The flying-boat will make trips twice a week. The aviator, Clyde Pangborn, will head the crew. The Guba, a 14-ton craft, cost 250,000 dollars.—Reuter.

~~Air~~ Wash 7
9

Romeike & Curtice Ltd.
Telephone
CENTRAL 2781
(2 Lines.)
35. Shoe Lane
LONDON.
E.C.4.

EXTRACT FROM
SHEFFIELD DAILY TELEGRAPH
High Street, Sheffield

Date 27

Noted Aircraft to Bring Aluminium

Mr. Richard Archbold, the explorer, announced in New York that he has sold his flying-boat Guba, which he has used on scientific expeditions in the jungle areas of Africa and New Guinea, to the British Government for the purpose of transporting aluminium from the United States to England.

The flying boat will make trips twice a week.

Clyde Pangborn will head the crew.

The Guba, a 14-ton craft, cost 250,000 dollars.—Reuter.

Consolidated Air
7

Romeike & Curtice Ltd.
Telephone
CENTRAL 2781
(2 Lines.)
35. Shoe Lane
LONDON.
E.C.4.

EXTRACT FROM
Modern Transport
-3 AUG 1940

Aluminium by Flying-boat.

The Ministry of Aircraft Production has purchased a large privately owned flying-boat in which 3½-ton cargoes of aluminium will be transported from the United States to Great Britain twice a week. It is reported that the well-known American airman Clyde Pangborn will head the crew of four operating the machine. According to Reuter the aircraft purchased is the 14-ton flying-boat the Guba, belonging to the American explorer, Mr. Richard Archbold.

Consolidated Air

Romeike & Curtice Ltd.
Telephone
CENTRAL 2781
(2 Lines.)
35. Shoe Lane
LONDON.
E.C.4.

EXTRACT FROM
LANCASHIRE DAILY POST
127 Fishergate, Preston
30 JUL 1940

Date 1940

Mr. Richard Archbold, the American explorer, has sold his famous flying boat, Guba, which he has used on scientific expeditions, to the British Government for transporting aluminium from the United States to England.

CONSOLIDATED AIRCRAFT "B-24" LAND BOMBER

gets hair-trigger control on

"NORMA-HOFFMANN"

PRECISION BEARINGS

● The planes in this series, built for U. S. Army Air Corps by Consolidated Aircraft Corp'n., San Diego, Calif., are powered by four 1200 H. P. motors and are designed for a speed of over 300 M. P. H. The builder states:—

"Smooth, strong and quick response to all controls through every bearing point is of paramount importance with a plane of this power and speed. * * * * Many of the bearings are, in simile, the reins or bridle points which control the enormous energy of this number (4800) of horses packed into one man-made machine."

The builder's recognition of the proved dependability of NORMA-HOFFMANN BEARINGS is shown in the fact that upwards of 60 of these PRECISION units are used in the "B-24" Bomber — in the controls, wings, power plant installation, and elsewhere in the plane.

"Where the bearings must not fail", NORMA-HOFFMANN PRECISION BEARINGS are the choice of the engineers and designers of practically every representative American builder of planes — for military, commercial, or private use.

There is a NORMA-HOFFMANN PRECISION BEARING for every load, speed and duty — 108 series and more than 3000 sizes. In this comprehensive line, American manufacturers serving the aviation industry find the solution of their bearing problems — employing these PRECISION BEARINGS in aircraft, engines, instruments, aircraft equipment and accessories, radio and photographic apparatus, and landing field equipment. Write for the Catalog. Let our engineers work with you.

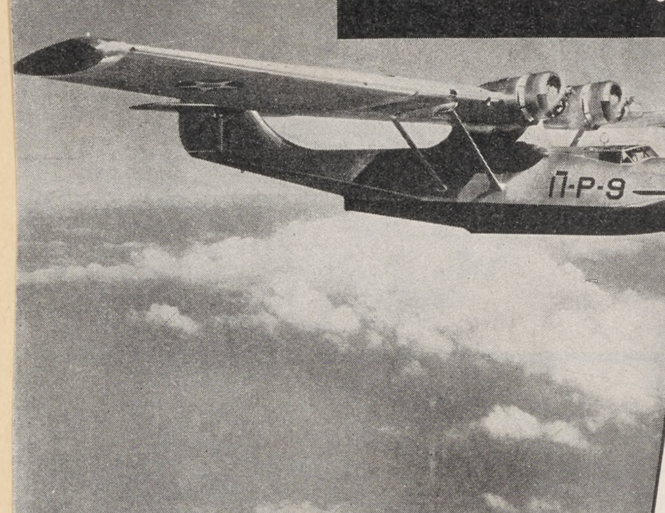
NORMA-HOFFMANN BEARINGS CORP'N., STAMFORD, CONN., U.S.A.

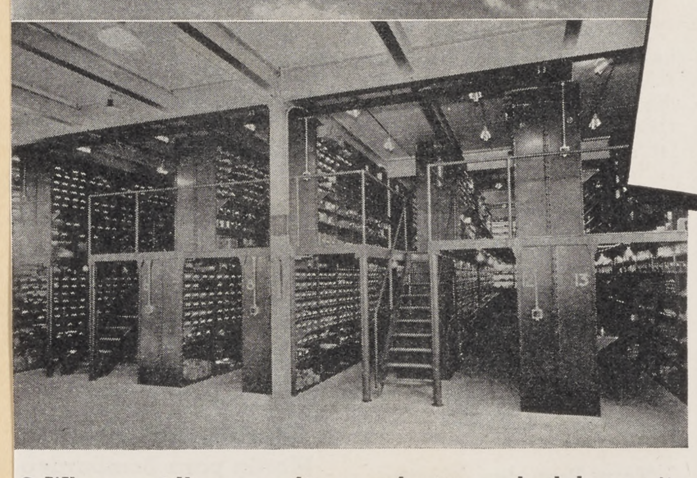
183-04

Aero Digest - Western Flying - Aviation July, August

CONSOLIDATED *Aircraft* CORPORATION

SAN DIEGO ESTABLISHED 1923



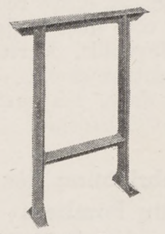


Gets Extra Value From Available Storage Space *with* LYON Steel Storage *Equipment*

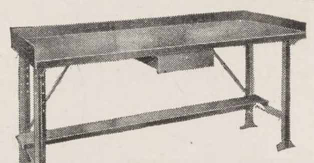
● When rapidly expanding production schedules on its famous flying boats, such as the PBY and the PB2Y, created the dual problem of providing increased material storage facilities while conserving all available floor space for manufacturing operations, Lyon Storage Engineers promptly provided a practical solution. By using the lower tier of rigid Standard Lyon Shelving to support a mezzanine floor, they doubled the capacity of the floor area devoted to storage.

A half century of experience in applying steel equipment to thousands of plant production and storage problems, qualifies Lyon to provide plans and equipment that will help any manufacturer save floor space, reduce cost and time of handling tools and materials, cut inventories and losses due to loss and damage of tools and stock. Mail coupon for full facts about Lyon's industry-proved Survey Service. LYON METAL PRODUCTS, INCORPORATED, (General Offices) Aurora, Illinois.

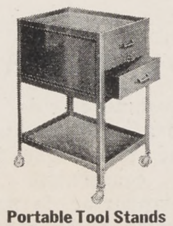
District and Sales Offices in All Major Cities



Bench Legs—Exceptionally sturdy construction. Permit attachment of tops, shelves and stringers at almost any desired location.



Steel Benches—Will not cut, splinter or become oil-soaked. Accessory parts include back end and stops, drawer, half or full depth shelves, or foot rest. Available in many sizes.



Portable Tool Stands—Can be loaded with tools and parts and taken anywhere in the plant. Top has flanged edges to prevent tools falling off.

Other *Lyon* Favorites

- Bar Racks
- Shop Desks
- Tool Trays
- Tool Storage Inserts
- Tool Cabinets
- Shop Boxes

LYON METAL PRODUCTS, INCORPORATED
5811 River Street, Aurora, Illinois

Send full particulars on items checked:
☐ Lyon Storage Survey Service; ☐ Steel Benches; ☐ Steel Bench Legs; ☐ Bar Racks; ☐ Tool Stands; ☐ Shop Boxes; ☐ Toolroom Equipment.

Name

Address

City

State

LYON SHOP EQUIPMENT *Service*

LYON METAL PRODUCTS, INCORPORATED, *Aurora, Illinois*

IATION, November, 1940

Air Consolidated

Ron

Dat

the
are
Mr.
bout
ions
rain
tion
has
is
d it
the
im-

perhaps, until the 19th c
living from that people thou
although from choice on thou
shipping they had nothing to the
marked migration or fishing. There
larly to the South seaward,
The towns found Coast.
the year round new busi
needs of retired in catering
and they grew and leisure
The migration to the coa
partly of folk who had do
made, their bit in the big cit
partly of old soldiers, sailo
officials who, of old, would p
have retired to their home to
have settled down in inland
Both migrations meant a co
redistribution of pop
able

1940

men.

Founded Federation

He was the founder of the organisation known as the Discharged Sailors and Soldiers' Federation, from which grew the nation-wide British Legion movement. The Leicester branch of the Legion was the first to be formed.

"Charlie" will always be remembered as a pioneer of the movement. Over the course of years he held number of offices, and was still vice president of the Leicester branch of the British Legion.

Originally he was Area Chairman of the National Federation of the Discharged Sailors and Soldiers' Federation, and later in turn became President and Chairman of the Leicester branch of the Legion.

One of the happiest days in the life of "Charlie" was when King George V visited Leicester in 1919. It had been arranged that his Majesty should make an inspection of the ex-servicemen's institute in Bond-street, but the official time table, arranged by the civic authorities, only allowed for a brief halt outside the premises.

Inside the building were many ex-servicemen, and "Charlie" told the King that it would break their hearts if he did not go inside.

That was sufficient for the King. He immediately left his car and was shown all over the building. During the tour "Charlie" even invited him to a day's fishing in Leicestershire.

When the late Earl Haig came to Leicester in 1922 to receive the freedom of the city, he spent much of his time at the British Legion Institute, where Mr. Col-

D

Air Consolidated Co

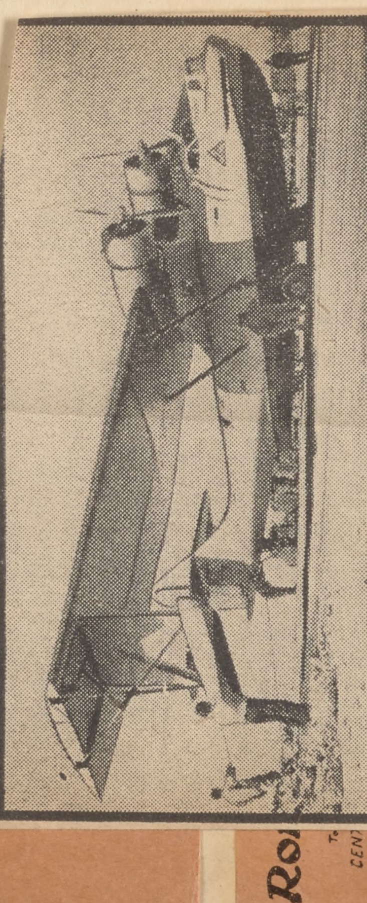
Romeike & Curtice Ltd
35, Shoe Lane. LONDON. E.C.4.
Telephone CENTRAL 2781 (2 Lines.)

EXTRACT FROM
BIRMINGHAM GAZETTE,
Newspaper House, Corporation St., Birmingham.

30 JUL 1940

Date

TO BRING OUR ALUMINIUM



Mr. Richard Archbold, the former explorer, has announced in New York that he has sold his flying-boat, Guba, which he has used on scientific expeditions in the jungle areas of Africa and New Guinea, to the British Government for transporting aluminium from the United States to England. The Guba will make trips twice a week. The well-known American airman, Clyde Pangborn, will head the crew.

Ro

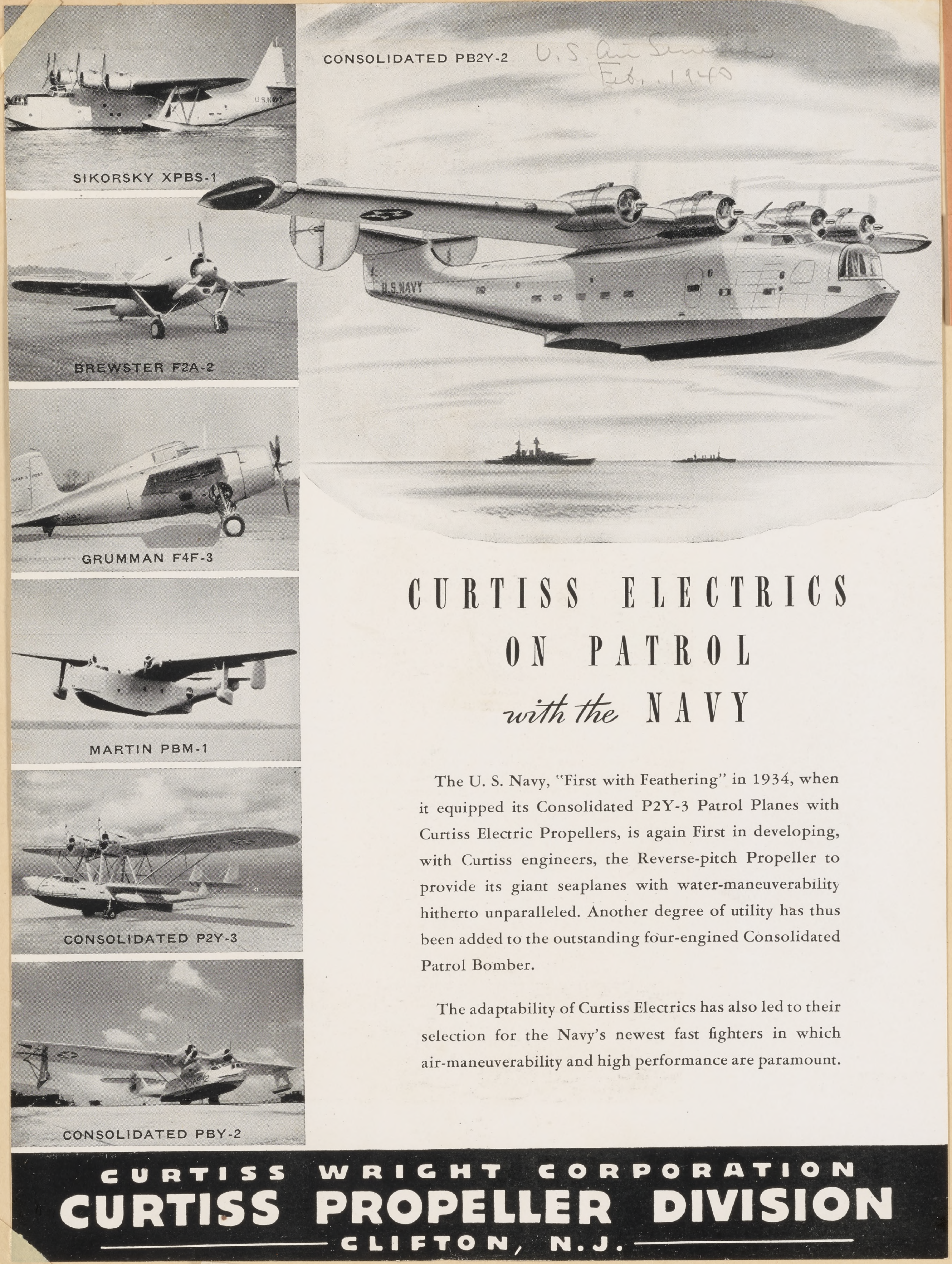
DE

FLYING ALUMINIUM TO BRI

Mr. Richard Archbold, the explorer, announced at New York that he has sold his flying boat Guba—which he has used on scientific expeditions in the jungle areas of Africa and New Guinea—to the British Government for the purpose of transporting aluminium from the United States to England.

The flying boat will make trips twice a week. The aviator, Clyde Pangborn,

Date



CONSOLIDATED PB2Y-2

U.S. Air Services
Feb. 1940

SIKORSKY XPBS-1

BREWSTER F2A-2

GRUMMAN F4F-3

MARTIN PBM-1

CONSOLIDATED P2Y-3

CONSOLIDATED PBY-2

CURTISS ELECTRICS ON PATROL *with the* NAVY

The U. S. Navy, "First with Feathering" in 1934, when it equipped its Consolidated P2Y-3 Patrol Planes with Curtiss Electric Propellers, is again First in developing, with Curtiss engineers, the Reverse-pitch Propeller to provide its giant seaplanes with water-maneuverability hitherto unparalleled. Another degree of utility has thus been added to the outstanding four-engined Consolidated Patrol Bomber.

The adaptability of Curtiss Electrics has also led to their selection for the Navy's newest fast fighters in which air-maneuverability and high performance are paramount.

CURTISS WRIGHT CORPORATION
CURTISS PROPELLER DIVISION
CLIFTON, N.J.

also Aero Feb. 1940

Consolidated Air

Romeike & Curtice Ltd
Telephone CENTRAL 2781 (2 Lines.)
35. Shoe Lane LONDON. E.C.4.
EXTRACT FROM
Groningen? Bochum

-3 AUG 1940

Aluminium by Flying-boat.

The Ministry of Aircraft Production has purchased a large privately owned flying-boat in which $3\frac{1}{2}$-ton cargoes of aluminium will be transported from the United States to Great Britain twice a week. It is reported that the well-known American airman Clyde Pangborn will head the crew of four operating the machine. According to Reuter the aircraft purchased is the 14-ton flying-boat the Guba, belonging to the American explorer, Mr. Richard Archbold.

Consolidated Air

Romeike & Curtice Ltd
Telephone CENTRAL 2781 (2 Lines.)
35. Shoe Lane. LONDON. E.C.4.
EXTRACT FROM
LANCASHIRE DAILY POST
127 Fishergate, Preston
Date 30 JUL 1940

Mr. Richard Archbold, the American explorer, has sold his famous flying boat, Guba, which he has used on scientific expeditions, to the British Government for transporting aluminium from the United States to England.

Consolidated Air

Romeike & Curtice Ltd
Telephone ...

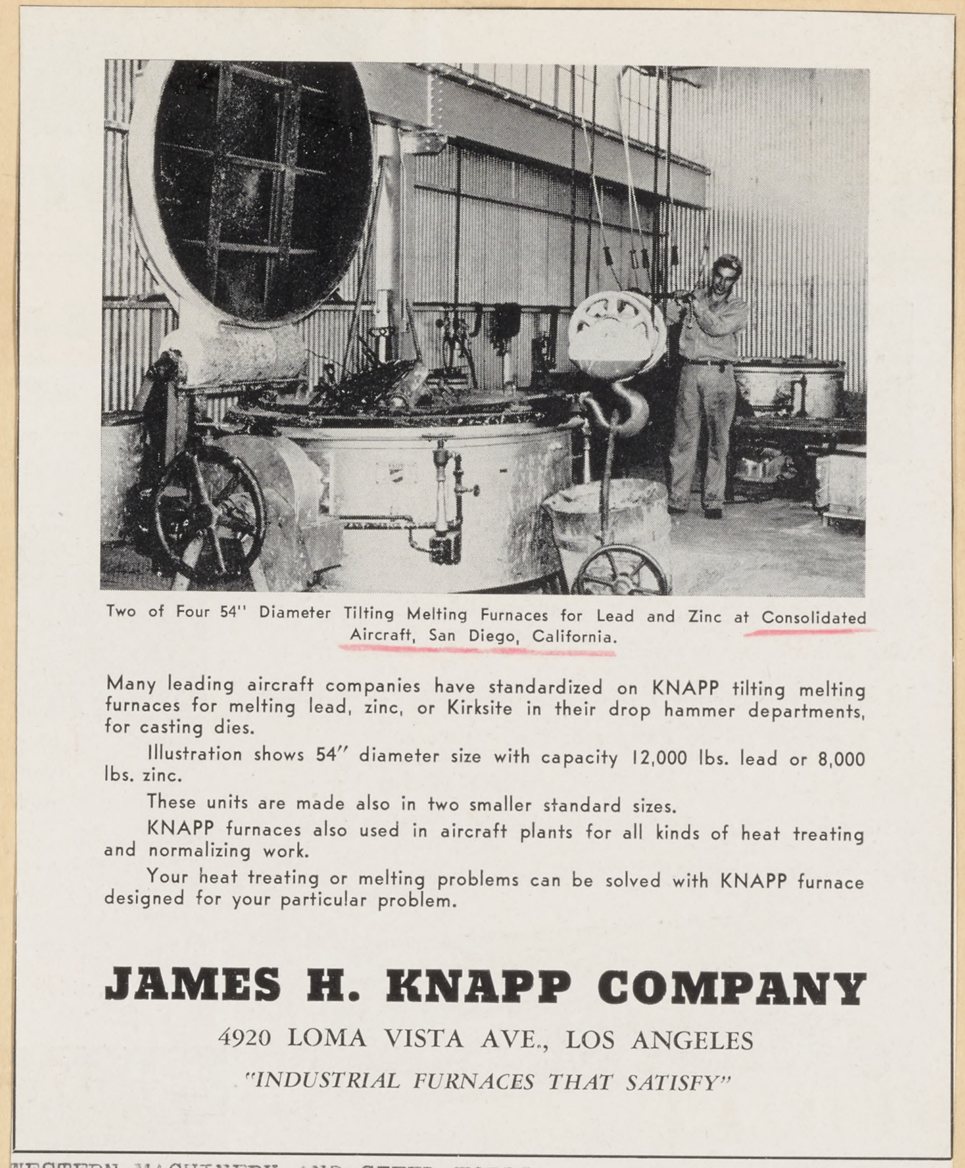
tea-pot should come to the kettle, not the kettle to the tea-pot; (3) you should give the tea enough time to brew, and stir it just before pouring. If you do all this your ration will go further.

Consolidated Air

Romeike & Curtice Ltd
Telephone CENTRAL 2781 (2 Lines.)
35. Shoe Lane LONDON. E.C.4.

DANCING & WHIST

PIER PAVILION BALLROOM.—TONIGHT (Monday), at 7.30. Greatest Novelt
Two Bands. Enormous success of Pavi
Ladies' Orchestra, direct from To



Two of Four 54" Diameter Tilting Melting Furnaces for Lead and Zinc at Consolidated Aircraft, San Diego, California.

Many leading aircraft companies have standardized on KNAPP tilting melting furnaces for melting lead, zinc, or Kirksite in their drop hammer departments, for casting dies.

Illustration shows 54" diameter size with capacity 12,000 lbs. lead or 8,000 lbs. zinc.

These units are made also in two smaller standard sizes.

KNAPP furnaces also used in aircraft plants for all kinds of heat treating and normalizing work.

Your heat treating or melting problems can be solved with KNAPP furnace designed for your particular problem.

JAMES H. KNAPP COMPANY
4920 LOMA VISTA AVE., LOS ANGELES
"INDUSTRIAL FURNACES THAT SATISFY"

WESTERN MACHINERY AND STEEL WORLD October 1940

Air

Consolidated Air

Romeike & Curtice Ltd
Telephone CENTRAL 2781 (2 Lines.)
35. Shoe Lane. LONDON. E.C.4.
EXTRACT FROM
Glasgow Hld
Date 30 JULY 1940

FAMOUS FLYING-BOAT FOR BRITAIN

TO CARRY ALUMINIUM FROM UNITED STATES

NEW YORK, Monday.

Mr Richard Archbold, the explorer, announced here that he has sold his flying-boat Guba—which he has used on scientific expeditions in the jungle areas of Africa and New Guinea—to the British Government for the purpose of transporting aluminium from the United States to Britain.

The flying-boat will make trips twice a week. The aviator, Clyde Pangborn, will head the crew. The Guba, a 14-ton craft, cost 250,000 dollars.—Reuter.

~~Bell~~ 9 Wade 7

Romeike & Curtice Ltd
Telephone CENTRAL 2781 (2 Lines.)
35. Shoe Lane LONDON. E.C.4.
EXTRACT FROM
SHEFFIELD DAILY TELEGRAPH
High Street, Sheffield
Date 27 JU

~~Bell~~ 8 7

Noted Aircraft to Bring Aluminium

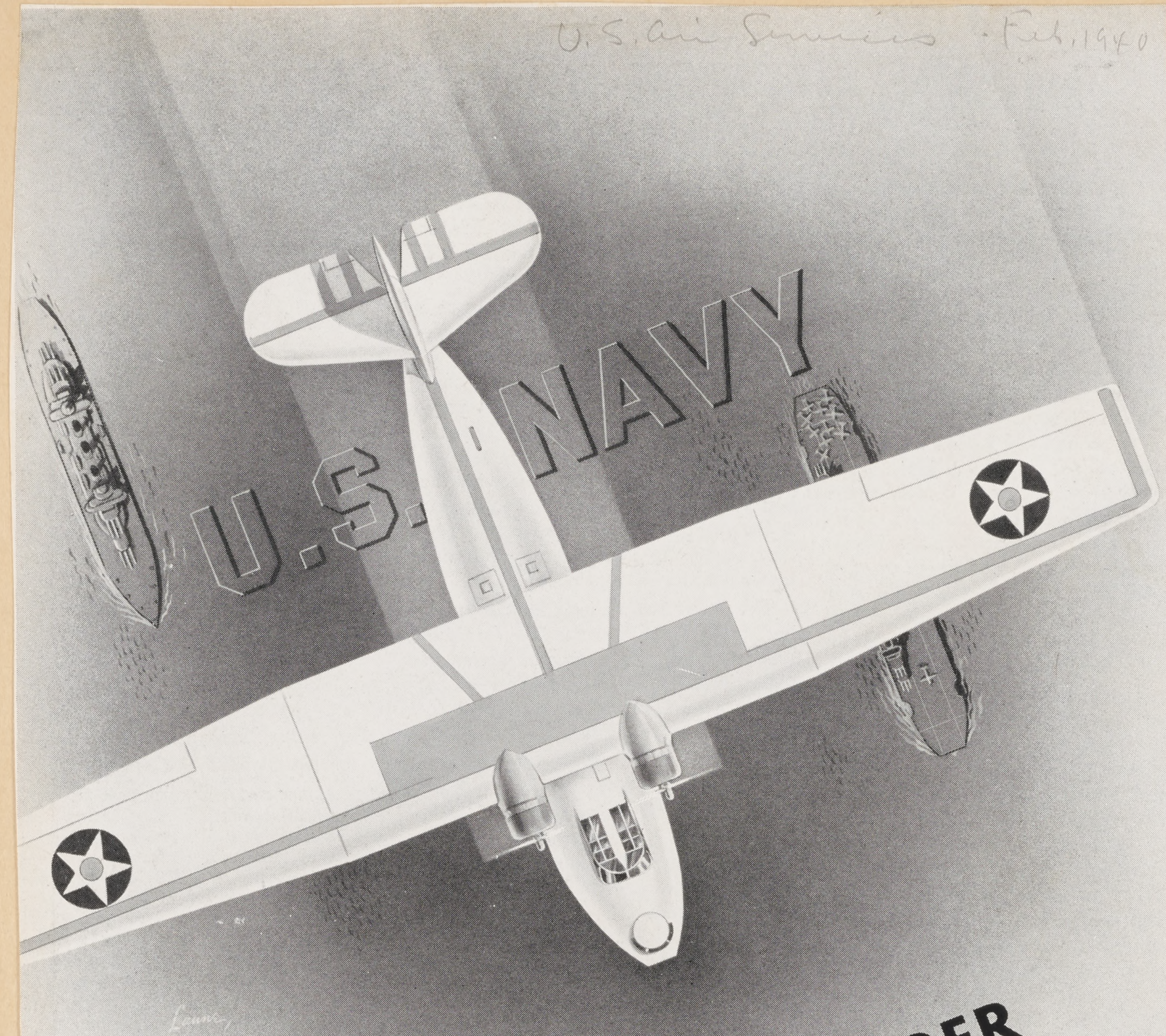
Mr. Richard Archbold, the explorer, announced in New York that he has sold his flying-boat Guba, which he has used on scientific expeditions in the jungle areas of Africa and New Guinea, to the British Government for the purpose of transporting aluminium from the United States to England.

The flying boat will make trips twice a week.

Clyde Pangborn will head the crew.

The Guba, a 14-ton craft, cost 250,000 dollars.—Reuter.

U.S. Air Services - Feb. 1940



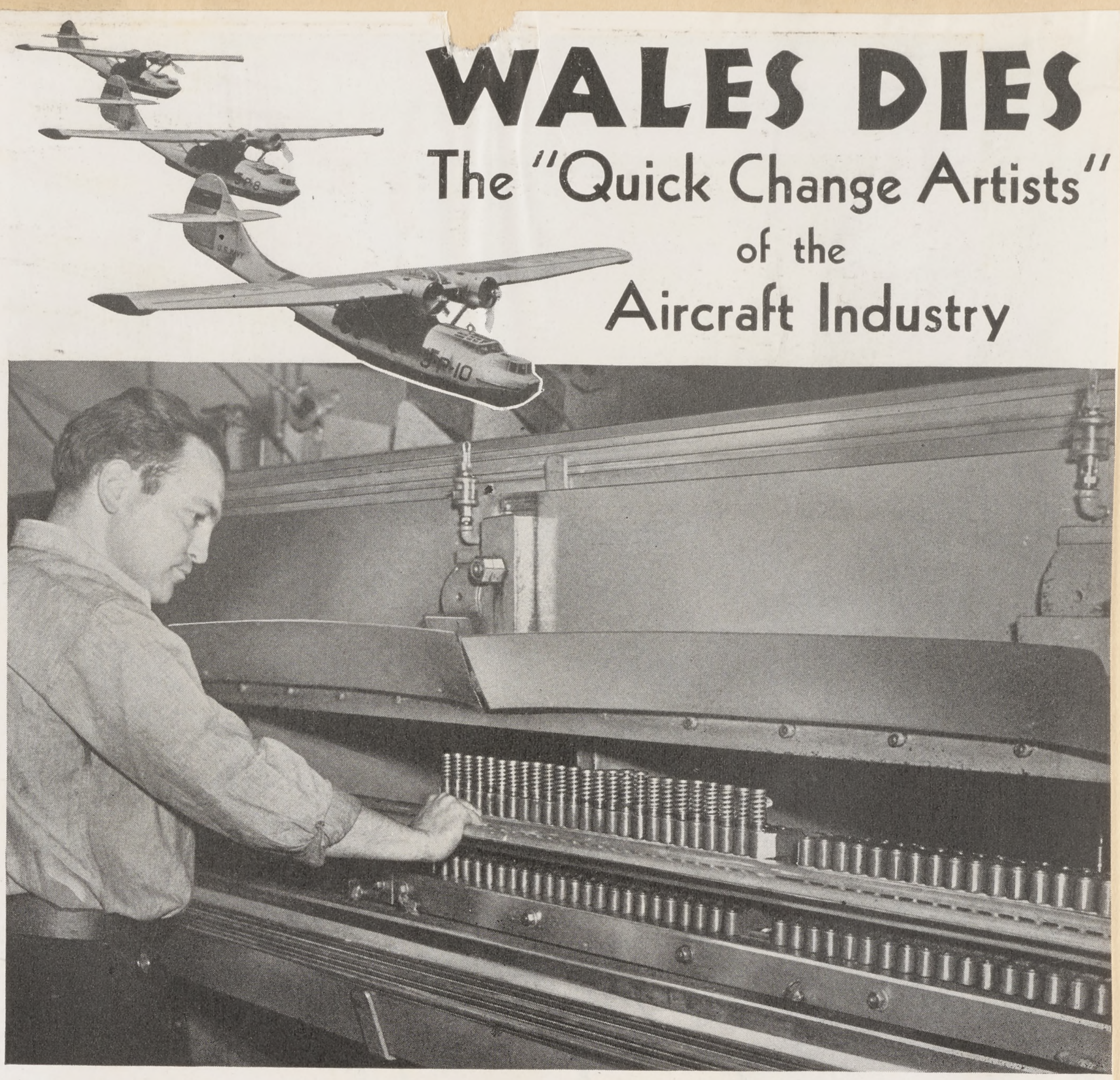
NAVY'S LARGEST ORDER

Famous for their mass flights to Alaska, Hawaii, the Philippines, Coco Solo, and Florida, the Navy's twin-engined Consolidated patrol bombers are now doing yeoman service in patrolling American territorial waters. Tried and true, this type has now won the largest procurement order in naval aviation history. And, like all their predecessors, the new PBY-5's will be powered by dependable Pratt & Whitney Twin Wasp engines.

PRATT & WHITNEY USA
DEPENDABLE ENGINES

PRATT & WHITNEY AIRCRAFT
One of the three divisions of
UNITED AIRCRAFT CORPORATION
EAST HARTFORD, CONNECTICUT

WALES DIES
The "Quick Change Artists" of the Aircraft Industry



U. S. Navy patrol bombers built by Consolidated Aircraft Corp.

Machinery - July 1940

Sheet metal operations in the aircraft industry are many and varied; and in addition, frequent changes are made in design. For punching holes in the various angles, shapes and sections used in aircraft manufacture Wales Dies are the "Quick Change Artists" of the Aircraft Industry. These individual dies may be shuffled around in presses or press brakes to punch any layout of holes or notches. Because they may be used over and over again they never become obsolete.

Shown above is a set-up of Wales Perforating Dies in the sheet metal department of the Consolidated Aircraft Corp., San Diego, Calif. where they are used for punching holes in channel formed dural stringers. Note how their compact design allows them to be placed closely together. Boeing, Bell, Brewster, Curtiss-Wright, and Lockheed are other users in aviation field as are many companies throughout industry.

Reduce die expense to a minimum. Eliminate obsolescense and production delays. With Wales Notching and Perforating Dies all that is necessary is to "Make a Template and You Have a Die". Write for catalog illustrating their many applications in aircraft and other types of sheet metal work.

THE STRIPPIT CORPORATION
1200 NIAGARA STREET
BUFFALO, NEW YORK

Aviation 10/40

Industry Backlog

Unfilled orders of the primary plane producers are now in excess of $2,000,000,000, as against an aggregate backlog of $300,000,000 a year ago. Still larger backlogs are in the offing as the War Department has authorized 21 aircraft companies to tool up for $1,250,000,000 of assured orders. In the case of both Curtiss-Wright Corp. and United Aircraft Corp., unfilled orders are more than twice the $225,000,000 total shipments of all aircraft manufacturers in 1939—a record year. The following table gives the latest approximate unfilled orders of 18 primary companies.

Allison	$40,000,000
Aviation Corp..	15,000,000
Beech	20,000,000
Bell	60,000,000
Boeing	130,000,000
Brewster	45,000,000
Consolidated ..	125,000,000
Curtiss-Wright.	550,000,000
Douglas	150,000,000
Fairchild	9,000,000
Grumman	15,000,000
Lockheed	190,000,000
Martin	120,000,000
North American	100,000,000
Republic	65,000,000
Ryan	5,000,000
United	450,000,000
Vultee	80,000,000
	$2,174,000,000

Aircraft 12/40

NEWS OF THE MONTH

Qantas To Deliver PBYS'

ARRANGEMENTS have been completed by the Civil Aviation Department for Qantas Empire Airways Ltd. to handle the details of the flight delivery of the Consolidated PBY 5 flying boats recently ordered by the Commonwealth Government.

The delivery plan involves many details such as arrangements for fuel and supplies, and the Civil Aviation Department has decided to allocate these to an existing operating unit rather than set up a special organisation.

Three well-known Australian commercial pilots will participate in the delivery assignment. They are Captain P. G. Taylor, who last year surveyed the Indian Ocean route in a PBY flying boat; Captain L. J. Brain, flying operations manager of Qantas, and Mr G. U. Allan, flight superintendent of Qantas.

Captain P. G. Taylor, M.C., E.G.M., has been requested by the Commonwealth Government and Qantas Empire Airways to act as navigator on the delivery flights.

■

PBYS' For Netherlands, Too

SIXTY PBY flying boats ordered by the Netherlands Indies Air Force will probably be flown down the Pacific on the most spectacular series of delivery flights yet carried out.

The air deliveries of bombers across the Atlantic from Botwood (Newfoundland) to Britain is about to get under way, but the ocean hop from America to the Hawaiian Islands, or an adjacent island, is the world's longest cross-water flight.

The Prime Minister, Mr Menzies, recently announced that Australia had ordered 18 Consolidated flying boats. In addition to the 60 Consolidated flying boats for the Indies, the Dutch Air Force has also ordered a number of Boeing flying boats.

Although the flight down the Pacific to the Indies may seem a large undertaking for service flying boats, it should be remembered that the Pacific air service is now regularly operating, and that the Consolidated flying boat of the PBY type has a still air range of 4000 miles.

The Dutch Consolidated flying boats, soon for delivery, will be based in the Netherlands Indies in secret stations already prepared.

■

Australia Orders 11 PBY's

Australia has ordered 11 additional PBY flying boats from Consolidated Aircraft Corp. at cost of 1,000,000 pounds, including spares. Delivery is expected before the year-end. The latest order together with seven similar craft earlier purchased will replace Sunderland flying boats, recently transferred to the RAF, for long range reconnaissance. Amer. Aviation 11/15/40

The expansion of the airplane industry on the Pacific Coast not only looks to the defense emergency but to the economies offered by this region for efficient peace time operations. **Expansion of these plants where they are gives recognition of the incomparable natural advantages of the area for that industry.**

Southern California offers maximum benefits and efficiencies for the manufacture and fly-away delivery of airplanes both during the emergency and in the post-war period.

Left to the genius of aircraft makers this locality offers lowest unit costs of production. Witness the removal of North American Aviation, Inc. to Los Angeles from Baltimore and Consolidated Aircraft, Inc. to San Diego from Buffalo.

Manufacture of parts by the automotive industry and the location of Government sponsored assembly plants in the middle-west, for mass production of planes, is in disregard of the economic factors which normally dictate the location of industry.

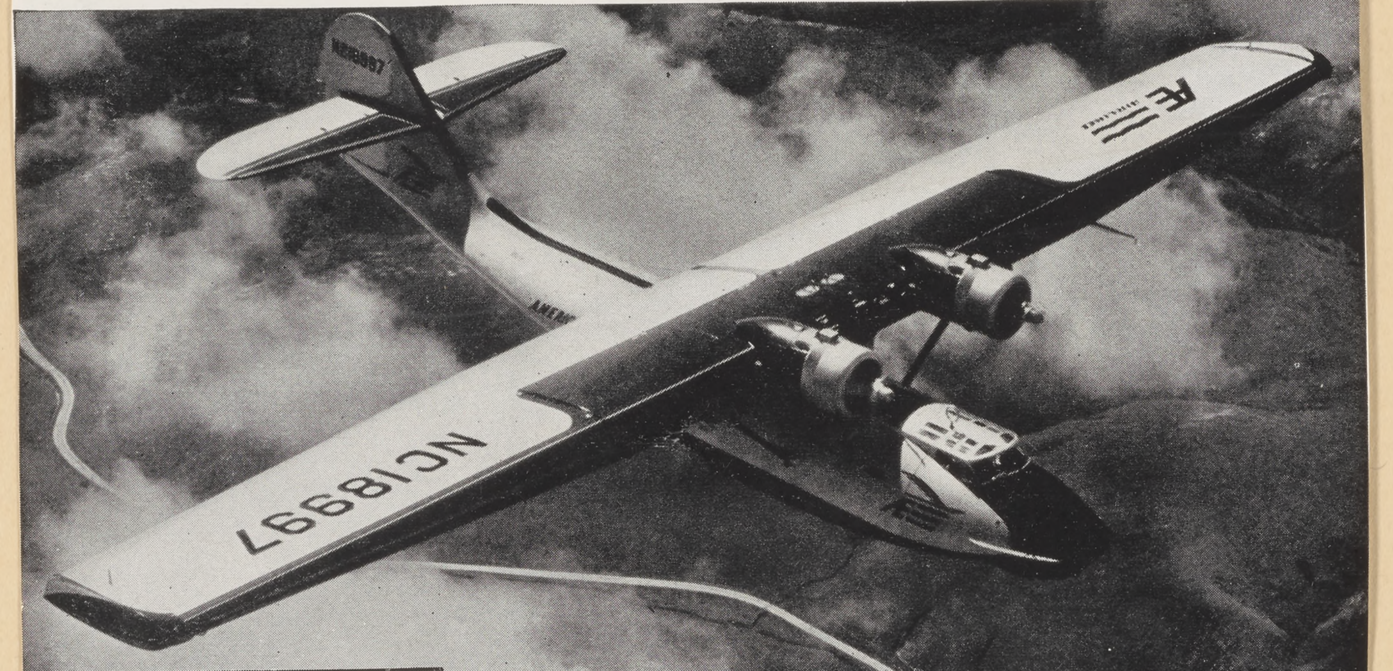
The urgency of defense and British demands and the so-called invulnerability of that region to invasion, have given the interior of the country a prominence in the aircraft industry which it could not command on economic grounds.

The continued conduct of such operations in that territory, after the emergency has passed and the full play of competition again rules the industry, will be done at the handicap of higher costs than Pacific Coast manufacturers enjoy.

Industrial Los Angeles County 11-12/40

SPERRY INSTRUMENTS

AID SURVEY FOR NEW ATLANTIC SERVICE



Captain P. J. Byrne, commander of American Export Airlines' survey flights

In completing a series of scientific survey flights across the Atlantic, American Export has written a new chapter in aviation history. Long famous for successful steamship operations, the line will soon be ready to accommodate air passengers as well. The routes are ready, the pioneering done.

Referring to the part which Sperry instruments played in this important accomplishment, Captain Byrne reported "During all our flights we relied continually upon the Sperry Gyropilot, Gyro-Horizon, Directional Gyro and Gyro-Magnetic Compass. Their splendid performance was of great assistance to the successful completion of every trip."

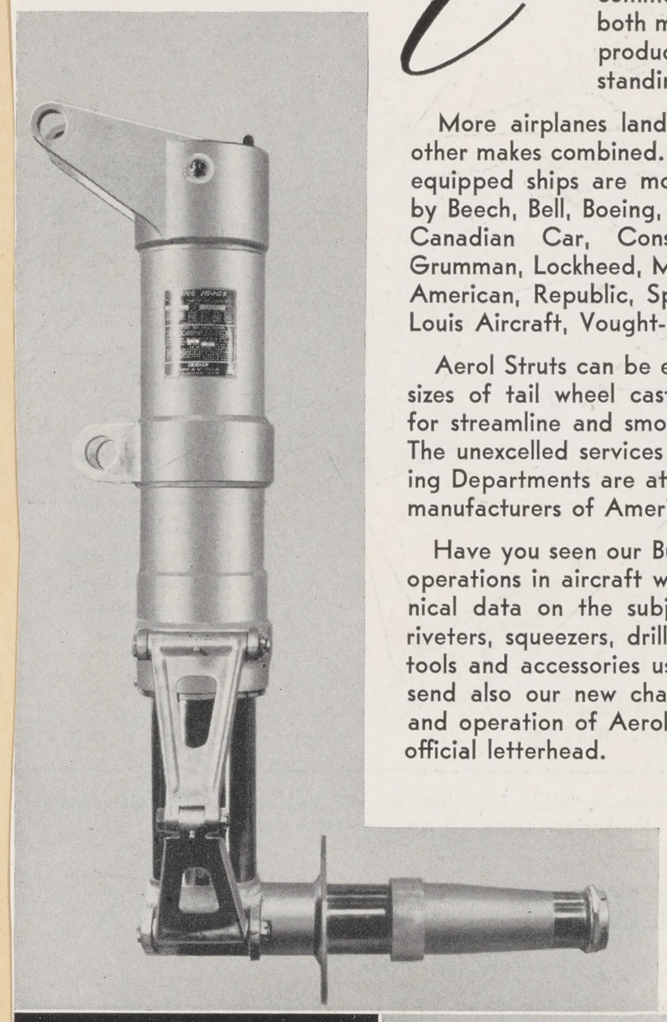
U.S. Air Services – Sept. 1939

SPERRY GYROSCOPE COMPANY, Inc.
BROOKLYN, N.Y.

CONSOLIDATED P·B·Y AMPHIBIANS
MAKE SAFE, SMOOTH LANDINGS ON AEROL SHOCK ABSORBING STRUTS

Western Flying, Oct. 1940

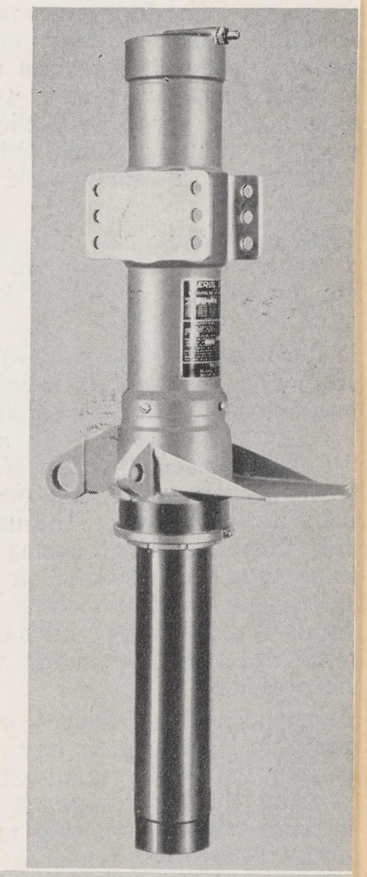
CONSOLIDATED AIRCRAFT CORPORATION management and factory personnel are justly proud of their PBY series of military and commercial amphibians. And we, as suppliers of the Aerol Struts, both main leg and nose installations, are gratified and proud that our products were selected to insure safe, soft landings of this outstanding example of the plane builder's science and skill.



More airplanes land on Aerol Struts than on all other makes combined. Among the well-known Aerol-equipped ships are most or all of the models built by Beech, Bell, Boeing, Brewster, British DeHavilland, Canadian Car, Consolidated, Curtiss, Douglas, Grumman, Lockheed, Martin, NAF, Noorduyn, North American, Republic, Spartan, Stearman, Stinson, St. Louis Aircraft, Vought-Sikorsky.

Aerol Struts can be engineered into any plane. All sizes of tail wheel caster knuckles can be supplied for streamline and smooth contour tires and wheels. The unexcelled services of our Engineering and Testing Departments are at the command of the aircraft manufacturers of America.

Have you seen our Bulletin 85, treating of riveting operations in aircraft work? It gives also much technical data on the subject of our extensive line of riveters, squeezers, drills, grinders and miscellaneous tools and accessories used by the Industry. May we send also our new chart explanatory of the design and operation of Aerol Struts? Please write on your official letterhead.



Main Leg and Nose Struts as Designed and Made by Us for the Consolidated PBY Amphibian.

ASK THE PILOTS WHO LAND ON THEM

THE CLEVELAND PNEUMATIC TOOL COMPANY
Automotive · Aircraft Division
3734 EAST 78TH ST., CLEVELAND, OHIO

X

Gets Big Contract

Maj. Reuben H. Fleet

President of Consolidated Aircraft Corp., whose company won the largest aircraft award of the fortnight—$85,800,000 for bombers. (See story on page 28). Amer. Aviation 10/1/40

Aviation 10/40

TABLE I

Market Action of Aviation Securities One Year After Start of European War

Air Transport	September 1 1939	August 30 1940	% Change
American Airlines	28	56	+100
Eastern Air Lines	17	30	+ 77
Pan American Airways	10	14	+ 40
Pennsylvania Central Airlines	8	16	+100
Transcontinental & Western Air	9	18	+100
United Air Lines	10	16	+ 60
BARRON'S Air Transport Average	14.38	26.12	+ 82
Aircraft			
Boeing	21	15	— 29
Consolidated	19	23	— 21
Curtiss-Wright	5	8	+ 60
Douglas	66	73	+ 11
Lockheed	24	27	+ 13
Martin	32	32	....
North American	16	17	+ 6
Sperry	42	39	— 7
United Aircraft	36	40	+ 11
BARRON'S Aircraft Average	36.10	37.15	+ 3
BARRON'S 50 Stock Average	78	74	— 5.5

AVERAGES

	Barron's Aircraft Average	Barron's Air Transport Average	Barron's 50 Stock Average
August 16	33.48	24.94	72
August 23	34.48	25.38	74
August 30	37.15	26.12	74
September 6	39.25	26.97	79

U.S. Air Services 10/40

Consolidated Acquires Hall-Aluminum

HALL-ALUMINUM AIRCRAFT CORPORATION of Bristol, Pa., has been merged through purchase with Consolidated Aircraft Corporation, and some 32 key men as well as all material and equipment have been transferred to San Diego, Calif.

Archibald M. Hall, president and director of the Hall-Aluminum Aircraft Corporation, is the son of Charles Ward Hall who founded Charles Ward Hall, Inc., the pioneering aluminum alloy aircraft manufacturing company. A. M. Hall was born in New York in 1899, and is a Mechanical Engineering graduate of Cornell University, 1924. He spent a year on the inspection side of the Navy's F4C-1 fighters, and was with the Union Carbide and Carbon Corp. as an engineer. From 1927 through 1936 he was vice-president of Hall Aluminum Aircraft Corp. and from 1936 to date, president.

Until its acquisition by Consolidated the company was engaged in the design and manufacture of aircraft, particularly flying boats.

More PBY's Ordered

Aircraft 11/40

SEA-ROUTES leading from the north to Brisbane, Sydney and Melbourne will be patrolled by the PBY flying boats, which the Commonwealth has ordered from the Consolidated factory in the U.S.A.

Long-range reconnaissance was to have been the home defence task of the *Sunderland* flying boats of the R.A.A.F. squadron operating so efficiently with the R.A.F. Coastal Command, but Australia has altered its plans to meet the wartime requirements of the United Kingdom. Besides allocating the *Sunderlands* to important war duties, Australia has manned them with Australian-trained crews.

To bridge the home-defence gap left by attaching the *Sunderlands* to the R.A.F., the Commonwealth Government has increased its original order for seven PBY flying boats.

These long-range machines will add to the already impressive mileage built up since the outbreak of war by R.A.A.F. reconnaissance patrols. Since September, 1939, general reconnaissance squadrons have flown a total of more than 1,700,000 statute miles and searched a total area of 22,500,000 square miles of coastline and sea.

A seaplane base on Lake Macquarie, N.S.W., will be headquarters for PBY squadrons. Good progress has been made there with the establishment of a cantilever hangar, and the addition of other smaller buildings. Original estimated cost of the base was £450,000, of which about £300,000 will have been spent by the end of this month.

This station has been used for servicing machines based on warships and for conversion courses for pilots transferring to flying boat units after having learned to fly on land machines. The base will come into full use with the arrival of the PBY machines.

The Wall St. Journal 12/9/40

Consolidated Aircraft Announces $7,000,000 Expansion Program

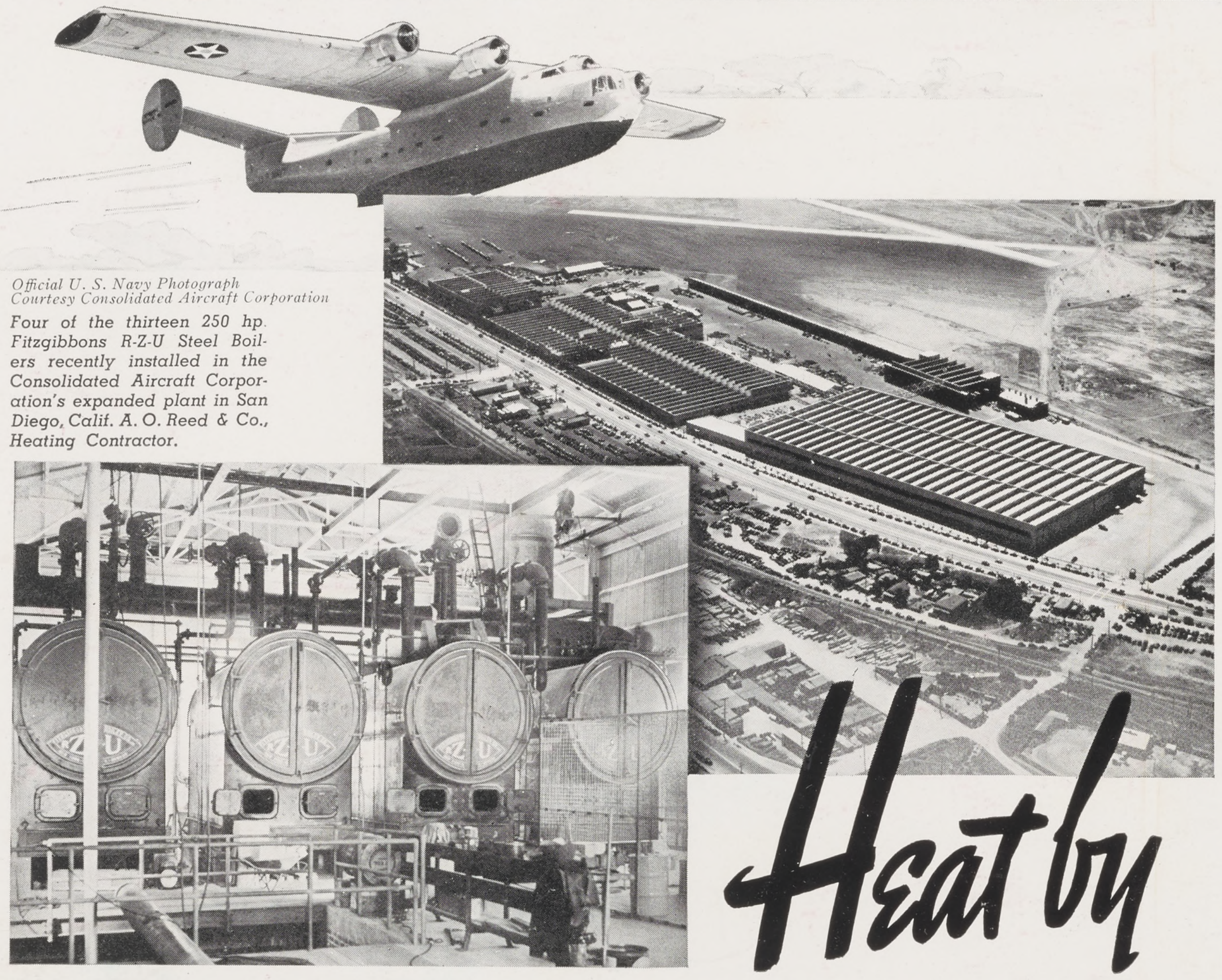
Special to THE WALL STREET JOURNAL

SAN DIEGO—Consolidated Aircraft Corp. is announcing today additional expansion to round out its plant facilities here, involving construction of a plant consisting of eight buildings at a cost of $7,000,000 which will practically double present manufacturing space under roof. The new plant to be located little more than a mile north of the present main unit at Lindbergh Field will fit solidly into the line production program for Consolidated flying boats and large bombers, according to company officials.

The new huge parts plant will add 1,553,000 square feet of manufacturing space under roof just about doubling the present roof area, including recent expansion which is nearing completion. With an accelerated construction program the plant should be completed and in full operation by June 1, 1941, according to present plans which should bring company's employment roster to around 30,000.

This new plant will be a highly specialized production unit devoted to the manufacture of component parts and assemblies for wings and tail surfaces construction with completely independent facilities for all operations needed for their manufacture.

★ A FIRST LINE INDUSTRY EXPANDS FOR DEFENSE ★



Official U. S. Navy Photograph
Courtesy Consolidated Aircraft Corporation

Four of the thirteen 250 hp. Fitzgibbons R-Z-U Steel Boilers recently installed in the Consolidated Aircraft Corporation's expanded plant in San Diego, Calif. A. O. Reed & Co., Heating Contractor.

Heat by

FITZGIBBONS STEEL BOILERS

FOR CONSOLIDATED AIRCRAFT CORPORATION

SAN DIEGO, CALIFORNIA

BOILER No 3
FITZGIBBON'S
STEEL HEATING BOILER
FOR
CONSOLIDATED AIRCRAFT CORPORATION
SAN DIEGO, CALIF.
A.O. REED & CO. SAN DIEGO, CALIF.
N Y C

A Fitzgibbons Steel Boiler takes to the rails. On the way to Consolidated Aircraft Corporation in San Diego, California.

Again it's Fitzgibbons for a vitally important heating job! In keeping with the character of the whole plant and the importance of its product, this prominent airplane manufacturer selects thirteen of the famous Fitzgibbons R-Z-U Boilers for the ultimate in heating dependability and economy.

For important defense projects or industrial and commercial installations, architects and engineers specify Fitzgibbons Steel Boilers for assured heating—*assured economy, assured performance, assured comfort.*

•

The Fitzgibbons R-Z-U Catalog has a wealth of information for architects and heating contractors. Write for your copy today.

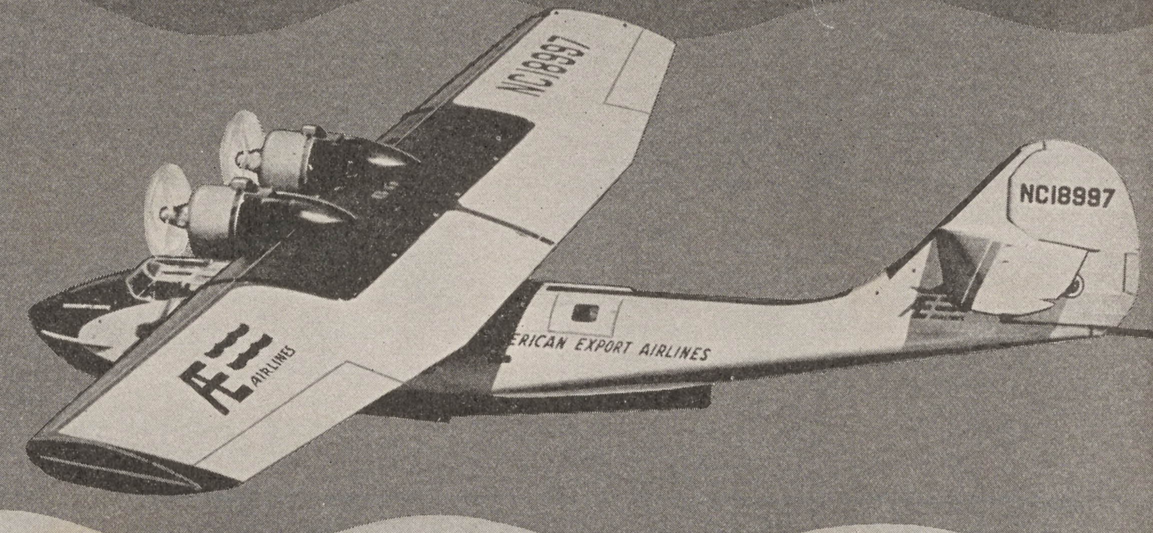
Fitzgibbons Boiler Company, Inc.
General Offices: 101 Park Avenue, New York, N. Y.
Works: Oswego, N. Y. *Offices in Principal Cities*

Pencil Points — December &
Heating, Piping and Air Conditioning, Domestic Engineering, The Architectural Forum, The Architectural Record, and the official bulletin of the National Association of Heating, Piping and Air Conditioning Contractors.

Western Flying

Eclipse Equipment

HELPS BLAZE ANOTHER AIR-TRAIL



AMERICAN EXPORT'S NEW SURVEY AIRLINER

ECLIPSE

Eclipse-Equipped!

American Export Airlines' new Consolidated Survey Flying Boat carries: Eclipse AC and DC Generators, Starters, Auxiliary Power Supply Unit, Booster Coils, Control Boxes, Flowmeters, Float Retracting Motors, Valves and Oil Separators.

With a background of a hundred brilliant non-stop flights to Hawaii, the Consolidated PBY-4 tackles an inspiring new task—30-hour scheduled flights to France. American Export Airlines, specifying Eclipse Equipment for the great 2400 horsepower flying boat, has followed a tradition solidly based upon the satisfying performance of Eclipse accessory units on the planes of every airline in America, and most airlines abroad.

ECLIPSE AVIATION
DIVISION OF BENDIX AVIATION CORPORATION
BENDIX, NEW JERSEY

Amer. Aviation
11/15/40

NEW YORK STOCK EXCHANGE

	Week Ended Oct. 26				Week Ended Nov. 2			
	High	Low	Net Change	Sales	High	Low	Net Change	Sales
American Airlines	62	59¾	— ⅞	4,900	63¼	60	+1¼	10,300
Aviation Corp.	4⅞	4½	.....	14,700	5¼	4½	+ ½	28,600
Bendix Aviation	31¾	30⅝	+ ¼	8,300	33⅞	30⅝	+2⅞	21,200
Boeing Airplane	16⅜	15¾	+ ⅛	11,200	17¾	15¾	+1⅝	37,500
Consolidated Aircraft ..	23	21¾	— ½	1,000	23½	21¼	+1⅝	4,100
Continental Motors	3⅝	3⅜	— ⅛	9,300	3¾	3⅜	+ ¼	12,900
Curtiss-Wright	7¾	7⅜	— ¼	23,800	8⅜	7⅝	+ ⅝	52,500
Curtiss-Wright A	28	27½	— ⅜	2,900	28½	27¾	+ ⅝	6,800
Douglas Aircraft	87¼	82½	+3¼	11,200	91¼	84	+4¼	10,900
Eastern Air Lines	37⅝	35⅛	+2¼	21,600	37⅞	36½	— ⅛	14,700
Ex-Cell-O	30½	29½	+ ¾	1,700	32	30	+1¼	7,400
Grumman Airc. Eng. ..	17½	16¾	—1⅛	1,600	17⅞	16¾	+ ¾	4,000
Lockheed Aircraft	29	27¾	—1	9,100	30¾	27⅞	+2⅛	28,100
Glenn L. Martin	32¼	30⅝	— ⅞	11,600	33¾	30½	+2¼	21,100
Natl. Aviation Corp. ..	11	10⅜	— ¼	1,300	11½	10⅝	+ ¾	2,400
N. American Aviation ..	17¼	16⅝	— ⅜	6,400	18¼	16⅝	+ ⅞	22,100
Pan American Airways .	16	15⅛	+ ⅛	11,700	17½	15⅝	+1	27,000
Sperry Corp.	41⅞	40⅜	+ ⅞	5,400	43¾	41¼	+1⅛	11,600
Square D Co.	35	34	.....	4,700	34⅞	33¼	— ⅝	3,400
Thompson Products	35	33¾	+1	2,000	35	32¾	—2¼	2,000
TWA	18¾	17¾	+ ¾	6,600	19	18⅜	— ⅜	3,400
United Aircraft	40	39	+ ½	7,700	43	39½	+3	20,000
United Air Lines	19⅛	17⅝	+ ½	27,400	19⅜	18⅝	+ ⅜	18,900
Wright Aeronautical ...	98	98	—2	50	105	97	+5	180

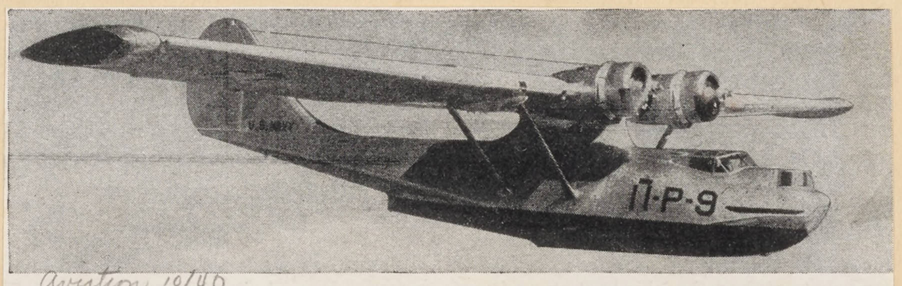
Am. Aviation 12/15/40

Navy Reported to Have Over 2,000 Consair, Martin Boats Ordered

More than 2,000 flying boats estimated to be on order by the U. S. Navy are being built in the plants of Glenn L. Martin Co. in Baltimore and Consolidated Aircraft Corp., San Diego, Cal., it was reported in Washington following recent awards for Consolidated aircraft and Pratt & Whitney engines.

Contract for patrol bombers was awarded to Martin on Nov. 1, and it is believed to call for about 1,100 flying boats of the PBM type at a total cost of $106,125,396. Consolidated will supply about 1,000 PBY's at a cost of $93,842,500, it was reported following the award of two contracts, one on Nov. 9 amounting to $75,313,000, and the other on Nov. 15 totaling $18,529,500.

The Navy on Nov. 12 awarded a $57,856,179 contract for engines to Pratt & Whitney Aircraft Division of United Aircraft Corp., East Hartford, Conn. No details as to type, number or delivery dates were disclosed, although it was believed that the engines included in this and other contracts would be used in the Consair and Martin flying boats.



Aviation 10/40

U.S NAVY
17-P-6

Ryan Sky News - Winter 40-41

San Diego Factories Working On Largest Orders in History

San Diego's three major aircraft plants, Consolidated, Ryan and Solar, now have combined backlogs totaling $330,000,000—practically a third of a billion dollars. This huge sum is equal to the total business on hand at this time only a year ago of every aircraft manufacturer in the entire United States. No more graphic illustration can be given of San Diego's dominant position in aviation today and the assurance which this huge volume of business gives for a continued demand for trained men.

The largest manufacturer in San Diego, now employing more than 15,000 men, is Consolidated Aircraft Corp. which specializes on huge Army and Navy bombers. Both the Consolidated and Ryan plants have recently been doubled in size with further expansion already being planned.

Within the next few months Consolidated is expected to employ at least an additional 10,000 men, while Ryan and Solar will also increase their personnel by sixty per cent.

4

NVD

AVIA

REVISTA ARGENTINA DE AERONAUTICA

Primer Organo Hispano Americano de Aviación

GOSTO 1940

50 Cts.

MODEL AIRPLANE NEWS

11th Year of Publication

SEPTEMBER, 1939

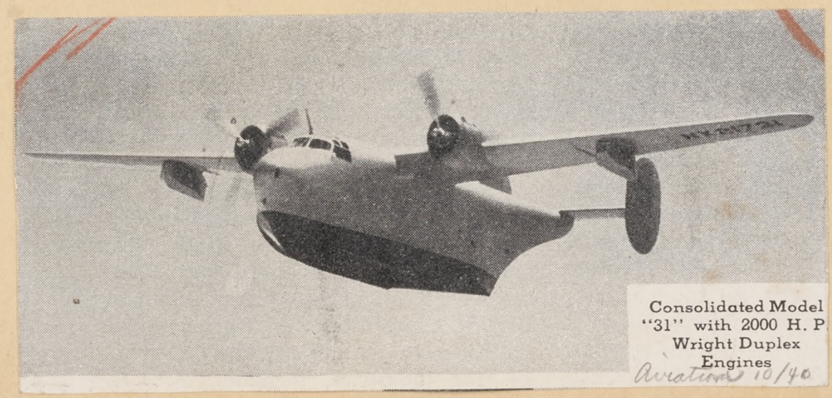
20c

Consolidated "31" Patrol Bomber

X Amer. Aviation 10/1/40

NEW YORK STOCK EXCHANGE

	Week Ended Sept. 14				Week Ended Sept. 21			
	High	Low	Net Change	Sales	High	Low	Net Change	Sales
American Airlines ..	55½	54	—1¾	3,400	56½	55	+1¼	1,900
Aviation Corp.	4⅝	4¼	—⅜	11,900	4⅝	4⅜	+¼	10,300
Bendix Aviation ..	31¼	29⅜	—2⅜	5,300	31¾	30	+2⅛	7,600
Boeing Airplane ...	16½	15	—1½	26,500	16⅞	15⅞	+1	18,000
Consolidated Aircraft	23⅛	21½	—1¾	2,500	23	21¾	+1½	1,200
Continental Motors	3¾	3¼	.....	22,700	3⅞	3⅝	+⅛	23,100
Curtiss-Wright	8	7⅜	—¾	30,200	8	7¾	+⅜	14,800
Curtiss-Wright A ..	27⅜	25	—1⅞	5,500	27	25⅝	+⅞	2,000
Douglas Aircraft ..	76	73⅛	—2¾	4,500	77	74	+2¾	3,200
Eastern Air Lines ..	30	28½	—⅞	4,200	30	29½	.....	2,700
Ex-Cell-O	30¾	29⅞	—1⅝	2,200	31⅞	30½	+⅞	2,500
Grumman Airc. Eng.	18	16½	—2¼	2,400	18	17	+1½	1,600
Lockheed Aircraft ..	28½	26¼	—1¾	19,800	29½	27¾	+2⅛	13,500
Glenn L. Martin ...	31½	29¾	—1⅞	7,200	31¾	30½	+1⅝	6,200
Natl. Aviation Corp.	10½	9⅝	—1	900	10½	10⅜	+¼	500
N. American Aviation	17¼	16⅜	—⅞	9,500	17¼	16¾	+½	6,400
Pan American Airwys	15⅜	13¾	—1	8,100	15¼	14⅛	+½	6,700
Sperry Corp.	40	37⅜	—2⅞	5,200	41	38	+3⅝	4,400
Square D Co.	31	30¼	—1¾	1,900	32½	30⅞	+2½	2,000
Thompson Products	35⅛	32¾	—2¾	1,200	35	33¾	+1¾	1,000
TWA	17½	16⅝	—⅜	4,800	18	17¼	+½	3,700
United Aircraft	40½	38¼	—2	9,600	41¼	39½	+1½	8,600
United Air Lines	16½	15	—1½	8,400	16¼	15⅜	+½	4,500
Wright Aeronautical	100	100	—5	30	104	104	+4	10



Consolidated Model "31" with 2000 H. P. Wright Duplex Engines

Aviation 10/40

Amer. Aviation 10/15/40

NEW YORK STOCK EXCHANGE

	Week Ended Sept. 28				Week Ended Oct. 5			
	High	Low	Net Change	Sales	High	Low	Net Change	Sales
American Airlines	58½	53½	—2½	4,100	60¼	55½	+6⅛	8,500
Aviation Corp.	4⅞	4½	.....	28,700	4¾	4½	.....	8,400
Bendix Aviation	32⅝	30⅛	—⅜	11,100	32⅝	31¼	+⅝	7,100
Boeing Airplane	17¼	15½	—½	25,300	16¾	16	.....	9,900
Consolidated Aircraft	23½	22¾	+¼	3,300	24	22½	—¾	2,500
Continental Motors ..	3⅞	3½	.....	26,600	3⅞	3⅝	—⅛	18,500
Curtiss-Wright	8¼	7½	—⅛	25,600	8⅛	7¾	.....	16,800
Curtiss-Wright A	27⅞	26½	+½	4,800	28	27	+¼	3,400
Douglas Aircraft	78½	75¾	—1¼	5,700	79¾	76¾	+3	4,600
Eastern Air Lines ...	31⅜	29⅞	+⅞	10,700	35	30¾	+4¼	32,400
Ex-Cell-O	32	30¾	—⅛	3,900	31¼	30	—1¼	4,600
Grumman Airc. Eng.	18½	17½	—½	1,000	18	17	+⅜	1,200
Lockheed Aircraft ...	30½	27⅝	—¾	20,000	30⅛	28	+½	15,800
Glenn L. Martin	33	30¾	—⅜	9,600	33¼	32	+⅝	12,900
Natl. Aviation Corp. ..	10¾	10⅜	—⅛	1,700	11¼	10¾	+⅝	3,300
N. American Aviation .	18	16⅞	.....	13,200	17⅞	17¼	+¼	11,500
Pan American Airways	15⅜	14¼	—½	10,900	16⅞	14⅜	+2¼	24,200
Sperry Corp.	41½	40⅝	+½	6,200	43⅛	41½	+¼	7,600
Square D Co.	33⅛	31¼	—⅝	3,900	32	31⅜	—⅛	1,400
Thompson Products .	34½	33½	—⅛	1,000	35⅛	33¾	+⅝	1,700
TWA	18⅛	17¼	—½	2,600	19⅛	18	+1½	8,600
United Aircraft	41¾	39¼	—¾	9,200	41	39¾	+¼	10,100
United Air Lines	17	15⅞	—⅛	12,900	18⅜	16⅛	+2	27,000
Wright Aeronautical .	106	100	—4	60	104	104	+4	10

Consolidated Completed

Aviation 10/40

Dedication ceremonies were held September 2nd, for the new Consolidated Aircraft Corp. factory building which virtually doubles the size of the San Diego factory. Completed at a cost of more than $2,000,000, the new building is more than 300 ft. wide and 700 ft. long. With other construction this brings total Consolidated floor space to about 2,000,000 sq.ft., said to be the largest integrated aircraft factory in America. Employment currently totals about 10,000, with 12,000 scheduled to be on the payroll by December, and 18,000 at the peak activity of the present plant.

Air 7 Consolidated Air

Romeike & Curtice Ltd
Telephone CENTRAL 2781 (2 Lines.)
R&C
35. Shoe Lane. LONDON. E.C.4.

EXTRACT FROM
SHEFFIELD DAILY TELEGRAPH
High Street, Sheffield

21 NOV 1940

Da

U.S. GIVES US FIRST OF BIG NEW BOMBERS

WASHINGTON, Wednesday.

THE U.S. Army High Command has given Britain priority on the delivery of 26 four-engined bombers at present at the factory of the Consolidated Aircraft Company at San Diego, California.

The High Command simultaneously announces that negotiations are under way for giving Britain 20 four-engined Boeing bombers of the Flying Fortress type which have already been completed.

The machines of the Consolidated Aircraft Company are reported to be very similar to the Flying Fortresses, both types being capable of a range of 3,000 miles.

SOME ALREADY DELIVERED

The Consolidated Company's four-engined bombers have just begun coming off the production lines, and the negotiations which have now been completed will enable Britain to take the first deliveries.

Indeed the first deliveries, it is understood, were made to the British last Saturday.

The U.S. Army will accept a delay of approximately three months in its own deliveries of this same type, known as the B-24.

General George C. Marshall, U.S. Army Chief of Staff, told a Press Conference to-day: "In consideration of this priority the British Government has released to the U.S. sufficient engines to equip 41 Boeing flying fortresses, which the U.S. Army had already accepted without their engines or would have received without engines before January 1st."

BOMBSIGHTS

Referring to the Boeing Company's B.17 type of four-engined bomber, he said:

"We are now in the process of negotiating with the British authorities the basis for releasing to them 20 fully-equipped planes except as to the Norden bombsight."

The General simultaneously announced that the Sperry bombsight has been released to Britain.

This is one of the two high accuracy bombsights which have been developed in the United States.

The General disclosed that the U.S. Army has observers in British warplanes flying over Britain and the English Channel, but they have not flown over Germany.

—*P.A. War Special.*

CARRY SEVEN TONS OF BOMBS

These bombers, writes the Military Man, of the "flying fortress" type have a top speed of well over 300 m.p.h.

The latest type carries nearly seven tons of bombs and ammunition, a fact of tremendous importance when it is remembered that our present long-distance, twin-engined bombers carry less than a third of this load and that Berlin is only 600 miles away.

The more modern ones have five machine gun stations, and a pilot in the R.A.F. who actually examined one of these machines told me, "They are so strong that anything Germany can produce or has in service at present would not stand an earthly chance against them. The armament is terrific and the field of fire very wide."

The full crew consists of two pilots, a navigator, a wireless operator, and five machine gunners, three of whom are also bomb-aimers.

The wing span is 105 feet.

Air Consolidated Air

Romeike & Curtice Ltd
Telephone CENTRAL 2781 (2 Lines.)
R&C
35. Shoe Lane. LONDON. E.C.4.

EXTRACT FROM
Western Mail

Date 21 NOV 1940

GIANT U.S. BOMBERS FOR BRITAIN

WASHINGTON, Wednesday.

THE United States Army High Command has given Britain priority on the delivery of 26 four-engined bombers at present at the factory of the Consolidated Aircraft Company at San Diego, California.

The High Command simultaneously announces that negotiations are under way for giving Britain 20 four-engined Boeing bombers of the flying fortress type which have already been completed.

The machines of the Consolidated Aircraft Company are reported to be very similar to the flying fortresses, both types being capable of a range of 3,000 miles.

The Consolidated Company's four-engined bombers have just begun coming off the production lines and the negotiations, which have now been completed, will enable Britain to take the first deliveries. Indeed, the first deliveries, it is understood, were made to the British last Saturday.

Bombsight Released

The United States Army will accept a delay of approximately three months in its own deliveries of this same type, known as the B.24, Gen. George C. Marshall, United States Army Chief of Staff, told a Press conference to-day.

Gen. Marshall simultaneously announced that the Sperry bombsight has been released to Britain.

Gen. Marshall disclosed that the United States Army has observers in British warplanes flying over Britain and the English Channel, but they have not flown over Germany.—Press Association War Special.

---

18 PBY-5 FLYING BOATS.
R.A.A.F.'s Acquisition.

The Air Log 10/40

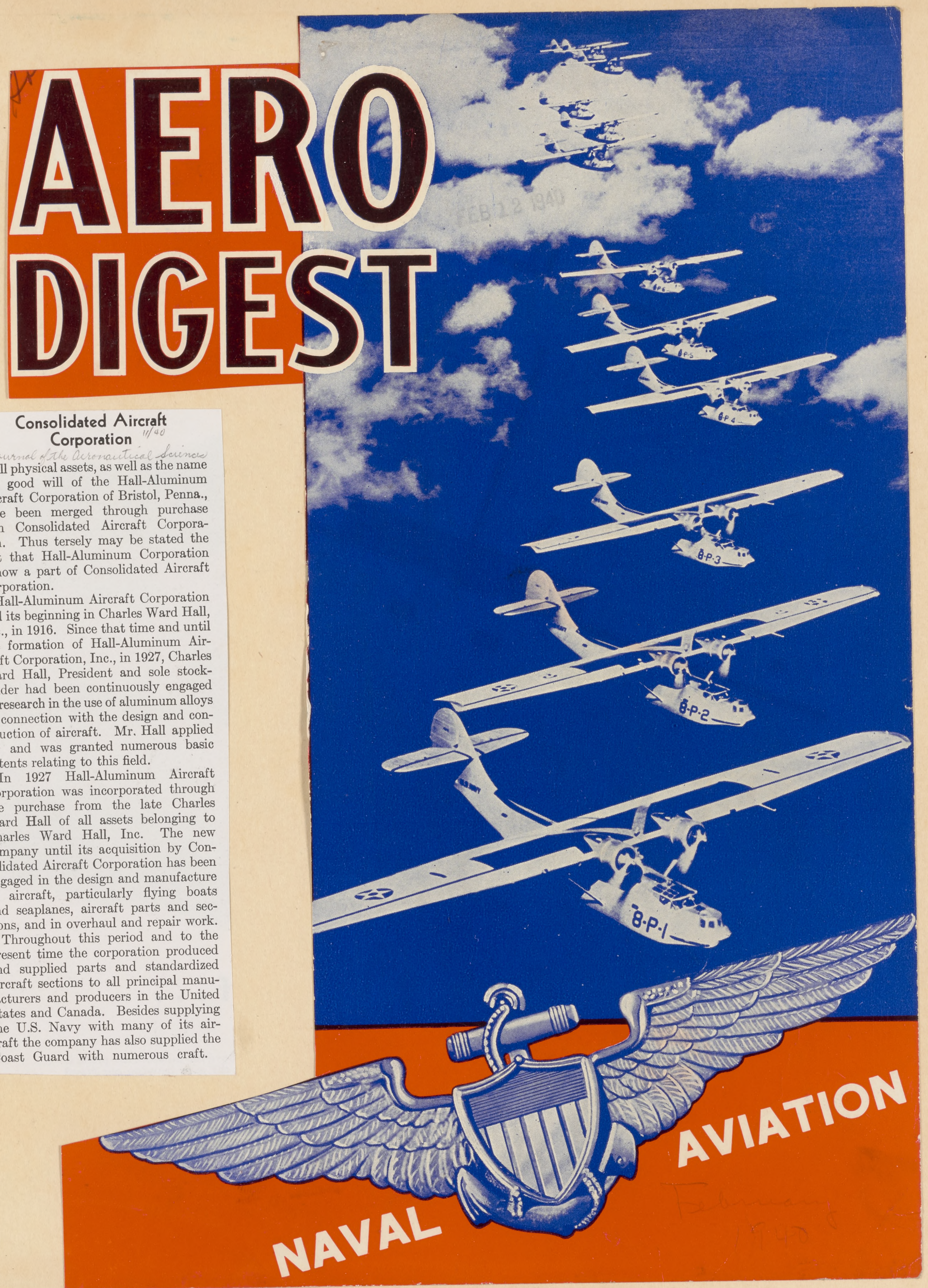
During September eleven more Consolidated PBY-5's — making eighteen all told—were ordered by the Commonwealth Government for the Royal Australian Air Force.

These craft are, generally, similar to the "Guba", formerly the property of American explorer-scientist Richard Archbold, and the only craft of the type which has been in Australian territory.

As reconnaissance craft, and with the capacity to operate from innumerable stretches of water round our extensive coast-line, it is questionable if anything more suitable exists at the present time, for their range—4,000 miles—permits a radius of operation which is not only highly-desirable but absolutely essential, from our point of view.

The presence here of a few similar machines at the time of the sinking of the "Turakina" by the German raider in the Tasman might easily have brought about the pirate's downfall if not even have prevented its entry into waters which could not be policed by other aircraft because of lack of essential flying range.

There are, we know, other flying-boats being developed which will have greater speed coupled with longer range, but they cannot, because of more numerous and/or more powerful engines, coupled with a greater all-up weight, operate so economically, whilst the PBY-5's range would be, other than under exceptional circumstances, ample for our requirements.



Consolidated Aircraft Corporation

11/40

Journal of the Aeronautical Sciences

All physical assets, as well as the name and good will of the Hall-Aluminum Aircraft Corporation of Bristol, Penna., have been merged through purchase with Consolidated Aircraft Corporation. Thus tersely may be stated the fact that Hall-Aluminum Corporation is now a part of Consolidated Aircraft Corporation.

Hall-Aluminum Aircraft Corporation had its beginning in Charles Ward Hall, Inc., in 1916. Since that time and until the formation of Hall-Aluminum Aircraft Corporation, Inc., in 1927, Charles Ward Hall, President and sole stockholder had been continuously engaged in research in the use of aluminum alloys in connection with the design and construction of aircraft. Mr. Hall applied for and was granted numerous basic patents relating to this field.

In 1927 Hall-Aluminum Aircraft Corporation was incorporated through the purchase from the late Charles Ward Hall of all assets belonging to Charles Ward Hall, Inc. The new company until its acquisition by Consolidated Aircraft Corporation has been engaged in the design and manufacture of aircraft, particularly flying boats and seaplanes, aircraft parts and sections, and in overhaul and repair work.

Throughout this period and to the present time the corporation produced and supplied parts and standardized aircraft sections to all principal manufacturers and producers in the United States and Canada. Besides supplying the U.S. Navy with many of its aircraft the company has also supplied the Coast Guard with numerous craft.

October 10/40

SPEAKING at the official dedication of Consolidated Aircraft's huge new buildings (San Diego, Cal.) on Labor Day, Major Reuben H. Fleet, company president (l.) took occasion to condemn peace-time conscription of plane plants as a deterrent to further expansion. Edgar N. Gott acted as master of ceremonies, and Rear Admiral Charles Blakely (r.) dedicated the plant to preparedness.

GOVERNMENT CONTRACTS

Awards of $25,000 and Over
Release Date Shown

amer. Aviation 10/15/41

X

AIRCRAFT

Consolidated Aircraft Corp., San Diego, Cal., 9/21, airplanes and spares, $85,800,000 (War).

Fairchild Aircraft Div., Fairchild Engine & Airplane Corp., Hagerstown, Md., 9/23, airplanes, $6,672,200 (War).

Ryan Aeronautical Co., San Diego, Cal., 9/23, airplanes, $5,355,087 (War).

Curtiss Aeroplane Div., Curtiss-Wright Corp., Buffalo, N. Y., 9/25, airplanes, $48,514,819 (War).

St. Louis Airplane Div., Curtiss-Wright Corp., Robertson, Mo., 9/25, airplanes, $45,646,882 (War).

North American Aviation Inc., Inglewood, Cal., 9/25, airplanes, $72,857,049 (War).

Vought-Sikorsky Aircraft Div., United Aircraft Corp., Stratford, Conn., 9/28, airplanes, $25,035 (Navy).

Vought-Sikorsky Aircraft Div., United Aircraft Corp., Stratford, Conn., 9/28, airplanes and parts, $27,010 (Navy).

Glenn L. Martin Co., Baltimore, Md., 9/28, airplanes, $99,641,880 (War).

Douglas Aircraft Co. Inc., Santa Monica, Cal., 10/1, airplanes, $37,462,121 (War).

Douglas Aircraft Co., Inc., Santa Monica, Cal., 10/3, airplanes, $141,320,610 (War).

North American Aviation, Inc., Inglewood, Cal., 10/5, airplanes, $37,770,981 (War).

Consolidated

Romeike & Curtice Ltd

Telephone
CENTRAL 2781
(2 Lines.)

R&C

35. Shoe Lane.
LONDON.
E.C.4.

EXTRACT FROM
BIRMINGHAM POST
38, New Street, Birmingham.

Date ……40

BIG U.S. BOMBERS FOR BRITAIN

DECISION BY ARMY HIGH COMAND

WASHINGTON, November 20

The United States Army High Command has given Britain priority on the delivery of twenty-six four-engined bombers at present at the factory of the Consolidated Aircraft Company at San Diego, California. The High Command simultaneously announces that negotiations are under way for giving Britain twenty four-engined Boeing bombers of the "Flying Fortress" type which have been completed. The machines of the Consolidated Aircraft Company are reported to be very similar to the "Flying Fortresses." Both types are capable of a range of 3,000 miles.

The Consolidated Company's four-engined bombers have just begun coming off the production lines and the negotiations, which have now been completed, will enable Britain to take the first deliveries. Indeed, the first deliveries, it is understood, were made to the British last Saturday. The U.S. Army will accept a delay of approximately three months in its deliveries of this same type, known as T.B.24.

General George C. Marshall (U.S. Army Chief of Staff) told a Press conference to-day that in consideraton of this priority the British Government has released to the United States sufficient engines to equip forty-one Boeing "flying fortresses" which the U.S. Army had already accepted without engines before January 1.

The General, referring to the Boeing Company's B. 17 type of four-engined bomber, said: "We are now in the process of negotiating with the British authorities on the basis for releasing to them twenty fully-equipped planes, except as to the Norden bombsight." The General simultaneously announced that the Sperry bombsight has been released to Britain. This is one of the two high accuracy bombsights which have been developed in the United States. He said the Norden sight, the more modern of the two bombsights, is now being used by the Army and Navy. The Sperry sight was no longer used in military planes in the United States.

Both types of bombing planes have ranges capable of reaching any part of Germany from Great Britain. The General disclosed that the U.S. Army has observers in British warplanes flying over Britain.—Press Association.

Consolidated Air

Romeike & Curtice Ltd

Telephone
CENTRAL 2781
(2 Lines.)

R&C

35. Shoe Lane.
LONDON.
E.C.4.

EXTRACT FROM
DAILY TELEGRAPH,
Fleet Street, E.C.4

Date 21 NOV 1940

BRITAIN TO GET 46 FLYING FORTRESSES

◆

NEW TYPE BOMBER RELEASED

FROM OUR OWN CORRESPONDENT
WASHINGTON, Wednesday.

Gen. Marshall, United States Chief of Staff, announced to-day that 26 heavy four-engined bombers, similar to the Flying Fortress type, which has a range of 3,000 miles, had been released by the Priorities Board for despatch to Britain.

In addition, 20 new Boeing Flying Fortresses, complete with rear gun and protective armour, will be released for early delivery.

The 20 new bombers, claimed to be the most advanced of their type in the world, have been made by the Consolidated Aircraft Co. The prototype has already been tested and found to fully live up to expectations. The factory has now gone into regular production.

The new bombers will be equipped with the Sperry bombsight, claimed to be capable of "aiming a bomb into a barrel at 10,000ft." The United States is retaining for her own use the more modern Norden bomb-sight.

Three of the new machines are due to be delivered this month and three in December, while 20 more are due to be delivered before March.

BRITISH EQUIPMENT

Gen. Marshall also stated that Britain had agreed to supply to the United States sufficient engines to equip 41 Flying Fortresses. The Boeing factory has been handicapped by a lack of engines.

The latest transaction means deliveries over and above the rough fifty-fifty rule announced recently. This rule, officials explain, was always intended to be a flexible standard.

American aircraft production is being speeded up as rapidly as possible with a view to reaching peak production by the Spring, when a British aerial offensive is anticipated. This speed up will be in the nature of an emergency spurt and may slow down deliveries some months after, but officials believe this is better than attempting a steadily rising flow which bears no relation to military requirements and strategy.

A new British request for overage destroyers is likely to be made by the Marquess of Lothian, British Ambassador to the United States, as soon as he returns to Washington, according to well-informed quarters here to-day. A total of 50 destroyers is mentioned.

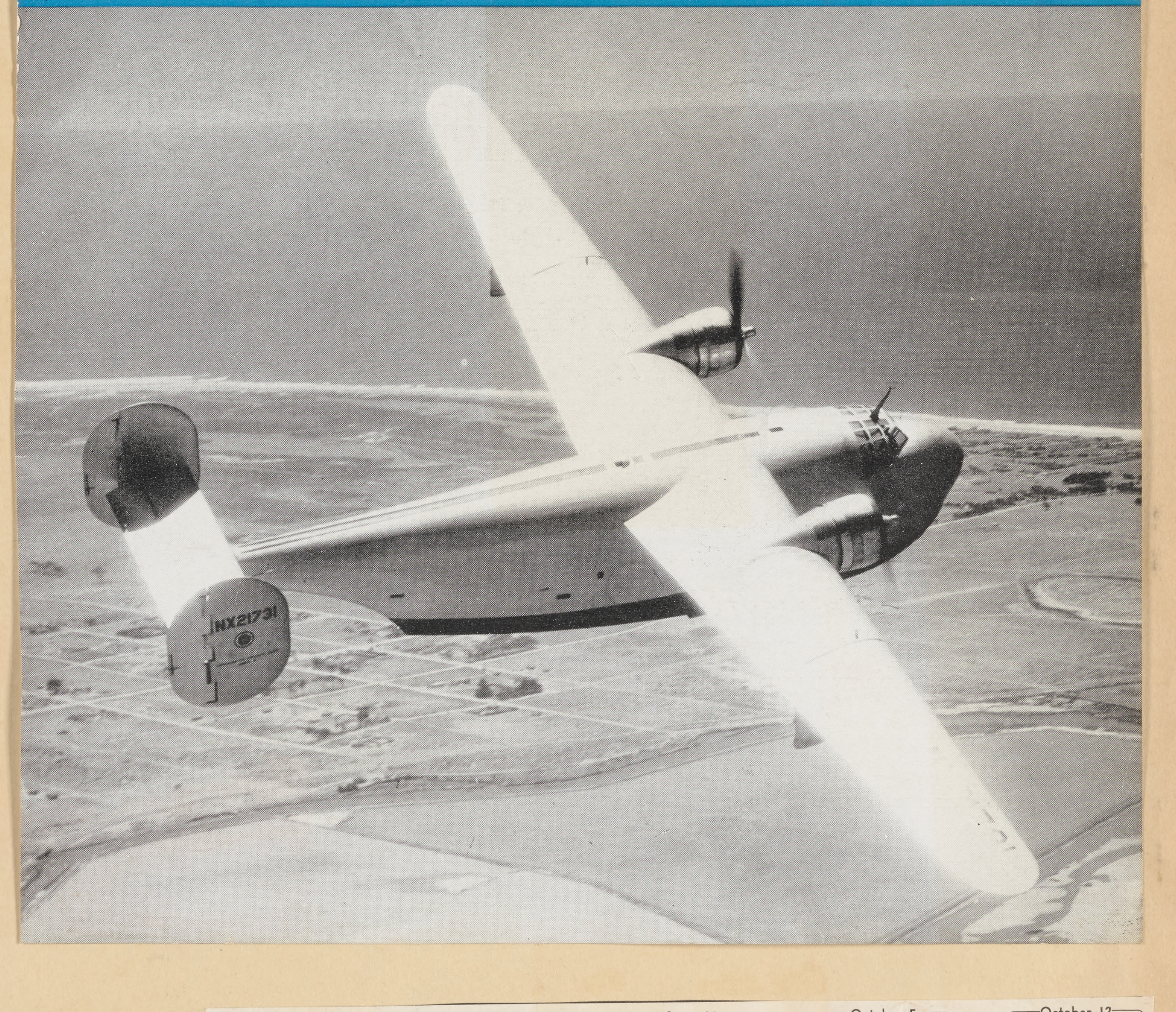
U.S. Loan Move

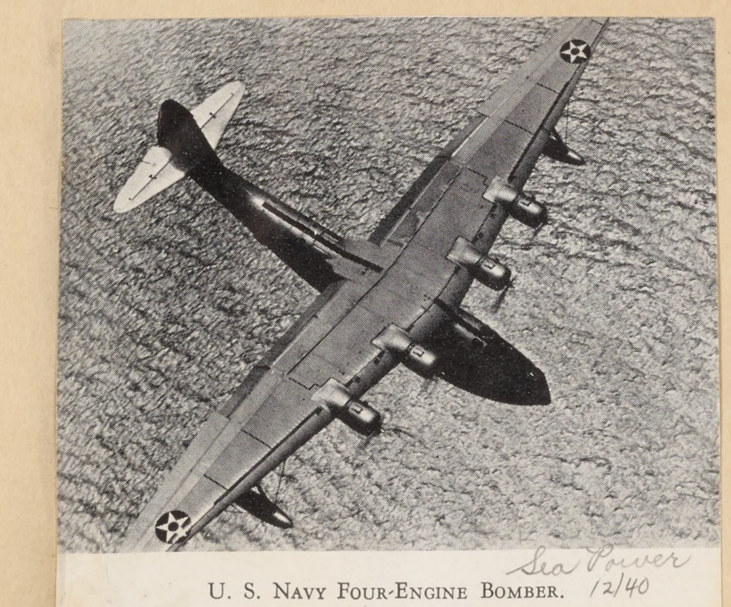
Increasing sentiment in favour of changing the Johnson Act to enable Britain to float loans for the purchase of war supplies in the United States is reflected by the latest poll of the American Institute of Public Opinion in which 54 per cent. of the people interviewed expressed approval of such loans. When the same question was asked last May 65 per cent. opposed the modification of the Johnson Act.

AERONAUTIQUE
Canadienne

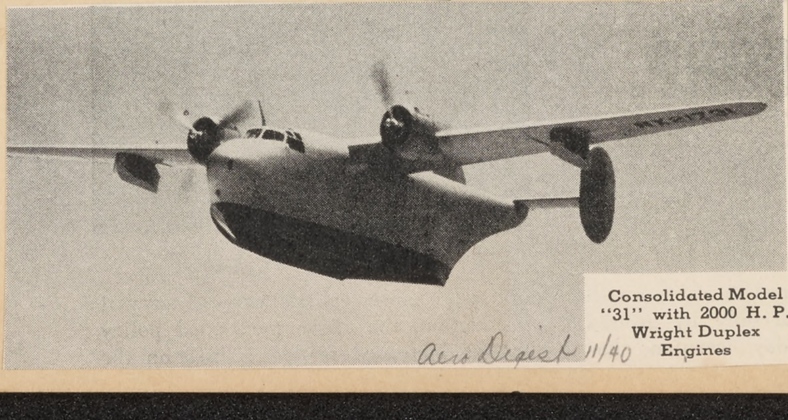
MONTRÉAL

Vol. 2 - No 5 Juillet 1940 25 sous





U. S. NAVY FOUR-ENGINE BOMBER. Sea Power 12/40



Consolidated Model "31" with 2000 H. P. Wright Duplex Engines

Aero Digest 11/40

Aero Digest 11/40

N. Y. STOCK EXCHANGE

	Week Ending: Sept. 21				Sept. 28				October 5				October 12			
	High	Low	Change	Sales	High	Low	Change	Sales	High	Low	Change	Sales	High	Low	Change	Sales
American Airlines	56½	55	+1¼	1,900	58½	53½	—2½	4,100	60¼	55½	+6⅛	8,500	60	57½	— ⅜	4,300
Aviation Corp.	4⅝	4⅜	+ ¼	10,300	4⅞	4½	......	28,700	4¾	4½	......	8,400	4⅝	4½	— ⅛	4,800
Bendix Aviation	31¾	30	+2⅛	7,600	32⅝	30½	— ⅜	11,100	32⅝	31¼	+ ⅝	7,100	32	30¾	— ⅜	6,400
Boeing Airplane	16⅞	15⅞	+1	18,000	17¼	15½	— ½	25,300	16¾	16	......	9,900	16⅛	15¼	— ½	5,500
Consolidated	23	21¾	+1½	1,200	23½	22¾	+ ¼	3,300	24	22½	— ¾	2,500	22	21½	— ½	1,000
Continental Motors	3⅞	3⅝	+ ⅛	23,100	3⅞	3½	......	26,600	3⅞	3⅝	— ⅛	18,500	3⅝	3⅜	— ¼	8,200
Curtiss-Wright	8	7¾	+ ⅜	14,800	8¼	7½	— ⅛	25,600	8⅛	7¾	......	16,800	7⅞	7½	— ⅛	15,400
Curtiss-Wright A	27	25⅝	+ ⅞	2,000	27⅞	26½	+ ½	4,800	28	27	+ ¼	3,400	27½	26½	— ¼	2,200
Douglas Aircraft	77	74	+2⅜	3,200	78½	75¾	—1¼	5,700	79¾	76¾	+3	4,600	77⅞	76½	—1	2,700
Eastern Airlines	30	29½	......	2,700	31⅜	29⅞	+ ⅞	10,700	35	30¾	+4¼	32,400	34¾	32¼	— ¾	12,200
Grumman	18	17	+1½	1,600	18½	17½	— ½	1,000	18	17	+ ⅜	1,200	17⅞	16¾	— ⅝	1,500
Lockheed	29½	27¾	+2⅛	13,500	30½	27⅝	— ¾	20,000	30⅛	28	+ ½	15,800	29¼	27⅛	—1⅛	7,300
Martin, G. L.	31¾	30½	+1⅝	6,200	33	30¾	— ⅜	9,600	33¼	32	+ ⅝	12,900	32	30½	— ½	5,000
National Aviation	10½	10⅜	+ ¼	500	10¾	10⅜	— ⅛	1,700	11¼	10¾	+ ⅝	3,300	11	10¼	— ½	800
North American	17¼	16¾	+ ½	6,400	18	16⅞	.....	13,200	17⅞	17¼	+ ¼	11,500	17½	16⅝	— ¾	5,700
Pan American	15¼	14⅛	+ ½	6,700	15⅜	14¼	— ½	10,900	16⅞	14⅜	+2¼	24,200	16⅞	15⅜	—1	14,200
Sperry Corp.	41	38	+3⅝	4,400	41½	40⅝	+ ½	6,200	43⅛	41½	+ ¼	7,600	41⅞	40½	— ⅝	4,600
Square D Co.	32½	30⅞	+2½	2,000	33⅛	31¼	— ⅝	3,900	32	31⅜	— ⅛	1,400	32⅛	30⅝	+ ⅜	1,500
TWA	18	17¼	+ ½	3,700	18⅛	17¼	— ½	2,600	19⅛	18	+1½	8,600	18¾	17¾	— ⅝	4,600
United Airlines	16¼	15⅜	+ ½	4,500	17	15⅞	— ⅛	12,900	18⅜	16⅛	+2	27,000	18⅜	16⅝	......	16,800
United Aircraft	41¼	39½	+1½	8,600	41¾	39¼	— ¾	9,200	41	39¾	+ ¼	10,100	40⅛	38	—1⅛	7,700
Wright Aero	104	104	+4	10	106	100	—4	60	104	104	+4	10	103	96	—3	450

San Diego Defense Boom Overshadows City's Other Claims to Fame

'GERANIUMS AND ROSES' GIVE WAY TO DEFENSE BOOM

-:- -:- -:- -:- -:- -:- -:- -:- -:-

Customary 'Biggest News' Stories Overshadowed by 1940 Growth

By SPENCER HELD

San Diego, long famed for its pretty girls and sun-bronzed athletes, its shirt-sleeved tourists and the dungaree navy, became a national defense boom town in 1940.

The new World war overshadowed local news in 1939, and we abandoned our annual custom of picking the 10 biggest San Diego news stories of the year. But the then "phony war" had some repercussions here—the fleet returned a month early from the east coast; President Roosevelt ordered 49 World war destroyers reconditioned at the local base; 21 warships departed for "security patrol" duty in Hawaiian waters, and Consolidated Aircraft Corp. got some contracts which seemed fat at the time.

We hadn't seen anything, yet. In 1940, when the mechanized German army overran France and the Luftwaffe besieged Britain, a state of emergency was proclaimed in the United States and San Diego became a focal point of tremendous importance on the national defense map.

Consolidated Aircraft expanded enormously to handle a flood of orders from Britain and the United States. New buildings were dedicated on the Lindbergh field site Sept. 2, and work was pushed on another final assembly building, 360 by 720 feet, and a single 200-by-1500-foot structure for small parts assembly.

On Dec. 18, it was announced that a parts factory would be built along the east side of Pacific highway about 1 1-3 miles north of the main plant. This will cost more than $14,000,000 and will virtually double Consair's present size. It is scheduled to go into full operation by June, 1941.

The number of employes jumped from 3170 to 13,832 on Dec. 24, and the backlog of orders soared from a respectable $42,141,694 to an incredible $323,000,000 at year's end.

Ryan Aeronautical Co. also went into high-geared production. With 700 employes and a backlog of $1,500,000 at the beginning of the year,

(Continued on Page 12A, Col. 1)

'BIGGEST NEWS' GIVES WAY TO PHENOMENAL GROWTH

CONTINUED FROM PAGE ONE

the company now employs 1600 men working on a backlog of $10,600,000 in a plant twice its 1939 size. The Ryan school is training 243 army air corps cadets, as compared with 63 the first of the year.

The army moved into town in force, at least on paper. Ft. Rosecrans, which has "guarded" the harbor with ancient guns manned by skeleton crews for lo, these many years, came to life under the impetus of a building project to house 3000 men and 125 officers. Construction of a cantonment for 7500 men and 300 officers got under way on Torrey Pines mesa. By a rotation system, the camp is expected to train 20,000 draftees between March 15, 1941, and March 15, 1942.

Hits New High

With marine corps recruiting hitting a new high, Camp Elliott mushroomed on Kearny mesa, and the Barnett ave. base pushed its limits so far southward that on one occasion a sergeant, calling the roll, got a "Here sir," from a watchman at the Consolidated plant. There were 5100 officers and men at the base on Jan. 1; the total is now approximately 10,300. Camp Elliott went from 50 to 3100.

The naval training station expanded to train double the number of bluejackets as the fleet was built up to fighting strength. The figures tell the story—2661 men on Jan. 1; 5679 today.

Activity Intensified

Activity was intensified at both the North Island naval air station, largest in the nation, and the destroyer base, but little news came through their closely-guarded portals . . . The navy this year clamped down a censorship on news and pictures of ships and planes. This was often intelligent, but sometimes it was considered stupid by newsmen.

The 1940 census, taken early in the year, showed a population of 202,038, including about 7000 men of the fleet who maintained residences ashore. Approximately 21,000 others were not counted. The warships left for six weeks of maneuvers in the Hawaiian area April 1 but remained there the rest of the year, although contingents returned for two-weeks "visiting" periods during the fall months. An estimated 30,000 new residents flocked into town after the census, drawn by the lure of national defense jobs.

Started by Navy

All this added up to a housing shortage. In January, the city council had heeded the objections of realtors and apartment house owners and "tabled" a proposed USHA slum clearance, low-rent housing project. In July, the navy took matters into its own hands, and, (with the approval of the council, went ahead with plans for low-rent housing. A $3,800,000 project was started for construction of 1200 housing units for navy families, 600 adjoining the destroyer base and 600 near the naval training station.

On Oct. 31, Charles F. Palmer, defense housing coordinator, announced in Washington that the largest of 63 housing projects in vital defense areas would be located in San Diego. The $15,000,000 program provides for construction of 3000 residential units for civilian workers on Kearny mesa. The first contract, for a $9,070,000 slice of the job, was awarded to a Los Angeles firm Dec. 12.

Distinguished Guests

Distinguished visitors included Col. Frank Knox, secretary of the navy, and Wendell Willkie. Col. Knox came here by plane from Honolulu to inspect naval establishments Sept. 16 and 17. Willkie made a campaign speech to 10,000 persons at Lane field Sept. 18.

Two local amateur teams reached the finals in national tournaments. The San Diego State college basketball team, coached by Morris Gross, won four straight last-minute victories in the National Intercollegiates at Kansas City in March, only to lose out in the finals to Tarkio, Mo., college, 52 to 42. (The Aztecs lost the title by one point in 1939.) Post 6, American Legion, junior baseball team, which won the national championship in 1938, again was coached into the "little world series" by Mike Morrow. They lost the deciding game to Albemarle, N. C., 9 to 8, after their two Negro stars were barred from play.

Everybody Here

Business boomed. On Dec. 13, Newell Jones wrote in The Tribune-Sun that "Merchants' Christmas cash registers were dinging like the dongs of a legion of lunatic Swiss bell ringers." (They had done a fair bit of dinging in the late summer and fall months, too, when the town went convention crazy. Everybody met here from embalmers to magicians, from the California American Legion to the state C.I.O.)

Honest reporting makes it impossible to dismiss, with a well-bred shrug of distaste, any mention of the seamier side of life in a national defense center. Here are a few notes which shed light on some of our social problems:

Year's Tragedies

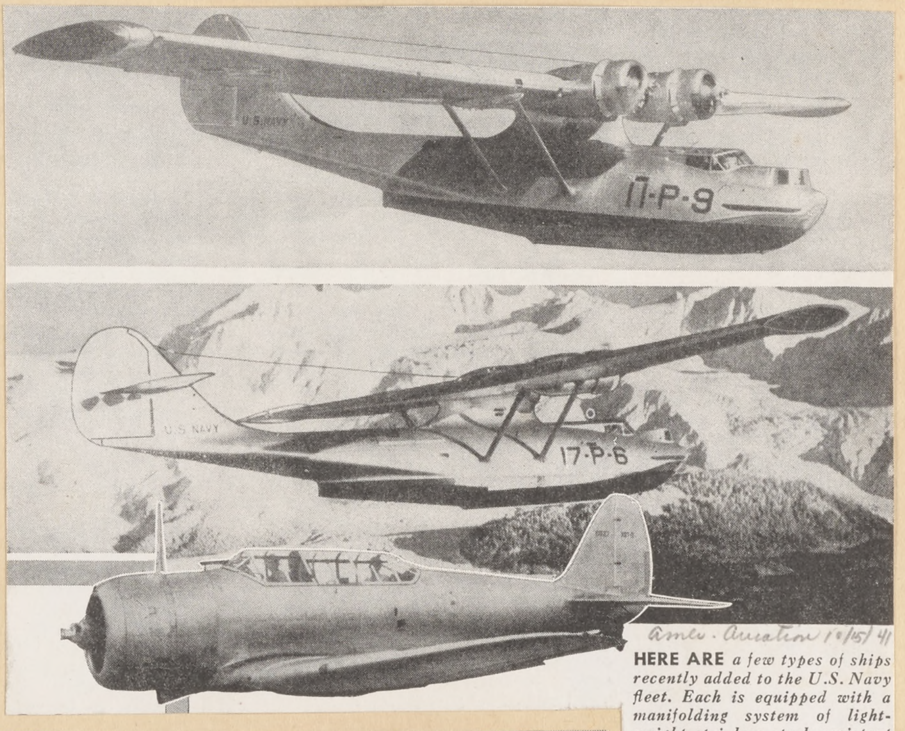
Last spring, after the fleet left, the mutilated body of a sailor was found under Cabrillo bridge. . . . Lt. Comdr. J. F. Luten, medical corps, naval hospital, told a health officers' convention here in September that prostitutes should be placed in segregated districts and kept under strict medical supervision. He said that venereal diseases occupied second place among all causes of illness in the navy in 1938. "A total of 10,782 cases were admitted," he said. . . . On Dec. 11, a sailor's wife with a liking for liquor got a year in the county jail for the fatal neglect of her baby son. . . . On Dec. 16, a navy wife, grieving over the absence of her husband, hanged herself in the garage of her mother's home. . . . On Dec. 18, the body of a new-born baby boy, carefully wrapped in a sheet and quilt, was found in the city dump. . . . On Dec. 19, a representative of the Y.W.C.A. said at a public meeting that the "Y" now is forced to shelter female hoboes, hitch-hikers, inebriates and other questionable characters.

In Van of Ghastly Parade

San Diego has long marched in the van of the ghastly parade of corpses strewn from coast to coast by that marvelous mechanical creation, the automobile, which, in the hands of punks, drunks, dimwits and just plain careless damphools, is more deadly than all the bombs dropped on Britain. City traffic deaths rose from 45 in 1939 to 61 as of today.

The national draft lottery Oct. 29 was a big story to the 30,000 San Diegans between 21 and 35 who had registered for the nation's first peace time conscription. On Nov. 22, the first contingent of 31 draftees were given a royal send-off at Union station by the marine corps band and a large crowd of citizens.

In the field of labor, both the A.F.L. and C.I.O. were active in organizing during the year. In August, a dispute between the San Diego Building and Construction Trades council, A.F.L., and local lumbermen, shut down 13 lumber and building material yards for several days. The "strike" or "lock-out" involved several hundred members of the millmen's and teamsters' unions.



Amer. Aviation 10/15/41

HERE ARE *a few types of ships recently added to the U.S. Navy fleet. Each is equipped with a manifolding system of light-weight stainless steel, resistant to corrosion and oxidation. U. S. Navy Official Photographs.*

Industrial LA County 11-12/40

Airplane and Parts Backlogs in Pacific Coast Factories

(As of November 1, 1940)

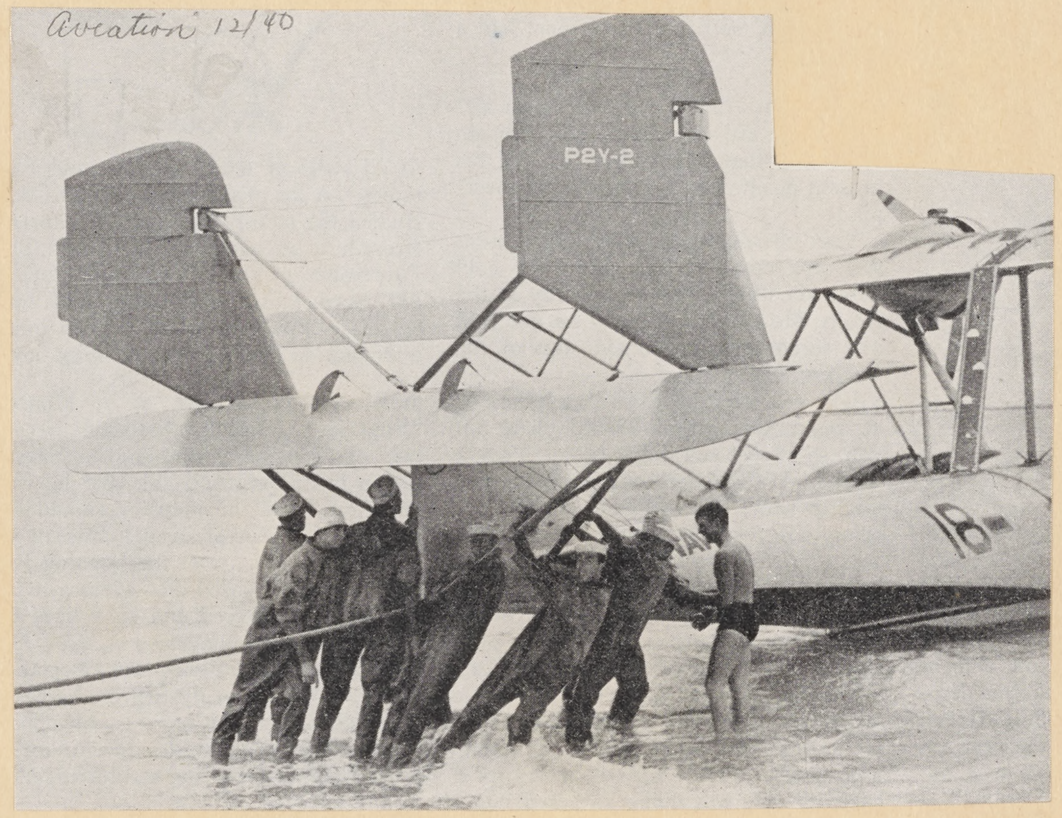
	Los Angeles County	
Douglas	$350,000,000	
Lockheed	280,000,000	
North American	220,000,000	
Northrop	24,000,000	
Vultee	77,011,935	
Adel Precision	750,000	
Aerco Corporation	169,000	
Aircraft Accessories	1,600,000	
Hardman Aircraft	700,000	
Kinner Motors	700,000	
Menasco	4,000,000	
Timm Aircraft	1,047,639	
Los Angeles County	$959,978,574	
	San Diego	
Consolidated Aircraft Corporation	328,842,500	
Ryan Aeronautical	11,400,000	
Solar Aircraft Co.	3,650,000	
	$343,892,500	
Southern California		$1,303,871,074
	Seattle	
Boeing Aircraft Co.	$184,000,000	$ 184,000,000
TOTAL PACIFIC COAST		$1,487,871,074

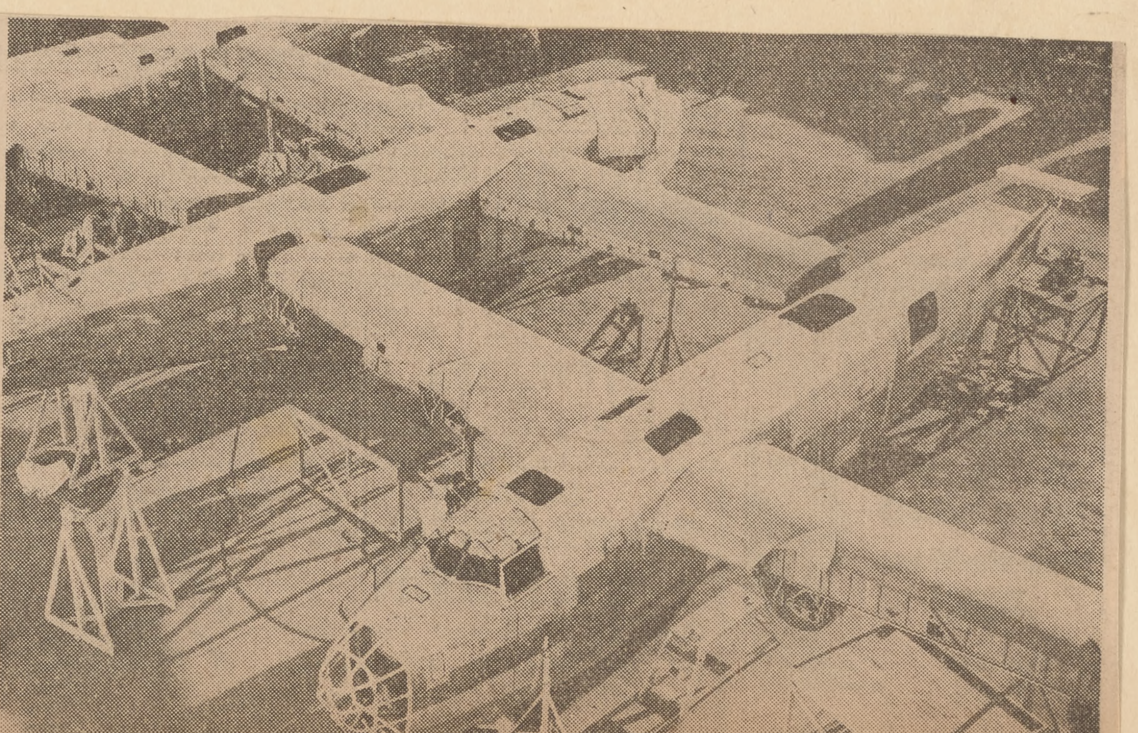
Los Angeles County	Nov. 1, 1940	Oct. 1, 1939	Oct. 1, 1938
Backlog of Orders	$959,978,574	$108,349,597	$65,486,008
Persons Employed	50,074	20,256	11,854
Average Annual Payroll	$ 91,933,708	$ 25,806,263	$17,606,589

Floor Area of Aircraft Plants in Los Angeles County

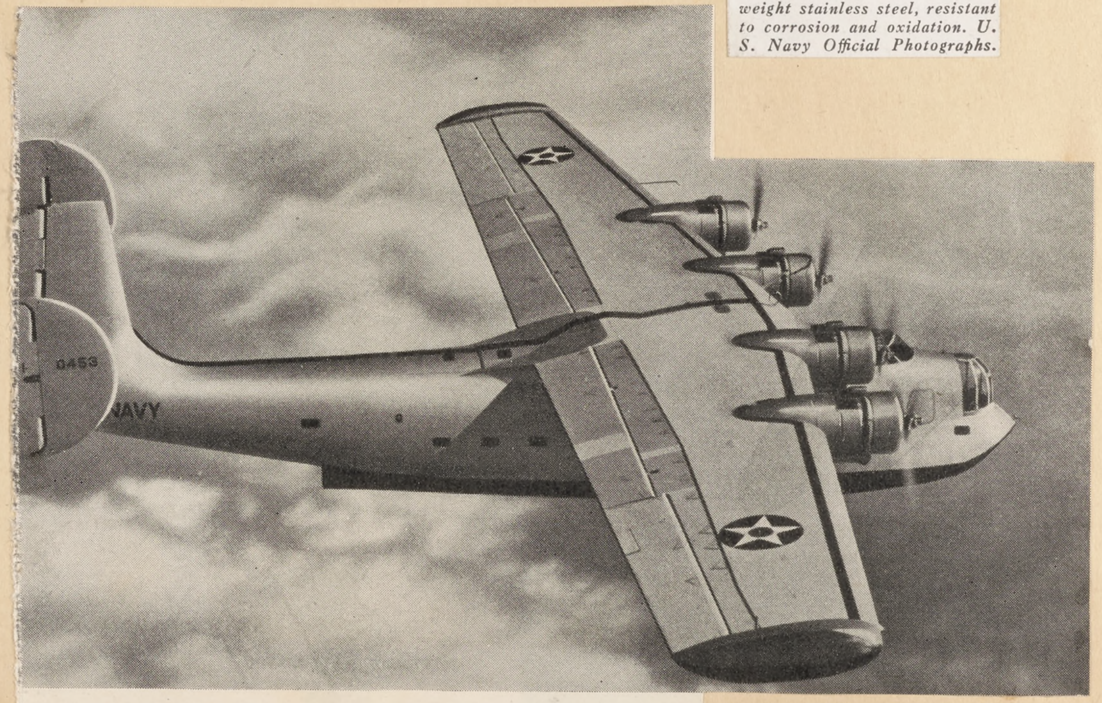
Nov. 1, 1940—Built and Building	8,500,000 square feet
Aug. 1, 1940	3,836,970 square feet
Jan. 1, 1940	2,714,000 square feet
Jan. 1, 1939	2,000,000 square feet

Aviation 12/40





The famous B-24 bombers, four-motored, built by Consolidated Aircraft Corp. for Britain.—(Photo by Stanley Griffin, Tribune-Sun staff photographer.)



NSOLIDATED AIRCRAFT CORPORATION'S XPB2Y-1, one of the newest and
htiest arms of the Navy's coast defense, contains many parts fab-
ed from light-weight Synthane. *Official photograph U. S. Navy.*

Aero Digest 11/40

Consolidated Tests Long Range Bomber

Initial tests were undertaken over San Diego recently of Consolidated Aircraft's B-24, a new, long-range bomber, the first of a fleet of seven destined for Britain. It is powered with four 1,200 horsepower engines, and has a wing span of 110 feet.

The B-24 has a capacity of four tons of bombs, and a crew of nine, and its cruising radius is 3,000 miles. Top speed is believed to be 300 miles an hour.

It was reported that these bombers would be used to ferry Canadian pilots to the British Isles.

12/40 Canadian Aviation

DAILY EXPRESS Thursday, November 21, 1940

ENLIVEN
SOUPS WITH
H·P SAUCE

BLACK-OUT
ZERO
HOUR
TO-NIGHT
UNTIL 8.1 A.M.
MOON RISES 11.27 P.M. MOON SETS 1.33 P.M.

LONDON — ENGLAND

Daily Express
No. 12,636 Thursday, November 21, 1940 One Penny

End CATARRH
You can clear away stuffy congestion, get rid of dangerous germs and stop that constant flow of poison into your system. How? Simply by applying 'Mentholatum' into your nostrils. The instant you do so, this breathable balm volatilises and you commence inhaling its antiseptics. Quickly, pleasantly, the 'Mentholatum' vapours stop the gathering of germs, clear the nasal cavities and open up your breathing passages. 'Mentholatum' Brand Balm stops Head Colds, banishes Catarrh, ends Chest Colds. All Chemists. 6d. and 1/3 plus Purchase Tax.

As R.A.F. bombers make 1,400-mile trip to fire the Skoda works—

46 FLYING FORTRESSES ARE RELEASED TO US

Latest types will be fitted
with secret b

**SIMULTANEOUS WITH RELEASE OF
AIR RAID FAR INTO GERMANY
THOUGHT WE COULD NOT REACH C
NIGHT :—**

Daily Express Staff Reporter C. V. R. THOMPSO

NEW YORK, Wednesday

AMERICA'S Army High Command ton announced that they have given up Britain a fleet of twenty-six four-engi bombers of the Flying Fortress type, wh were awaiting delivery to the U.S. Ar

These machines, claimed to be the most adva bomber type in the world, are a development o Boeing 22-ton Flying Fortress, and were built b Consolidated Aircraft Corporation at San D California.

General George C. M Chief of Staff, said that d would start immediate would be completed by th this month.

"In fact," he said, "B supposed to have taken of some of them last Sat

The High Command a ment reveals, too, that neg are well under way to suppl with another twenty Flyi tresses now in process of at the Boeing Company's plant.

ALL BY MARC

Delivery of this fleet, Marshall indicated, would pleted by March 1.

These twenty are being with the famed Sperr sight, said to be capable ing a bomb "into a ba 10,000 feet."

The Consolidated fou bombers have just begu off the production lines, negotiations just complete able Britain to take first

General Marshall said United States Army is prepared to accept a three months' lag in its own deliveries of this type.

"In return," he said, "the British Government has released to the United States sufficient engines to equip forty-one Boeing Flying Fortresses, which the United States Army has already accepted without engines or will have received without engines before January 1."

Amer Aviation 10/1/40

CONSOLIDATED

Already claiming the largest U. S. integrated plane plant, Consolidated Aircraft Corp. disclosed plans to built an $800,000 structure which will add 300,000 sq. ft. of floor space to approximately 2,000,000 sq. ft. now in use.

The new addition, which will be located on 22 acres of tidelands on which the firm has held an option, will extend into Lindbergh Field, San Diego, Cal.'s, municipal airport, due west of the present plant. It will be 200 ft. wide and 1,500 ft. long.

The company said its backlog is now in excess of $120,000,000 and that its list of employes has reached an all-time high of 9,485. Hundreds of additional workers will be employed when the new additions are opened.

BOMBERS

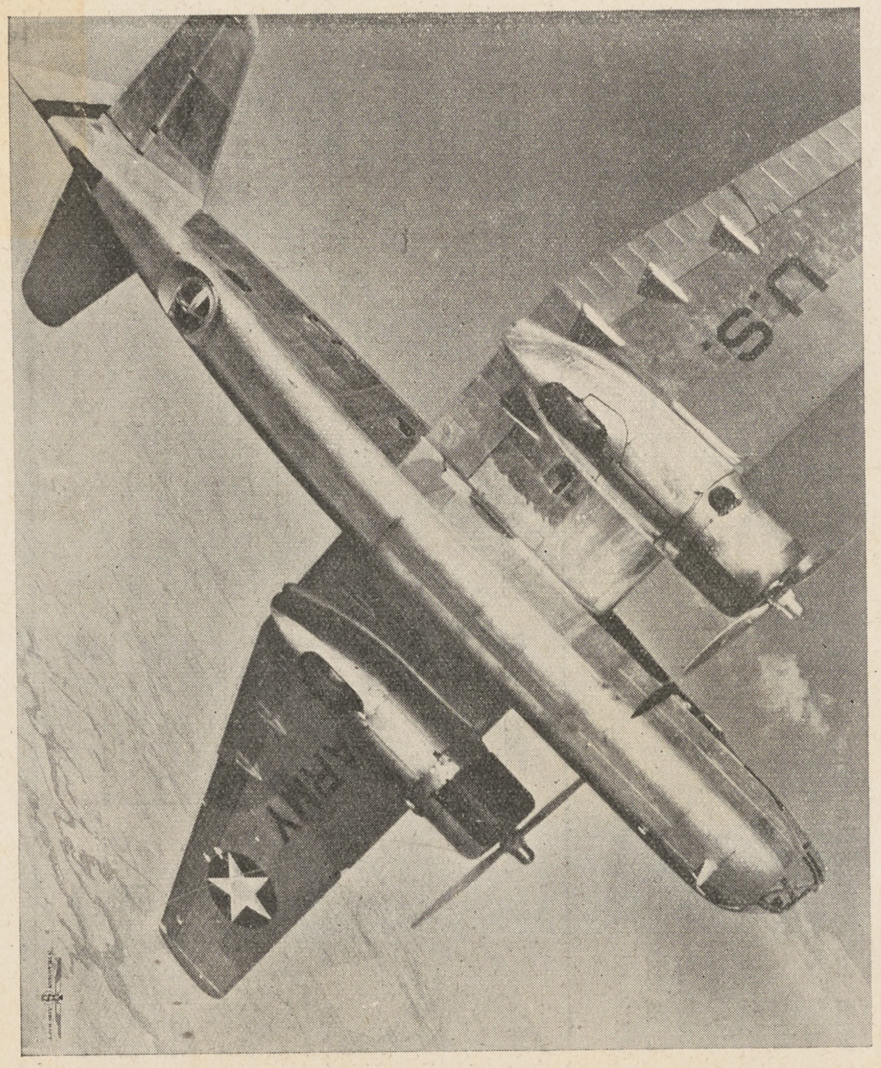
Including Multi-Purpose Aircraft Suitable for Reconnaissance and Ground Attack : Dive Bombing

ALTHOUGH the bombing aeroplane is frequently likened to a long-range piece of artillery, it must be borne in mind that a big shell, once it leaves the muzzle of a truly laid gun, is impersonal, invulnerable, irrevocable, and inevitable, whereas the bomber is guided by human brains and hands, can be destroyed, recalled, or redirected, and is dependent for success on weather, the preparedness and efficiency of enemy defences, and eventually—no matter how well navigated—on the skill of the bomb-aimer.

An efficient bomber must be able to attain, attack, and return from its target with a minimum of delay and consequently of risk. Speed, defensive fire power, and manœuvrability are desiderata, though their attainment must not be permitted to affect unduly the efficiency of a machine as a bomb carrier. The further development of specialised fighters for escort work may enable the bomber's defensive armament to be reduced or, in certain cases, omitted altogether, with a consequent gain in speed, though it must be remembered that it is not always possible, particularly at night, for aircraft to operate in company. The ideal of the tremendously fast unarmed bomber which will depend for protection entirely upon its speed remains a designer's dream, though the next few years may see it an accomplished fact.

A Questionable Doctrine

There are many knowledgeable strategists who contend that all bombers should be comparatively small, manoeuvrable machines armed with fixed or axially restricted guns. The protagonists of this doctrine cite examples from the Spanish civil war. In particular, the French General Armengaud writes: "The fire of bombers outside the axial plane is almost impossible with the present speeds of aircraft, and it cannot, in any case, be accurate. A speed equal to that of the pursuit machine, or very near it, plenty of manoeuvrability, small size, and especially axial armament—these are the conditions for the protection of bombers against aerial and terrestial weapons." The General refers to the "insufficient protection" of the big Savoia, Caproni, and Junkers bombers, and cites as proof of his argument the success of the smaller and faster Russian Katiouska and the German Dornier Do 17. It may, or may not, be significant that he refrains from mentioning the Fiat B.R.20, which, although larger than the Do 17, is as fast as the version of that



The Stearman X-100, or XA-21, a good example of what the Americans term an "attack bomber." This machine corresponds to the European formula for fast twin-engined bombers.

Western Flying 12/40

SAN DIEGO

This month has been a very busy one for the **Consair Flyer's Club. Al Becker** has been preparing for his private ticket. **W. E. Jones** is ready to solo. **Stan Mahoney** received a bad cut on his thumb while installing a carburetor on a Pratt & Whitney. Our two new members, **Bennett** and **McFadden** should be ready for that old solo flight soon.

This month's Orchid goes to **Barney Farley** for his coolheadness, quick thinking and fine judgment in bringing the plane down in a forced landing safely on the beach along the Coronado Strand. **—Al Drayman.**

Recent announcement has been made of the engagement of **Raymond Dinson** to **Miss Ivalena Jones,** secretary at Consair. Ray, also an employe of Consair, is a charter member of the **Southern California Flyers.**

» OUTDOOR ASSEMBLY of airplanes is being practiced most extensively at Consolidated in San Diego where temporary canvas-covered sheds, divided into stalls are used for finishing operations on hulls. In the yard are dozens of partially completed ships awaiting parts from subcontractors in other parts of the country. Meanwhile construction is progressing on a building larger than the present huge plant and a parts factory is planned to be built a short distance from the airport. Employment records showed 13,000 on the day of our visit. Aviation 12/40

Aviation 10/40 *Consolidated Aircraft* has purchased the Hall Aluminum Aircraft Corporation.

Consolidated Aircraft Corp., San Diego, Calif., $75,313 for airplanes.

Glenn L. Martin Co., Baltimore, Md., $106,125 for airplanes.

United Aircraft Corp., East Hartford, Conn., $59,490,703 for airplane engines.

AVIATION, December, 1940

Aero Digest - 12/40

N. Y. STOCK EXCHANGE	Week Ending: October 26				November 2				November 9				November 16			
	High	Low	Change	Sales	High	Low	Change	Sales	High	Low	Change	Sales	High	Low	Change	Sales
American Airlines	62	59¾	— ⅞	4,900	63¼	60	+1¼	10,300	65	60¼	+1¾	6,700	64¼	60⅛	—3½	4,900
Aviation Corp.	4⅞	4½	......	14,700	5¼	4½	+ ½	28,600	5⅞	4⅞	+ ¾	48,000	6	5¼	— ½	32,900
Bendix Aviation	31¾	30⅝	+ ¼	8,300	33⅞	30⅝	+2⅞	21,200	35	32¾	+1½	26,800	34⅞	33	—1⅝	9,900
Boeing Airplane	16⅜	15¾	+ ⅛	11,200	17¾	15¾	+1⅝	37,500	18½	16¼	+ ⅞	36,800	21	18⅜	+ ¾	65,000
Consolidated	23	21¾	— ½	1,000	23½	21¼	+1⅝	4,100	25¾	21⅞	+2⅜	6,600	27½	24¾	—1	10,000
Continental Motors	3⅝	3⅜	— ⅛	9,300	3¾	3⅜	+ ¼	12,900	4	3½	+ ⅛	41,900	4⅜	3⅞	......	80,000
Curtiss-Wright	7¾	7⅜	— ¼	23,800	8⅜	7⅝	+ ⅝	52,500	10½	8⅛	+2⅛	173,600	10¾	9¾	— ⅜	130,900
Curtiss-Wright A	28	27½	— ⅜	2,900	28½	27¾	+ ⅝	6,800	30	28¼	+1½	12,100	30	29	— ½	5,600
Douglas Aircraft	87¼	82½	+3¼	11,200	91¼	84	+4¼	10,900	90	82⅜	+2	26,800	88	80½	—5	10,300
Eastern Airlines	37⅝	35⅛	+2¼	21,600	37⅞	36½	— ⅛	14,700	39¼	34¾	+1⅞	20,000	39	36	—2⅞	14,300
Grumman	17½	16¾	—1⅛	1,600	17⅞	16¾	+ ¾	4,000	19¼	16¾	+1¾	6,200	20⅛	17¾	—1	7,500
Lockheed	29	27¾	—1	9,100	30¾	27⅞	+2⅛	28,100	32¾	28⅛	+2⅝	41,800	33⅝	30½	—1⅞	44,300
Martin, G. L.	32¼	30⅝	— ⅞	11,600	33¾	30½	+2¼	21,100	35⅛	31¾	+2	32,800	35¾	33½	—1⅜	24,300
National Aviation	11	10⅜	— ¼	1,300	11½	10⅝	+ ¾	2,400	12⅜	10⅝	+1⅛	6,600	13⅛	11½	— ⅞	7,400
North American	17¼	16⅝	— ⅜	6,400	18¼	16⅝	+ ⅞	22,100	18¾	16¾	+1⅛	31,600	19⅝	17⅞	— ¾	33,700
Pan American	16	15⅛	+ ⅛	11,700	17½	15⅝	+1	27,000	17⅛	15⅜	+ ⅛	16,700	18⅛	16½	+ ⅛	20,100
Sperry Corp.	41⅞	40⅜	+ ⅞	5,400	43¾	41¼	+1⅛	11,600	43¾	40⅜	+ ½	10,500	43⅞	42¼	—1¼	7,100
Square D Corp.	35	34	......	4,700	34⅞	33¼	— ⅝	3,400	34⅞	33¼	......	3,900	34½	32¼	—1	2,800
TWA	18¾	17¾	+ ¾	6,600	19	18⅜	— ⅜	3,400	19¼	17¾	+ ¼	3,200	20¼	18⅝	+ ⅞	5,800
United Airlines	19⅛	17⅝	+ ½	27,400	19⅜	18⅝	+ ⅜	18,900	19¼	17⅛	— ⅜	23,900	19⅝	18	— ⅝	18,200
United Aircraft	40	39	+ ½	7,700	43	39½	+3	20,000	44⅞	40½	+2⅛	26,800	47	45	+ ⅜	31,400
Wright Aero	98	98	—2	50	105	97	+5	180	110	102	+7	170	111	107	—3	120

San Diego Defense Boom Overshadows City's Other Claims to Fame

'BIGGEST NEWS' GIVES WAY TO PHENOMENAL GROWTH

CONTINUED FROM PAGE ONE

the company now employs 1600 men working on a backlog of $10,600,000 in a plant twice its 1939 size. The Ryan school is training 243 army air corps cadets, as compared with 63 the first of the year.

The army moved into town in force, at least on paper. Ft. Rosecrans, which has "guarded" the harbor with ancient guns manned by skeleton crews for lo, these many years, came to life under the impetus of a building project to house 3000 men and 125 officers. Construction of a cantonment for 7500 men and 300 officers got under way on Torrey Pines mesa. By a rotation system, the camp is expected to train 20,000 draftees between March 15, 1941, and March 15, 1942.

Hits New High

With marine corps recruiting hitting a new high, Camp Elliott mushroomed on Kearny mesa, and the Barnett ave. base pushed its limits so far southward that on one occasion a sergeant, calling the roll, got a "Here sir," from a watchman at the Consolidated plant. There were 5100 officers and men at the base on Jan. 1; the total is now approximately 10,300. Camp Elliott went from 50 to 3100.

The naval training station expanded to train double the number of bluejackets as the fleet was built up to fighting strength. The figures tell the story—2661 men on Jan. 1; 5679 today.

Activity Intensified

Activity was intensified at both the North Island naval air station, largest in the nation, and the destroyer base, but little news came through their closely-guarded portals . . . The navy this year clamped down a censorship on news and pictures of ships and planes. This was often intelligent, but sometimes it was considered stupid by newsmen.

The 1940 census, taken early in the year, showed a population of 202,038, including about 7000 men of the fleet who maintained residences ashore. Approximately 21,000 others were not counted. The warships left for six weeks of maneuvers in the Hawaiian area April 1 but remained there the rest of the year, although contingents returned for two-weeks "visiting" periods during the fall months. An estimated 30,000 new residents flocked into town after the census, drawn by the lure of national defense jobs.

Started by Navy

All this added up to a housing shortage. In January, the city council had heeded the objections of realtors and apartment house owners and "tabled" a proposed USHA slum clearance, low-rent housing project. In July, the navy took matters into its own hands, and, (with the approval of the council, went ahead with plans for low-rent housing. A $3,800,000 project was started for construction of 1200 housing units for navy families, 600 adjoining the destroyer base and 600 near the naval training station.

On Oct. 31, Charles F. Palmer, defense housing coordinator, announced in Washington that the largest of 63 housing projects in vital defense areas would be located in San Diego. The $15,000,000 program provides for construction of 3000 residential units for civilian workers on Kearny mesa. The first contract, for a $9,070,000 slice of the job, was awarded to a Los Angeles firm Dec. 12.

Everybody Here

Business boomed. On Dec. 13, Newell Jones wrote in The Tribune-Sun that "Merchants' Christmas cash registers were dinging like the dongs of a legion of lunatic Swiss bell ringers." (They had done a fair bit of dinging in the late summer and fall months, too, when the town went convention crazy. Everybody met here from embalmers to magicians, from the California American Legion to the state C.I.O.)

Honest reporting makes it impossible to dismiss, with a well-bred shrug of distaste, any mention of the seamier side of life in a national defense center. Here are a few notes which shed light on some of our social problems:

Year's Tragedies

Last spring, after the fleet left, the mutilated body of a sailor was found under Cabrillo bridge. . . . Lt. Comdr. J. F. Luten, medical corps, naval hospital, told a health officers' convention here in September that prostitutes should be placed in segregated districts and kept under strict medical supervision. He said that venereal diseases occupied second place among all causes of illness in the navy in 1938. "A total of 10,782 cases were admitted," he said. . . . On Dec. 11, a sailor's wife with a liking for liquor got a year in the county jail for the fatal neglect of her baby son. . . . On Dec. 16, a navy wife, grieving over the absence of her husband, hanged herself in the garage of her mother's home. . . . On Dec. 18, the body of a new-born baby boy, carefully wrapped in a sheet and quilt, was found in the city dump. . . . On Dec. 19, a representative of the Y.W.C.A. said at a public meeting that the "Y" now is forced to shelter female hoboes, hitch-hikers, inebriates and other questionable characters.

In Van of Ghastly Parade

San Diego has long marched in the van of the ghastly parade of corpses strewn from coast to coast by that marvelous mechanical creation, the automobile, which, in the hands of punks, drunks, dimwits and just plain careless damphools, is more deadly than all the bombs dropped on Britain. City traffic deaths rose from 45 in 1939 to 61 as of today.

The national draft lottery Oct. 29 was a big story to the 30,000 San Diegans between 21 and 35 who had registered for the nation's first peace time conscription. On Nov. 22, the first contingent of 31 draftees were given a royal send-off at Union station by the marine corps band and a large crowd of citizens.

In the field of labor, both the A.F.L. and C.I.O. were active in organizing during the year. In August, a dispute between the San Diego Building and Construction Trades council, A.F.L., and local lumbermen, shut down 13 lumber and building material yards for several days. The "strike" or "lock-out" involved several hundred members of the millmen's and teamsters' unions.

Distinguished Guests

Distinguished visitors included Col. Frank Knox, secretary of the navy, and Wendell Willkie. Col. Knox came here by plane from Honolulu to inspect naval establishments Sept. 16 and 17. Willkie made a campaign speech to 10,000 persons at Lane field Sept. 18.

Two local amateur teams reached the finals in national tournaments. The San Diego State college basketball team, coached by Morris Gross, won four straight last-minute victories in the National Intercollegiates at Kansas City in March, only to lose out in the finals to Tarkio, Mo., college, 52 to 42. (The Aztecs lost the title by one point in 1939.) Post 6, American Legion, junior baseball team, which won the national championship in 1938, again was coached into the "little world series" by Mike Morrow. They lost the deciding game to Albemarle, N. C., 9 to 8, after their two Negro stars were barred from play.

Consolidated Tests Long Range Bomber

Initial tests were undertaken over San Diego recently of Consolidated Aircraft's B-24, a new, long-range bomber, the first of a fleet of seven destined for Britain. It is powered with four 1,200 horsepower engines, and has a wing span of 110 feet.

The B-24 has a capacity of four tons of bombs, and a crew of nine, and its cruising radius is 3,000 miles. Top speed is believed to be 300 miles an hour.

It was reported that these bombers would be used to ferry Canadian pilots to the British Isles.

12/40 Canadian Aviation

'GERANIUMS AND ROSES' GIVE WAY TO DEFENSE BOOM

-:- -:- -:- -:- -:- -:- -:- -:- -:-

Customary 'Biggest News' Stories Overshadowed by 1940 Growth

By SPENCER HELD

San Diego, long famed for its pretty girls and sun-bronzed athletes, its shirt-sleeved tourists and the dungaree navy, became a national defense boom town in 1940.

The new World war overshadowed local news in 1939, and we abandoned our annual custom of picking the 10 biggest San Diego news stories of the year. But the then "phony war" had some repercussions here—the fleet returned a month early from the east coast; President Roosevelt ordered 49 World war destroyers reconditioned at the local base; 21 warships departed for "security patrol" duty in Hawaiian waters, and Consolidated Aircraft Corp. got some contracts which seemed fat at the time.

We hadn't seen anything, yet. In 1940, when the mechanized German army overran France and the Luftwaffe besieged Britain, a state of emergency was proclaimed in the United States and San Diego became a focal point of tremendous importance on the national defense map.

Consolidated Aircraft expanded enormously to handle a flood of orders from Britain and the United States. New buildings were dedicated on the Lindbergh field site Sept. 2, and work was pushed on another final assembly building, 360 by 720 feet, and a single 200-by-1500-foot structure for small parts assembly.

On Dec. 18, it was announced that a parts factory would be built along the east side of Pacific highway about 1 1-3 miles north of the main plant. This will cost more than $14,000,000 and will virtually double Consair's present size. It is scheduled to go into full operation by June, 1941.

The number of employes jumped from 3170 to 13,832 on Dec. 24, and the backlog of orders soared from a respectable $42,141,694 to an incredible $323,000,000 at year's end.

Ryan Aeronautical Co. also went into high-geared production. With 700 employes and a backlog of $1,500,000 at the beginning of the year,

(Continued on Page 12A, Col. 1)

Industrial LA County 11-12/40

Airplane and Parts Backlogs in Pacific Coast Factories

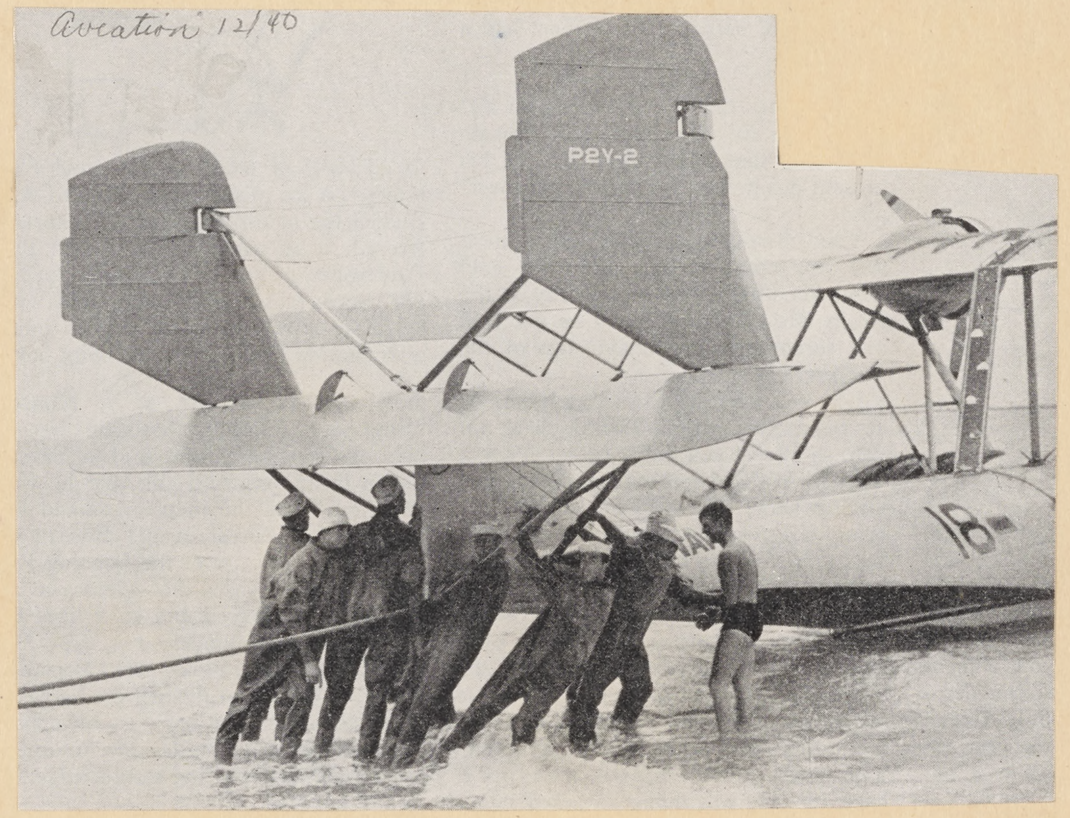
(As of November 1, 1940)

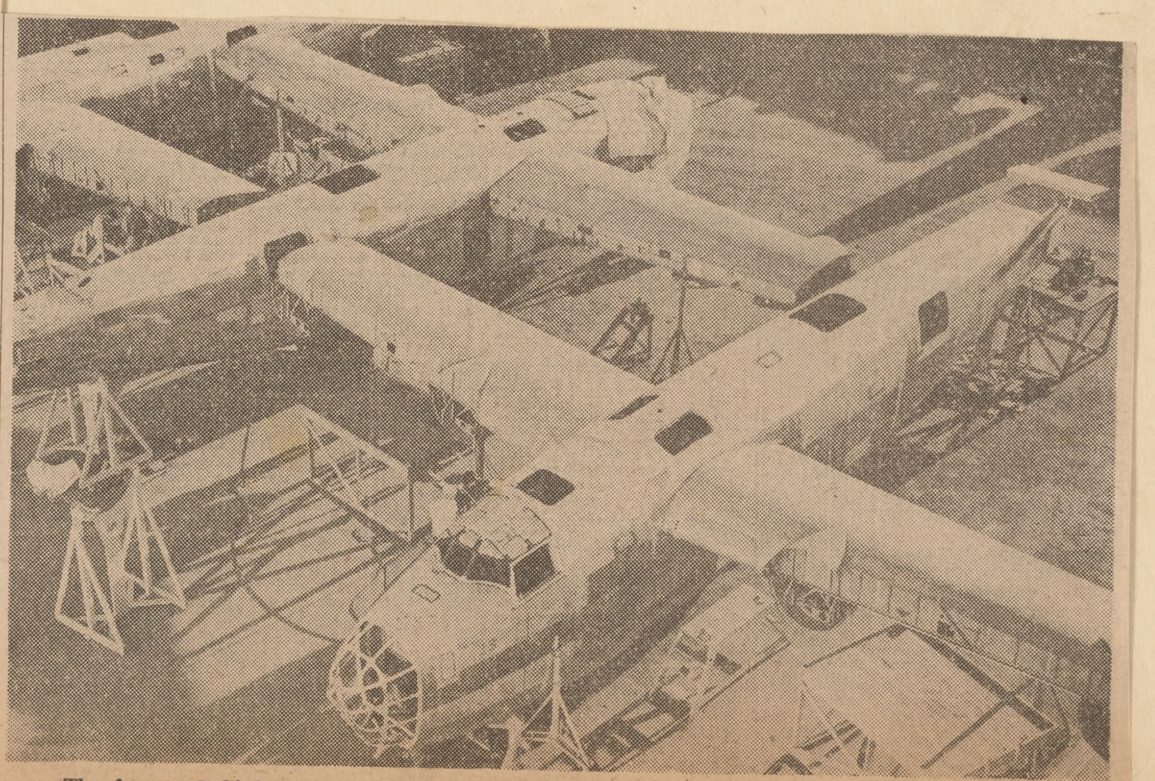
	Los Angeles County	
Douglas	$350,000,000	
Lockheed	280,000,000	
North American	220,000,000	
Northrop	24,000,000	
Vultee	77,011,935	
Adel Precision	750,000	
Aerco Corporation	169,000	
Aircraft Accessories	1,600,000	
Hardman Aircraft	700,000	
Kinner Motors	700,000	
Menasco	4,000,000	
Timm Aircraft	1,047,639	
Los Angeles County	$959,978,574	
	San Diego	
Consolidated Aircraft Corporation	328,842,500	
Ryan Aeronautical	11,400,000	
Solar Aircraft Co.	3,650,000	
	$343,892,500	
Southern California		$1,303,871,074
	Seattle	
Boeing Aircraft Co.	$184,000,000	$ 184,000,000
TOTAL PACIFIC COAST		$1,487,871,074

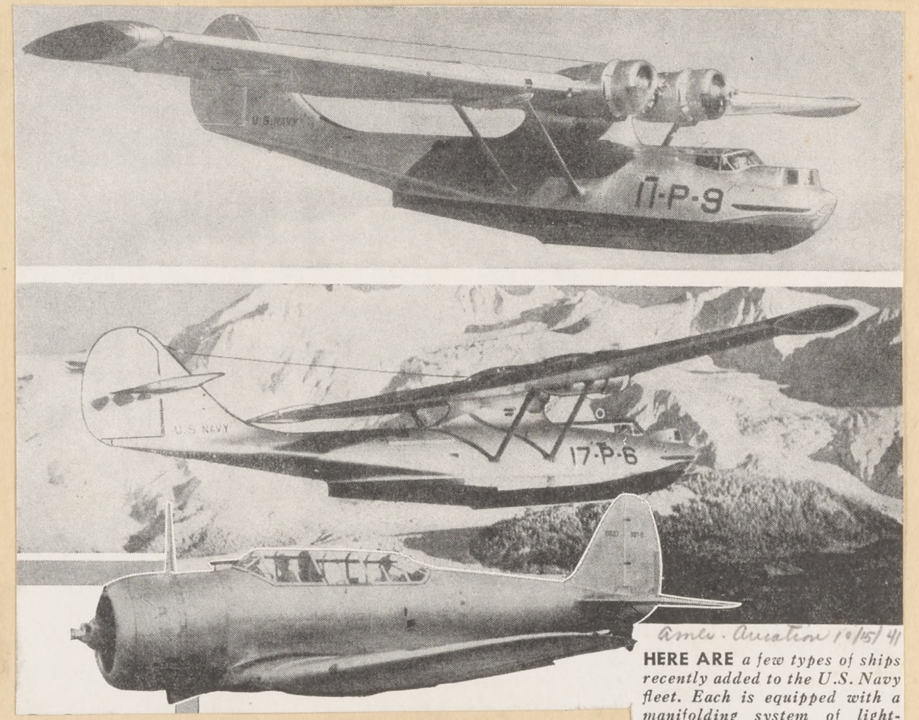
Los Angeles County	Nov. 1, 1940	Oct. 1, 1939	Oct. 1, 1938
Backlog of Orders	$959,978,574	$108,349,597	$65,486,008
Persons Employed	50,074	20,256	11,854
Average Annual Payroll	$ 91,933,708	$ 25,806,263	$17,606,589

Floor Area of Aircraft Plants in Los Angeles County

Nov. 1, 1940—Built and Building	8,500,000 square feet
Aug. 1, 1940	3,836,970 square feet
Jan. 1, 1940	2,714,000 square feet
Jan. 1, 1939	2,000,000 square feet

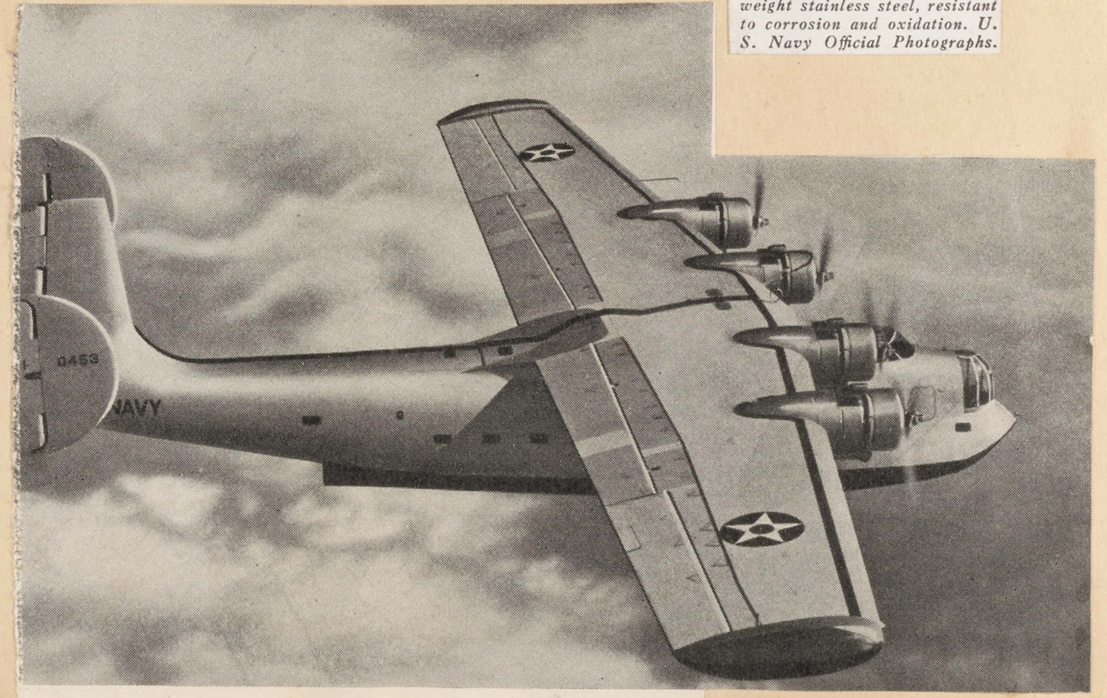

Aviation 12/40


The famous B-24 bombers, four-motored, built by Consolidated Aircraft Corp. for Britain.—(Photo by Stanley Griffin, Tribune-Sun staff photographer.)



Amer. Aviation 10/15/41

HERE ARE *a few types of ships recently added to the U.S. Navy fleet. Each is equipped with a manifolding system of lightweight stainless steel, resistant to corrosion and oxidation. U. S. Navy Official Photographs.*



SOLIDATED AIRCRAFT CORPORATION'S XPB2Y-1, one of the newest and htiest arms of the Navy's coast defense, contains many parts fabed from light-weight Synthane. *Official photograph U. S. Navy.*

Aero Digest 11/40

DAILY EXPRESS Thursday, November 21, 1940

ENLIVEN
SOUPS WITH
H·P SAUCE

BLACK-OUT ZERO HOUR TO-NIGHT UNTIL 8.1 A.M.
MOON RISES 11.27 PM MOON SETS 1.33 PM

LONDON — ENGLAND

Daily Express
No. 12,636 Thursday, November 21, 1940 One Penny

End CATARRH
You can clear away stuffy congestion, get rid of dangerous germs and stop that constant flow of poison into your system. How? Simply by applying 'Mentholatum' into your nostrils. The instant you do so, this breathable balm volatilises and you commence inhaling its antiseptics. Quickly, pleasantly, the 'Mentholatum' vapours stop the gathering of germs, clear the nasal cavities and open up your breathing passages. 'Mentholatum' Brand Balm stops Head Colds, banishes Catarrh, ends Chest Colds. All Chemists, 6d. and 1/3 plus Purchase Tax.

As R.A.F. bombers make 1,400-mile trip to fire the Skoda works—

46 FLYING FORTRESSES ARE RELEASED TO US

Latest types will be fitted with secret b

SIMULTANEOUS WITH RELEASE OF
AIR RAID FAR INTO GERMANY
THOUGHT WE COULD NOT REACH C
NIGHT:—

Daily Express Staff Reporter C. V. R. THOMPSO

NEW YORK, Wednesday

**AMERICA'S Army High Command ton
announced that they have given up
Britain a fleet of twenty-six four-engi
bombers of the Flying Fortress type, wh
were awaiting delivery to the U.S. Arm**

These machines, claimed to be the most adva
bomber type in the world, are a development o
Boeing 22-ton Flying Fortress, and were built b
Consolidated Aircraft Corporation at San D
California.

General George C. M
Chief of Staff, said that d
would start immediate
would be completed by th
this month.

"In fact," he said, "B
supposed to have taken
of some of them last Sat
The High Command a
ment reveals, too, that ne
are well under way to suppl
with another twenty Flyi
tresses now in process of
at the Boeing Company's
plant.

ALL BY MARC

Delivery of this fleet,
Marshall indicated, would
pleted by March 1.

These twenty are being
with the famed Sperr
sight, said to be capable
ing a bomb "into a ba
10,000 feet."

The Consolidated fou
bombers have just begu
off the production lines,
negotiations just complete
able Britain to take first
General Marshall said that the
United States Army is prepared to accept a three months' lag in its own deliveries of this type.

"In return," he said, "the British Government has released to the United States sufficient engines to equip forty-one Boeing Flying Fortresses, which the United States Army has already accepted without engines or will have received without engines before January 1."

Amer Aviation 10/1/40

CONSOLIDATED

Already claiming the largest U. S. integrated plane plant, Consolidated Aircraft Corp. disclosed plans to built an $800,000 structure which will add 300,000 sq. ft. of floor space to approximately 2,000,000 sq. ft. now in use.

The new addition, which will be located on 22 acres of tidelands on which the firm has held an option, will extend into Lindbergh Field, San Diego, Cal.'s, municipal airport, due west of the present plant. It will be 200 ft. wide and 1,500 ft. long.

The company said its backlog is now in excess of $120,000,000 and that its list of employes has reached an all-time high of 9,485. Hundreds of additional workers will be employed when the new additions are opened.

Western Flying 12/40

SAN DIEGO

This month has been a very busy one for the **Consair Flyer's Club. Al Becker** has been preparing for his private ticket. **W. E. Jones** is ready to solo. **Stan Mahoney** received a bad cut on his thumb while installing a carburetor on a Pratt & Whitney. Our two new members, **Bennett** and **McFadden** should be ready for that old solo flight soon.

This month's Orchid goes to **Barney Farley** for his coolheadness, quick thinking and fine judgment in bringing the plane down in a forced landing safely on the beach along the Coronado Strand. **—Al Drayman.**

Recent announcement has been made of the engagement of **Raymond Dinson** to **Miss Ivalena Jones,** secretary at Consair. Ray, also an employe of Consair, is a charter member of the **Southern California Flyers.**

» OUTDOOR ASSEMBLY of airplanes is being practiced most extensively at Consolidated in San Diego where temporary canvas-covered sheds, divided into stalls are used for finishing operations on hulls. In the yard are dozens of partially completed ships awaiting parts from subcontractors in other parts of the country. Meanwhile construction is progressing on a building larger than the present huge plant and a parts factory is planned to be built a short distance from the airport. Employment records showed 13,000 on the day of our visit. Aviation 12/40

Aviation 10/40 *Consolidated Aircraft* has purchased the Hall Aluminum Aircraft Corporation.

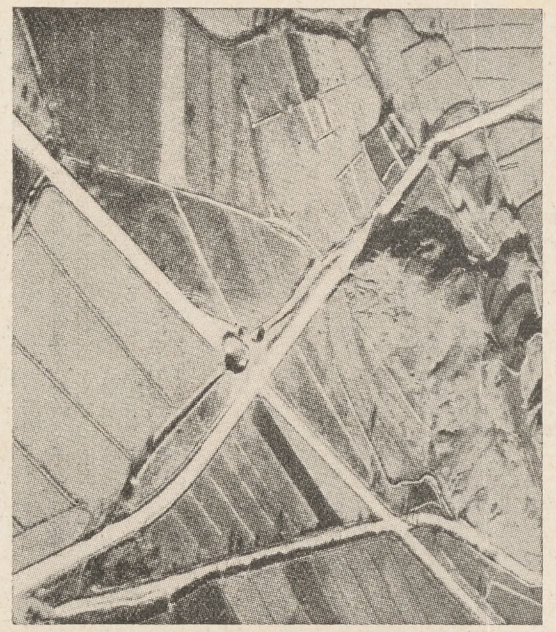
Consolidated Aircraft Corp., San Diego, Calif., $75,313 for airplanes.

Glenn L. Martin Co., Baltimore, Md., $106,125 for airplanes.

United Aircraft Corp., East Hartford, Conn., $59,490,703 for airplane engines.

AVIATION, December, 1940

BOMBERS (CONTINUED)



Germany's *Luftwaffe* obtained good results in Poland with dive-bombers. Above are crossroads after receiving attention from a Ju 87.

economical to take an old-type biplane which already had the drag required for diving and put a more powerful engine into it."

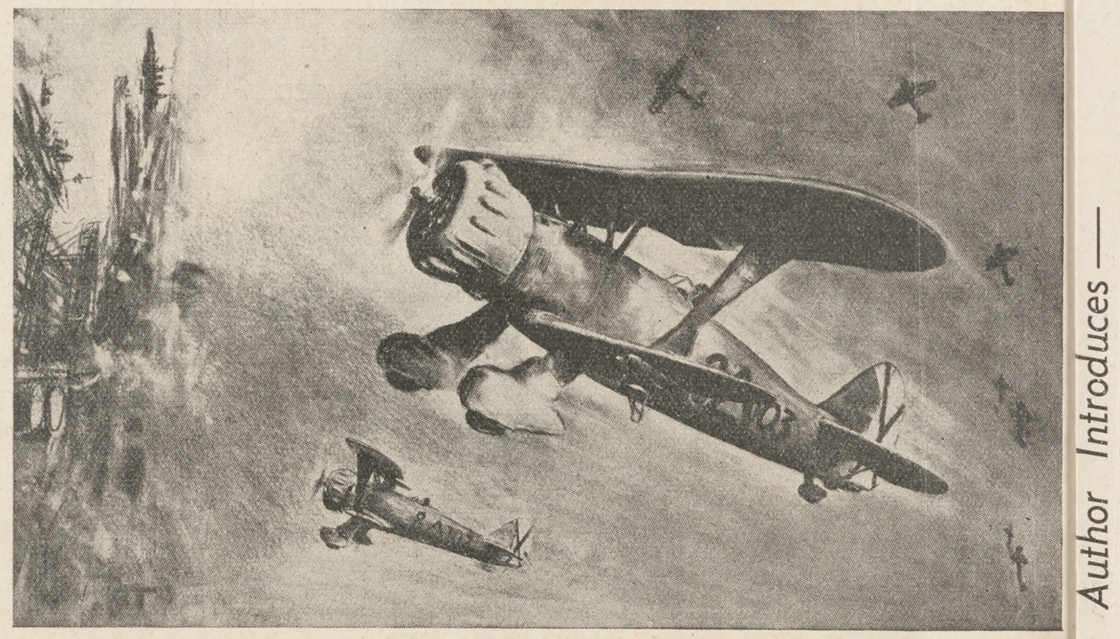
Actually, the modern dive-bomber is a clean, high-performance machine carrying a very useful bomb load without using excessive engine power.

Diving Requirements

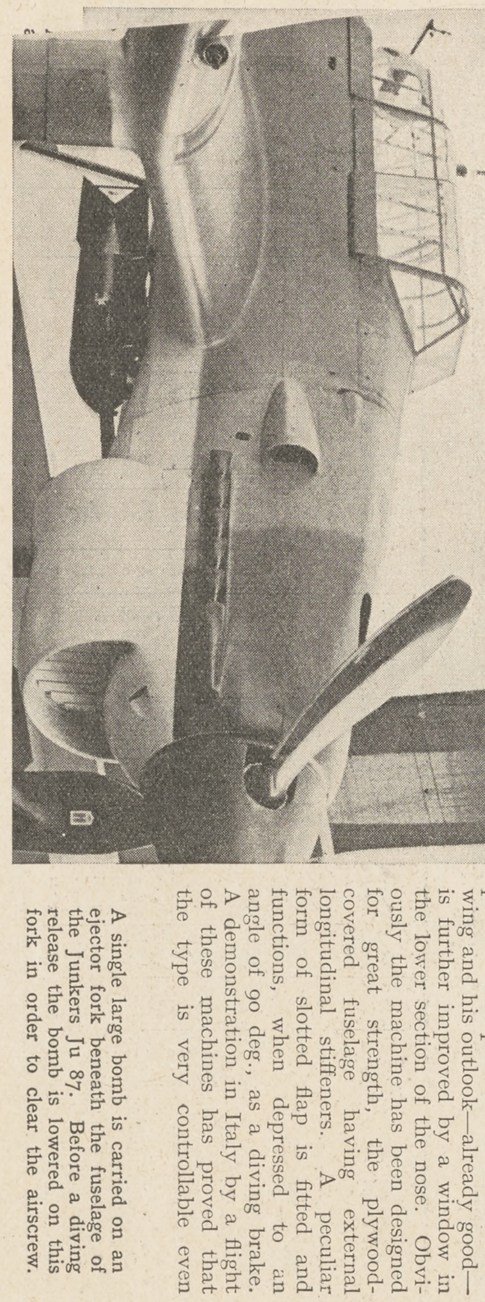
Dive-bombers must be strong enough to withstand sharp pull-outs; manœuvrable enough to make things difficult for enemy A.A. gunners; the pilot's view over the nose must be especially good; the fuel system must be specially studied, and provision made, if the machine is a single-engined type and the bomb is carried beneath the fuselage, for the projectile to be guided clear of the airscrew. Two advantages of the twin-engined layout are improvement in the pilot's forward vision and the fact that bomb-displacing gear is unnecessary. Modern specialised dive-bombers are fitted with aerodynamic brakes to retard the speed in a bombing dive which would otherwise be too high for the pilot to take accurate aim from comparatively close range. Reversible pitch airscrews have also been tried as diving brakes.

The specialised single-seater dive-bomber is comparatively new in conception although American Navy fighters have for some years been equipped to carry quite heavy bomb loads. Germany was among the first countries to give the type consideration, and the Henschel Hs 123 biplane was used in the Spanish and Polish campaigns. With its biplane wings and fixed undercarriage it does not pick up speed in a dive as quickly as the clean cantilever monoplanes and consequently does not need diving brakes.

Most modern of the single-seater dive-bombers is the Italian Savoia Marchetti S.M.85. This is a high-wing monoplane with internal ventral bomb stowage and two radial engines of comparatively low power. The pilot sits in front of the wing and his outlook—already good—is further improved by a window in the lower section of the nose. Obviously the machine has been designed for great strength, the plywood-covered fuselage having external longitudinal stiffeners. A peculiar form of slotted flap is fitted and functions, when depressed to an angle of 90 deg., as a diving brake. A demonstration in Italy by a flight of these machines has proved that the type is very controllable even



German Henschel Hs 123 single-seater dive-bombers attacking docks during the Spanish campaign.



A single large bomb is carried on an ejector fork beneath the fuselage of the Junkers Ju 87. Before a diving release the bomb is lowered on this fork in order to clear the airscrew.

The Author Introduces —

MILITARY AIRCRAFT

By H. F. KING

PRIMARILY this issue of *Flight* is devoted to a study of international practice in the design, construction, armament, equipment and, to a lesser degree, operation, of military aircraft. It is the most thorough survey of its kind yet published, and extensive use has been made of foreign material.

The tables of data have been compiled to give as accurate an indication as possible of the characteristics of individual machines. It is emphasised, however, that many of the figures are unconfirmed, though one fact is certain: British aircraft which have been in service for a considerable period make a superb showing even against foreign prototypes, the figures for which may be highly optimistic. When it is remembered that the Hurricane and Spitfire, for example, were Great Britain's best fighters three years ago and that they still compare so well with foreign fighters of much more recent design, we get some indication of their quality. Nevertheless there are developments abroad which are well worth attention.

It is greatly to be regretted that photographs of, and data for, the newest British service types are officially withheld, though references have been published in the Continental press to a "Westland twin-engined fighter" and other intriguing machines. Another British high-speed two-engined machine has already made a brief appearance in public, but further reference to this promising aircraft is prohibited. The only permissible indication of the performance of our new fighters is that during contractors' trials one of them was dubbed "Crikey" by local residents.

It will be learned from a study of the ensuing material that despite the tendency toward specialisation of military aircraft there is one type of machine, the fast twin-engined three/four-seater, which may be adapted for bombing, fighting, reconnaissance, ground attack and, in some cases, torpedo-dropping. The general-purpose day and night single-seater fighter is also much in evidence.

Since our last Military Aircraft number some refreshing designs have appeared; these are remarked on hereafter. The increased importance attached to armour protection is also noteworthy.

It is important to bear in mind when perusing the tables of data that the figures for top speed should be linked with those for the corresponding heights. Many foreign machines are handicapped by engines which deliver their power at comparatively low altitudes. It would have been preferable to have quoted figures for, say, maximum speed at 20,000ft., but sufficient data were not forthcoming to permit this.

Finally, it is emphasised that many of the machines discussed and illustrated are prototypes only, and it should not be inferred that they are in service. They are included for their interest.

In other words, the issue deals with technical development rather than the equipment of air forces.

A MESSAGE from the AIR MINISTER

AIR MINISTRY,
WHITEHALL, S.W.1.

4th March, 1940

I welcome this opportunity of contributing a foreword to the special Military Aircraft number of "Flight" and of commending its contents to the many thousands connected with the Royal Air Force and with British aircraft manufacture.

The review of military aircraft, British and foreign, in the following pages will be of particular interest at the present time and should also have considerable educational value—not least, perhaps, from the point of view of the striking evidence it affords, to readers both at home and overseas, of the outstanding qualities of British machines.

Kingsley Wood

Aero Digest - 12/40

N. Y. STOCK EXCHANGE

	Week Ending: October 26				November 2				November 9				November 16			
	High	Low	Change	Sales	High	Low	Change	Sales	High	Low	Change	Sales	High	Low	Change	Sales
American Airlines	62	59¾	— ⅞	4,900	63¼	60	+1¼	10,300	65	60¼	+1¾	6,700	64¼	60⅛	—3½	4,900
Aviation Corp.	4⅞	4½	......	14,700	5¼	4½	+ ½	28,600	5⅞	4⅞	+ ¾	48,000	6	5¼	— ½	32,900
Bendix Aviation	31¾	30⅝	+ ¼	8,300	33⅞	30⅝	+2⅞	21,200	35	32¾	+1½	26,800	34⅞	33	—1⅝	9,900
Boeing Airplane	16⅜	15¾	+ ⅛	11,200	17¾	15¾	+1⅝	37,500	18½	16¼	+ ⅞	36,800	21	18⅜	+ ¾	65,000
Consolidated	23	21¾	— ½	1,000	23½	21¼	+1⅝	4,100	25¾	21⅞	+2⅜	6,600	27½	24¾	—1	10,000
Continental Motors	3⅝	3⅜	— ⅛	9,300	3¾	3⅜	+ ¼	12,900	4	3½	+ ⅛	41,900	4⅜	3⅞	......	80,000
Curtiss-Wright	7¾	7⅜	— ¼	23,800	8⅜	7⅝	+ ⅝	52,500	10½	8⅛	+2⅛	173,600	10¾	9¾	— ⅜	130,900
Curtiss-Wright A	28	27½	— ⅜	2,900	28½	27¾	+ ⅝	6,800	30	28¼	+1½	12,100	30	29	— ½	5,600
Douglas Aircraft	87¼	82½	+3¼	11,200	91¼	84	+4¼	10,900	90	82⅜	+2	26,800	88	80½	—5	10,300
Eastern Airlines	37⅝	35⅛	+2¼	21,600	37⅞	36½	— ⅛	14,700	39¼	34¾	+1⅞	20,000	39	36	—2⅞	14,300
Grumman	17½	16¾	—1⅛	1,600	17⅞	16¾	+ ¾	4,000	19¼	16¾	+1¾	6,200	20⅛	17¾	—1	7,500
Lockheed	29	27¾	—1	9,100	30¾	27⅞	+2⅛	28,100	32¾	28⅛	+2⅝	41,800	33⅝	30½	—1⅞	44,300
Martin, G. L.	32¼	30⅝	— ⅞	11,600	33¾	30½	+2¼	21,100	35⅛	31¾	+2	32,800	35¾	33½	—1⅜	24,300
National Aviation	11	10⅜	— ¼	1,300	11½	10⅝	+ ¾	2,400	12⅜	10⅝	+1⅛	6,600	13⅛	11½	— ⅞	7,400
North American	17¼	16⅝	— ⅜	6,400	18¼	16⅝	+ ⅞	22,100	18¾	16¾	+1⅛	31,600	19⅝	17⅞	— ¾	33,700
Pan American	16	15⅛	+ ⅛	11,700	17½	15⅝	+1	27,000	17⅛	15⅜	+ ⅛	16,700	18⅛	16½	+ ⅛	20,100
Sperry Corp.	41⅞	40⅜	+ ⅞	5,400	43¾	41¼	+1⅛	11,600	43¾	40⅜	+ ½	10,500	43⅞	42¼	—1¼	7,100
Square D Corp.	35	34	......	4,700	34⅞	33¼	— ⅝	3,400	34⅞	33¼	......	3,900	34½	32¼	—1	2,800
TWA	18¾	17¾	+ ¾	6,600	19	18⅜	— ⅜	3,400	19¼	17¾	+ ¼	3,200	20¼	18⅝	+ ⅞	5,800
United Airlines	19⅛	17⅝	+ ½	27,400	19⅜	18⅝	+ ⅜	18,900	19¼	17⅛	— ⅜	23,900	19⅝	18	— ⅝	18,200
United Aircraft	40	39	+ ½	7,700	43	39½	+3	20,000	44⅞	40½	+2⅛	26,800	47	45	+ ⅜	31,400
Wright Aero	98	98	—2	50	105	97	+5	180	110	102	+7	170	111	107	—3	120

San Diego Defense Boom Overshadows City's Other Claims to Fame

'BIGGEST NEWS' GIVES WAY TO PHENOMENAL GROWTH

CONTINUED FROM PAGE ONE

the company now employs 1600 men working on a backlog of $10,600,000 in a plant twice its 1939 size. The Ryan school is training 243 army air corps cadets, as compared with 63 the first of the year.

The army moved into town in force, at least on paper. Ft. Rosecrans, which has "guarded" the harbor with ancient guns manned by skeleton crews for lo, these many years, came to life under the impetus of a building project to house 3000 men and 125 officers. Construction of a cantonment for 7500 men and 300 officers got under way on Torrey Pines mesa. By a rotation system, the camp is expected to train 20,000 draftees between March 15, 1941, and March 15, 1942.

Hits New High

With marine corps recruiting hitting a new high, Camp Elliott mushroomed on Kearny mesa, and the Barnett ave. base pushed its limits so far southward that on one occasion a sergeant, calling the roll, got a "Here sir," from a watchman at the Consolidated plant. There were 5100 officers and men at the base on Jan. 1; the total is now approximately 10,300. Camp Elliott went from 50 to 3100.

The naval training station expanded to train double the number of bluejackets as the fleet was built up to fighting strength. The figures tell the story—2661 men on Jan. 1; 5679 today.

Activity Intensified

Activity was intensified at both the North Island naval air station, largest in the nation, and the destroyer base, but little news came through their closely-guarded portals . . . The navy this year clamped down a censorship on news and pictures of ships and planes. This was often intelligent, but sometimes it was considered stupid by newsmen.

The 1940 census, taken early in the year, showed a population of 202,038, including about 7000 men of the fleet who maintained residences ashore. Approximately 21,000 others were not counted. The warships left for six weeks of maneuvers in the Hawaiian area April 1 but remained there the rest of the year, although contingents returned for two-weeks "visiting" periods during the fall months. An estimated 30,000 new residents flocked into town after the census, drawn by the lure of national defense jobs.

Started by Navy

All this added up to a housing shortage. In January, the city council had heeded the objections of realtors and apartment house owners and "tabled" a proposed USHA slum clearance, low-rent housing project. In July, the navy took matters into its own hands, and, (with the approval of the council, went ahead with plans for low-rent housing. A $3,800,000 project was started for construction of 1200 housing units for navy families, 600 adjoining the destroyer base and 600 near the naval training station.

On Oct. 31, Charles F. Palmer, defense housing coordinator, announced in Washington that the largest of 63 housing projects in vital defense areas would be located in San Diego. The $15,000,000 program provides for construction of 3000 residential units for civilian workers on Kearny mesa. The first contract, for a $9,070,000 slice of the job, was awarded to a Los Angeles firm Dec. 12.

Diego Building and Construction Trades council, A.F.L., and local lumbermen, shut down 13 lumber and building material yards for several days. The "strike" or "lockout" involved several hundred members of the millmen's and teamsters' unions.

Distinguished Guests

Distinguished visitors included Col. Frank Knox, secretary of the navy, and Wendell Willkie. Col. Knox came here by plane from Honolulu to inspect naval establishments Sept. 16 and 17. Willkie made a campaign speech to 10,000 persons at Lane field Sept. 18.

Two local amateur teams reached the finals in national tournaments. The San Diego State college basketball team, coached by Morris Gross, won four straight last-minute victories in the National Intercollegiates at Kansas City in March, only to lose out in the finals to Tarkio, Mo., college, 52 to 42. (The Aztecs lost the title by one point in 1939.) Post 6, American Legion, junior baseball team, which won the national championship in 1938, again was coached into the "little world series" by Mike Morrow. They lost the deciding game to Albemarle, N. C., 9 to 8, after their two Negro stars were barred from play.

Everybody Here

Business boomed. On Dec. 13, Newell Jones wrote in The Tribune-Sun that "Merchants' Christmas cash registers were dinging like the dongs of a legion of lunatic Swiss bell ringers." (They had done a fair bit of dinging in the late summer and fall months, too, when the town went convention crazy. Everybody met here from embalmers to magicians, from the California American Legion to the state C.I.O.)

Honest reporting makes it impossible to dismiss, with a well-bred shrug of distaste, any mention of the seamier side of life in a national defense center. Here are a few notes which shed light on some of our social problems:

Year's Tragedies

Last spring, after the fleet left, the mutilated body of a sailor was found under Cabrillo bridge. . . . Lt. Comdr. J. F. Luten, medical corps, naval hospital, told a health officers' convention here in September that prostitutes should be placed in segregated districts and kept under strict medical supervision. He said that venereal diseases occupied second place among all causes of illness in the navy in 1938. "A total of 10,782 cases were admitted," he said. . . . On Dec. 11, a sailor's wife with a liking for liquor got a year in the county jail for the fatal neglect of her baby son. . . . On Dec. 16, a navy wife, grieving over the absence of her husband, hanged herself in the garage of her mother's home. . . . On Dec. 18, the body of a new-born baby boy, carefully wrapped in a sheet and quilt, was found in the city dump. . . . On Dec. 19, a representative of the Y.W.C.A. said at a public meeting that the "Y" now is forced to shelter female hoboes, hitch-hikers, inebriates and other questionable characters.

In Van of Ghastly Parade

San Diego has long marched in the van of the ghastly parade of corpses strewn from coast to coast by that marvelous mechanical creation, the automobile, which, in the hands of punks, drunks, dimwits and just plain careless damphools, is more deadly than all the bombs dropped on Britain. City traffic deaths rose from 45 in 1939 to 61 as of today.

The national draft lottery Oct. 29 was a big story to the 30,000 San Diegans between 21 and 35 who had registered for the nation's first peace time conscription. On Nov. 22, the first contingent of 31 draftees were given a royal send-off at Union station by the marine corps band and a large crowd of citizens.

In the field of labor, both the A.F.L. and C.I.O. were active in organizing during the year. In August, a dispute between the San

Consolidated Tests Long Range Bomber

Initial tests were undertaken over San Diego recently of Consolidated Aircraft's B-24, a new, long-range bomber, the first of a fleet of seven destined for Britain. It is powered with four 1,200 horsepower engines, and has a wing span of 110 feet.

The B-24 has a capacity of four tons of bombs, and a crew of nine, and its cruising radius is 3,000 miles. Top speed is believed to be 300 miles an hour.

It was reported that these bombers would be used to ferry Canadian pilots to the British Isles.

12/40 Canadian Aviation

'GERANIUMS AND ROSES' GIVE WAY TO DEFENSE BOOM

-:- -:- -:- -:- -:- -:- -:- -:- -:-

Customary 'Biggest News' Stories Overshadowed by 1940 Growth

By SPENCER HELD

San Diego, long famed for its pretty girls and sun-bronzed athletes, its shirt-sleeved tourists and the dungaree navy, became a national defense boom town in 1940.

The new World war overshadowed local news in 1939, and we abandoned our annual custom of picking the 10 biggest San Diego news stories of the year. But the then "phony war" had some repercussions here—the fleet returned a month early from the east coast; President Roosevelt ordered 49 World war destroyers reconditioned at the local base; 21 warships departed for "security patrol" duty in Hawaiian waters, and Consolidated Aircraft Corp. got some contracts which seemed fat at the time.

We hadn't seen anything, yet. In 1940, when the mechanized German army overran France and the Luftwaffe besieged Britain, a state of emergency was proclaimed in the United States and San Diego became a focal point of tremendous importance on the national defense map.

Consolidated Aircraft expanded enormously to handle a flood of orders from Britain and the United States. New buildings were dedicated on the Lindbergh field site Sept. 2, and work was pushed on another final assembly building, 360 by 720 feet, and a single 200-by-1500-foot structure for small parts assembly.

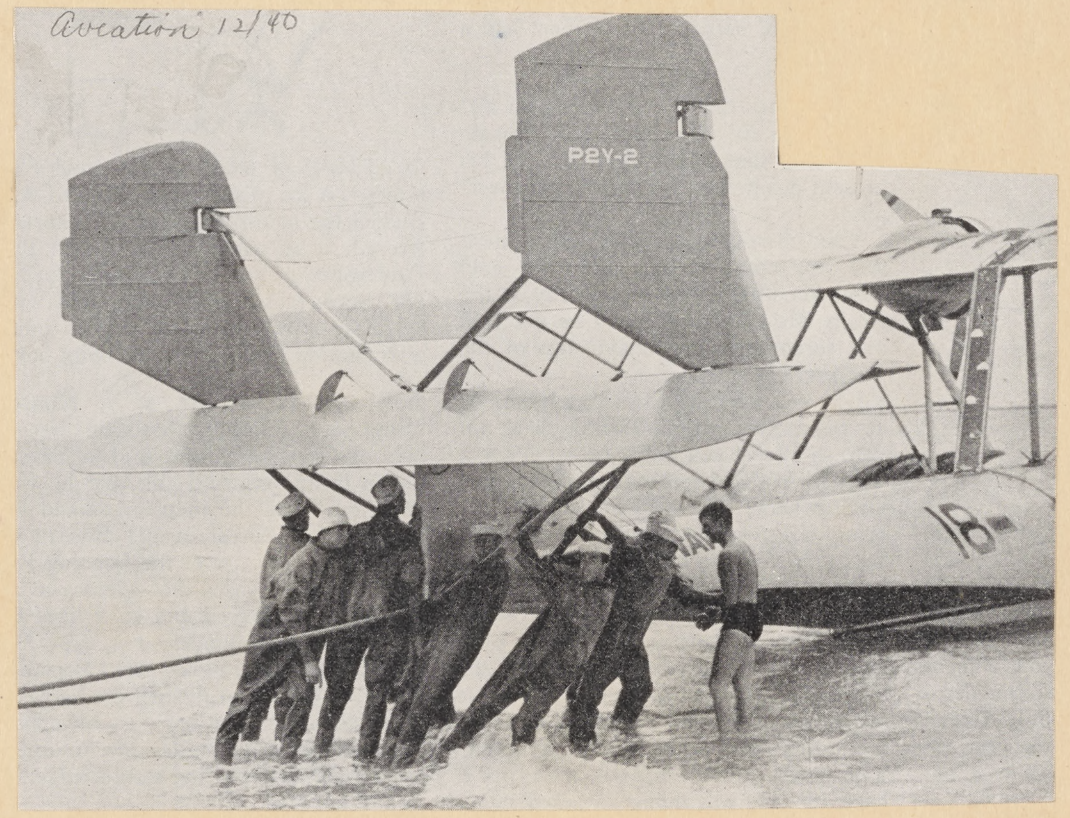
On Dec. 18, it was announced that a parts factory would be built along the east side of Pacific highway about 1 1-3 miles north of the main plant. This will cost more than $14,000,000 and will virtually double Consair's present size. It is scheduled to go into full operation by June, 1941.

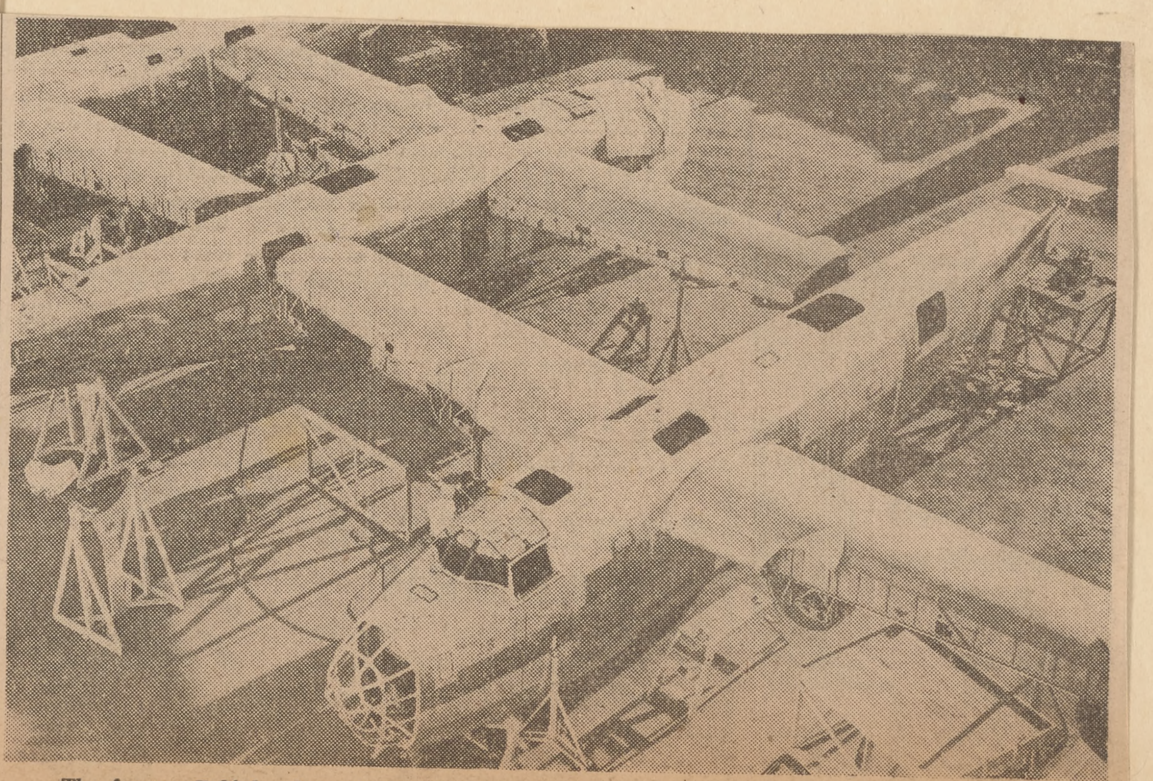
The number of employes jumped from 3170 to 13,832 on Dec. 24, and the backlog of orders soared from a respectable $42,141,694 to an incredible $323,000,000 at year's end.

Ryan Aeronautical Co. also went into high-geared production. With 700 employes and a backlog of $1,500,000 at the beginning of the year,

(Continued on Page 12A, Col. 1)

Aviation 12/40





The famous B-24 bombers, four-motored, built by Consolidated Aircraft Corp. for Britain.—(Photo by Stanley Griffin, Tribune-Sun staff photographer.)

Industrial LA County 11-12/40

Airplane and Parts Backlogs in Pacific Coast Factories

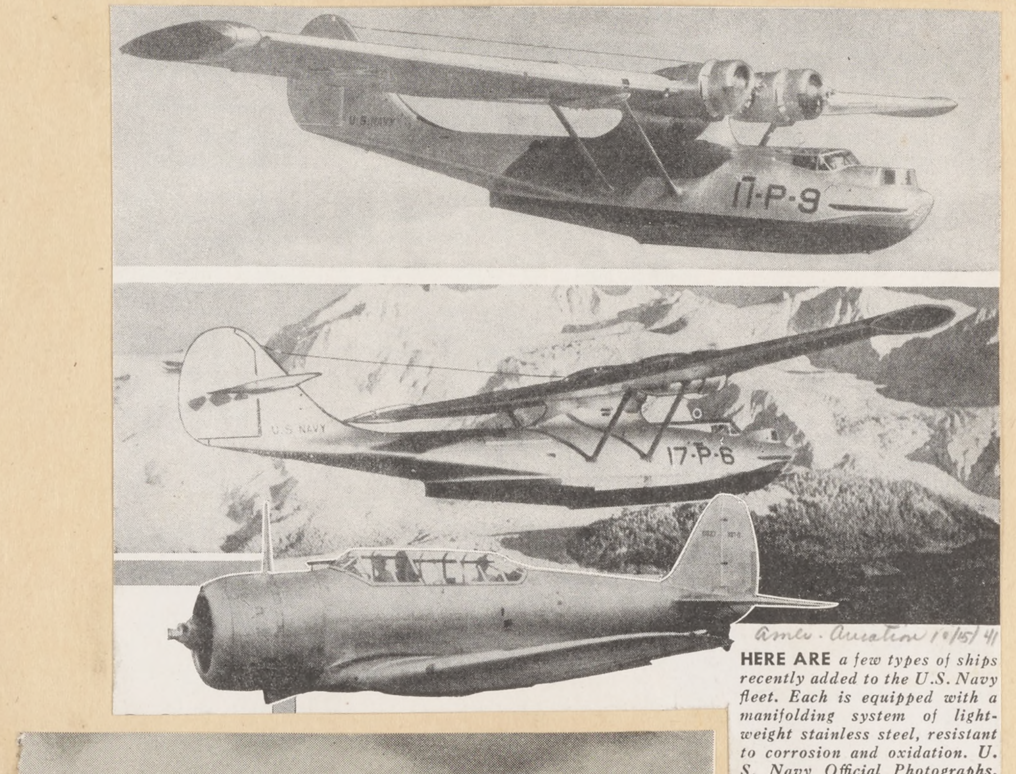
(As of November 1, 1940)

	Los Angeles County	
Douglas	$350,000,000	
Lockheed	280,000,000	
North American	220,000,000	
Northrop	24,000,000	
Vultee	77,011,935	
Adel Precision	750,000	
Aerco Corporation	169,000	
Aircraft Accessories	1,600,000	
Hardman Aircraft	700,000	
Kinner Motors	700,000	
Menasco	4,000,000	
Timm Aircraft	1,047,639	
Los Angeles County	$959,978,574	
	San Diego	
Consolidated Aircraft Corporation	328,842,500	
Ryan Aeronautical	11,400,000	
Solar Aircraft Co.	3,650,000	
	$343,892,500	
Southern California		$1,303,871,074
	Seattle	
Boeing Aircraft Co.	$184,000,000	$ 184,000,000
TOTAL PACIFIC COAST		$1,487,871,074

Los Angeles County	Nov. 1, 1940	Oct. 1, 1939	Oct. 1, 1938
Backlog of Orders	$959,978,574	$108,349,597	$65,486,008
Persons Employed	50,074	20,256	11,854
Average Annual Payroll	$ 91,933,708	$ 25,806,263	$17,606,589

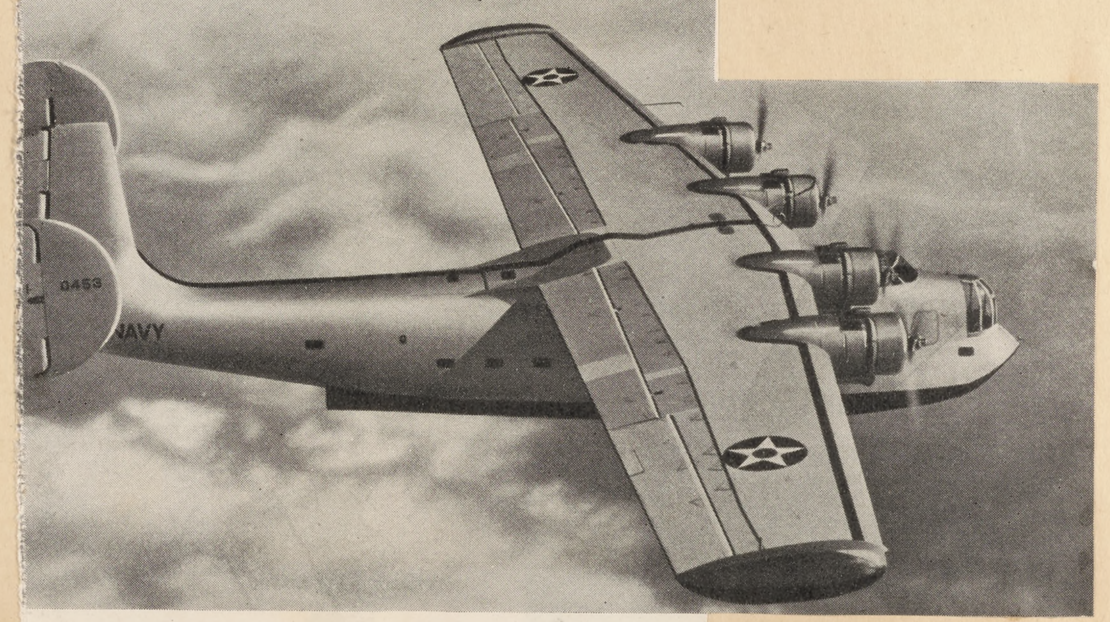
Floor Area of Aircraft Plants in Los Angeles County

Nov. 1, 1940—Built and Building	8,500,000 square feet
Aug. 1, 1940	3,836,970 square feet
Jan. 1, 1940	2,714,000 square feet
Jan. 1, 1939	2,000,000 square feet



Amer. Aviation 10/15/41

HERE ARE *a few types of ships recently added to the U.S. Navy fleet. Each is equipped with a manifolding system of light-weight stainless steel, resistant to corrosion and oxidation. U. S. Navy Official Photographs.*



NSOLIDATED AIRCRAFT CORPORATION'S XPB2Y-1, one of the newest and htiest arms of the Navy's coast defense, contains many parts fab- ed from light-weight Synthane. *Official photograph U. S. Navy.*

Aero Digest 11/40

LONDON —ENGLAND

DAILY EXPRESS Thursday, November 21, 1940

ENLIVEN SOUPS WITH H·P SAUCE

BLACK-OUT ZERO HOUR TO-NIGHT UNTIL 8.1 A.M.
MOON RISES 11.27 PM MOON SETS 1.33 PM

Daily Express

No. 12,636 Thursday, November 21, 1940 One Penny

End CATARRH
You can clear away stuffy congestion, get rid of dangerous germs and stop that constant flow of poison into your system. How? Simply by applying 'Mentholatum' into your nostrils. The instant you do so, this breathable balm volatilises and you commence inhaling its antiseptics. Quickly, pleasantly, the 'Mentholatum' vapours stop the gathering of germs, clear the nasal cavities and open up your breathing passages. 'Mentholatum' Brand Balm stops Head Colds, banishes Catarrh, ends Chest Colds. All Chemists, 6d. and 1/3 plus Purchase Tax.

As R.A.F. bombers make 1,400-mile trip to fire the Skoda works—

46 FLYING FORTRESSES ARE RELEASED TO US

Latest types wil be fitted
with secret b

SIMULTANEOUS WITH RELEASE OF
AIR RAID FAR INTO GERMANY
THOUGHT WE COULD NOT REACH CA
NIGHT:—

Daily Express Staff Reporter C. V. R. THOMPSO

NEW YORK, Wednesday

**AMERICA'S Army High Command toni
announced that they have given up
Britain a fleet of twenty-six four-engi
bombers of the Flying Fortress type, wh
were awaiting delivery to the U.S. Arr**

These machines, claimed to be the most adva
bomber type in the world, are a development o
Boeing 22-ton Flying Fortress, and were built b
Consolidated Aircraft Corporation at San D
California.

General George C. M
Chief of Staff, said that d
would start immediate
would be completed by th
this month.

"In fact," he said, "B
supposed to have taken
of some of them last Sat

The High Command a
ment reveals, too, that neg
are well under way to suppl
with another twenty Flyi
tresses now in process of
at the Boeing Company's
plant.

ALL BY MARC

Delivery of this fleet,
Marshall indicated, would
pleted by March 1.

These twenty are being
with the famed Sperr
sight, said to be capable
ing a bomb "into a ba
10,000 feet."

The Consolidated fou
bombers have just begu
off the production lines,
negotiations just complete
able Britain to take first

General Marshall said that the United States Army is prepared to accept a three months' lag in its own deliveries of this type.

"In return," he said, "the British Government has released to the United States sufficient engines to equip forty-one Boeing Flying Fortresses, which the United States Army has already accepted without engines or will have received without engines before January 1."

Amer Aviation 10/1/40

CONSOLIDATED

Already claiming the largest U. S. integrated plane plant, Consolidated Aircraft Corp. disclosed plans to built an $800,000 structure which will add 300,000 sq. ft. of floor space to approximately 2,000,000 sq. ft. now in use.

The new addition, which will be located on 22 acres of tidelands on which the firm has held an option, will extend into Lindbergh Field, San Diego, Cal.'s, municipal airport, due west of the present plant. It will be 200 ft. wide and 1,500 ft. long.

The company said its backlog is now in excess of $120,000,000 and that its list of employes has reached an all-time high of 9,485. Hundreds of additional workers will be employed when the new additions are opened.

Western Flying 12/40

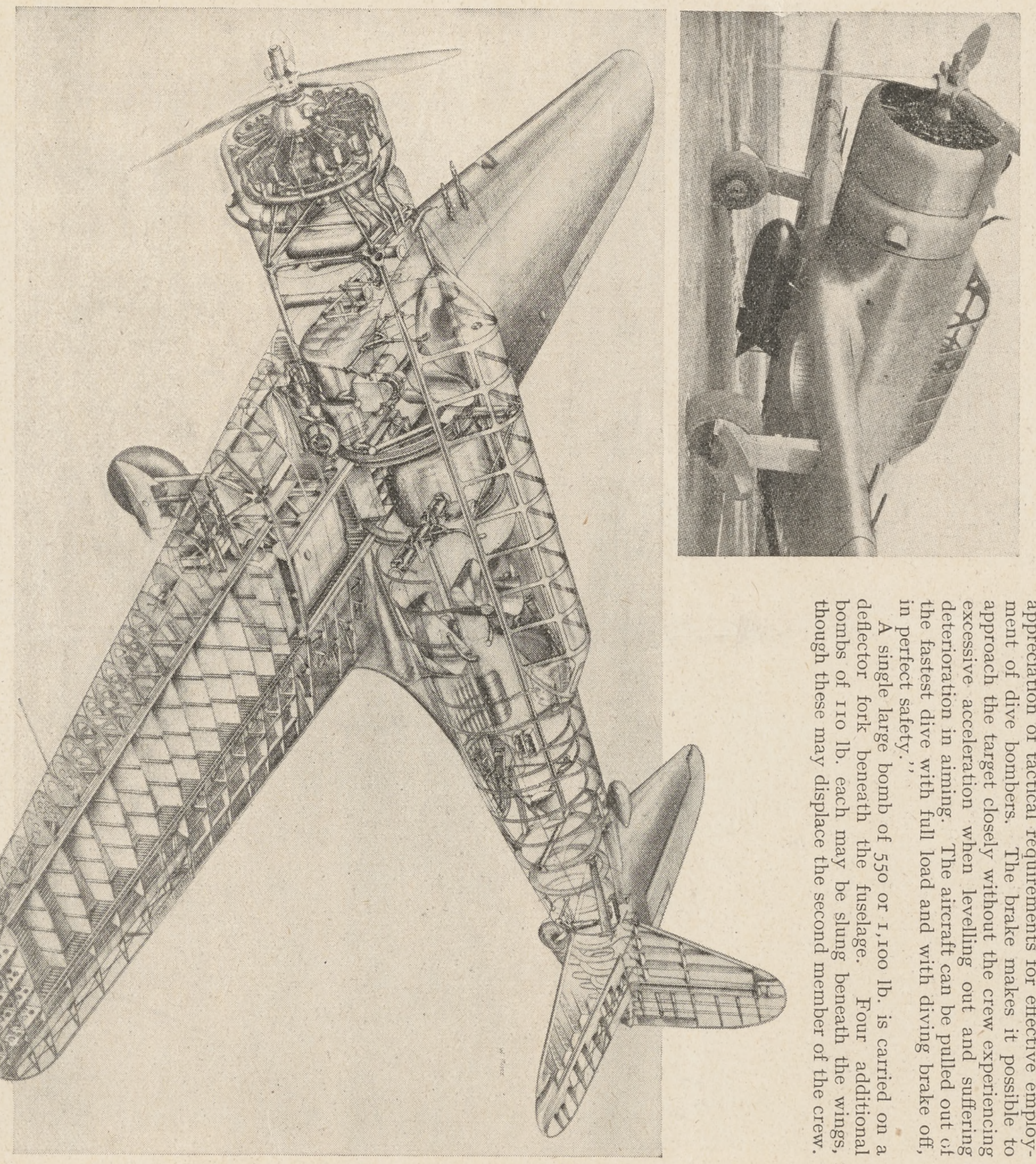
SAN DIEGO

This month has been a very busy one for the **Consair Flyer's Club. Al Becker** has been preparing for his private ticket. **W. E. Jones** is ready to solo. **Stan Mahoney** received a bad cut on his thumb while installing a carburetor on a Pratt & Whitney. Our two new members, **Bennett** and **McFadden** should be ready for that old solo flight soon.

This month's Orchid goes to **Barney Farley** for his coolheadness, quick thinking and fine judgment in bringing the plane down in a forced landing safely on the beach along the Coronado Strand. —**Al Drayman.**

Recent announcement has been made of the engagement of **Raymond Dinson** to **Miss Ivalena Jones,** secretary at Consair. Ray, also an employe of Consair, is a charter member of the **Southern California Flyers.**

» OUTDOOR ASSEMBLY of airplanes is being practiced most extensively at Consolidated in San Diego where temporary canvas-covered sheds, divided into stalls are used for finishing operations on hulls. In the yard are dozens of partially completed ships awaiting parts from subcontractors in other parts of the country. Meanwhile construction is progressing on a building larger than the present huge plant and a parts factory is planned to be built a short distance from the airport. Employment records showed 13,000 on the day of our visit. Aviation 12/40



A thoroughly sectioned view of the Vultee V-11, which can be used for bombing or ground attack. Above it is shown how a single large bomb can be carried externally.

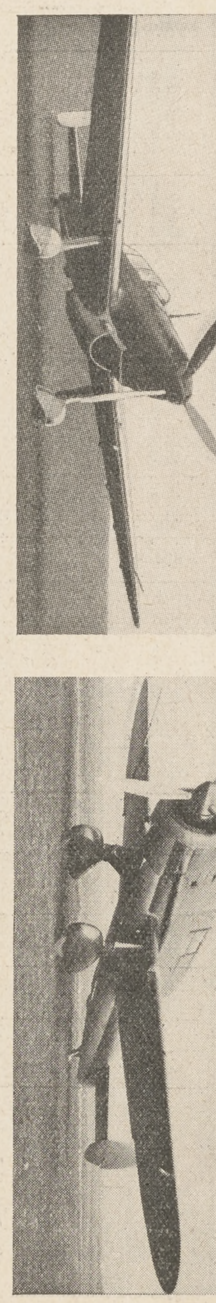
projectiles are stowed internally, but for the diving attacks the trap doors are locked in the closed position and a single bomb of 400 kg. (880 lb.) is suspended externally. The air brakes take the form of hydraulically operated slats below the wing just aft of the leading edge and it is claimed that, with these brakes in operation, 180-deg. aileron turns can easily be made over a vertical path of 2,300ft. Without the brakes a speed of 400 m.p.h. is reached. Terminal velocity dives have been continued from 13,000ft. to 3,300ft.

It is not without interest to compare the performance of the G-1 short-range dive-bomber with its external bomb with that of the normal bomber version with internal stowage. These figures relate to the machine as fitted with two Bristol Perseus X engines.

	DIVE BOMBER	NORMAL BOMBER
Bomb Load ..	880 lb.	880 lb.
Weight of Rack(s)	90 lb.	90 lb.
All-up Weight	11,240 lb.	11,900 lb.
Top speed	301 m.p.h.	298 m.p.h.
Climb to 19,685 ft.	10.9 min.	12.2 min.
Ceiling	30,180 ft.	29,200 ft.
Range	560 miles	890 miles

The Ju 87 has brakes which are generally similar to those on the G-1, though they are in four, instead of two, sections. Concerning this machine the manufacturers remark: "The diving speed can be limited by a diving brake. This means for limitation is not incorporated as a protection against structural failure, as requisite possibly in other designs of dive bomber, but solely in thorough appreciation of tactical requirements for effective employment of dive bombers. The brake makes it possible to approach the target closely without the crew experiencing excessive acceleration when levelling out and suffering deterioration in aiming. The aircraft can be pulled out of the fastest dive, with full load and with diving brake off, in perfect safety."

A single large bomb of 550 or 1,100 lb. is carried on a deflector fork beneath the fuselage. Four additional bombs of 110 lb. each may be slung beneath the wings, though these may displace the second member of the crew.



Two single-engined multi-purpose machines which are similar in that they have a fixed undercarriage and twin fins and rudders. On the left is the new Swiss C.36 and on the right the Polish P.Z.L. Sum.

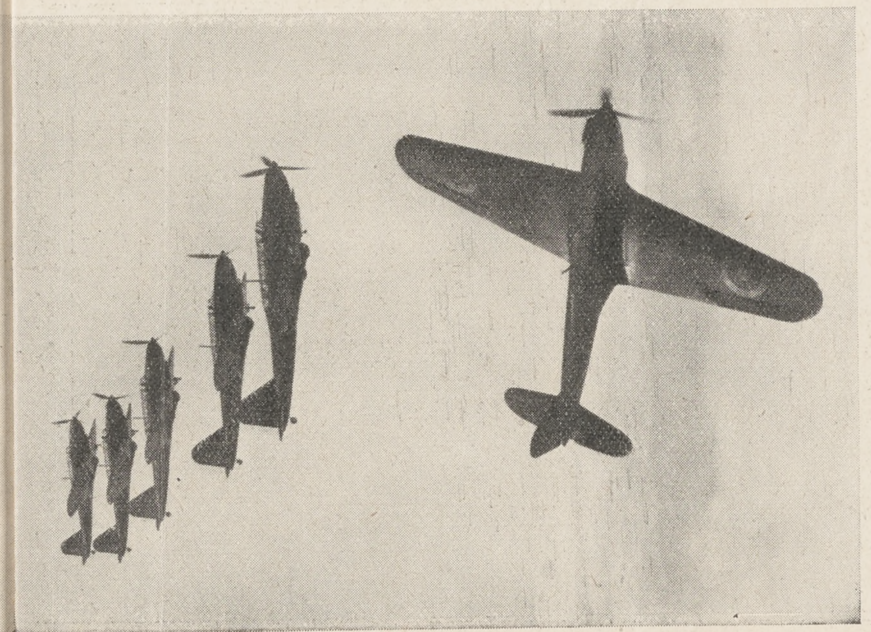
when diving with flaps down. The machine has been developed into the S.M.86, which has a higher performance.

Mr. Folland advocates the adoption of a super-fast unarmed single-seater dive-bomber and maintains that such a machine could be made at least as fast (with reduced factors at the start) as an intercepter fighter despite the fact that it would have a range of 1,400 miles. One would presume in view of its cleanness (estimated top speed 470 m.p.h.) that some extremely efficient form of diving brake would be needed; possibly a reversible-pitch type of airscrew would be used in addition to aerodynamic brakes.

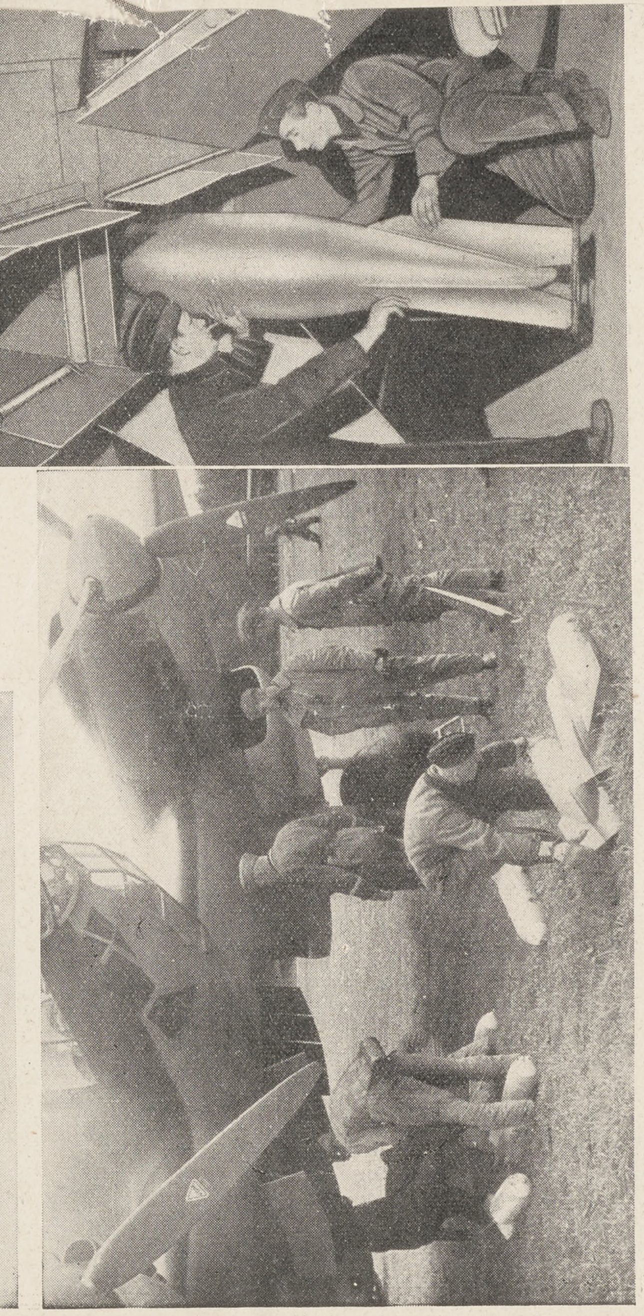
Outstanding among the two-seater dive-bombers is our own Blackburn Skua which is fitted with special hydraulically operated speed-reducing flaps. When fully depressed these limit the diving speed to about 220 knots (255 m.p.h.).

Dive-Control

Exhibitions of "dive-control" have also been given in public by two other foreign dive bombers, one a version of the Fokker G-1 and the other the Junkers Ju 87. As there is no airscrew in the nose of the Fokker the problem of guiding the bomb clear of the structure is simplified and aiming facilitated. For normal horizontal bombing the



On the left are Fairey Battles of the R.A.F. in the act of "peeling off" from an echelon formation to deliver a dive-bombing attack.



Many of the Continental bombers have vertical bomb stowage. Below on the left a Heinkel He 111K is seen being "bombed up," while on the right a large projectile is being persuaded into the bomb cell of a Ju 86K.

Dive-Bombers

Designation of Aircraft	Span		Wing Area	Wing Loading	Gross Weight	Disposable Load	Engine Type	Cooling	Rated Power	Max. Speed	Attained at	Climb		Service Ceiling	Typical Armament	Progress
	ft.	in.	sq. ft.	lb./sq. ft.	lb.	lb.			h.p.	m.p.h.	ft.	To ft.	In min.	ft.		
GREAT BRITAIN																
Blackburn Skua	46	2	312	21.8	6,811	1,321	Bristol Perseus XII ...	A	745	225	6,500	—	—	20,200	5 rcmg	OP
Hawker Henley ...	47	10½	342	26.4	9,050	3,350	Rolls-Royce Merlin II ...	L	990	300	17,500	19,680	15	29,000	2 rcmg	IS
Fairey P.4/34	47	4½	346	25.4	8,787	2,382	Rolls-Royce Merlin II ...	L	990	284	17,200	—	—	29,600	2 rcmg	IP
AMERICA																
Bell BG-1	36	0	353.8	17.3	6,641	2,821	Wright Cyclone F56 ...	A	755	206	11,300	—	—	24,950	2 rcmg	AO
Brewster XSBA-1 (138) ...	39	0	259	23.16	6,000	2,000	Wright Cyclone G... ...	A	750	285	—	—	—	—	2 rcmg	IP
Curtiss SBC-4 (Helldiver 77).	34	0	317	18	5,710	1,544	Wright Cyclone G3 ...	A	840	235	9,800	—	—	25,700	2 rcmg	IS
Douglas DB19	41	6	318.6	20.5	6,527	2,025	P. and W. Twin Wasp Jr.	A	750	223	—	—	—	25,000	2 rcmg	IS
Vought SB2U-1 (V.156) ...	42	0	305.3	21.3	6,500	2,000	P. and W. Twin Wasp Jr.	A	750	257	—	—	—	28,200	2 rcmg	IS
GERMANY																
Blohm and Voss Ha.137 ...	36	7	252.8	21	5,313	1,320	Junkers Jumo 210c ...	L	680	205	6,560	13,120	9	22,960	2 rcmg	PA
Junkers Ju.87	45	4	344	26.7	9,200	3,000	Junkers Jumo 211 ...	L	940	240	—	—	—	25,000	3 rcmg	IS
HOLLAND																
Fokker G.1	54	1½	384	27	11,243	3,637	Bristol Perseus X ...	A	1,460	300	—	19,680	11	29,000	5 rcmg	IS

Consolidated Aircraft Corp., San Diego, Calif., $75,313 for airplanes.

Glenn L. Martin Co., Baltimore, Md., $106,125 for airplanes.

United Aircraft Corp., East Hartford, Conn., $59,490,703 for airplane engines.

AVIATION, December, 1940

Aviation 10/40 *Consolidated Aircraft* has purchased the Hall Aluminum Aircraft Corporation.

Aero Digest - 12/40

N. Y. STOCK EXCHANGE

Week Ending:	October 26				November 2				November 9				November 16			
	High	Low	Change	Sales	High	Low	Change	Sales	High	Low	Change	Sales	High	Low	Change	Sales
American Airlines	62	59¾	— ⅞	4,900	63¼	60	+1¼	10,300	65	60¼	+1¾	6,700	64¼	60⅛	—3½	4,900
Aviation Corp.	4⅞	4½	......	14,700	5¼	4½	+ ½	28,600	5⅞	4⅞	+ ¾	48,000	6	5¼	— ½	32,900
Bendix Aviation	31¾	30⅝	+ ¼	8,300	33⅞	30⅝	+2⅞	21,200	35	32¾	+1½	26,800	34⅞	33	—1⅝	9,900
Boeing Airplane	16⅜	15¾	+ ⅛	11,200	17¾	15¾	+1⅝	37,500	18½	16¼	+ ⅞	36,800	21	18⅜	+ ¾	65,000
Consolidated	23	21¾	— ½	1,000	23½	21¼	+1⅝	4,100	25¾	21⅞	+2⅜	6,600	27½	24¾	—1	10,000
Continental Motors	3⅝	3⅜	— ⅛	9,300	3¾	3⅜	+ ¼	12,900	4	3½	+ ⅛	41,900	4⅜	3⅞	......	80,000
Curtiss-Wright	7¾	7⅜	— ¼	23,800	8⅜	7⅝	+ ⅝	52,500	10½	8⅛	+2⅛	173,600	10¾	9¾	— ⅜	130,900
Curtiss-Wright A	28	27½	— ⅜	2,900	28½	27¾	+ ⅝	6,800	30	28¼	+1½	12,100	30	29	— ½	5,600
Douglas Aircraft	87¼	82½	+3¼	11,200	91¼	84	+4¼	10,900	90	82⅜	+2	26,800	88	80½	—5	10,300
Eastern Airlines	37⅝	35⅛	+2¼	21,600	37⅞	36½	— ⅛	14,700	39¼	34¾	+1⅞	20,000	39	36	—2⅞	14,300
Grumman	17½	16¾	—1⅛	1,600	17⅞	16¾	+ ¾	4,000	19¼	16¾	+1¾	6,200	20⅛	17¾	—1	7,500
Lockheed	29	27¾	—1	9,100	30¾	27⅞	+2⅛	28,100	32¾	28⅛	+2⅝	41,800	33⅝	30½	—1⅞	44,300
Martin, G. L.	32¼	30⅝	— ⅞	11,600	33¾	30½	+2¼	21,100	35⅛	31¾	+2	32,800	35¾	33½	—1⅜	24,300
National Aviation	11	10⅜	— ¼	1,300	11½	10⅝	+ ¾	2,400	12⅜	10⅝	+1⅛	6,600	13⅛	11½	— ⅞	7,400
North American	17¼	16⅝	— ⅜	6,400	18¼	16⅝	+ ⅞	22,100	18¾	16¾	+1⅛	31,600	19⅝	17⅞	— ¾	33,700
Pan American	16	15⅛	+ ⅛	11,700	17½	15⅝	+1	27,000	17⅛	15⅜	+ ⅛	16,700	18⅛	16½	+ ⅛	20,100
Sperry Corp.	41⅞	40⅜	+ ⅞	5,400	43¾	41¼	+1⅛	11,600	43¾	40⅜	+ ½	10,500	43⅞	42¼	—1¼	7,100
Square D Corp.	35	34	......	4,700	34⅞	33¼	— ⅝	3,400	34⅞	33¼	......	3,900	34½	32¼	—1	2,800
TWA	18¾	17¾	+ ¾	6,600	19	18⅜	— ⅜	3,400	19¼	17¾	+ ¼	3,200	20¼	18⅝	+ ⅞	5,800
United Airlines	19⅛	17⅝	+ ½	27,400	19⅜	18⅝	+ ⅜	18,900	19¼	17⅛	— ⅜	23,900	19⅝	18	— ⅝	18,200
United Aircraft	40	39	+ ½	7,700	43	39½	+3	20,000	44⅞	40½	+2⅛	26,800	47	45	+ ⅜	31,400
Wright Aero	98	98	—2	50	105	97	+5	180	110	102	+7	170	111	107	—3	120

THE TRIBUNE-SUN, San Diego, California, Saturday, December 28, 1940

San Diego Defense Boom Overshadows City's Other Claims to Fame

'BIGGEST NEWS' GIVES WAY TO PHENOMENAL GROWTH

CONTINUED FROM PAGE ONE

the company now employs 1600 men working on a backlog of $10,600,000 in a plant twice its 1939 size. The Ryan school is training 243 army air corps cadets, as compared with 63 the first of the year.

The army moved into town in force, at least on paper. Ft. Rosecrans, which has "guarded" the harbor with ancient guns manned by skeleton crews for lo, these many years, came to life under the impetus of a building project to house 3000 men and 125 officers. Construction of a cantonment for 7500 men and 300 officers got under way on Torrey Pines mesa. By a rotation system, the camp is expected to train 20,000 draftees between March 15, 1941, and March 15, 1942.

Hits New High

With marine corps recruiting hitting a new high, Camp Elliott mushroomed on Kearny mesa, and the Barnett ave. base pushed its limits so far southward that on one occasion a sergeant, calling the roll, got a "Here sir," from a watchman at the Consolidated plant. There were 5100 officers and men at the base on Jan. 1; the total is now approximately 10,300. Camp Elliott went from 50 to 3100.

The naval training station expanded to train double the number of bluejackets as the fleet was built up to fighting strength. The figures tell the story—2661 men on Jan. 1; 5679 today.

Activity Intensified

Activity was intensified at both the North Island naval air station, largest in the nation, and the destroyer base, but little news came through their closely-guarded portals . . . The navy this year clamped down a censorship on news and pictures of ships and planes. This was often intelligent, but sometimes it was considered stupid by newsmen.

The 1940 census, taken early in the year, showed a population of 202,038, including about 7000 men of the fleet who maintained residences ashore. Approximately 21,000 others were not counted. The warships left for six weeks of maneuvers in the Hawaiian area April 1 but remained there the rest of the year, although contingents returned for two-weeks "visiting" periods during the fall months. An estimated 30,000 new residents flocked into town after the census, drawn by the lure of national defense jobs.

Started by Navy

All this added up to a housing shortage. In January, the city council had heeded the objections of realtors and apartment house owners and "tabled" a proposed USHA slum clearance, low-rent housing project. In July, the navy took matters into its own hands, and, (with the approval of the council, went ahead with plans for low-rent housing. A $3,800,000 project was started for construction of 1200 housing units for navy families, 600 adjoining the destroyer base and 600 near the naval training station.

On Oct. 31, Charles F. Palmer, defense housing coordinator, announced in Washington that the largest of 63 housing projects in vital defense areas would be located in San Diego. The $15,000,000 program provides for construction of 3000 residential units for civilian workers on Kearny mesa. The first contract, for a $9,070,000 slice of the job, was awarded to a Los Angeles firm Dec. 12.

Everybody Here

Business boomed. On Dec. 13, Newell Jones wrote in The Tribune-Sun that "Merchants' Christmas cash registers were dinging like the dongs of a legion of lunatic Swiss bell ringers." (They had done a fair bit of dinging in the late summer and fall months, too, when the town went convention crazy. Everybody met here from embalmers to magicians, from the California American Legion to the state C.I.O.)

Honest reporting makes it impossible to dismiss, with a well-bred shrug of distaste, any mention of the seamier side of life in a national defense center. Here are a few notes which shed light on some of our social problems:

Year's Tragedies

Last spring, after the fleet left, the mutilated body of a sailor was found under Cabrillo bridge. . . . Lt. Comdr. J. F. Luten, medical corps, naval hospital, told a health officers' convention here in September that prostitutes should be placed in segregated districts and kept under strict medical supervision. He said that venereal diseases occupied second place among all causes of illness in the navy in 1938. "A total of 10,782 cases were admitted," he said. . . . On Dec. 11, a sailor's wife with a liking for liquor got a year in the county jail for the fatal neglect of her baby son. . . . On Dec. 16, a navy wife, grieving over the absence of her husband, hanged herself in the garage of her mother's home. . . . On Dec. 18, the body of a new-born baby boy, carefully wrapped in a sheet and quilt, was found in the city dump. . . . On Dec. 19, a representative of the Y.W.C.A. said at a public meeting that the "Y" now is forced to shelter female hoboes, hitch-hikers, inebriates and other questionable characters.

In Van of Ghastly Parade

San Diego has long marched in the van of the ghastly parade of corpses strewn from coast to coast by that marvelous mechanical creation, the automobile, which, in the hands of punks, drunks, dimwits and just plain careless damphools, is more deadly than all the bombs dropped on Britain. City traffic deaths rose from 45 in 1939 to 61 as of today.

The national draft lottery Oct. 29 was a big story to the 30,000 San Diegans between 21 and 35 who had registered for the nation's first peace time conscription. On Nov. 22, the first contingent of 31 draftees were given a royal send-off at Union station by the marine corps band and a large crowd of citizens.

In the field of labor, both the A.F.L. and C.I.O. were active in organizing during the year. In August, a dispute between the San Diego Building and Construction Trades council, A.F.L., and local lumbermen, shut down 13 lumber and building material yards for several days. The "strike" or "lockout" involved several hundred members of the millmen's and teamsters' unions.

Distinguished Guests

Distinguished visitors included Col. Frank Knox, secretary of the navy, and Wendell Willkie. Col. Knox came here by plane from Honolulu to inspect naval establishments Sept. 16 and 17. Willkie made a campaign speech to 10,000 persons at Lane field Sept. 18.

Two local amateur teams reached the finals in national tournaments. The San Diego State college basketball team, coached by Morris Gross, won four straight last-minute victories in the National Intercollegiates at Kansas City in March, only to lose out in the finals to Tarkio, Mo., college, 52 to 42. (The Aztecs lost the title by one point in 1939.) Post 6, American Legion, junior baseball team, which won the national championship in 1938, again was coached into the "little world series" by Mike Morrow. They lost the deciding game to Albemarle, N. C., 9 to 8, after their two Negro stars were barred from play.

Consolidated Tests Long Range Bomber

Initial tests were undertaken over San Diego recently of Consolidated Aircraft's B-24, a new, long-range bomber, the first of a fleet of seven destined for Britain. It is powered with four 1,200 horsepower engines, and has a wing span of 110 feet.

The B-24 has a capacity of four tons of bombs, and a crew of nine, and its cruising radius is 3,000 miles. Top speed is believed to be 300 miles an hour.

It was reported that these bombers would be used to ferry Canadian pilots to the British Isles.

12/40 Canadian Aviation

'GERANIUMS AND ROSES' GIVE WAY TO DEFENSE BOOM

-:- -:- -:- -:- -:- -:- -:- -:- -:-

Customary 'Biggest News' Stories Overshadowed by 1940 Growth

By SPENCER HELD

San Diego, long famed for its pretty girls and sun-bronzed athletes, its shirt-sleeved tourists and the dungaree navy, became a national defense boom town in 1940.

The new World war overshadowed local news in 1939, and we abandoned our annual custom of picking the 10 biggest San Diego news stories of the year. But the then "phony war" had some repercussions here—the fleet returned a month early from the east coast; President Roosevelt ordered 49 World war destroyers reconditioned at the local base; 21 warships departed for "security patrol" duty in Hawaiian waters, and Consolidated Aircraft Corp. got some contracts which seemed fat at the time.

We hadn't seen anything, yet. In 1940, when the mechanized German army overran France and the Luftwaffe besieged Britain, a state of emergency was proclaimed in the United States and San Diego became a focal point of tremendous importance on the national defense map.

Consolidated Aircraft expanded enormously to handle a flood of orders from Britain and the United States. New buildings were dedicated on the Lindbergh field site Sept. 2, and work was pushed on another final assembly building, 360 by 720 feet, and a single 200-by-1500-foot structure for small parts assembly.

On Dec. 18, it was announced that a parts factory would be built along the east side of Pacific highway about 1 1-3 miles north of the main plant. This will cost more than $14,000,000 and will virtually double Consair's present size. It is scheduled to go into full operation by June, 1941.

The number of employes jumped from 3170 to 13,832 on Dec. 24, and the backlog of orders soared from a respectable $42,141,694 to an incredible $323,000,000 at year's end.

Ryan Aeronautical Co. also went into high-geared production. With 700 employes and a backlog of $1,500,000 at the beginning of the year,

(Continued on Page 12A, Col. 1)

Industrial LA County 11-12/40

Airplane and Parts Backlogs in Pacific Coast Factories

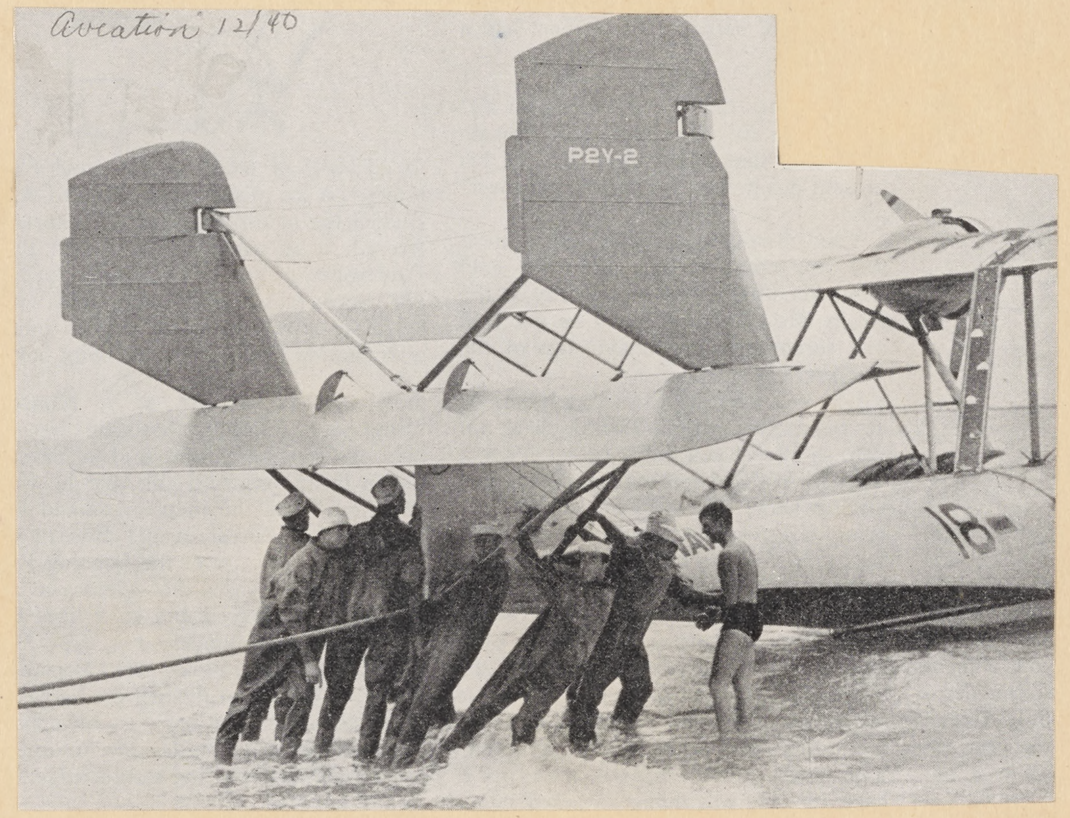
(As of November 1, 1940)

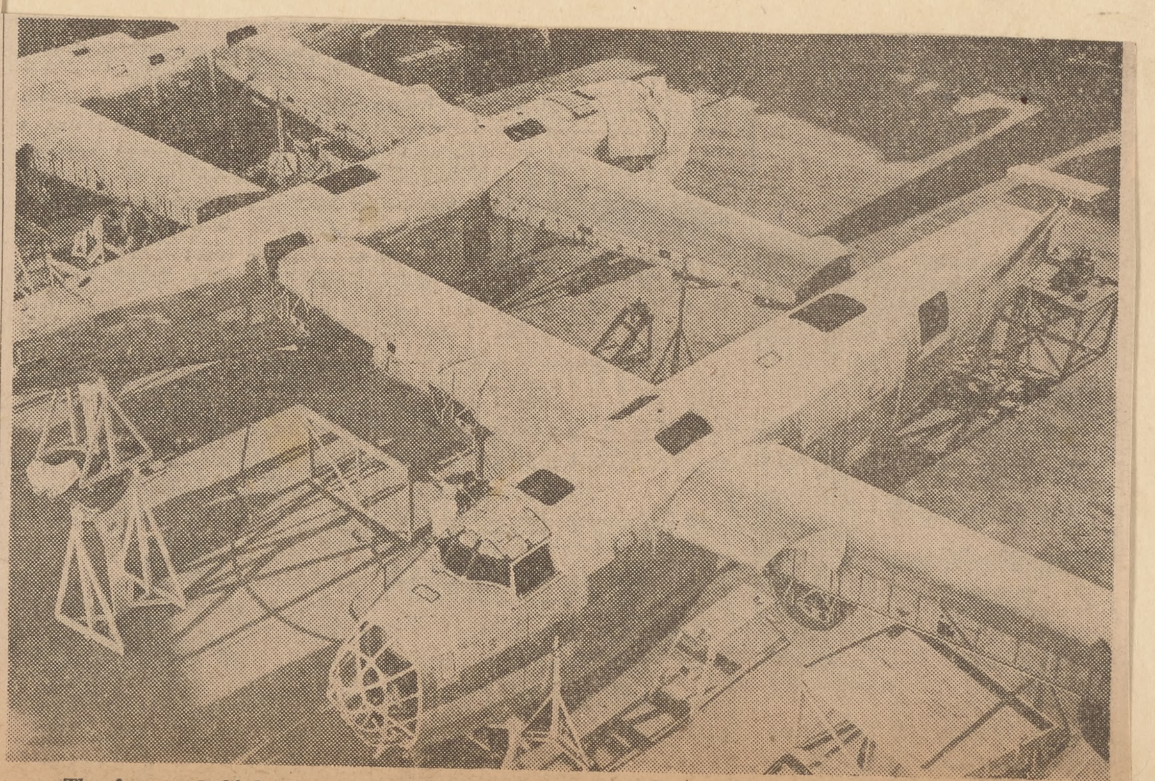
	Los Angeles County	
Douglas	$350,000,000	
Lockheed	280,000,000	
North American	220,000,000	
Northrop	24,000,000	
Vultee	77,011,935	
Adel Precision	750,000	
Aerco Corporation	169,000	
Aircraft Accessories	1,600,000	
Hardman Aircraft	700,000	
Kinner Motors	700,000	
Menasco	4,000,000	
Timm Aircraft	1,047,639	
Los Angeles County	$959,978,574	
	San Diego	
Consolidated Aircraft Corporation	328,842,500	
Ryan Aeronautical	11,400,000	
Solar Aircraft Co.	3,650,000	
	$343,892,500	
Southern California		$1,303,871,074
	Seattle	
Boeing Aircraft Co.	$184,000,000	$ 184,000,000
TOTAL PACIFIC COAST		$1,487,871,074

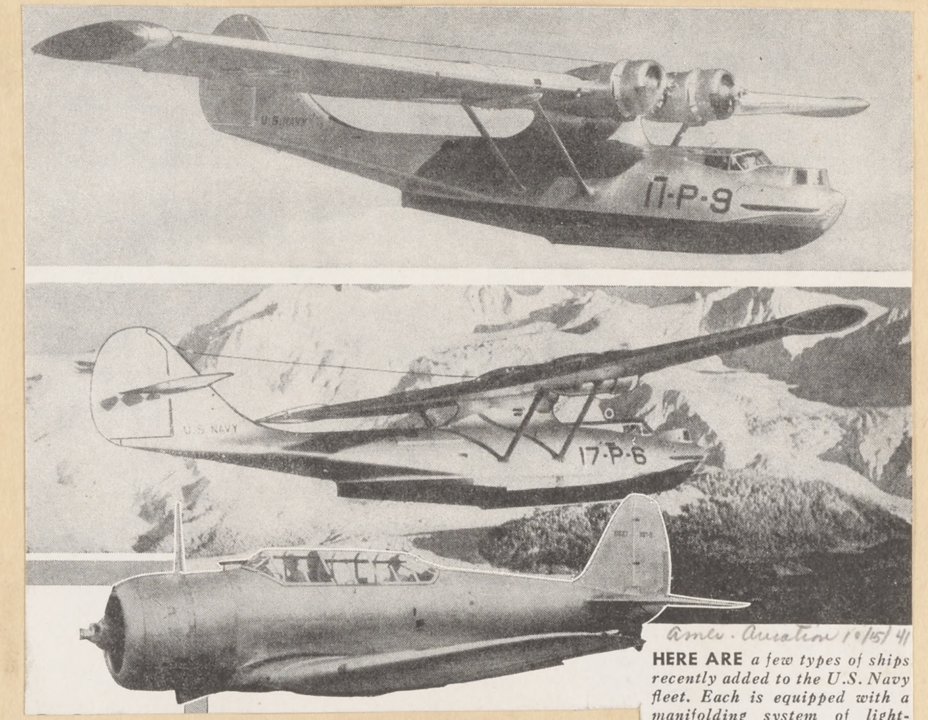
Los Angeles County	Nov. 1, 1940	Oct. 1, 1939	Oct. 1, 1938
Backlog of Orders	$959,978,574	$108,349,597	$65,486,008
Persons Employed	50,074	20,256	11,854
Average Annual Payroll	$ 91,933,708	$ 25,806,263	$17,606,589

Floor Area of Aircraft Plants in Los Angeles County

Nov. 1, 1940—Built and Building	8,500,000 square feet
Aug. 1, 1940	3,836,970 square feet
Jan. 1, 1940	2,714,000 square feet
Jan. 1, 1939	2,000,000 square feet

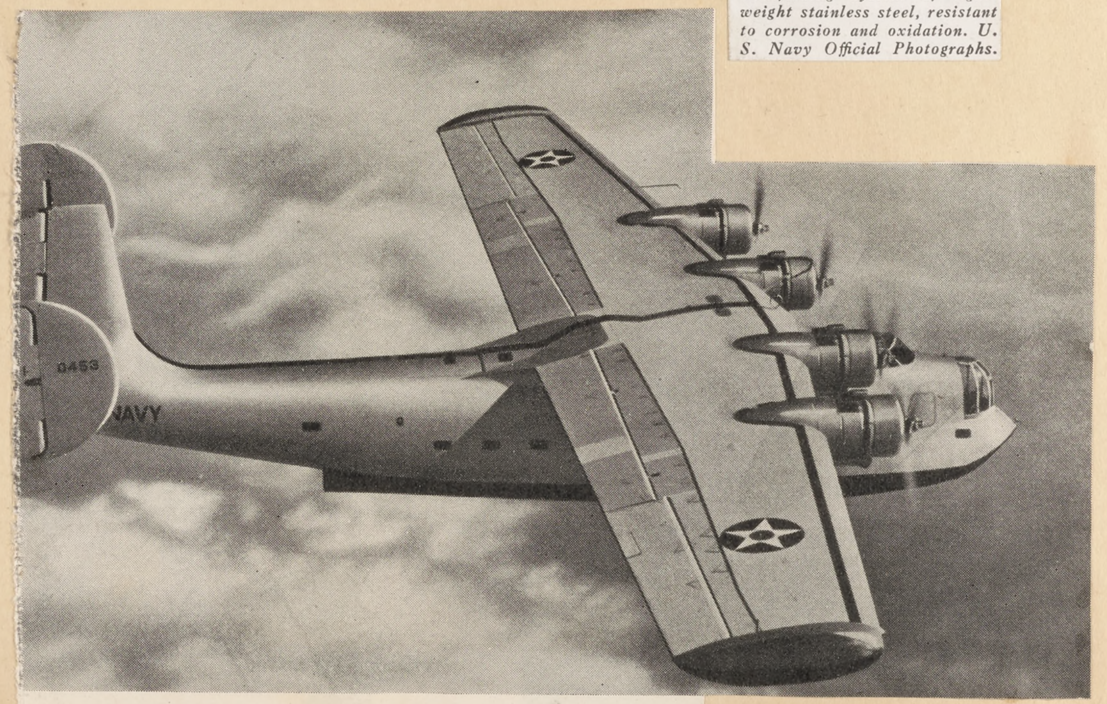

Aveation 12/40


The famous B-24 bombers, four-motored, built by Consolidated Aircraft Corp. for Britain.—(Photo by Stanley Griffin, Tribune-Sun staff photographer.)



Amer. Aviation 10/15/41

HERE ARE *a few types of ships recently added to the U.S. Navy fleet. Each is equipped with a manifolding system of light-weight stainless steel, resistant to corrosion and oxidation. U. S. Navy Official Photographs.*



NSOLIDATED AIRCRAFT CORPORATION'S XPB2Y-1, one of the newest and htiest arms of the Navy's coast defense, contains many parts fab- ed from light-weight Synthane. *Official photograph U. S. Navy.*

Aero Digest 11/40

DAILY EXPRESS Thursday, November 21, 1940

LONDON —ENGLAND

ENLIVEN SOUPS WITH H·P SAUCE

BLACK-OUT ZERO HOUR TO-NIGHT UNTIL 8.1 A.M.
MOON RISES 11.27 PM MOON SETS 1.33 PM

Daily Express
No. 12,636 Thursday, November 21, 1940 One Penny

End CATARRH
You can clear away stuffy congestion, get rid of dangerous germs and stop that constant flow of poison into your system. How? Simply by applying 'Mentholatum' into your nostrils. The instant you do so, this breathable balm volatilises and you commence inhaling its antiseptics. Quickly, pleasantly, the Mentholatum vapours stop the gathering of germs, clear the nasal cavities and open up your breathing passages. 'Mentholatum' Brand Balm stops Head Colds, banishes Catarrh, ends Chest Colds. All Chemists, 6d. and 1/3 plus Purchase Tax.

As R.A.F. bombers make 1,400-mile trip to fire the Skoda works—

46 FLYING FORTRESSES ARE RELEASED TO US

Latest types will be fitted
with secret b

**SIMULTANEOUS WITH RELEASE OF
AIR RAID FAR INTO GERMANY
THOUGHT WE COULD NOT REACH CA
NIGHT:—**

Daily Express Staff Reporter C. V. R. THOMPSON
NEW YORK, Wednesday

**AMERICA'S Army High Command toni
announced that they have given up
Britain a fleet of twenty-six four-engi
bombers of the Flying Fortress type, wh
were awaiting delivery to the U.S. Arn**

These machines, claimed to be the most adva
bomber type in the world, are a development o
Boeing 22-ton Flying Fortress, and were built b
Consolidated Aircraft Corporation at San D
California.

General George C.
Chief of Staff, said that d
would start immediate
would be completed by th
this month.

"In fact," he said, "B
supposed to have taken
of some of them last Sat

The High Command a
ment reveals, too, that ne
are well under way to suppl
with another twenty Fly
tresses now in process of
at the Boeing Company's
plant.

ALL BY MARC

Delivery of this fleet,
Marshall indicated, would
pleted by March 1.

These twenty are being
with the famed Sperr
sight, said to be capable
ing a bomb "into a ba
10,000 feet."

The Consolidated fou
bombers have just begu
off the production lines,
negotiations just complete
able Britain to take first

General Marshall said that the United States Army is prepared to accept a three months' lag in its own deliveries of this type.

"In return," he said, "the British Government has released to the United States sufficient engines to equip forty-one Boeing Flying Fortresses, which the United States Army has already accepted without engines or will have received without engines before January 1."

Amer Aviation 10/1/40

CONSOLIDATED

Already claiming the largest U. S. integrated plane plant, Consolidated Aircraft Corp. disclosed plans to built an $800,000 structure which will add 300,000 sq. ft. of floor space to approximately 2,000,000 sq. ft. now in use.

The new addition, which will be located on 22 acres of tidelands on which the firm has held an option, will extend into Lindbergh Field, San Diego, Cal.'s, municipal airport, due west of the present plant. It will be 200 ft. wide and 1,500 ft. long.

The company said its backlog is now in excess of $120,000,000 and that its list of employes has reached an all-time high of 9,485. Hundreds of additional workers will be employed when the new additions are opened.

Western Flying 12/40

SAN DIEGO

This month has been a very busy one for the **Consair Flyer's Club. Al Becker** has been preparing for his private ticket. **W. E. Jones** is ready to solo. **Stan Mahoney** received a bad cut on his thumb while installing a carburetor on a Pratt & Whitney. Our two new members, **Bennett** and **McFadden** should be ready for that old solo flight soon.

This month's Orchid goes to **Barney Farley** for his coolheadness, quick thinking and fine judgment in bringing the plane down in a forced landing safely on the beach along the Coronado Strand. —**Al Drayman.**

Recent announcement has been made of the engagement of **Raymond Dinson** to **Miss Ivalena Jones,** secretary at Consair. Ray, also an employe of Consair, is a charter member of the **Southern California Flyers.**

» OUTDOOR ASSEMBLY of airplanes is being practiced most extensively at Consolidated in San Diego where temporary canvas-covered sheds, divided into stalls are used for finishing operations on hulls. In the yard are dozens of partially completed ships awaiting parts from subcontractors in other parts of the country. Meanwhile construction is progressing on a building larger than the present huge plant and a parts factory is planned to be built a short distance from the airport. Employment records showed 13,000 on the day of our visit. Aviation 12/40

Aviation 10/40 *Consolidated Aircraft* has purchased the Hall Aluminum Aircraft Corporation.

Consolidated Aircraft Corp., San Diego, Calif., $75,313 for airplanes.
Glenn L. Martin Co., Baltimore, Md., $106,125 for airplanes.
United Aircraft Corp., East Hartford, Conn., $59,490,703 for airplane engines.

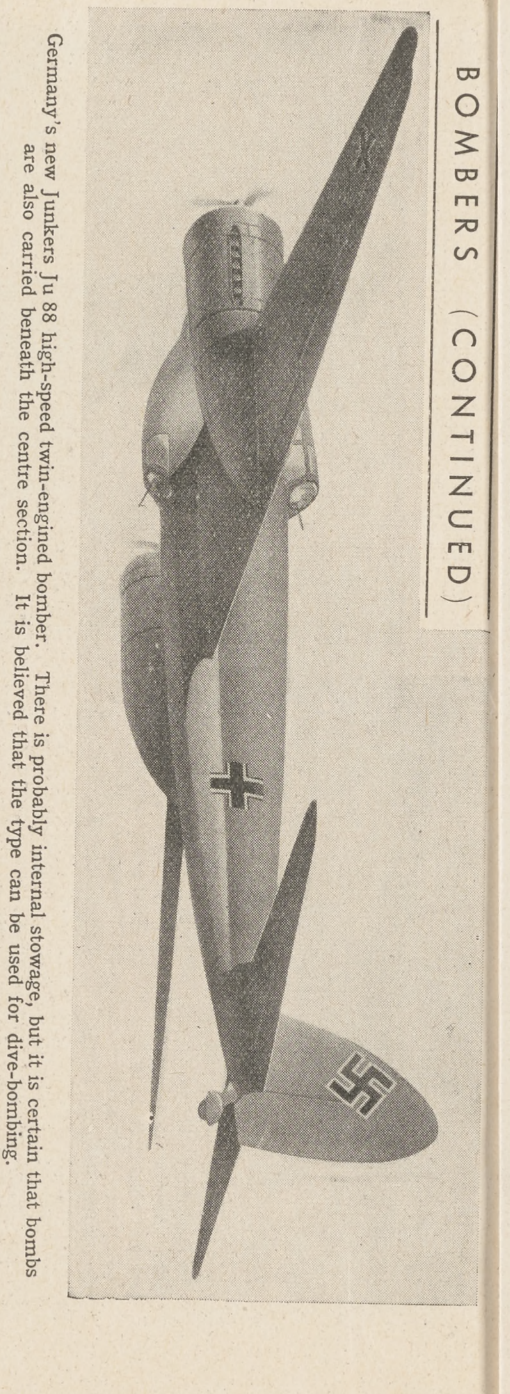
AVIATION, December, 1940

Aero Digest - 12/40

N. Y. STOCK EXCHANGE

	Week Ending: October 26				November 2				November 9				November 16			
	High	Low	Change	Sales	High	Low	Change	Sales	High	Low	Change	Sales	High	Low	Change	Sales
American Airlines	62	59¾	−⅞	4,900	63¼	60	+1¼	10,300	65	60¼	+1¾	6,700	64¼	60⅛	−3½	4,900
Aviation Corp.	4⅞	4½	......	14,700	5¼	4½	+½	28,600	5⅞	4⅞	+¾	48,000	6	5¼	−½	32,900
Bendix Aviation	31¾	30⅝	+¼	8,300	33⅞	30⅝	+2⅞	21,200	35	32¾	+1½	26,800	34⅞	33	−1⅝	9,900
Boeing Airplane	16⅜	15¾	+⅛	11,200	17¾	15¾	+1⅝	37,500	18½	16¼	+⅞	36,800	21	18⅜	+¾	65,000
Consolidated	23	21¾	−½	1,000	23½	21¼	+1⅝	4,100	25¾	21⅞	+2⅜	6,600	27½	24¾	−1	10,000
Continental Motors	3⅝	3⅜	−⅛	9,300	3¾	3⅜	+¼	12,900	4	3½	+⅛	41,900	4⅜	3⅞	......	80,000
Curtiss-Wright	7¾	7⅜	−¼	23,800	8⅜	7⅝	+⅝	52,500	10½	8⅛	+2⅛	173,600	10¾	9¾	−⅜	130,900
Curtiss-Wright A	28	27½	−⅜	2,900	28½	27¾	+⅝	6,800	30	28¼	+1½	12,100	30	29	−½	5,600
Douglas Aircraft	87¼	82½	+3¼	11,200	91¼	84	+4¼	10,900	90	82¾	+2	26,800	88	80½	−5	10,300
Eastern Airlines	37⅝	35⅛	+2¼	21,600	37⅞	36½	−⅛	14,700	39¼	34¾	+1⅞	20,000	39	36	−2⅞	14,300
Grumman	17½	16¾	−1⅛	1,600	17⅞	16¾	+¾	4,000	19¼	16¾	+1¾	6,200	20⅛	17¾	−1	7,500
Lockheed	29	27¾	−1	9,100	30¾	27⅞	+2⅛	28,100	32¾	28⅛	+2⅝	41,800	33⅝	30½	−1⅞	44,300
Martin, G. L.	32¼	30⅝	−⅞	11,600	33¾	30½	+2¼	21,100	35⅛	31¾	+2	32,800	35¾	33½	−1⅜	24,300
National Aviation	11	10⅜	−¼	1,300	11½	10⅝	+¾	2,400	12⅝	10⅝	+1⅛	6,600	13⅛	11½	−⅞	7,400
North American	17¼	16⅝	−⅜	6,400	18¼	16⅝	+⅞	22,100	18¾	16¾	+1⅛	31,600	19⅝	17⅞	−¾	33,700
Pan American	16	15⅛	+⅛	11,700	17½	15⅝	+1	27,000	17⅛	15⅜	+⅛	16,700	18⅛	16½	+⅛	20,100
Sperry Corp.	41⅞	40⅜	+⅞	5,400	43¾	41¼	+1⅛	11,600	43¾	40⅜	+½	10,500	43⅞	42¼	−1¼	7,100
Square D Corp.	35	34	......	4,700	34⅞	33¼	−⅝	3,400	34⅞	33¼	......	3,900	34½	32¼	−1	2,800
TWA	18¾	17¾	+¾	6,600	19	18⅜	−⅜	3,400	19¼	17¾	+¼	3,200	20¼	18⅝	+⅞	5,800
United Airlines	19⅛	17⅝	+½	27,400	19⅝	18⅝	+⅜	18,900	19¼	17⅛	−⅜	23,900	19⅝	18	−⅝	18,200
United Aircraft	40	39	+½	7,700	43	39½	+3	20,000	44⅞	40½	+2⅛	26,800	47	45	+⅜	31,400
Wright Aero	98	98	−2	50	105	97	+5	180	110	102	+7	170	111	107	−3	120

BOMBERS (CONTINUED)



Germany's new Junkers Ju 88 high-speed twin-engined bomber. There is probably internal stowage, but it is certain that bombs are also carried beneath the centre section. It is believed that the type can be used for dive-bombing.

There are various reasons for the adoption of two engines for medium-sized bombers. Mainly these are operational, though the problems of airscrew diameter and undercarriage height apply to a certain degree. Particularly in the case of the smaller multi-purpose bombers which can be used as fighters the possibility of installing heavy forward-firing armament is a governing consideration, while the poor forward view, greater complication in the fuselage, vibration, and the difficulty of providing a forward position for the bomb-aimer are other weighty factors militating against the single-engined machine. On the other hand, the fitting of two engines on the wings has certain drawbacks, notably transference of weight outboard with consequent loss in manœuvrability (this may be partially offset by counter-rotating airscrews) and, in the case of certain mid- and high-wing radial-engined machines of comparatively small size, notoriously bad lateral vision.

Aerodynamically, some of the latest multi-purpose bombers, being the fastest of all bombing machines, are a joy to behold, though military requirements necessarily mar their lines. Design varies considerably, low, mid and high wings all being in vogue. Radial engines predominate, for the time being at least.

Although profiting from the same technical advances as high-speed transport aircraft, the structural design of fast bombers may differ considerably as stresses will be concentrated in the bomb cells rather than distributed along the length of the fuselage. Metal-stressed-skin construction is most favoured and on a number of new types a tricycle undercarriage is fitted. Another point of technical interest is the extensive use of beautifully moulded transparent material in the nose. In some types the entire forward part of the fuselage is almost completely transparent, giving an excellent view for the pilot and observer and light for the bomb-aimer.

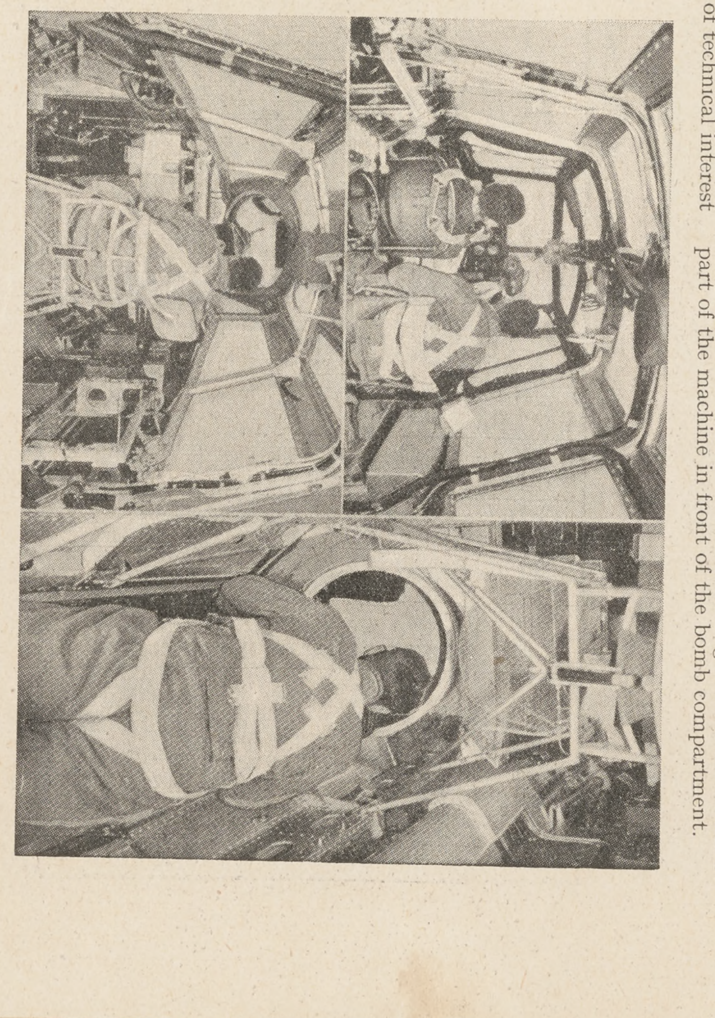
While our Bristol Blenheim and Beaufort have a comparatively roomy cabin extending aft from the pilot's cockpit to a power-driven gun turret the French Potez 63, being a lighter machine and having a fuselage of smaller cross-section, is laid out rather on the lines of the Fairey Battle with an external transparent enclosure. For bombing operations, a crew of two is carried in the Potez, the third man's position being taken up by a cell holding eight 125lb. bombs. One version of the machine has external racks for dive-bombing.

Regulations prevent our referring to the bomb load of the Blenheim or Beaufort so we must turn to the new Martin 167 for an examination of the bomb arrangements. Internal racks are fitted to carry one 1,130lb. bomb; two 624lb. bombs; four 308lb. bombs; or eight 116lb. bombs. These are released through doors in the bottom of the fuselage which are opened by elastic cords and closed by hydraulic power from either the pilot's or the bomb-aimer's position. For ground attack work a large number of small fragmentation bombs are carried in chutes in the bomb bay, supplementing four wing-mounted guns and two free guns.

Gun Installations

Armament, despite the limitations imposed by the comparatively small size of the machines under consideration, differs fairly considerably, though when they are operating exclusively as bombers the fire power is not very heavy.

The standard Blenheim bomber has one fixed wing-mounted gun and a second weapon in a semi-retractable power-driven turret aft of the cabin; the Czech Aero A-300 and the Italian Caproni Ca 135 likewise have a retractable turret, but the front gun is mounted in the nose and has a limited arc of fire; the Potez, Breguet and Breda machines, when functioning solely as bombers, have fixed machine guns, plus one aft gun with a restricted arc of movement. Germany's Dornier Do 215 has a gun with a very restricted movement firing through the pilot's windscreen, a second on top of the fuselage and a third below. The Do 215 is also of interest in that the crew is bunched together in the forward part of the machine in front of the bomb compartment.



On the right are three interior views of the German Dornier Do 215. In two of the views the upper and lower rear guns are shown manned.

TWIN-ENGINED MULTI-PURPOSE MACHINES

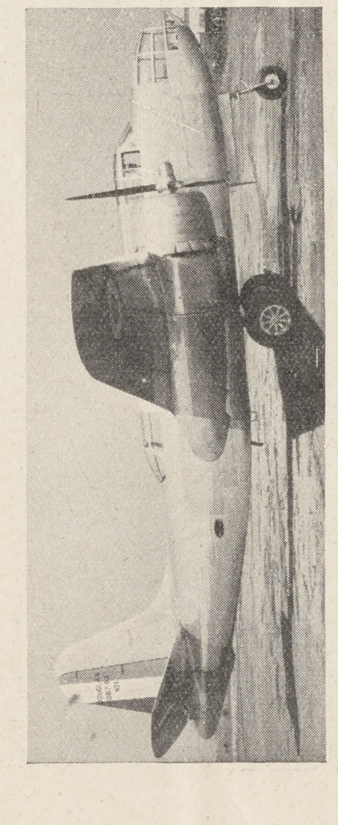
Designation of Aircraft	Span		Wing Area	Wing Loading	Gross Weight	Disposable Load	Engine Type	Cooling	Rated Power	Max. Speed	Attained at	Climb		Service Ceiling	Typical Armament	Progress
												To	In			
	ft.	in.	sq. ft.	lb./ sq. ft.	lb.	lb.			h.p.	m.p.h.	ft.	ft.	min.	ft.		
GREAT BRITAIN																
Bristol Blenheim I (Bomber)	56	4	469	26.6	12,500	4,400	Bristol Mercury VIII ...	A	1,680	285	15,000	20,000	17.5	27,280	2 rcmg	IS
Bristol Blenheim IV (Bomber)	56	4	469	26.6	14,400	6,150	Bristol Mercury XV ...	A	1,680	295	15,000	20,000	17	—	2 rcmg	IS
FRANCE																
Bloch 174 (Recco.) ...	58	7	441	—	—	—	Gnôme-Rhône 14N ...	A	1,740	310	18,000	—	—	—	3 rcmg	IP
Breguet 690 (Fighter) ...	50	6	314.2	30.54	9,570	3,168	Gnôme-Rhône 14M ...	A	1,460	304	16,400	13,120	7	30,500	2 sg 1 rcmg	IS
Potez 63 (Fighter) ...	52	6	355.2	23.8	8,470	2,627	Gnôme-Rhône 14M ...	A	1,460	285	13,120	13,120	7.3	30,000	2 sg 1 rcmg	IS
AMERICA																
Martin 167	61	4	538.5	28.4	15,297	4,711	P. and W. Twin Wasp ...	A	2,000	316	14,000	—	—	31,000	6 rcmg	IS
North American NA.40 (Attack).	66	0	598.5	35.0	21,000	7,450	Wright Two-Row Cyclone	A	2,400	314	17,500	—	—	26,500	7 rcmg	IP
GERMANY																
Dornier Do.17 (Bomber) ...	59	0	592	30.02	17,857	7,408	Daimler-Benz DB600G ...	L	2,100	290	13,120	—	—	—	2 rcmg	IS
Dornier Do.215 (Bomber) ..	59	0	592	31.9	18,920	7,260	Daimler-Benz DB601A ...	L	2,100	310	—	—	—	29,500	3 rcmg	IS
BOHEMIA-MORAVIA																
Aero A-300 (Bomber) ...	62	11	489.6	27.26	11,088	4,587	Bristol Mercury IX ...	A	1,650	291	18,040	19,680	11.5	24,600	2 rcmg	PA
HOLLAND																
Fokker G.1 (Bomber) ...	54	1½	384	29	11,900	4,343	Bristol Perseus X	A	1,460	298	—	19,680	12.2	28,000	5 rcmg	IS
YUGOSLAVIA																
Ikarus Orkan (Fighter) ...	43	5	279.5	29.9	8,360	3,300	Hispano-Suiza 14AB ...	A	1,310	341	13,120	13,120	4.3	35,000	3 rcmg	PA

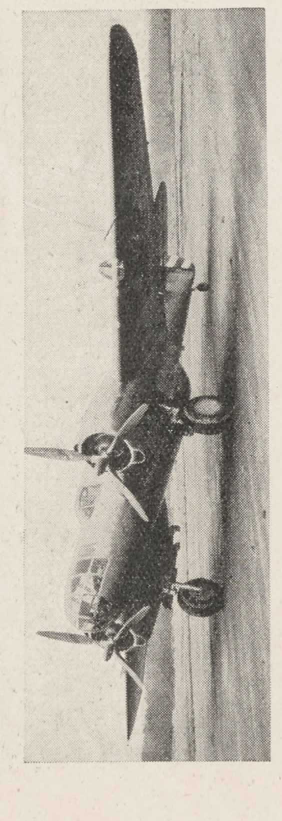
Certain dive-bombers used by the U.S. Navy have diving brakes which take the form of split trailing edge flaps opening like two leaves of a book.

Apart from the Blackburn Skua no Britsh bombers designed with the diving attack in mind have been fitted with diving brakes, though special arrangements are made to guide the bombs clear of the airscrew. On the Fairey Battle, for example, the internally stowed bombs are carried on hydraulic jacks which are retracted into the wing. When released the projectiles fall through trap doors except in the case of dive-bombing when they are lowered beneath the wing surface. It is stated that the normal bomb load is 1,000 lb., though allowance is made for a 500 lb. overload.

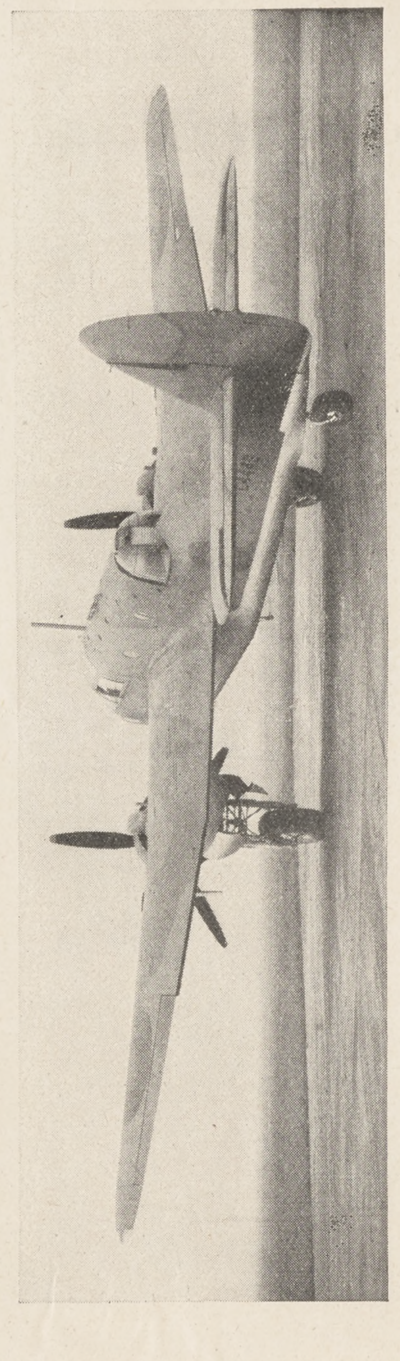
The Battle, although classed by the R.A.F. as a bomber, is a good representative of the single-engined multi-purpose class. The term "multi-purpose" (not to be confused with the old R.A.F. classification "general purpose") embraces a large variety of machines weighing betwen 6,500 lb. and 15,500 lb. which can be used for bombing and reconnaissance. The smaller machines are also suitable, when specially adapted, for fighting or ground attack and certain of the larger may be equipped, in addition, for torpedo-dropping.

The single-engined multi-purpose bomber is popular among impecunious nations with small air forces, though it is still justifying itself in the service of the Powers. There is, however, a marked tendency to fit at least two engines to all bombers, though the single-seater unarmed ultra-high-speed machine may, as already inferred, mark a reversion to a single engine.





Probably the most versatile high-speed twin-engined machine in the world is the Bristol Beaufort (below). The Beaufort could be used for bombing, reconnaissance, torpedo-dropping, fighting and ground attack. Of the two machines on the left the one with the tricycle undercarriage is the Douglas DB-7. This machine, like the Martin 167 below it, has been supplied in quantity to France.



San Diego Defense Boom Overshadows City's Other Claims to Fame

'BIGGEST NEWS' GIVES WAY TO PHENOMENAL GROWTH

CONTINUED FROM PAGE ONE

the company now employs 1600 men working on a backlog of $10,600,000 in a plant twice its 1939 size. The Ryan school is training 243 army air corps cadets, as compared with 63 the first of the year.

The army moved into town in force, at least on paper. Ft. Rosecrans, which has "guarded" the harbor with ancient guns manned by skeleton crews for lo, these many years, came to life under the impetus of a building project to house 3000 men and 125 officers. Construction of a cantonment for 7500 men and 300 officers got under way on Torrey Pines mesa. By a rotation system, the camp is expected to train 20,000 draftees between March 15, 1941, and March 15, 1942.

Hits New High

With marine corps recruiting hitting a new high, Camp Elliott mushroomed on Kearny mesa, and the Barnett ave. base pushed its limits so far southward that on one occasion a sergeant, calling the roll, got a "Here sir," from a watchman at the Consolidated plant. There were 5100 officers and men at the base on Jan. 1; the total is now approximately 10,300. Camp Elliott went from 50 to 3100.

The naval training station expanded to train double the number of bluejackets as the fleet was built up to fighting strength. The figures tell the story—2661 men on Jan. 1; 5679 today.

Activity Intensified

Activity was intensified at both the North Island naval air station, largest in the nation, and the destroyer base, but little news came through their closely-guarded portals . . . The navy this year clamped down a censorship on news and pictures of ships and planes. This was often intelligent, but sometimes it was considered stupid by newsmen.

The 1940 census, taken early in the year, showed a population of 202,038, including about 7000 men of the fleet who maintained residences ashore. Approximately 21,000 others were not counted. The warships left for six weeks of maneuvers in the Hawaiian area April 1 but remained there the rest of the year, although contingents returned for two-weeks "visiting" periods during the fall months. An estimated 30,000 new residents flocked into town after the census, drawn by the lure of national defense jobs.

Started by Navy

All this added up to a housing shortage. In January, the city council had heeded the objections of realtors and apartment house owners and "tabled" a proposed USHA slum clearance, low-rent housing project. In July, the navy took matters into its own hands, and, (with the approval of the council, went ahead with plans for low-rent housing. A $3,800,000 project was started for construction of 1200 housing units for navy families, 600 adjoining the destroyer base and 600 near the naval training station.

On Oct. 31, Charles F. Palmer, defense housing coordinator, announced in Washington that the largest of 63 housing projects in vital defense areas would be located in San Diego. The $15,000,000 program provides for construction of 3000 residential units for civilian workers on Kearny mesa. The first contract, for a $9,070,000 slice of the job, was awarded to a Los Angeles firm Dec. 12.

Everybody Here

Business boomed. On Dec. 13, Newell Jones wrote in The Tribune-Sun that "Merchants' Christmas cash registers were dinging like the dongs of a legion of lunatic Swiss bell ringers." (They had done a fair bit of dinging in the late summer and fall months, too, when the town went convention crazy. Everybody met here from embalmers to magicians, from the California American Legion to the state C.I.O.)

Honest reporting makes it impossible to dismiss, with a well-bred shrug of distaste, any mention of the seamier side of life in a national defense center. Here are a few notes which shed light on some of our social problems:

Year's Tragedies

Last spring, after the fleet left, the mutilated body of a sailor was found under Cabrillo bridge. . . . Lt. Comdr. J. F. Luten, medical corps, naval hospital, told a health officers' convention here in September that prostitutes should be placed in segregated districts and kept under strict medical supervision. He said that venereal diseases occupied second place among all causes of illness in the navy in 1938. "A total of 10,782 cases were admitted," he said. . . . On Dec. 11, a sailor's wife with a liking for liquor got a year in the county jail for the fatal neglect of her baby son. . . . On Dec. 16, a navy wife, grieving over the absence of her husband, hanged herself in the garage of her mother's home. . . . On Dec. 18, the body of a new-born baby boy, carefully wrapped in a sheet and quilt, was found in the city dump. . . . On Dec. 19, a representative of the Y.W.C.A. said at a public meeting that the "Y" now is forced to shelter female hoboes, hitch-hikers, inebriates and other questionable characters.

In Van of Ghastly Parade

San Diego has long marched in the van of the ghastly parade of corpses strewn from coast to coast by that marvelous mechanical creation, the automobile, which, in the hands of punks, drunks, dimwits and just plain careless damphools, is more deadly than all the bombs dropped on Britain. City traffic deaths rose from 45 in 1939 to 61 as of today.

The national draft lottery Oct. 29 was a big story to the 30,000 San Diegans between 21 and 35 who had registered for the nation's first peace time conscription. On Nov. 22, the first contingent of 31 draftees were given a royal send-off at Union station by the marine corps band and a large crowd of citizens.

In the field of labor, both the A.F.L. and C.I.O. were active in organizing during the year. In August, a dispute between the San Diego Building and Construction Trades council, A.F.L., and local lumbermen, shut down 13 lumber and building material yards for several days. The "strike" or "lock-out" involved several hundred members of the millmen's and teamsters' unions.

Distinguished Guests

Distinguished visitors included Col. Frank Knox, secretary of the navy, and Wendell Willkie. Col. Knox came here by plane from Honolulu to inspect naval establishments Sept. 16 and 17. Willkie made a campaign speech to 10,000 persons at Lane field Sept. 18.

Two local amateur teams reached the finals in national tournaments. The San Diego State college basketball team, coached by Morris Gross, won four straight last-minute victories in the National Intercollegiates at Kansas City in March, only to lose out in the finals to Tarkio, Mo., college, 52 to 42. (The Aztecs lost the title by one point in 1939.) Post 6, American Legion, junior baseball team, which won the national championship in 1938, again was coached into the "little world series" by Mike Morrow. They lost the deciding game to Albemarle, N. C., 9 to 8, after their two Negro stars were barred from play.

Consolidated Tests Long Range Bomber

Initial tests were undertaken over San Diego recently of Consolidated Aircraft's B-24, a new, long-range bomber, the first of a fleet of seven destined for Britain. It is powered with four 1,200 horsepower engines, and has a wing span of 110 feet.

The B-24 has a capacity of four tons of bombs, and a crew of nine, and its cruising radius is 3,000 miles. Top speed is believed to be 300 miles an hour.

It was reported that these bombers would be used to ferry Canadian pilots to the British Isles.

12/40 Canadian Aviation

'GERANIUMS AND ROSES' GIVE WAY TO DEFENSE BOOM

Customary 'Biggest News' Stories Overshadowed by 1940 Growth

By SPENCER HELD

San Diego, long famed for its pretty girls and sun-bronzed athletes, its shirt-sleeved tourists and the dungaree navy, became a national defense boom town in 1940.

The new World war overshadowed local news in 1939, and we abandoned our annual custom of picking the 10 biggest San Diego news stories of the year. But the then "phony war" had some repercussions here—the fleet returned a month early from the east coast; President Roosevelt ordered 49 World war destroyers reconditioned at the local base; 21 warships departed for "security patrol" duty in Hawaiian waters, and Consolidated Aircraft Corp. got some contracts which seemed fat at the time.

We hadn't seen anything, yet. In 1940, when the mechanized German army overran France and the Luftwaffe besieged Britain, a state of emergency was proclaimed in the United States and San Diego became a focal point of tremendous importance on the national defense map.

Consolidated Aircraft expanded enormously to handle a flood of orders from Britain and the United States. New buildings were dedicated on the Lindbergh field site Sept. 2, and work was pushed on another final assembly building, 360 by 720 feet, and a single 200-by-1500-foot structure for small parts assembly.

On Dec. 18, it was announced that a parts factory would be built along the east side of Pacific highway about 1 1-3 miles north of the main plant. This will cost more than $14,000,000 and will virtually double Consair's present size. It is scheduled to go into full operation by June, 1941.

The number of employes jumped from 3170 to 13,832 on Dec. 24, and the backlog of orders soared from a respectable $42,141,694 to an incredible $323,000,000 at year's end.

Ryan Aeronautical Co. also went into high-geared production. With 700 employes and a backlog of $1,500,000 at the beginning of the year,

(Continued on Page 12A, Col. 1)

Industrial LA County 11-12/40

Airplane and Parts Backlogs in Pacific Coast Factories

(As of November 1, 1940)

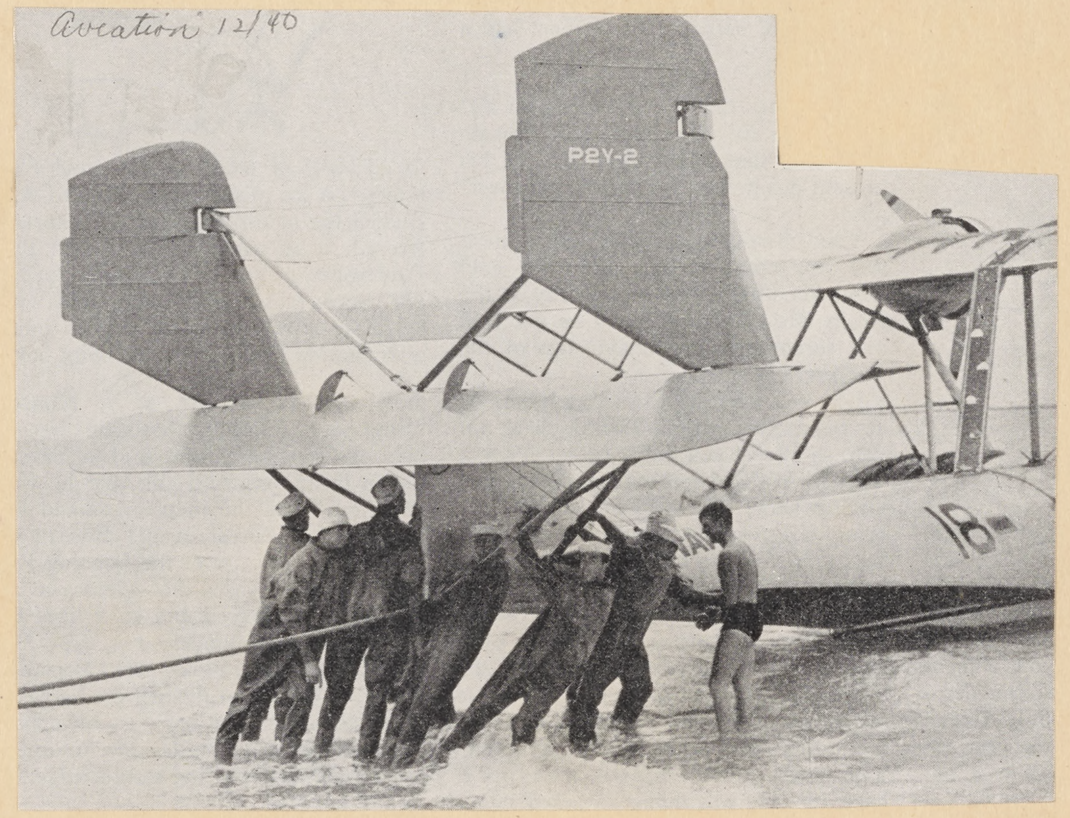
	Los Angeles County	
Douglas	$350,000,000	
Lockheed	280,000,000	
North American	220,000,000	
Northrop	24,000,000	
Vultee	77,011,935	
Adel Precision	750,000	
Aerco Corporation	169,000	
Aircraft Accessories	1,600,000	
Hardman Aircraft	700,000	
Kinner Motors	700,000	
Menasco	4,000,000	
Timm Aircraft	1,047,639	
Los Angeles County	$959,978,574	
	San Diego	
Consolidated Aircraft Corporation	328,842,500	
Ryan Aeronautical	11,400,000	
Solar Aircraft Co.	3,650,000	
	$343,892,500	
Southern California		$1,303,871,074
	Seattle	
Boeing Aircraft Co.	$184,000,000	$ 184,000,000
TOTAL PACIFIC COAST		$1,487,871,074

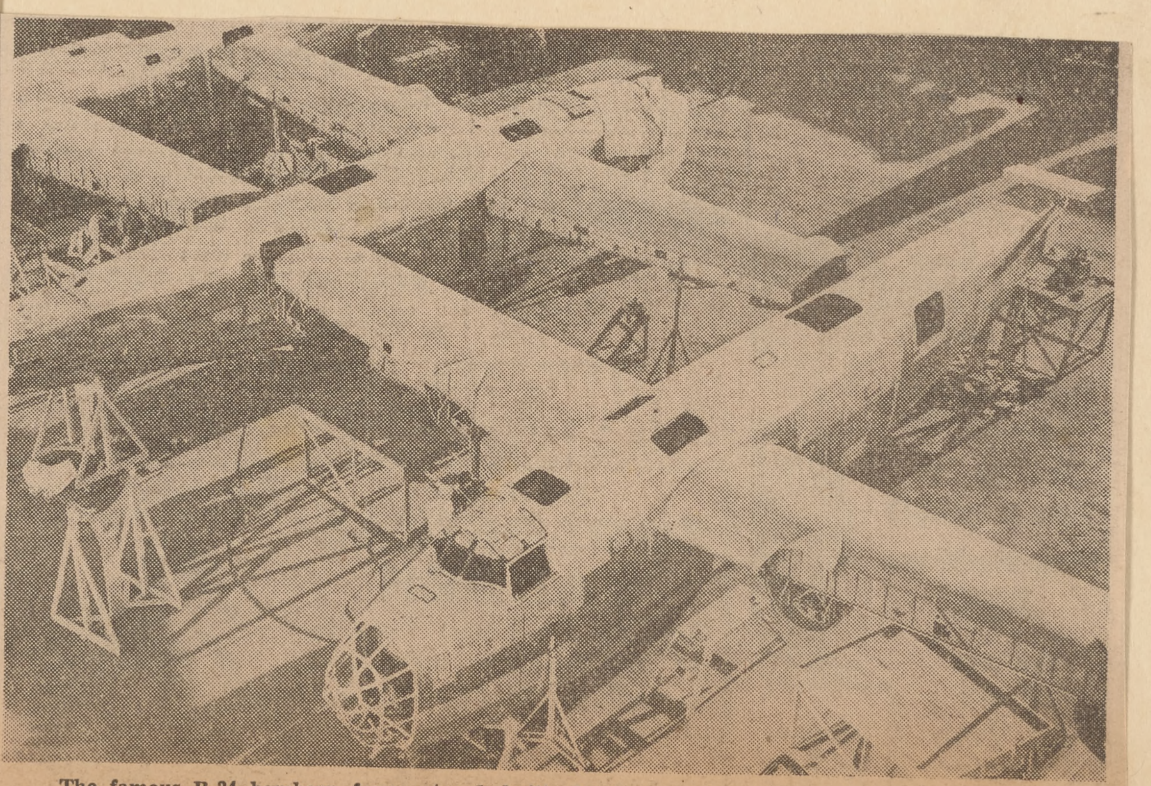
Los Angeles County	Nov. 1, 1940	Oct. 1, 1939	Oct. 1, 1938
Backlog of Orders	$959,978,574	$108,349,597	$65,486,008
Persons Employed	50,074	20,256	11,854
Average Annual Payroll	$ 91,933,708	$ 25,806,263	$17,606,589

Floor Area of Aircraft Plants in Los Angeles County

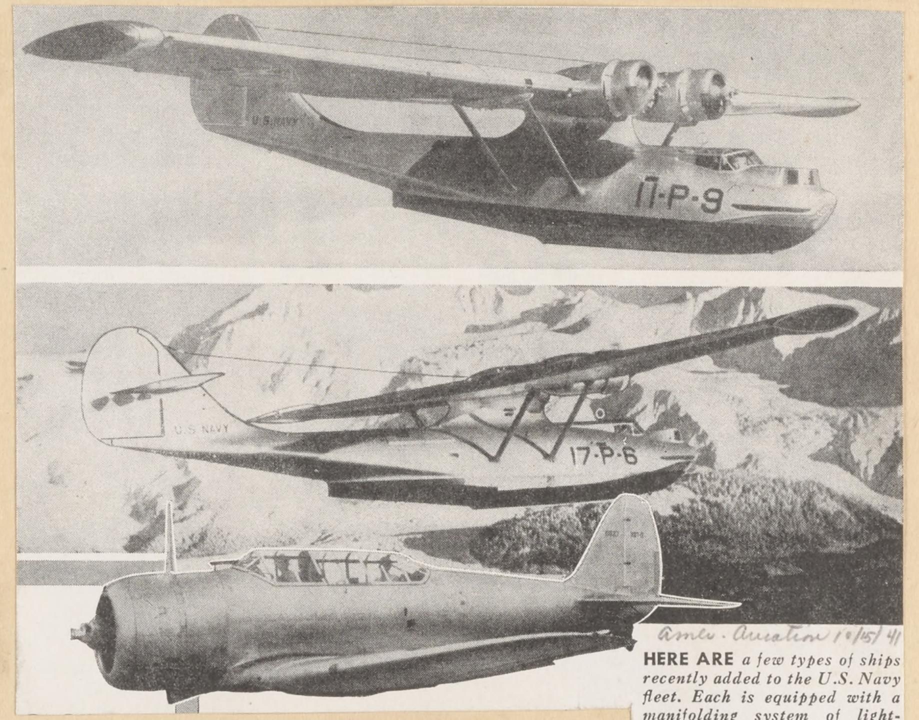
Nov. 1, 1940—Built and Building	8,500,000 square feet
Aug. 1, 1940	3,836,970 square feet
Jan. 1, 1940	2,714,000 square feet
Jan. 1, 1939	2,000,000 square feet

Aviation 12/40



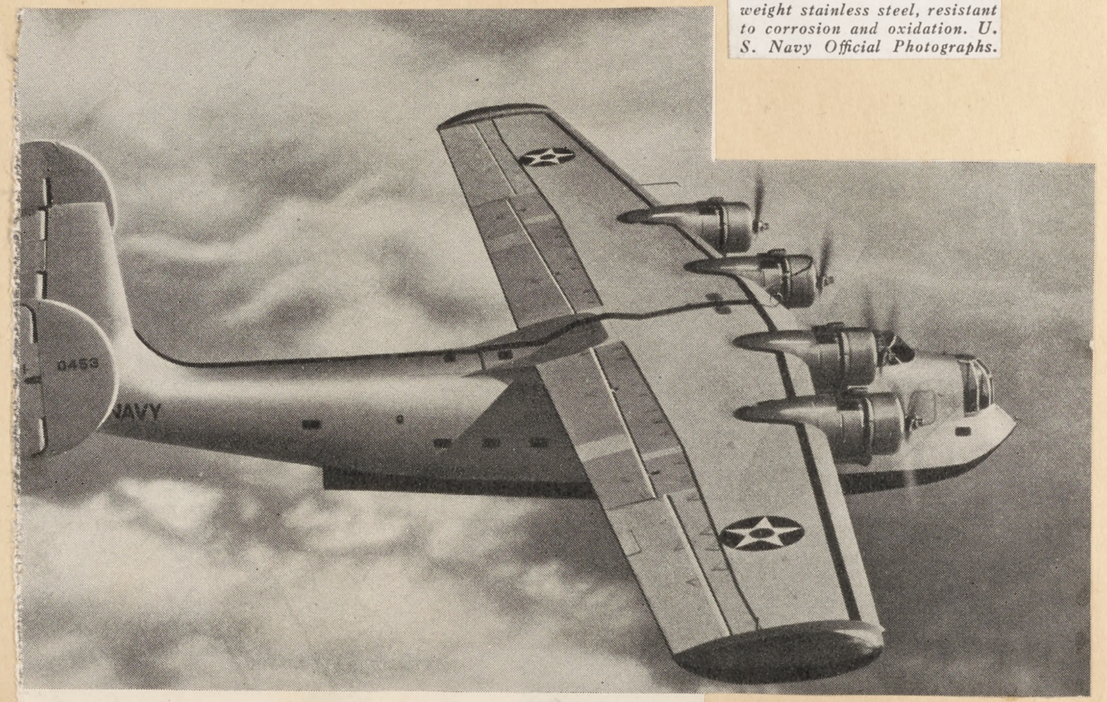


The famous B-24 bombers, four-motored, built by Consolidated Aircraft Corp. for Britain.—(Photo by Stanley Griffin, Tribune-Sun staff photographer.)



Amer. Aviation 10/15/41

HERE ARE *a few types of ships recently added to the U.S. Navy fleet. Each is equipped with a manifolding system of light-weight stainless steel, resistant to corrosion and oxidation. U. S. Navy Official Photographs.*



NSOLIDATED AIRCRAFT CORPORATION'S XPB2Y-1, one of the newest and htiest arms of the Navy's coast defense, contains many parts fab-ed from light-weight Synthane. *Official photograph U. S. Navy.*

Aero Digest 11/40

LONDON — ENGLAND

DAILY EXPRESS Thursday, November 21, 1940

Daily Express

No. 12,636 Thursday, November 21, 1940 One Penny

ENLIVEN SOUPS WITH H·P SAUCE

BLACK-OUT ZERO HOUR TO-NIGHT UNTIL 8.1 A.M.
MOON RISES 11.27 PM MOON SETS 1.33 PM

End CATARRH
You can clear away stuffy congestion, get rid of dangerous germs and stop that constant flow of poison into your system. How? Simply by applying 'Mentholatum' into your nostrils. The instant you do so, this breathable balm volatilises and you commence inhaling its antiseptics. Quickly, pleasantly, the 'Mentholatum' vapours stop the gathering of germs, clear the nasal cavities and open up your breathing passages. 'Mentholatum' Brand Balm stops Head Colds, banishes Catarrh, ends Chest Colds. All Chemists, 6d. and 1/3 plus Purchase Tax.

As R.A.F. bombers make 1,400-mile trip to fire the Skoda works—

46 FLYING FORTRESSES ARE RELEASED TO US

Latest types will be fitted with secret b

**SIMULTANEOUS WITH RELEASE OF
AIR RAID FAR INTO GERMANY C
THOUGHT WE COULD NOT REACH CA
NIGHT :—**

Daily Express Staff Reporter C. V. R. THOMPSON

NEW YORK, Wednesday

**AMERICA'S Army High Command toni
announced that they have given up
Britain a fleet of twenty-six four-engi
bombers of the Flying Fortress type, wh
were awaiting delivery to the U.S. Arn**

These machines, claimed to be the most adva
bomber type in the world, are a development o
Boeing 22-ton Flying Fortress, and were built b
Consolidated Aircraft Corporation at San D
California.

General George C. M
Chief of Staff, said that d
would start immediate
would be completed by th
this month.

"In fact," he said, "B
supposed to have taken
of some of them last Sat

The High Command a
ment reveals, too, that neg
are well under way to suppl
with another twenty Flyi
tresses now in process of
at the Boeing Company's
plant.

ALL BY MARC

Delivery of this fleet,
Marshall indicated, would
pleted by March 1.

These twenty are being
with the famed Sperr
sight, said to be capable
ing a bomb "into a ba
10,000 feet."

The Consolidated fou
bombers have just begu
off the production lines,
negotiations just complete
able Britain to take first

General Marshall said that the United States Army is prepared to accept a three months' lag in its own deliveries of this type.

"In return," he said, "the British Government has released to the United States sufficient engines to equip forty-one Boeing Flying Fortresses, which the United States Army has already accepted without engines or will have received without engines before January 1."

Amer Aviation 10/1/40

CONSOLIDATED

Already claiming the largest U. S. integrated plane plant, Consolidated Aircraft Corp. disclosed plans to built an $800,000 structure which will add 300,000 sq. ft. of floor space to approximately 2,000,000 sq. ft. now in use.

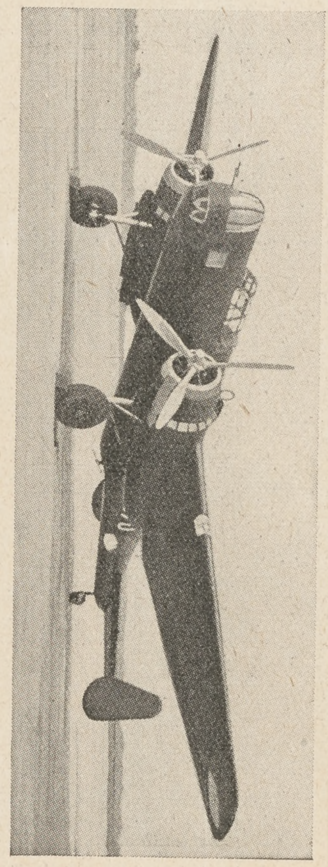
The new addition, which will be located on 22 acres of tidelands on which the firm has held an option, will extend into Lindbergh Field, San Diego, Cal.'s, municipal airport, due west of the present plant. It will be 200 ft. wide and 1,500 ft. long.

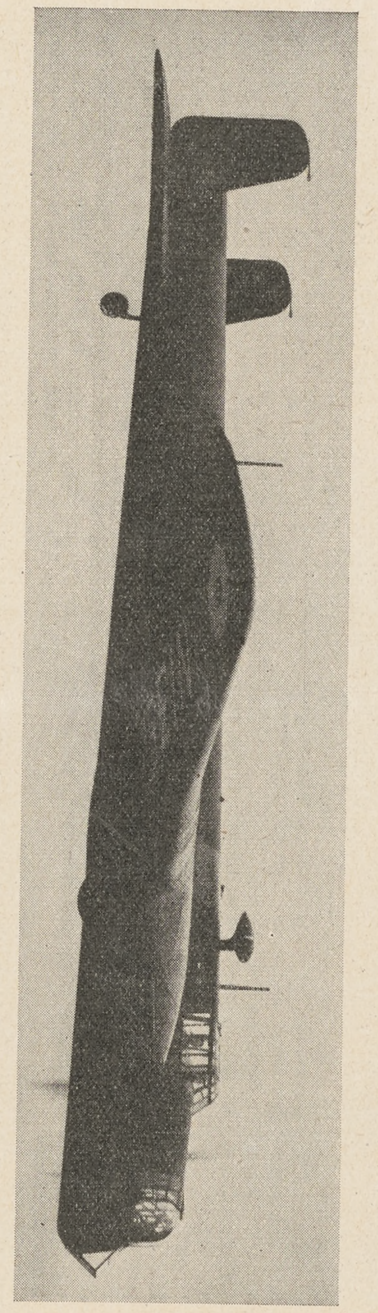
The company said its backlog is now in excess of $120,000,000 and that its list of employes has reached an all-time high of 9,485. Hundreds of additional workers will be employed when the new additions are opened.

BOMBERS (CONTINUED)

One of the most recent twin-engined bombers is the Fokker T.9 (right), a large machine with two Bristol Hercules 14-cylinder sleeve-valve engines.

Below is the Merlin-engined Armstrong-Whitworth Whitley bomber. This type has done magnificent work over Germany.





performance at low altitudes; the top speed at 4,500ft. is 252 m.p.h.

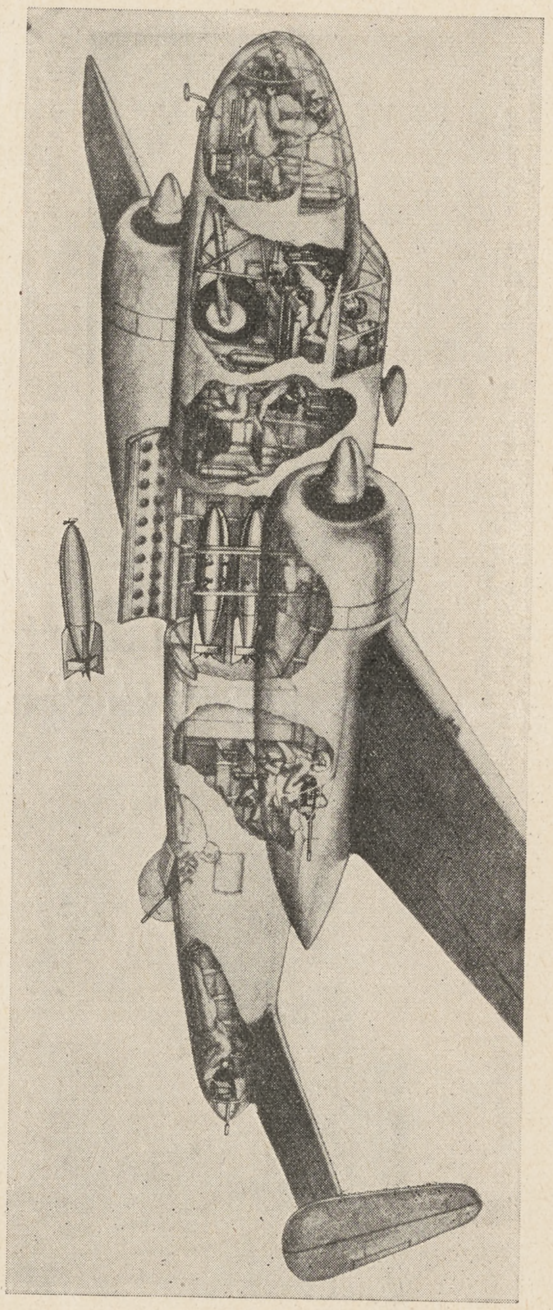
In Poland the Germans used Messerschmitt Me 110 twin-engined fighters armed with 20 mm. shell-guns for attacks on trains. A group of Messerschmitts would perforate the boilers of the locomotives with their shell-guns, the train subsequently being destroyed by dive-bombers. The Daimler-Benz DB 601 engines of the Me 110 have two-speed superchargers which confer a good performance near the ground.

Although the long-distance trips made over Germany by the R.A.F. in large, comparatively slow bombers are referred to as reconnaissance flights, long-distance daylight reconnaissance is normally undertaken by fast twin-engined machines of the type already discussed. For this sort of work the machines are fitted with cameras, and in some cases, if visibility is restricted by a part of the structure, are provided with a special compartment beneath the fuselage for the observer. A transparent nose is, however, usually considered sufficient for observation.

Large high-altitude cameras and/or extra tanks may be fitted in the bomb bay; the Dornier Do 17, for example, when undertaking reconnaissance, carries a battery of three cameras in the bottom of the fuselage. The French version of the Martin 167 is delivered with extra tankage and special photographic arrangements for reconnaissance work.

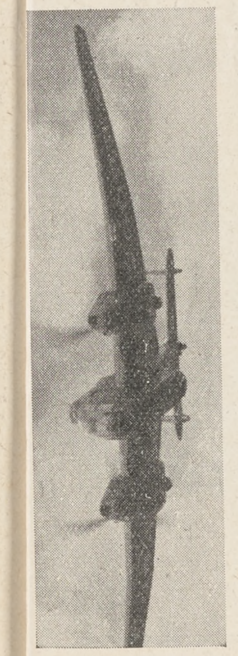
For night reconnaissance special apparatus such as the Fairchild night photographic equipment may be used. This equipment was for many years kept secret by the U.S. Army Air Corps. It consists of three principal units: a special camera, a light-sensitive cell, and an electric control box. The high-intensity flash charges which give brilliant flashes of light and deafening detonations are completely consumed in bursting, and provision is made to ensure positive action at a predetermined interval after the release of the charge, this being the time when it is well below and behind the machine. Means are also provided to prevent a premature explosion. It is said that the heavy charges of flashlight powder have a million times the intensity of ordinary photographic flash bulbs.

As for speed, it was considered astonishing years ago that Mr. C. R. Fairey could build a bomber (the Fox) which could "walk away" from many contemporary fighters. The fast twin-engined multi-purpose bombers of to-day in some instances approach fighter performance, but are not as fast as might be expected. Greater speeds would un-



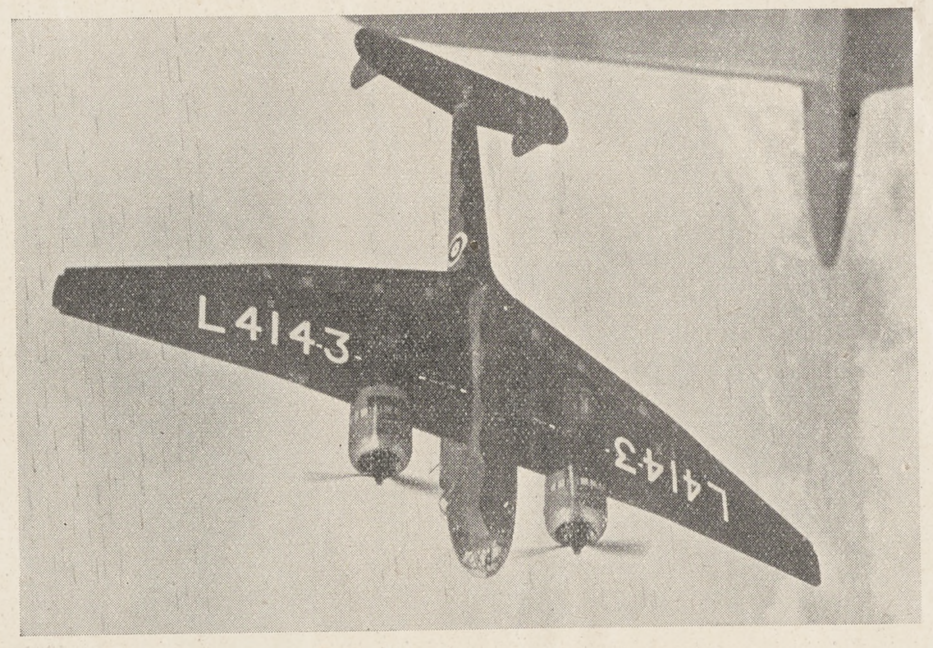
The North American NA-40A bomber has fixed guns in the nose and free guns above and below the fuselage and in the tail. The view above also shows the bomb stowage arrangements.

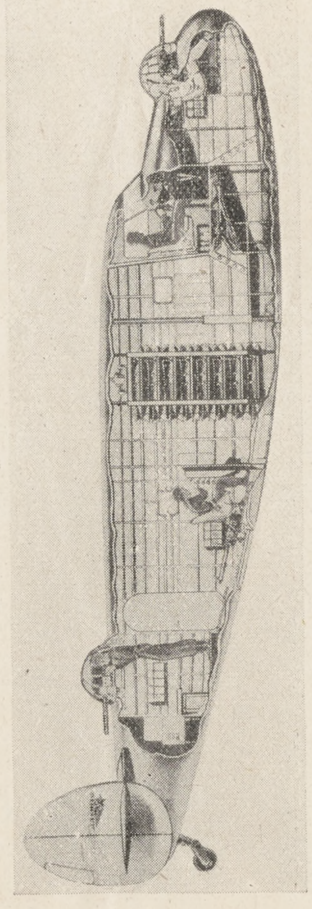
BOMBERS (CONTINUED)



It will have been gathered from our reference to the Martin 167 that even in the "ground-attack" condition the gun-power is comparatively low. The modern tendency is to use bombs for low-flying attacks rather than machine guns. America's new formula for twin-engined "attack" bombers corresponds in fact to the European conception of a compact, high-performance, twin-engined bomber. In this connection the remarks of Brig. Gen. Jacob Fickel, Commanding General, First Wing, G.H.Q. Air Force, U.S. Army Air Corps, are of interest. He writes that the Ethiopian and Spanish wars increased the demand for aircraft suitable for close support of ground forces by attacks on hostile rear areas. He refers to the technical difficulties in the development of the low-flying attack machine and states that these, coupled with the improvement in ground fire against that type, led to the development of the "attack bombers, or, as he chooses to call them, "light bombardment airplanes." Brig. Gen. Fickel states that although the machines have a comparatively short range when carrying a full bomb load they can fly far enough to deliver heavy attacks from an altitude out of effective reach of small arms and machine guns on hostile reserves, ammunition and supply dumps, lines of communications, command posts, mechanised flanking forces, and advanced aerodromes.

The highly specialised ground-attack machine has lost favour, though the Curtiss 76-D is available with eight fixed guns and a rear free gun. In the fuselage is stowage for twenty chemical or fragmentation bombs, while racks on each side of the centre section carry two 100lb. bombs. Like all ground-attack machines the 76-D is designed for





The Handley Page Hampden bomber (above) is extremely efficient, due in a large measure to the installation of Handley Page slots and flaps. The Hereford (top left) is similar except for the engines, which are 24 - cylinder Napier - Halford Daggers.

A good example of a bomber adapted from a commercial machine is the Lockheed 14 (left).

TWIN-ENGINED BOMBERS

Designation of Aircraft	Span	Wing Area	Wing Loading	Gross Weight	Disposable Load	Engine Type	Cooling	Rated Power	Max. Speed	Attained at	Climb To	Climb In	Service Ceiling	Typical Armament	Progress
	ft. in.	sq. ft.	lb./sq. ft.	lb.	lb.			h.p.	m.p.h.	ft.	ft.	min.	ft.		
GREAT BRITAIN															
A.W. Whitley	84 0	1137	22.7	25,900	8,380	Rolls-Royce Merlin ..	L	1,980	245	16,250	15,000	16	25,000	5 rcmg	IS
Handley Page Hampden ...	69 2	668	28.1	18,756	6,976	Bristol Pegasus XVIII ..	A	1,500	265	15,500	15,000	18.9	22,700	4 rcmg	IS
Vickers Wellington ...	86 0	839.5	29.6	24,850	—	Bristol Pegasus XVIII ...	A	1,500	265	17,000	15,000	18	26,300	5 rcmg	IS
FRANCE															
Amiot 350	74 10	721.6	26.8	19,400	—	Hispano-Suiza 12Y29 ..	L	1,820	310	16,400	13,120	8	30,000	3 rcmg	IP
Amiot 351	74 10	721.6	26.8	19,400	—	Gnôme-Rhône 14N ..	A	1,740	310	16,400	13,120	7	30,000	3 rcmg	IP
Bloch 134	72 9	678	31.8	21,604	—	Hispano-Suiza 14Aa ..	A	2,240	273	13,120	—	—	26,240	3 rcmg	OP
Lioré 45	73 9½	731.6	32.1	23,479	9,435	Hispano-Suiza 14Aa ..	A	2,240	310	16,400	13,120	10	26,500	1 sg 2 rcmg	IS
AMERICA															
Martin 166	70 2	682	23.3	15,894	5,302	P. and W. Twin Wasp .	A	1,800	268	6,500	—	—	24,800	3 rcmg	AO
Lockheed EB-14	65 6	551	33.6	18,500	5,850	Wright Cyclone ...	A	1,500	284	15,000	—	—	25,000	3 rcmg	AO
GERMANY															
Heinkel He111K (Mark V)	74 3	943	26.5	25,000	—	Junkers Jumo 211	L	1,880	270	12,300	13,000	17	24,000	3 rcmg	IP
Junkers Ju.86K (mod.) ...	73 9	882.3	20.5	18,100	—	B.M.W. 132	A	1,600	233	8,500	—	—	23,300	3 rcmg	OP
POLAND															
PZL Los	56 0	571	32.8	18,739	—	Gnôme-Rhône 14N ..	A	1,740	304	16,700	—	—	22,900	3 rcmg	OP
ITALY															
Breda 82	68 11	—	—	—	—	Fiat A.80.Rc.41 ...	A	2,000	264	—	—	—	30,000	3 rcmg	PA
Caproni Ca 135	61 8	645.6	25.21	16,225	6,325	Isotta-Fraschini XI.Rc.40.	L	1,800	273	14,760	13,120	11.5	22,960	3 rcmg	IS
Caproni Ca 405 (Procellaria)	59 0	—	—	24,200	—	Isotta-Fraschini XI.Rc.40.	L	1,800	261	14,760	—	—	23,000	3 rcmg	PA
Fiat Br 20	70 6	796	27.9	22,220	7,920	Fiat A.80 Rc.41	A	2,000	268	16,400	13,100	14	29,500	3 lbmg	IS
Piaggio P32 (Mark II) ..	59 0	635	32.1	20,350	6,710	Piaggio P.XI.Rc.40 ..	A	2,000	264	16,400	13,120	15	26,000	3 rcmg	IS
HOLLAND															
Fokker T5	68 10	710.5	21.84	15,983	5,732	Bristol Pegasus XXVI ...	A	1,660	259	—	16,400	14.2	25,000	5 rcmg	IS

Western Flying 12/40

SAN DIEGO

This month has been a very busy one for the **Consair Flyer's Club. Al Becker** has been preparing for his private ticket. **W. E. Jones** is ready to solo. **Stan Mahoney** received a bad cut on his thumb while installing a carburetor on a Pratt & Whitney. Our two new members, **Bennett** and **McFadden** should be ready for that old solo flight soon.

This month's Orchid goes to **Barney Farley** for his coolheadness, quick thinking and fine judgment in bringing the plane down in a forced landing safely on the beach along the Coronado Strand. —**Al Drayman.**

Recent announcement has been made of the engagement of **Raymond Dinson** to **Miss Ivalena Jones,** secretary at Consair. Ray, also an employe of Consair, is a charter member of the **Southern California Flyers.**

» OUTDOOR ASSEMBLY of airplanes is being practiced most extensively at Consolidated in San Diego where temporary canvas-covered sheds, divided into stalls are used for finishing operations on hulls. In the yard are dozens of partially completed ships awaiting parts from subcontractors in other parts of the country. Meanwhile construction is progressing on a building larger than the present huge plant and a parts factory is planned to be built a short distance from the airport. Employment records showed 13,000 on the day of our visit. Aviation 12/40

Aviation 10/40 *Consolidated Aircraft* has purchased the Hall Aluminum Aircraft Corporation.

Consolidated Aircraft Corp., San Diego, Calif., $75,313 for airplanes.

Glenn L. Martin Co., Baltimore, Md., $106,125 for airplanes.

United Aircraft Corp., East Hartford, Conn., $59,490,703 for airplane engines.

AVIATION, December, 1940

Aero Digest - 12/40

N. Y. STOCK EXCHANGE

	Week Ending: October 26				November 2				November 9				November 16			
	High	Low	Change	Sales	High	Low	Change	Sales	High	Low	Change	Sales	High	Low	Change	Sales
American Airlines	62	59¾	— ⅞	4,900	63¼	60	+1¼	10,300	65	60¼	+1¾	6,700	64¼	60⅛	—3½	4,900
Aviation Corp.	4⅞	4½	......	14,700	5¼	4½	+ ½	28,600	5⅞	4⅞	+ ¾	48,000	6	5¼	— ½	32,900
Bendix Aviation	31¾	30⅝	+ ¼	8,300	33⅞	30⅝	+2⅞	21,200	35	32¾	+1½	26,800	34⅞	33	—1⅝	9,900
Boeing Airplane	16⅜	15¾	+ ⅛	11,200	17¾	15¾	+1⅝	37,500	18½	16¼	+ ⅞	36,800	21	18⅜	+ ¾	65,000
Consolidated	23	21¾	— ½	1,000	23½	21¼	+1⅝	4,100	25¾	21⅞	+2⅜	6,600	27½	24¾	—1	10,000
Continental Motors	3⅝	3⅜	— ⅛	9,300	3¾	3⅜	+ ¼	12,900	4	3½	+ ⅛	41,900	4⅜	3⅞	......	80,000
Curtiss-Wright	7¾	7⅜	— ¼	23,800	8⅜	7⅝	+ ⅝	52,500	10½	8⅛	+2⅛	173,600	10¾	9¾	— ⅜	130,900
Curtiss-Wright A	28	27½	— ⅜	2,900	28½	27¾	+ ⅝	6,800	30	28¼	+1½	12,100	30	29	— ½	5,600
Douglas Aircraft	87¼	82½	+3¼	11,200	91¼	84	+4¼	10,900	90	82⅜	+2	26,800	88	80½	—5	10,300
Eastern Airlines	37⅝	35⅛	+2¼	21,600	37⅞	36½	— ⅛	14,700	39¼	34¾	+1⅞	20,000	39	36	—2⅞	14,300
Grumman	17½	16¾	—1⅛	1,600	17⅞	16¾	+ ¾	4,000	19¼	16¾	+1¾	6,200	20⅛	17¾	—1	7,500
Lockheed	29	27¾	—1	9,100	30¾	27⅞	+2⅛	28,100	32¾	28⅛	+2⅝	41,800	33⅝	30½	—1⅞	44,300
Martin, G. L.	32¼	30⅝	— ⅞	11,600	33¾	30½	+2¼	21,100	35⅛	31¾	+2	32,800	35¾	33½	—1⅜	24,300
National Aviation	11	10⅜	— ¼	1,300	11½	10⅝	+ ¾	2,400	12⅜	10⅝	+1⅛	6,600	13⅛	11½	— ⅞	7,400
North American	17¼	16⅝	— ⅜	6,400	18¼	16⅝	+ ⅞	22,100	18¾	16¾	+1⅛	31,600	19⅝	17⅞	— ¾	33,700
Pan American	16	15⅛	+ ⅛	11,700	17½	15⅝	+1	27,000	17⅛	15⅜	+ ⅛	16,700	18⅛	16½	+ ⅛	20,100
Sperry Corp.	41⅞	40⅜	+ ⅞	5,400	43¾	41¼	+1⅛	11,600	43¾	40⅜	+ ½	10,500	43⅞	42¼	—1¼	7,100
Square D Corp.	35	34	......	4,700	34⅞	33¼	— ⅝	3,400	34⅞	33¼	......	3,900	34½	32¼	—1	2,800
TWA	18¾	17¾	+ ¾	6,600	19	18⅜	— ⅜	3,400	19¼	17¾	+ ¼	3,200	20¼	18⅝	+ ⅞	5,800
United Airlines	19⅛	17⅝	+ ½	27,400	19⅜	18⅝	+ ⅜	18,900	19¼	17⅛	— ⅜	23,900	19⅝	18	— ⅝	18,200
United Aircraft	40	39	+ ½	7,700	43	39½	+3	20,000	44⅞	40½	+2⅛	26,800	47	45	+ ⅜	31,400
Wright Aero	98	98	—2	50	105	97	+5	180	110	102	+7	170	111	107	—3	120

San Diego Defense Boom Overshadows City's Other Claims to Fame

'BIGGEST NEWS' GIVES WAY TO PHENOMENAL GROWTH

CONTINUED FROM PAGE ONE

the company now employs 1600 men working on a backlog of $10,600,000 in a plant twice its 1939 size. The Ryan school is training 243 army air corps cadets, as compared with 63 the first of the year.

The army moved into town in force, at least on paper. Ft. Rosecrans, which has "guarded" the harbor with ancient guns manned by skeleton crews for lo, these many years, came to life under the impetus of a building project to house 3000 men and 125 officers. Construction of a cantonment for 7500 men and 300 officers got under way on Torrey Pines mesa. By a rotation system, the camp is expected to train 20,000 draftees between March 15, 1941, and March 15, 1942.

Hits New High

With marine corps recruiting hitting a new high, Camp Elliott mushroomed on Kearny mesa, and the Barnett ave. base pushed its limits so far southward that on one occasion a sergeant, calling the roll, got a "Here sir," from a watchman at the Consolidated plant. There were 5100 officers and men at the base on Jan. 1; the total is now approximately 10,300. Camp Elliott went from 50 to 3100.

The naval training station expanded to train double the number of bluejackets as the fleet was built up to fighting strength. The figures tell the story—2661 men on Jan. 1; 5679 today.

Activity Intensified

Activity was intensified at both the North Island naval air station, largest in the nation, and the destroyer base, but little news came through their closely-guarded portals . . . The navy this year clamped down a censorship on news and pictures of ships and planes. This was often intelligent, but sometimes it was considered stupid by newsmen.

The 1940 census, taken early in the year, showed a population of 202,038, including about 7000 men of the fleet who maintained residences ashore. Approximately 21,000 others were not counted. The warships left for six weeks of maneuvers in the Hawaiian area April 1 but remained there the rest of the year, although contingents returned for two-weeks "visiting" periods during the fall months. An estimated 30,000 new residents flocked into town after the census, drawn by the lure of national defense jobs.

Started by Navy

All this added up to a housing shortage. In January, the city council had heeded the objections of realtors and apartment house owners and "tabled" a proposed USHA slum clearance, low-rent housing project. In July, the navy took matters into its own hands, and, (with the approval of the council, went ahead with plans for low-rent housing. A $3,800,000 project was started for construction of 1200 housing units for navy families, 600 adjoining the destroyer base and 600 near the naval training station.

On Oct. 31, Charles F. Palmer, defense housing coordinator, announced in Washington that the largest of 63 housing projects in vital defense areas would be located in San Diego. The $15,000,000 program provides for construction of 3000 residential units for civilian workers on Kearny mesa. The first contract, for a $9,070,000 slice of the job, was awarded to a Los Angeles firm Dec. 12.

Everybody Here

Business boomed. On Dec. 13, Newell Jones wrote in The Tribune-Sun that "Merchants' Christmas cash registers were dinging like the dongs of a legion of lunatic Swiss bell ringers." (They had done a fair bit of dinging in the late summer and fall months, too, when the town went convention crazy. Everybody met here from embalmers to magicians, from the California American Legion to the state C.I.O.)

Honest reporting makes it impossible to dismiss, with a well-bred shrug of distaste, any mention of the seamier side of life in a national defense center. Here are a few notes which shed light on some of our social problems:

Year's Tragedies

Last spring, after the fleet left, the mutilated body of a sailor was found under Cabrillo bridge. . . . Lt. Comdr. J. F. Luten, medical corps, naval hospital, told a health officers' convention here in September that prostitutes should be placed in segregated districts and kept under strict medical supervision. He said that venereal diseases occupied second place among all causes of illness in the navy in 1938. "A total of 10,782 cases were admitted," he said. . . . On Dec. 11, a sailor's wife with a liking for liquor got a year in the county jail for the fatal neglect of her baby son. . . . On Dec. 16, a navy wife, grieving over the absence of her husband, hanged herself in the garage of her mother's home. . . . On Dec. 18, the body of a new-born baby boy, carefully wrapped in a sheet and quilt, was found in the city dump. . . . On Dec. 19, a representative of the Y.W.C.A. said at a public meeting that the "Y" now is forced to shelter female hoboes, hitch-hikers, inebriates and other questionable characters.

In Van of Ghastly Parade

San Diego has long marched in the van of the ghastly parade of corpses strewn from coast to coast by that marvelous mechanical creation, the automobile, which, in the hands of punks, drunks, dimwits and just plain careless damphools, is more deadly than all the bombs dropped on Britain. City traffic deaths rose from 45 in 1939 to 61 as of today.

The national draft lottery Oct. 29 was a big story to the 30,000 San Diegans between 21 and 35 who had registered for the nation's first peace time conscription. On Nov. 22, the first contingent of 31 draftees were given a royal send-off at Union station by the marine corps band and a large crowd of citizens.

In the field of labor, both the A.F.L. and C.I.O. were active in organizing during the year. In August, a dispute between the San Diego Building and Construction Trades council, A.F.L., and local lumbermen, shut down 13 lumber and building material yards for several days. The "strike" or "lock-out" involved several hundred members of the millmen's and teamsters' unions.

Distinguished Guests

Distinguished visitors included Col. Frank Knox, secretary of the navy, and Wendell Willkie. Col. Knox came here by plane from Honolulu to inspect naval establishments Sept. 16 and 17. Willkie made a campaign speech to 10,000 persons at Lane field Sept. 18.

Two local amateur teams reached the finals in national tournaments. The San Diego State college basketball team, coached by Morris Gross, won four straight last-minute victories in the National Intercollegiates at Kansas City in March, only to lose out in the finals to Tarkio, Mo., college, 52 to 42. (The Aztecs lost the title by one point in 1939.) Post 6, American Legion, junior baseball team, which won the national championship in 1938, again was coached into the "little world series" by Mike Morrow. They lost the deciding game to Albemarle, N. C., 9 to 8, after their two Negro stars were barred from play.

Consolidated Tests Long Range Bomber

Initial tests were undertaken over San Diego recently of Consolidated Aircraft's B-24, a new, long-range bomber, the first of a fleet of seven destined for Britain. It is powered with four 1,200 horsepower engines, and has a wing span of 110 feet.

The B-24 has a capacity of four tons of bombs, and a crew of nine, and its cruising radius is 3,000 miles. Top speed is believed to be 300 miles an hour.

It was reported that these bombers would be used to ferry Canadian pilots to the British Isles.

12/40 Canadian Aviation

'GERANIUMS AND ROSES' GIVE WAY TO DEFENSE BOOM

-:- -:- -:- -:- -:- -:- -:- -:- -:-

Customary 'Biggest News' Stories Overshadowed by 1940 Growth

By SPENCER HELD

San Diego, long famed for its pretty girls and sun-bronzed athletes, its shirt-sleeved tourists and the dungaree navy, became a national defense boom town in 1940.

The new World war overshadowed local news in 1939, and we abandoned our annual custom of picking the 10 biggest San Diego news stories of the year. But the then "phony war" had some repercussions here—the fleet returned a month early from the east coast; President Roosevelt ordered 49 World war destroyers reconditioned at the local base; 21 warships departed for "security patrol" duty in Hawaiian waters, and Consolidated Aircraft Corp. got some contracts which seemed fat at the time.

We hadn't seen anything, yet. In 1940, when the mechanized German army overran France and the Luftwaffe besieged Britain, a state of emergency was proclaimed in the United States and San Diego became a focal point of tremendous importance on the national defense map.

Consolidated Aircraft expanded enormously to handle a flood of orders from Britain and the United States. New buildings were dedicated on the Lindbergh field site Sept. 2, and work was pushed on another final assembly building, 360 by 720 feet, and a single 200-by-1500-foot structure for small parts assembly.

On Dec. 18, it was announced that a parts factory would be built along the east side of Pacific highway about 1 1-3 miles north of the main plant. This will cost more than $14,000,000 and will virtually double Consair's present size. It is scheduled to go into full operation by June, 1941.

The number of employes jumped from 3170 to 13,832 on Dec. 24, and the backlog of orders soared from a respectable $42,141,694 to an incredible $323,000,000 at year's end.

Ryan Aeronautical Co. also went into high-geared production. With 700 employes and a backlog of $1,500,000 at the beginning of the year,

(Continued on Page 12A, Col. 1)

Industrial LA County 11-12/40

Airplane and Parts Backlogs in Pacific Coast Factories

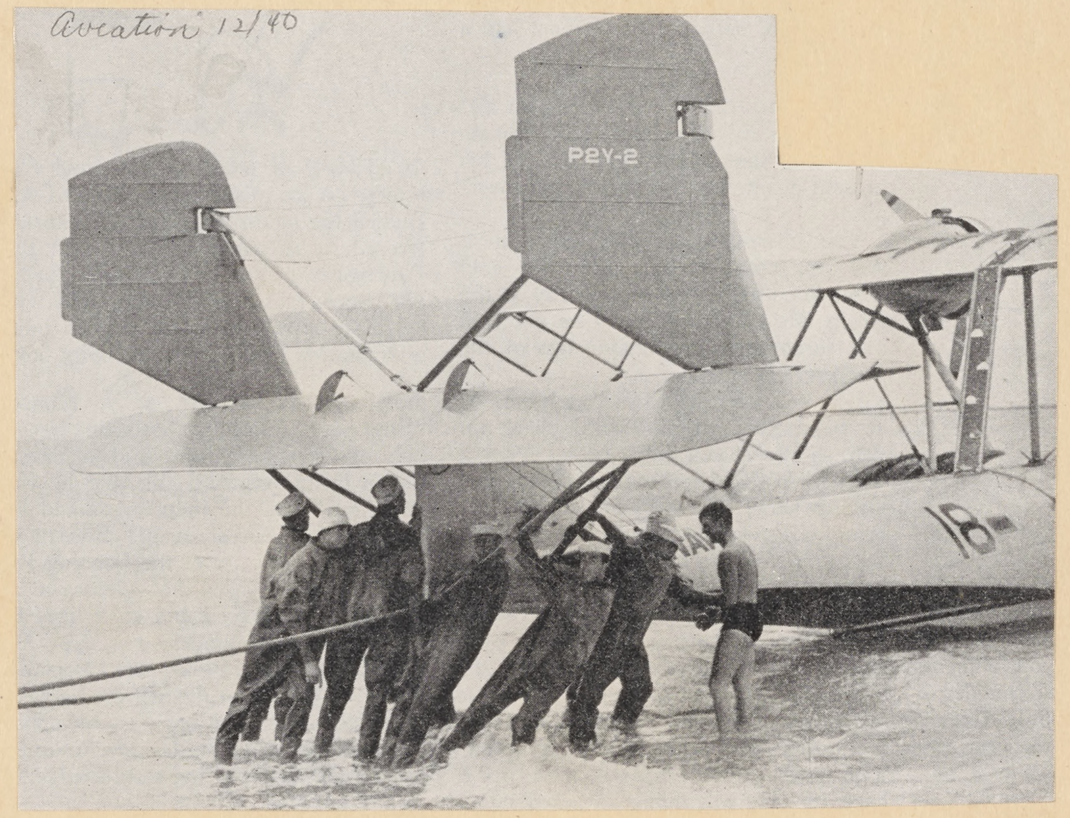
(As of November 1, 1940)

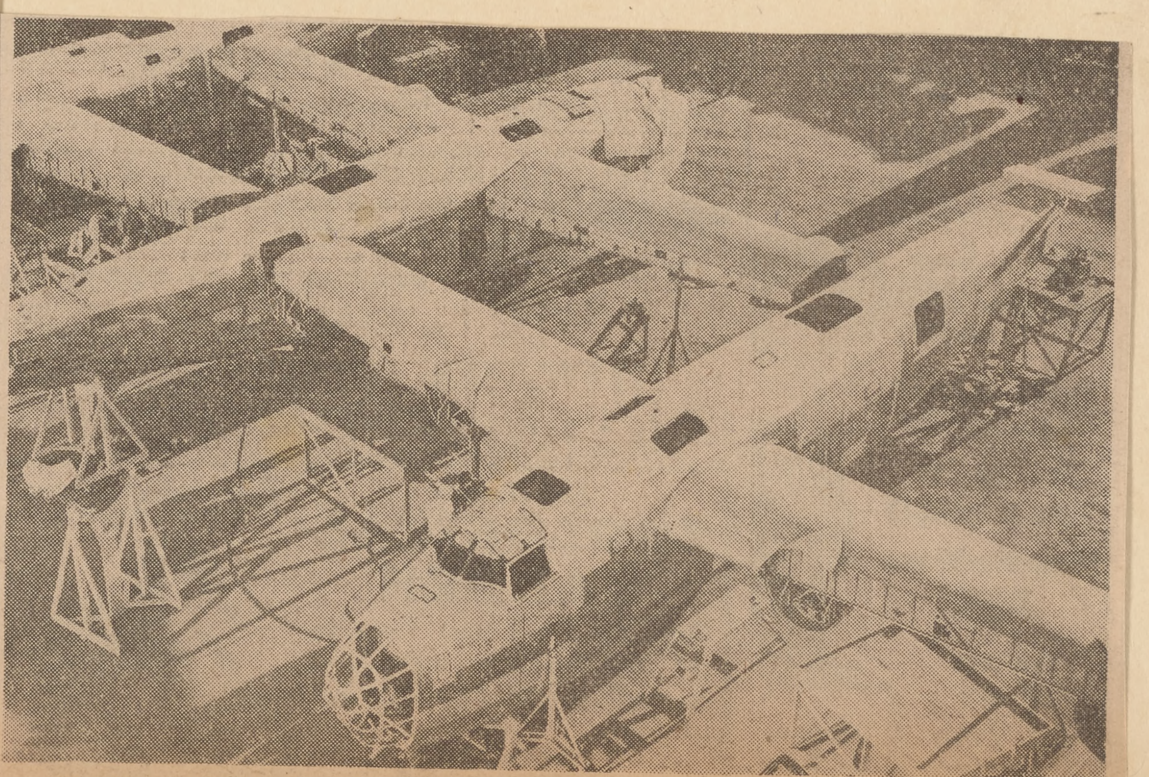
Los Angeles County		
Douglas	$350,000,000	
Lockheed	280,000,000	
North American	220,000,000	
Northrop	24,000,000	
Vultee	77,011,935	
Adel Precision	750,000	
Aerco Corporation	169,000	
Aircraft Accessories	1,600,000	
Hardman Aircraft	700,000	
Kinner Motors	700,000	
Menasco	4,000,000	
Timm Aircraft	1,047,639	
Los Angeles County	$959,978,574	
San Diego		
Consolidated Aircraft Corporation	328,842,500	
Ryan Aeronautical	11,400,000	
Solar Aircraft Co.	3,650,000	
	$343,892,500	
Southern California		$1,303,871,074
Seattle		
Boeing Aircraft Co.	$184,000,000	$ 184,000,000
TOTAL PACIFIC COAST		$1,487,871,074

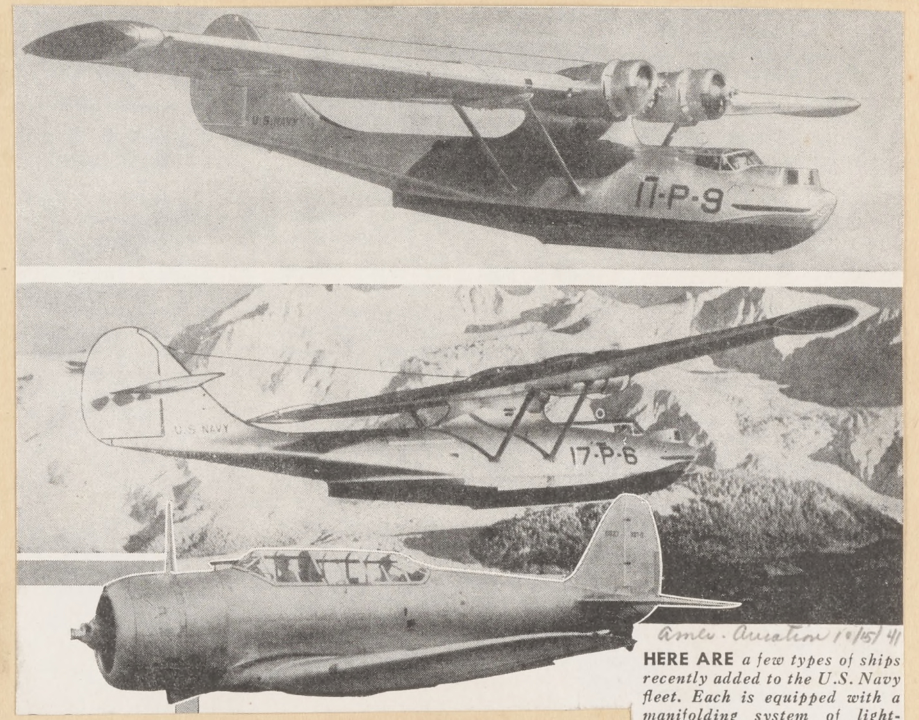
Los Angeles County	Nov. 1, 1940	Oct. 1, 1939	Oct. 1, 1938
Backlog of Orders	$959,978,574	$108,349,597	$65,486,008
Persons Employed	50,074	20,256	11,854
Average Annual Payroll	$ 91,933,708	$ 25,806,263	$17,606,589

Floor Area of Aircraft Plants in Los Angeles County

Nov. 1, 1940—Built and Building	8,500,000 square feet
Aug. 1, 1940	3,836,970 square feet
Jan. 1, 1940	2,714,000 square feet
Jan. 1, 1939	2,000,000 square feet

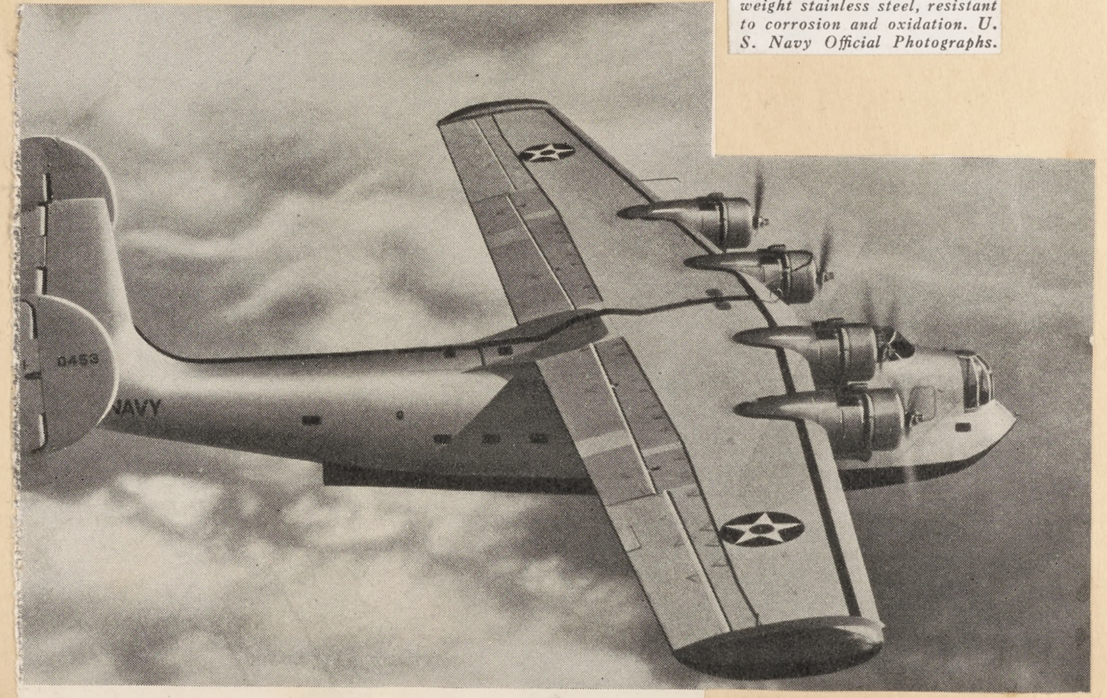

Aviation 12/40


The famous B-24 bombers, four-motored, built by Consolidated Aircraft Corp. for Britain.—(Photo by Stanley Griffin, Tribune-Sun staff photographer.)



Amer. Aviation 10/15/41

HERE ARE *a few types of ships recently added to the U.S. Navy fleet. Each is equipped with a manifolding system of light-weight stainless steel, resistant to corrosion and oxidation. U. S. Navy Official Photographs.*



NSOLIDATED AIRCRAFT CORPORATION'S XPB2Y-1, one of the newest and htiest arms of the Navy's coast defense, contains many parts fabed from light-weight Synthane. *Official photograph U. S. Navy.*

Aero Digest 11/40

DAILY EXPRESS Thursday, November 21, 1940

ENLIVEN SOUPS WITH H·P SAUCE

BLACK-OUT ZERO HOUR TO-NIGHT UNTIL 8.1 A.M. MOON RISES 11.27 P.M. MOON SETS 1.33 P.M.

LONDON — ENGLAND

Daily Express

No. 12,636 Thursday, November 21, 1940 One Penny

End CATARRH
You can clear away stuffy congestion, get rid of dangerous germs and stop that constant flow of poison into your system. How? Simply by applying 'Mentholatum' into your nostrils. The instant you do so, this breathable balm volatilises and you commence inhaling its antiseptics. Quickly, pleasantly, the 'Mentholatum' vapours stop the gathering of germs, clear the nasal cavities and open up your breathing passages. 'Mentholatum' Brand Balm stops Head Colds, banishes Catarrh, ends Chest Colds. All Chemists. 6d. and 1/3 plus Purchase Tax.

As R.A.F. bombers make 1,400-mile trip to fire the Skoda works—

46 FLYING FORTRESSES ARE RELEASED TO US

Latest types will be fitted with secret b

SIMULTANEOUS WITH RELEASE OF AIR RAID FAR INTO GERMANY C THOUGHT WE COULD NOT REACH CA NIGHT:—

Daily Express Staff Reporter C. V. R. THOMPSON

NEW YORK, Wednesday

AMERICA'S Army High Command toni announced that they have given up Britain a fleet of twenty-six four-engi bombers of the Flying Fortress type, wh were awaiting delivery to the U.S. Arn

These machines, claimed to be the most adva bomber type in the world, are a development o Boeing 22-ton Flying Fortress, and were built b Consolidated Aircraft Corporation at San D California.

General George C. M Chief of Staff, said that d would start immediate would be completed by th this month.

"In fact," he said, "B supposed to have taken of some of them last Sat

The High Command a ment reveals, too, that neg are well under way to suppl with another twenty Flyi tresses now in process of at the Boeing Company's plant.

ALL BY MARC

Delivery of this fleet, Marshall indicated, would pleted by March 1.

These twenty are being with the famed Sperr sight, said to be capable ing a bomb "into a ba 10,000 feet."

The Consolidated fou bombers have just begun off the production lines, a negotiations just completed wi able Britain to take first deliveries.

General Marshall said that the United States Army is prepared to accept a three months' lag in its own deliveries of this type.

"In return," he said, "the British Government has released to the United States sufficient engines to equip forty-one Boeing Flying Fortresses, which the United States Army has already accepted without engines or will have received without engines before January 1."

Amer Aviation 10/1/40

CONSOLIDATED

Already claiming the largest U. S. integrated plane plant, Consolidated Aircraft Corp. disclosed plans to built an $800,000 structure which will add 300,000 sq. ft. of floor space to approximately 2,000,000 sq. ft. now in use.

The new addition, which will be located on 22 acres of tidelands on which the firm has held an option, will extend into Lindbergh Field, San Diego, Cal.'s, municipal airport, due west of the present plant. It will be 200 ft. wide and 1,500 ft. long.

The company said its backlog is now in excess of $120,000,000 and that its list of employes has reached an all-time high of 9,485. Hundreds of additional workers will be employed when the new additions are opened.

Western Flying 12/40

SAN DIEGO

This month has been a very busy one for the **Consair Flyer's Club. Al Becker** has been preparing for his private ticket. **W. E. Jones** is ready to solo. **Stan Mahoney** received a bad cut on his thumb while installing a carburetor on a Pratt & Whitney. Our two new members, **Bennett** and **McFadden** should be ready for that old solo flight soon.

This month's Orchid goes to **Barney Farley** for his cool-headness, quick thinking and fine judgment in bringing the plane down in a forced landing safely on the beach along the Coronado Strand. **—Al Drayman.**

Recent announcement has been made of the engagement of **Raymond Dinson** to **Miss Ivalena Jones,** secretary at Consair. **Ray,** also an employe of **Consair,** is a charter member of the **Southern California Flyers.**

» OUTDOOR ASSEMBLY of airplanes is being practiced most extensively at Consolidated in San Diego where temporary canvas-covered sheds, divided into stalls are used for finishing operations on hulls. In the yard are dozens of partially completed ships awaiting parts from subcontractors in other parts of the country. Meanwhile construction is progressing on a building larger than the present huge plant and a parts factory is planned to be built a short distance from the airport. Employment records showed 13,000 on the day of our visit.

Aviation 12/40

Aviation 1/40 *Consolidated Aircraft* has purchased the Hall Aluminum Aircraft Corporation.

Consolidated Aircraft Corp., San Diego, Calif., $75,313 for airplanes.

Glenn L. Martin Co., Baltimore, Md., $106,125 for airplanes.

United Aircraft Corp., East Hartford, Conn., $59,490,703 for airplane engines.

AVIATION, December, 1940

Aero Digest - 12/40

N. Y. STOCK EXCHANGE

	Week Ending: October 26				November 2				November 9				November 16			
	High	Low	Change	Sales	High	Low	Change	Sales	High	Low	Change	Sales	High	Low	Change	Sales
American Airlines	62	59¾	— ⅞	4,900	63¼	60	+1¼	10,300	65	60¼	+1¾	6,700	64¼	60⅛	—3½	4,900
Aviation Corp.	4⅞	4½	......	14,700	5¼	4½	+ ½	28,600	5⅞	4⅞	+ ¾	48,000	6	5¼	— ½	32,900
Bendix Aviation	31¾	30⅝	+ ¼	8,300	33⅞	30⅝	+2⅞	21,200	35	32¾	+1½	26,800	34⅞	33	—1⅝	9,900
Boeing Airplane	16⅜	15¾	+ ⅛	11,200	17¾	15¾	+1⅝	37,500	18½	16¼	+ ⅞	36,800	21	18⅜	+ ¾	65,000
Consolidated	23	21¾	— ½	1,000	23½	21¼	+1⅝	4,100	25¾	21⅞	+2⅜	6,600	27½	24¾	—1	10,000
Continental Motors	3⅝	3⅜	— ⅛	9,300	3¾	3⅜	+ ¼	12,900	4	3½	+ ⅛	41,900	4⅜	3⅞	......	80,000
Curtiss-Wright	7¾	7⅜	— ¼	23,800	8⅜	7⅝	+ ⅝	52,500	10½	8⅛	+2⅛	173,600	10¾	9¾	— ⅜	130,900
Curtiss-Wright A	28	27½	— ⅜	2,900	28½	27¾	+ ⅝	6,800	30	28¼	+1½	12,100	30	29	— ½	5,600
Douglas Aircraft	87¼	82½	+3¼	11,200	91¼	84	+4¼	10,900	90	82⅜	+2	26,800	88	80½	—5	10,300
Eastern Airlines	37⅝	35⅛	+2¼	21,600	37⅞	36½	— ⅛	14,700	39¼	34¾	+1⅞	20,000	39	36	—2⅞	14,300
Grumman	17½	16¾	—1⅛	1,600	17⅞	16¾	+ ¾	4,000	19¼	16¾	+1¾	6,200	20⅛	17¾	—1	7,500
Lockheed	29	27¾	—1	9,100	30¾	27⅞	+2⅛	28,100	32¾	28⅛	+2⅝	41,800	33⅝	30½	—1⅞	44,300
Martin, G. L.	32¼	30⅝	— ⅞	11,600	33¾	30½	+2¼	21,100	35⅛	31¾	+2	32,800	35¾	33½	—1⅜	24,300
National Aviation	11	10⅜	— ¼	1,300	11½	10⅝	+ ¾	2,400	12⅜	10⅝	+1⅛	6,600	13⅛	11½	— ⅞	7,400
North American	17¼	16⅝	— ⅜	6,400	18¼	16⅝	+ ⅞	22,100	18¾	16¾	+1⅛	31,600	19⅝	17⅞	— ¾	33,700
Pan American	16	15⅛	+ ⅛	11,700	17½	15⅝	+1	27,000	17⅛	15⅜	+ ⅛	16,700	18⅛	16½	+ ⅛	20,100
Sperry Corp.	41⅞	40⅜	+ ⅞	5,400	43¾	41¼	+1⅛	11,600	43¾	40⅜	+ ½	10,500	43⅞	42¼	—1¼	7,100
Square D Corp.	35	34	......	4,700	34⅞	33¼	— ⅝	3,400	34⅞	33¼	......	3,900	34½	32¼	—1	2,800
TWA	18¾	17¾	+ ¾	6,600	19	18⅜	— ⅜	3,400	19¼	17¾	+ ¼	3,200	20¼	18⅝	+ ⅞	5,800
United Airlines	19⅛	17⅝	+ ½	27,400	19⅜	18⅝	+ ⅜	18,900	19¼	17⅛	— ⅜	23,900	19⅝	18	— ⅝	18,200
United Aircraft	40	39	+ ½	7,700	43	39½	+3	20,000	44⅞	40½	+2⅛	26,800	47	45	+ ⅜	31,400
Wright Aero	98	98	—2	50	105	97	+5	180	110	102	+7	170	111	107	—3	120

---

machine commonly used in Spain, and, what is more, carries its armament in efficient Breda power-driven turrets.

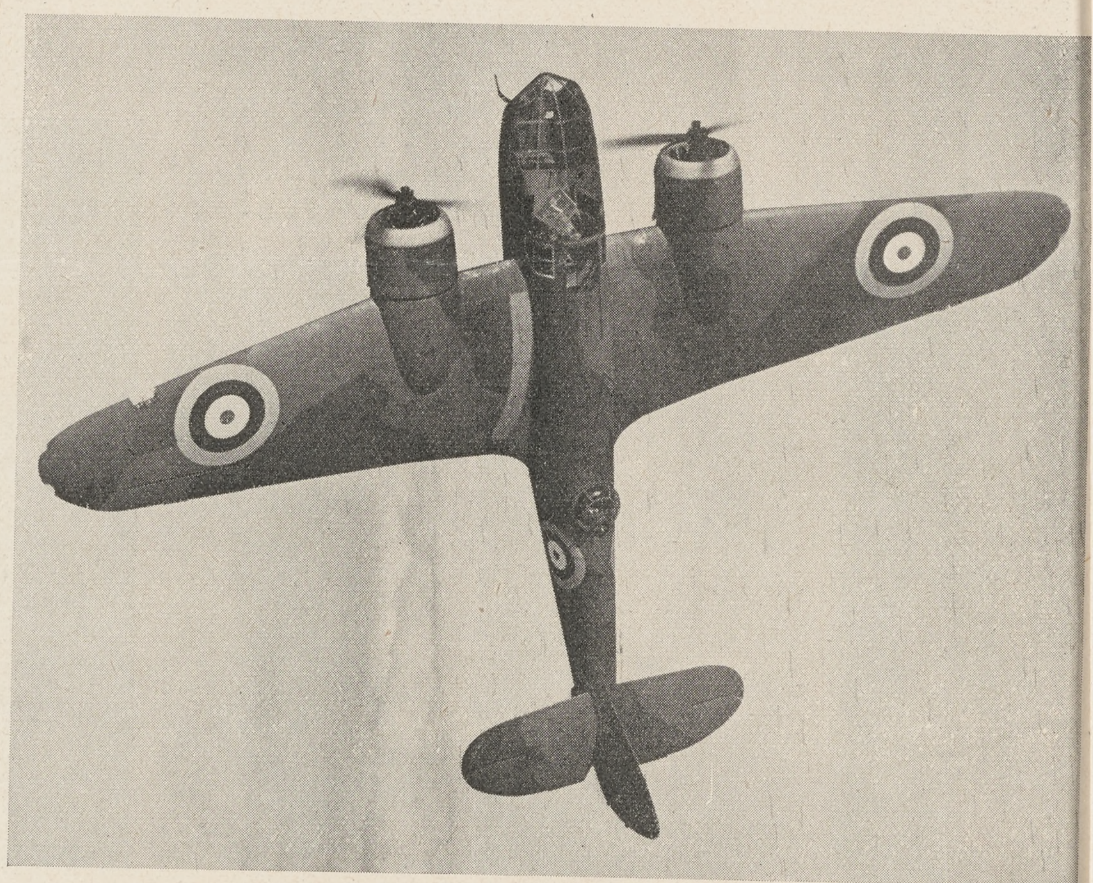
It has been suggested that the Germans drew some false conclusions from the Spanish war and that they are developing heavier armament for their bombers at the expense of speed and manœuvrability.

For short-range work the small, fast, "evasive" type of bomber, which depends mainly on its speed and manœuvrability for protection, is a practical proposition, but for long-distance operation its limitations soon become apparent. If the range is long the bomb load will be small, and there is little point in flying for very long distances if the blow delivered is not a telling one. This means that large numbers of small, fast bombers must be employed to do the work of fewer but larger machines. If the opposition is very strong this may be worth while.

The classes of bombing aircraft in service to-day are more numerous than might be believed. Before examining their characteristics it will be advantageous to outline modern bombing technique, which, of course, strongly influences their design.

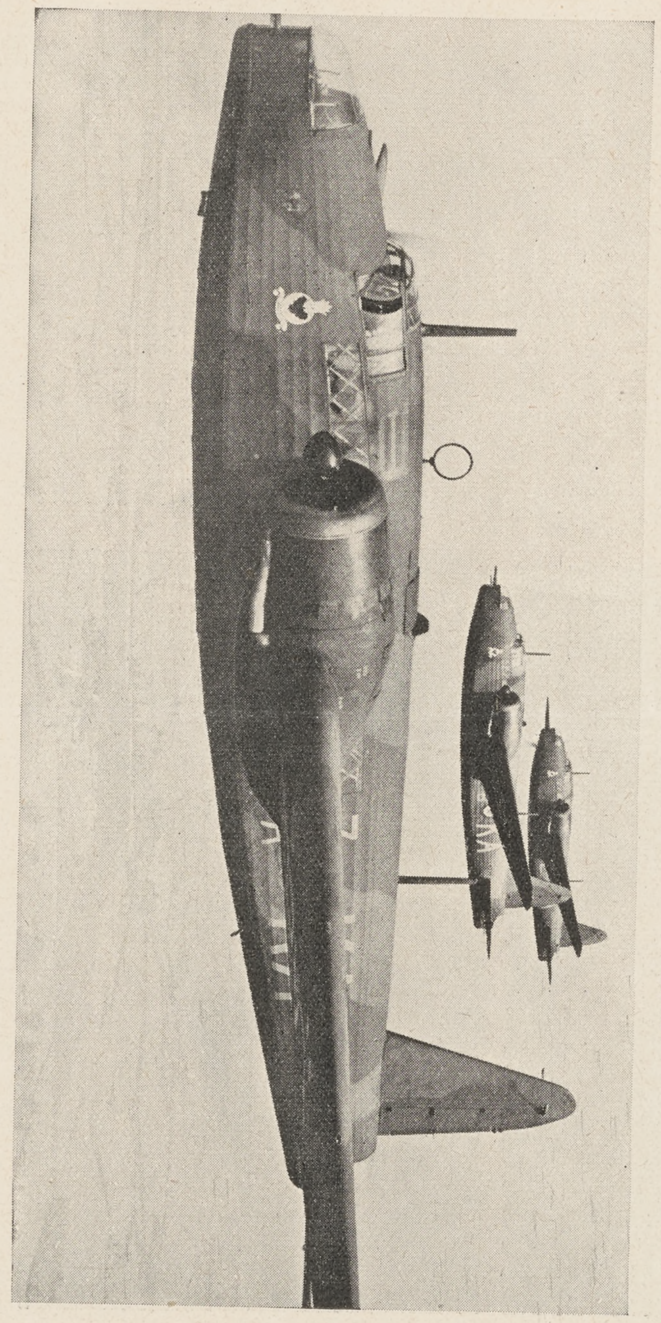
There are three commonly used types of bombing attack: the high-altitude; high-level or "precision" method; dive-bombing; and the low-level attack. The first is practised by all types, though least by specialised dive-bombers. It entails flying at very considerable heights to minimise the chances of enemy anti-aircraft guns and making a somewhat lengthy "run-up" to the target on a set course, at a steady speed and constant height while the bomb sight is adjusted. The bombs, of course, are dropped some distance before the machine reaches its target. For example, a bomber flying at 300 m.p.h. at 21,000ft. may have to release about three miles from the objective.

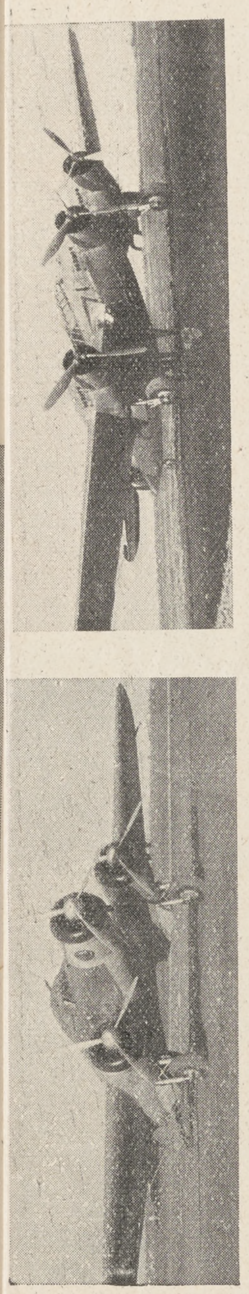
Dive-bombing implies the release of the projectile(s) at low or medium altitude at the bottom of a steep dive on



Outstanding among the world's multi-purpose aircraft is the Bristol Blenheim Mark IV. Blenheims have been delivered to the R.A.F. in hundreds and are used for bombing, reconnaissance and fighting.

One of the most successful large bombers ever built is the powerfully armed geodetic-built Vickers Wellington (below), which, on many occasions, has distinguished itself on active service.





Italy is the only country which favours the three-engine formula for large bombers. On the left is the Savoia-Marcoetti S.M.79B and on the right the Cant Z.1007.

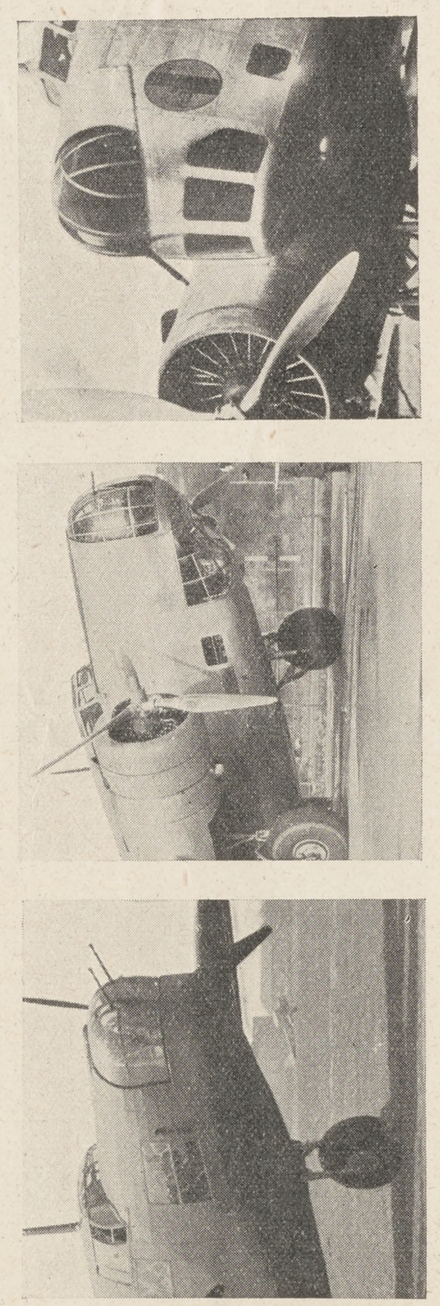
doubtedly be attained in many instances if liquid-cooled engines were adopted. Buried power plants and shaft-driven airscrews or propellers may appear before long on machines of this class. Higher wing loadings will necessitate the fullest use being made of high-lift equipment, assisted take-off or aerial refuelling.

Dogmatists often discuss bombers as though there were a clearly defined division between the small, fast "evasive" types and the larger, more heavily armed machines which rely primarily for protection on their gun power. Actually, as we have seen, some of the smaller bombers have quite a powerful armament (installed in some cases in power-driven turrets, despite the weight) which compares favourably with that mounted on certain larger machines.

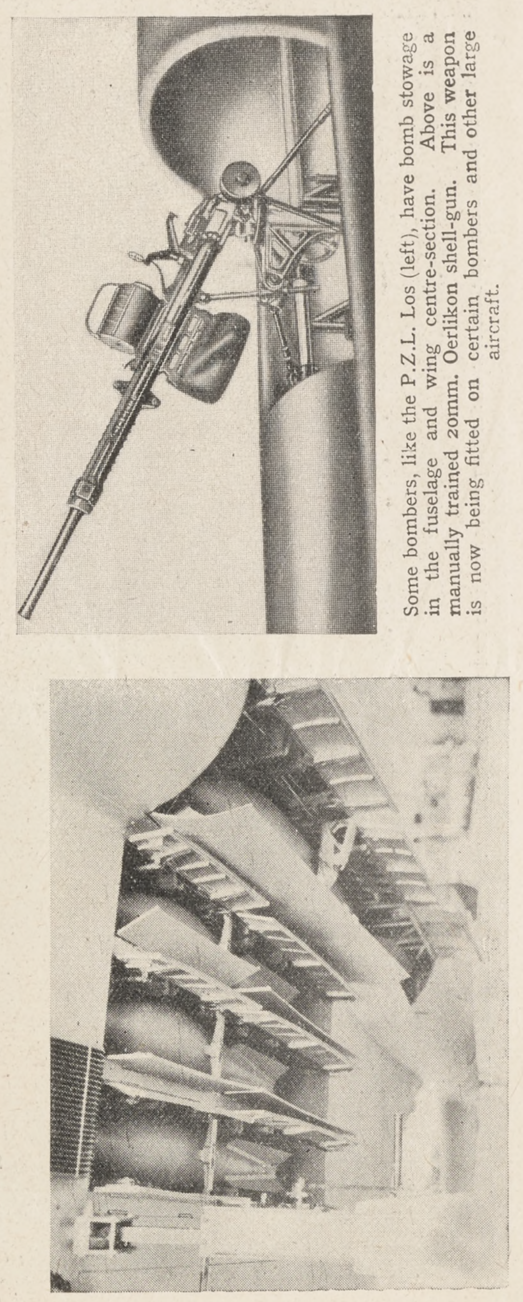
We must, however, establish some rough classification for discussion and may conveniently consider the two- and three-engined machines weighing, more or less, between 18,000 and 25,000lb. Current machines of this calibre include the Handley Page Hampden and Hereford, the Vickers Wellington and Armstrong-Whitworth Whitley, France's Amiot 340 and Liore 45, Italy's Fiat B.R.20 and Savoia Marchetti S.79 and S.79B, the American Douglas B-18 and B-23, Russia's S.B-2, Germany's Heinkel He 111K, the Dutch Fokker T.5 and the Japanese.

As might be expected in conformity with military aircraft the bombers under consideration are almost exclusively cantilever monoplanes. Stressed-skin metal construction is generally favoured, though Italy has achieved some creditable results with wooden wings and welded steel-tube fuselages. Composite construction may, in fact, yet prove to be by no means the "back number" which it is commonly considered.

There is one important type of structure which is, fortunately, so far exclusive to Great Britain. This is the Vickers-Wallis geodetic system which, using curved diagonal members, reconciles great stiffness and strength with a very low structural weight. It also permits the construction of wings of high aspect ratio which make for good take-off, climb and a high ceiling. Internal accommodation, moreover, is much less obstructed than with more conventional types of construction.



Great Britain has developed the power-driven gun turret to a very high pitch of perfection. On the left is the nose installation in the Vickers Wellington; in the centre an experimental power-driven turret on an American Douglas B-18; and on the right a Breda turret on Italy's Fiat B.R.20.



Some bombers, like the P.Z.L. Los (left), have bomb stowage in the fuselage and wing centre-section. Above is a manually trained 20mm. Oerlikon shell-gun. This weapon is now being fitted on certain bombers and other large aircraft.

San Diego Defense Boom Overshadows City's Other Claims to Fame

'BIGGEST NEWS' GIVES WAY TO PHENOMENAL GROWTH

CONTINUED FROM PAGE ONE

the company now employs 1600 men working on a backlog of $10,600,000 in a plant twice its 1939 size. The Ryan school is training 243 army air corps cadets, as compared with 63 the first of the year.

The army moved into town in force, at least on paper. Ft. Rosecrans, which has "guarded" the harbor with ancient guns manned by skeleton crews for lo, these many years, came to life under the impetus of a building project to house 3000 men and 125 officers. Construction of a cantonment for 7500 men and 300 officers got under way on Torrey Pines mesa. By a rotation system, the camp is expected to train 20,000 draftees between March 15, 1941, and March 15, 1942.

Hits New High

With marine corps recruiting hitting a new high, Camp Elliott mushroomed on Kearny mesa, and the Barnett ave. base pushed its limits so far southward that on one occasion a sergeant, calling the roll, got a "Here sir," from a watchman at the Consolidated plant. There were 5100 officers and men at the base on Jan. 1; the total is now approximately 10,300. Camp Elliott went from 50 to 3100.

The naval training station expanded to train double the number of bluejackets as the fleet was built up to fighting strength. The figures tell the story—2661 men on Jan. 1; 5679 today.

Activity Intensified

Activity was intensified at both the North Island naval air station, largest in the nation, and the destroyer base, but little news came through their closely-guarded portals . . . The navy this year clamped down a censorship on news and pictures of ships and planes. This was often intelligent, but sometimes it was considered stupid by newsmen.

The 1940 census, taken early in the year, showed a population of 202,038, including about 7000 men of the fleet who maintained residences ashore. Approximately 21,000 others were not counted. The warships left for six weeks of maneuvers in the Hawaiian area April 1 but remained there the rest of the year, although contingents returned for two-weeks "visiting" periods during the fall months. An estimated 30,000 new residents flocked into town after the census, drawn by the lure of national defense jobs.

Started by Navy

All this added up to a housing shortage. In January, the city council had heeded the objections of realtors and apartment house owners and "tabled" a proposed USHA slum clearance, low-rent housing project. In July, the navy took matters into its own hands, and, (with the approval of the council, went ahead with plans for low-rent housing. A $3,800,000 project was started for construction of 1200 housing units for navy families, 600 adjoining the destroyer base and 600 near the naval training station.

On Oct. 31, Charles F. Palmer, defense housing coordinator, announced in Washington that the largest of 63 housing projects in vital defense areas would be located in San Diego. The $15,000,000 program provides for construction of 3000 residential units for civilian workers on Kearny mesa. The first contract, for a $9,070,000 slice of the job, was awarded to a Los Angeles firm Dec. 12.

Everybody Here

Business boomed. On Dec. 13, Newell Jones wrote in The Tribune-Sun that "Merchants' Christmas cash registers were dinging like the dongs of a legion of lunatic Swiss bell ringers." (They had done a fair bit of dinging in the late summer and fall months, too, when the town went convention crazy. Everybody met here from embalmers to magicians, from the California American Legion to the state C.I.O.)

Honest reporting makes it impossible to dismiss, with a well-bred shrug of distaste, any mention of the seamier side of life in a national defense center. Here are a few notes which shed light on some of our social problems:

Year's Tragedies

Last spring, after the fleet left, the mutilated body of a sailor was found under Cabrillo bridge. . . . Lt. Comdr. J. F. Luten, medical corps, naval hospital, told a health officers' convention here in September that prostitutes should be placed in segregated districts and kept under strict medical supervision. He said that venereal diseases occupied second place among all causes of illness in the navy in 1938. "A total of 10,782 cases were admitted," he said. . . . On Dec. 11, a sailor's wife with a liking for liquor got a year in the county jail for the fatal neglect of her baby son. . . . On Dec. 16, a navy wife, grieving over the absence of her husband, hanged herself in the garage of her mother's home. . . . On Dec. 18, the body of a new-born baby boy, carefully wrapped in a sheet and quilt, was found in the city dump. . . . On Dec. 19, a representative of the Y.W.C.A. said at a public meeting that the "Y" now is forced to shelter female hoboes, hitch-hikers, inebriates and other questionable characters.

In Van of Ghastly Parade

San Diego has long marched in the van of the ghastly parade of corpses strewn from coast to coast by that marvelous mechanical creation, the automobile, which, in the hands of punks, drunks, dimwits and just plain careless damphools, is more deadly than all the bombs dropped on Britain. City traffic deaths rose from 45 in 1939 to 61 as of today.

The national draft lottery Oct. 29 was a big story to the 30,000 San Diegans between 21 and 35 who had registered for the nation's first peace time conscription. On Nov. 22, the first contingent of 31 draftees were given a royal send-off at Union station by the marine corps band and a large crowd of citizens.

In the field of labor, both the A.F.L. and C.I.O. were active in organizing during the year. In August, a dispute between the San Diego Building and Construction Trades council, A.F.L., and local lumbermen, shut down 13 lumber and building material yards for several days. The "strike" or "lock-out" involved several hundred members of the millmen's and teamsters' unions.

Distinguished Guests

Distinguished visitors included Col. Frank Knox, secretary of the navy, and Wendell Willkie. Col. Knox came here by plane from Honolulu to inspect naval establishments Sept. 16 and 17. Willkie made a campaign speech to 10,000 persons at Lane field Sept. 18.

Two local amateur teams reached the finals in national tournaments. The San Diego State college basketball team, coached by Morris Gross, won four straight last-minute victories in the National Intercollegiates at Kansas City in March, only to lose out in the finals to Tarkio, Mo., college, 52 to 42. (The Aztecs lost the title by one point in 1939.) Post 6, American Legion, junior baseball team, which won the national championship in 1938, again was coached into the "little world series" by Mike Morrow. They lost the deciding game to Albemarle, N. C., 9 to 8, after their two Negro stars were barred from play.

Consolidated Tests Long Range Bomber

Initial tests were undertaken over San Diego recently of Consolidated Aircraft's B-24, a new, long-range bomber, the first of a fleet of seven destined for Britain. It is powered with four 1,200 horsepower engines, and has a wing span of 110 feet.

The B-24 has a capacity of four tons of bombs, and a crew of nine, and its cruising radius is 3,000 miles. Top speed is believed to be 300 miles an hour.

It was reported that these bombers would be used to ferry Canadian pilots to the British Isles.

12/40 Canadian Aviation

'GERANIUMS AND ROSES' GIVE WAY TO DEFENSE BOOM

-:- -:- -:- -:- -:- -:- -:- -:- -:-

Customary 'Biggest News' Stories Overshadowed by 1940 Growth

By SPENCER HELD

San Diego, long famed for its pretty girls and sun-bronzed athletes, its shirt-sleeved tourists and the dungaree navy, became a national defense boom town in 1940.

The new World war overshadowed local news in 1939, and we abandoned our annual custom of picking the 10 biggest San Diego news stories of the year. But the then "phony war" had some repercussions here—the fleet returned a month early from the east coast; President Roosevelt ordered 49 World war destroyers reconditioned at the local base; 21 warships departed for "security patrol" duty in Hawaiian waters, and Consolidated Aircraft Corp. got some contracts which seemed fat at the time.

We hadn't seen anything, yet. In 1940, when the mechanized German army overran France and the Luftwaffe besieged Britain, a state of emergency was proclaimed in the United States and San Diego became a focal point of tremendous importance on the national defense map.

Consolidated Aircraft expanded enormously to handle a flood of orders from Britain and the United States. New buildings were dedicated on the Lindbergh field site Sept. 2, and work was pushed on another final assembly building, 360 by 720 feet, and a single 200-by-1500-foot structure for small parts assembly.

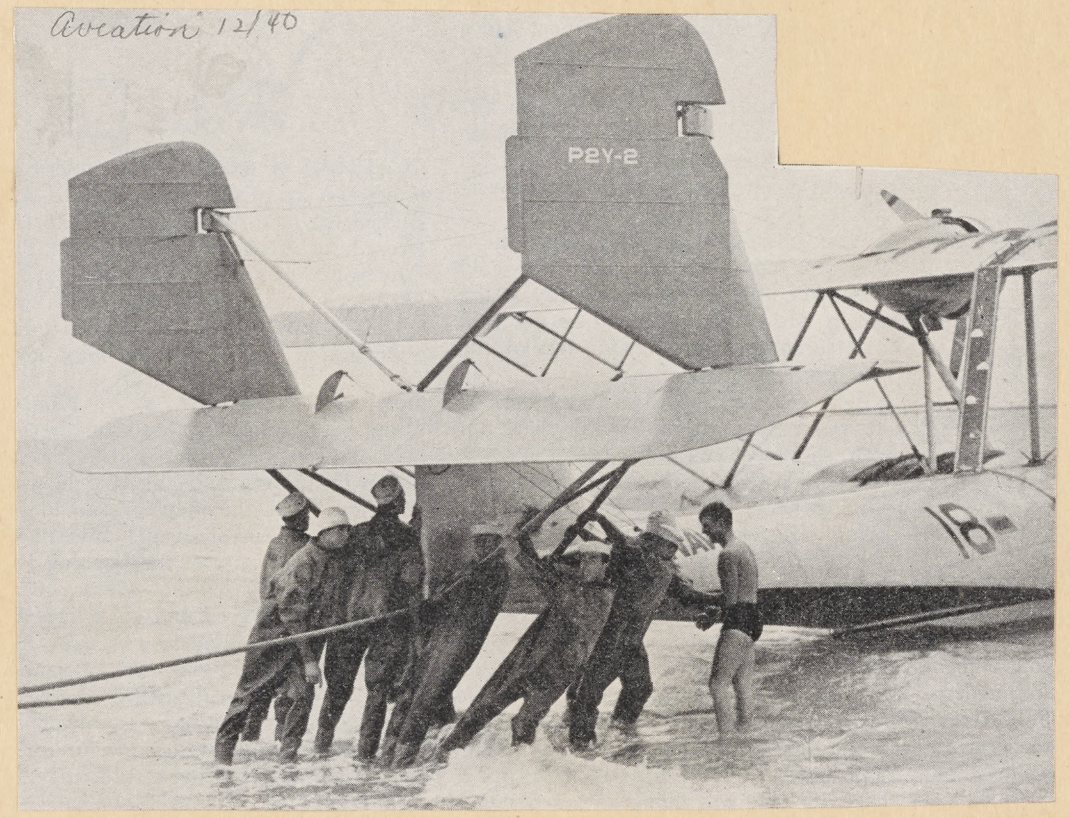
On Dec. 18, it was announced that a parts factory would be built along the east side of Pacific highway about 1 1-3 miles north of the main plant. This will cost more than $14,000,000 and will virtually double Consair's present size. It is scheduled to go into full operation by June, 1941.

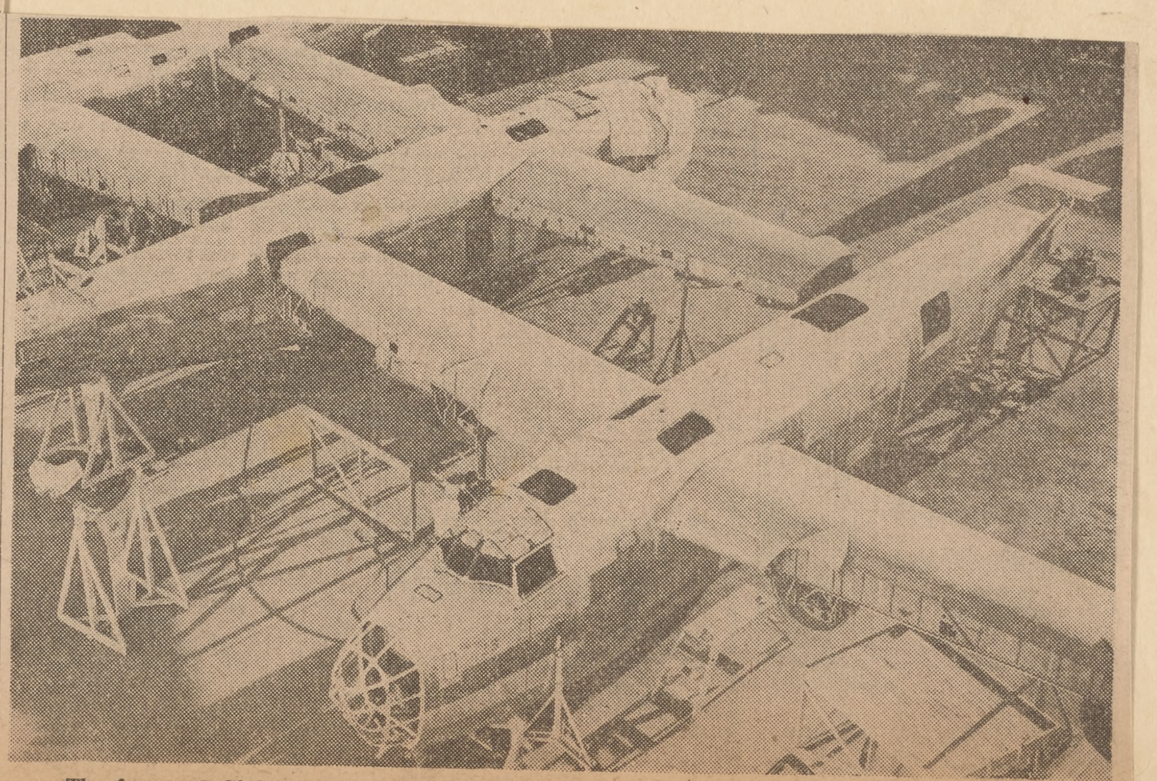
The number of employes jumped from 3170 to 13,832 on Dec. 24, and the backlog of orders soared from a respectable $42,141,694 to an incredible $323,000,000 at year's end.

Ryan Aeronautical Co. also went into high-geared production. With 700 employes and a backlog of $1,500,000 at the beginning of the year,

(Continued on Page 12A, Col. 1)

Aviation 12/40





The famous B-24 bombers, four-motored, built by Consolidated Aircraft Corp. for Britain.—(Photo by Stanley Griffin, Tribune-Sun staff photographer.)

Industrial LA County 11-12/40

Airplane and Parts Backlogs in Pacific Coast Factories

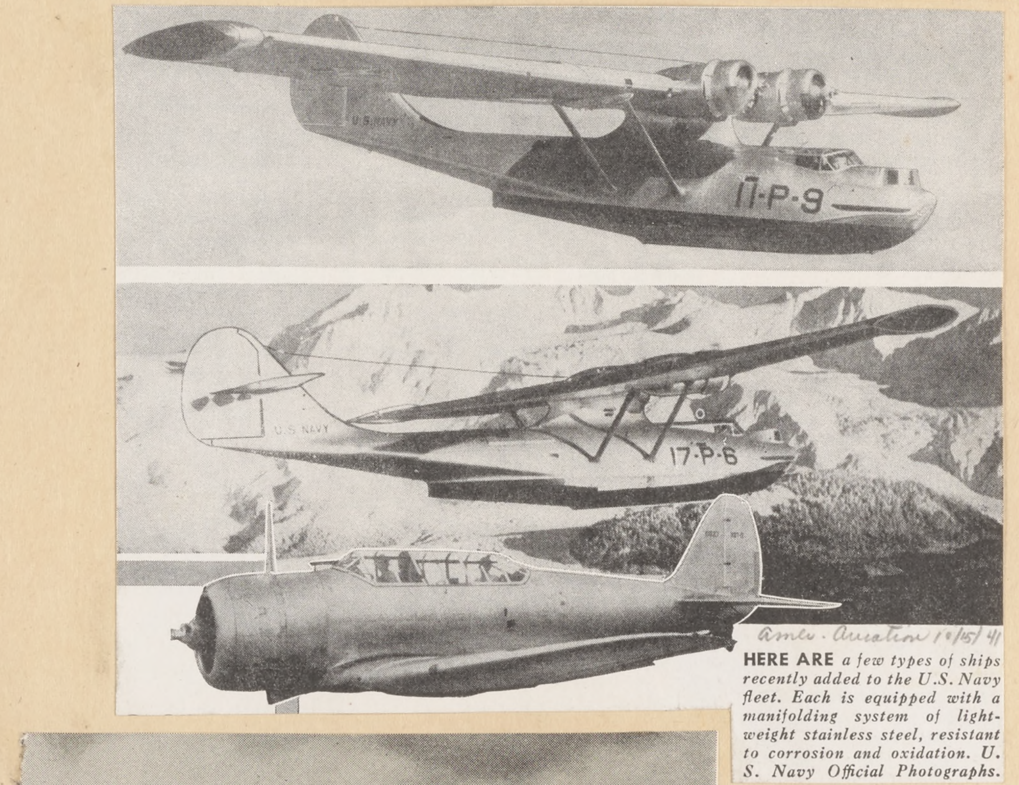
(As of November 1, 1940)

	Los Angeles County	
Douglas	$350,000,000	
Lockheed	280,000,000	
North American	220,000,000	
Northrop	24,000,000	
Vultee	77,011,935	
Adel Precision	750,000	
Aerco Corporation	169,000	
Aircraft Accessories	1,600,000	
Hardman Aircraft	700,000	
Kinner Motors	700,000	
Menasco	4,000,000	
Timm Aircraft	1,047,639	
Los Angeles County	$959,978,574	
	San Diego	
Consolidated Aircraft Corporation	328,842,500	
Ryan Aeronautical	11,400,000	
Solar Aircraft Co.	3,650,000	
	$343,892,500	
Southern California		$1,303,871,074
	Seattle	
Boeing Aircraft Co.	$184,000,000	$ 184,000,000
TOTAL PACIFIC COAST		$1,487,871,074

Los Angeles County	Nov. 1, 1940	Oct. 1, 1939	Oct. 1, 1938
Backlog of Orders	$959,978,574	$108,349,597	$65,486,008
Persons Employed	50,074	20,256	11,854
Average Annual Payroll	$ 91,933,708	$ 25,806,263	$17,606,589

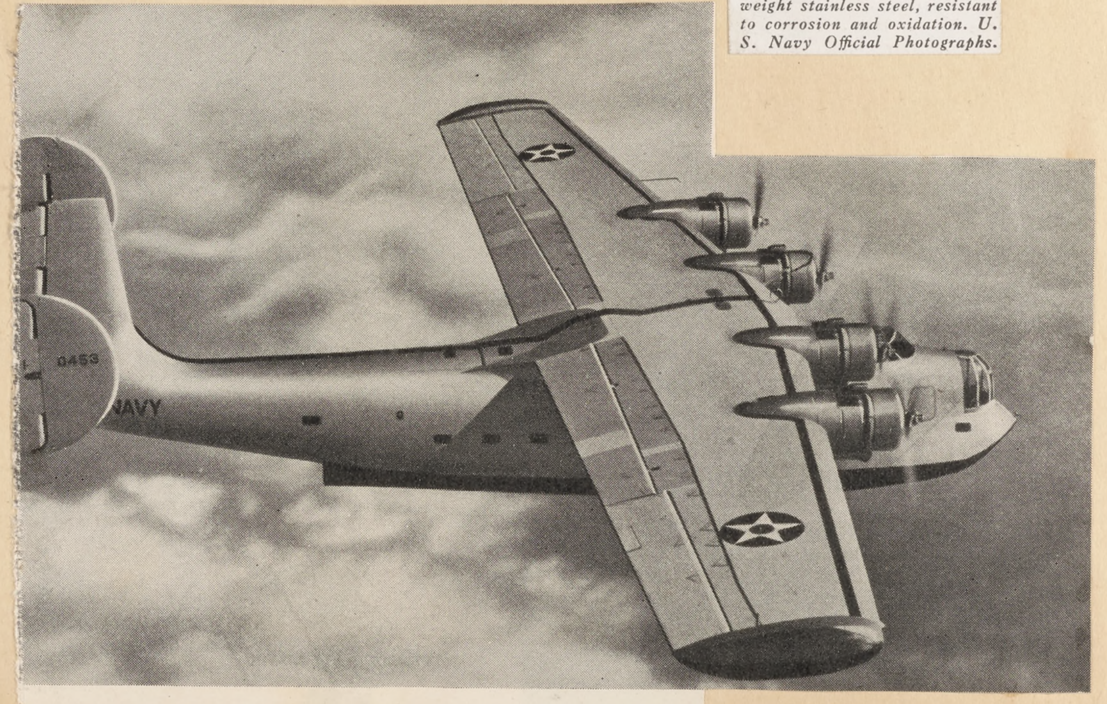
Floor Area of Aircraft Plants in Los Angeles County

Nov. 1, 1940—Built and Building	8,500,000 square feet
Aug. 1, 1940	3,836,970 square feet
Jan. 1, 1940	2,714,000 square feet
Jan. 1, 1939	2,000,000 square feet



Amer. Aviation 10/15/41

HERE ARE *a few types of ships recently added to the U.S. Navy fleet. Each is equipped with a manifolding system of light-weight stainless steel, resistant to corrosion and oxidation. U. S. Navy Official Photographs.*



NSOLIDATED AIRCRAFT CORPORATION'S XPB2Y-1, one of the newest and htiest arms of the Navy's coast defense, contains many parts fabed from light-weight Synthane. *Official photograph U. S. Navy.*

Aero Digest 11/40

DAILY EXPRESS Thursday, November 21, 1940

ENLIVEN SOUPS WITH H·P SAUCE

BLACK-OUT ZERO HOUR TO-NIGHT UNTIL 8.1 A.M.
MOON RISES 11.27 PM MOON SETS 1.33 PM

LONDON — ENGLAND

Daily Express

No. 12,636 Thursday, November 21, 1940 One Penny

End CATARRH
You can clear away stuffy congestion, get rid of dangerous germs and stop that constant flow of poison into your system. How? Simply by applying 'Mentholatum' into your nostrils. The instant you do so, this breathable balm volatilises and you commence inhaling its antiseptics. Quickly, pleasantly, the 'Mentholatum' vapours stop the gathering of germs, clear the nasal cavities and open up your breathing passages. 'Mentholatum' Brand Balm stops Head Colds, banishes Catarrh, ends Chest Colds. All Chemists, 6d. and 1/3 plus Purchase Tax.

As R.A.F. bombers make 1,400-mile trip to fire the Skoda works—

46 FLYING FORTRESSES ARE RELEASED TO US

Latest types will be fitted with secret bombsight

SIMULTANEOUS WITH RELEASE OF THE NEWS OF A BRITISH AIR RAID FAR INTO GERMANY OVER A CITY THE NAZIS THOUGHT WE COULD NOT REACH CAME THIS DESPATCH LAST NIGHT:—

Daily Express Staff Reporter C. V. R. THOMPSON

NEW YORK, Wednesday.

AMERICA'S Army High Command tonight announced that they have given up to Britain a fleet of twenty-six four-engined bombers of the Flying Fortress type, which were awaiting delivery to the U.S. Army.

These machines, claimed to be the most advanced bomber type in the world, are a development of the Boeing 22-ton Flying Fortress, and were built by the Consolidated Aircraft Corporation at San Diego, California.

General George C. Marshall, Chief of Staff, said that deliveries would start immediately, and would be completed by the end of this month.

"In fact," he said, "Britain is supposed to have taken delivery of some of them last Saturday."

The High Command announcement reveals, too, that negotiations are well under way to supply Britain with another twenty Flying Fortresses now in process of assembly at the Boeing Company's Seattle plant.

ALL BY MARCH 1

Delivery of this fleet, General Marshall indicated, would be completed by March 1.

These twenty are being equipped with the famed Sperry bombsight, said to be capable of aiming a bomb "into a barrel from 10,000 feet."

The Consolidated four-engined bombers have just begun coming off the production lines, and the negotiations just completed will enable Britain to take first deliveries.

General Marshall said that the United States Army is prepared to accept a three months' lag in its own deliveries of this type.

"In return," he said, "the British Government has released to the United States sufficient engines to equip forty-one Boeing Flying Fortresses, which the United States Army has already accepted without engines or will have received without engines before January 1."

Amer Aviation 10/1/40

CONSOLIDATED

Already claiming the largest U. S. integrated plane plant, Consolidated Aircraft Corp. disclosed plans to built an $800,000 structure which will add 300,000 sq. ft. of floor space to approximately 2,000,000 sq. ft. now in use.

The new addition, which will be located on 22 acres of tidelands on which the firm has held an option, will extend into Lindbergh Field, San Diego, Cal.'s, municipal airport, due west of the present plant. It will be 200 ft. wide and 1,500 ft. long.

The company said its backlog is now in excess of $120,000,000 and that its list of employes has reached an all-time high of 9,485. Hundreds of additional workers will be employed when the new additions are opened.

Western Flying 12/40

SAN DIEGO

This month has been a very busy one for the **Consair Flyer's Club. Al Becker** has been preparing for his private ticket. **W. E. Jones** is ready to solo. **Stan Mahoney** received a bad cut on his thumb while installing a carburetor on a Pratt & Whitney. Our two new members, **Bennett** and **McFadden** should be ready for that old solo flight soon.

This month's Orchid goes to **Barney Farley** for his coolheadness, quick thinking and fine judgment in bringing the plane down in a forced landing safely on the beach along the Coronado Strand. **—Al Drayman.**

Recent announcement has been made of the engagement of **Raymond Dinson** to **Miss Ivalena Jones,** secretary at Consair. Ray, also an employe of Consair, is a charter member of the **Southern California Flyers.**

» OUTDOOR ASSEMBLY of airplanes is being practiced most extensively at Consolidated in San Diego where temporary canvas-covered sheds, divided into stalls are used for finishing operations on hulls. In the yard are dozens of partially completed ships awaiting parts from subcontractors in other parts of the country. Meanwhile construction is progressing on a building larger than the present huge plant and a parts factory is planned to be built a short distance from the airport. Employment records showed 13,000 on the day of our visit.

Aviation 12/40

Aviation 10/40

Consolidated Aircraft has purchased the Hall Aluminum Aircraft Corporation.

Consolidated Aircraft Corp., San Diego, Calif., $75,313 for airplanes.

Glenn L. Martin Co., Baltimore, Md., $106,125 for airplanes.

United Aircraft Corp., East Hartford, Conn., $59,490,703 for airplane engines.

AVIATION, December, 1940

Aero Digest - 12/40

N. Y. STOCK EXCHANGE

Week Ending:	October 26				November 2				November 9				November 16			
	High	Low	Change	Sales	High	Low	Change	Sales	High	Low	Change	Sales	High	Low	Change	Sales
American Airlines	62	59¾	−⅞	4,900	63¼	60	+1¼	10,300	65	60¼	+1¾	6,700	64¼	60⅛	−3½	4,900
Aviation Corp.	4⅞	4½	......	14,700	5¼	4½	+½	28,600	5⅞	4⅞	+¾	48,000	6	5¼	−½	32,900
Bendix Aviation	31¾	30⅝	+¼	8,300	33⅞	30⅝	+2⅞	21,200	35	32¾	+1½	26,800	34⅞	33	−1⅝	9,900
Boeing Airplane	16⅜	15¾	+⅛	11,200	17¾	15¾	+1⅝	37,500	18½	16¼	+⅞	36,800	21	18⅜	+¾	65,000
Consolidated	23	21¾	−½	1,000	23½	21¼	+1⅝	4,100	25¾	21⅞	+2⅜	6,600	27½	24¾	−1	10,000
Continental Motors	3⅝	3⅜	−⅛	9,300	3¾	3⅜	+¼	12,900	4	3½	+⅛	41,900	4⅜	3⅞	......	80,000
Curtiss-Wright	7¾	7⅜	−¼	23,800	8⅜	7⅝	+⅝	52,500	10½	8⅛	+2⅛	173,600	10¾	9¾	−⅜	130,900
Curtiss-Wright A	28	27½	−⅜	2,900	28½	27¾	+⅝	6,800	30	28¼	+1½	12,100	30	29	−½	5,600
Douglas Aircraft	87¼	82½	+3¼	11,200	91¼	84	+4¼	10,900	90	82⅜	+2	26,800	88	80½	−5	10,300
Eastern Airlines	37⅝	35⅛	+2¼	21,600	37⅞	36½	−⅛	14,700	39¼	34¾	+1⅞	20,000	39	36	−2⅞	14,300
Grumman	17½	16¾	−1⅛	1,600	17⅞	16¾	+¾	4,000	19¼	16¾	+1¾	6,200	20⅛	17¾	−1	7,500
Lockheed	29	27¾	−1	9,100	30¾	27⅞	+2⅛	28,100	32¾	28⅛	+2⅝	41,800	33⅝	30½	−1⅞	44,300
Martin, G. L.	32¼	30⅝	−⅞	11,600	33¾	30½	+2¼	21,100	35⅛	31¾	+2	32,800	35¾	33½	−1⅜	24,300
National Aviation	11	10⅜	−¼	1,300	11½	10⅝	+¾	2,400	12⅜	10⅝	+1⅛	6,600	13⅛	11½	−⅞	7,400
North American	17¼	16⅝	−⅜	6,400	18¼	16⅝	+⅞	22,100	18¾	16¾	+1⅛	31,600	19⅝	17⅞	−¾	33,700
Pan American	16	15⅛	+⅛	11,700	17½	15⅝	+1	27,000	17⅛	15⅜	+⅛	16,700	18⅛	16½	+⅛	20,100
Sperry Corp.	41⅞	40⅜	+⅞	5,400	43¾	41¼	+1⅛	11,600	43¾	40⅜	+½	10,500	43⅞	42¼	−1¼	7,100
Square D Corp.	35	34	......	4,700	34⅞	33¼	−⅝	3,400	34⅞	33¼	......	3,900	34½	32¼	−1	2,800
TWA	18¾	17¾	+¾	6,600	19	18⅜	−⅜	3,400	19¼	17¾	+¼	3,200	20¼	18⅝	+⅞	5,800
United Airlines	19⅛	17⅝	+½	27,400	19⅜	18⅝	+⅜	18,900	19¼	17⅛	−⅜	23,900	19⅝	18	−⅝	18,200
United Aircraft	40	39	+½	7,700	43	39½	+3	20,000	44⅞	40½	+2⅛	26,800	47	45	+⅜	31,400
Wright Aero	98	98	−2	50	105	97	+5	180	110	102	+7	170	111	107	−3	120

---

the target. It is comparatively easy to score a hit on a fairly small target, though there is only one position for release in any dive for the path of the bomb after leaving the aircraft is not straight.

The low-level attack is made at high speed and from a low altitude without the use of bomb sight. In some cases it has been found desirable to attach each bomb to a small parachute to give the attacking machine time to clear the explosion.

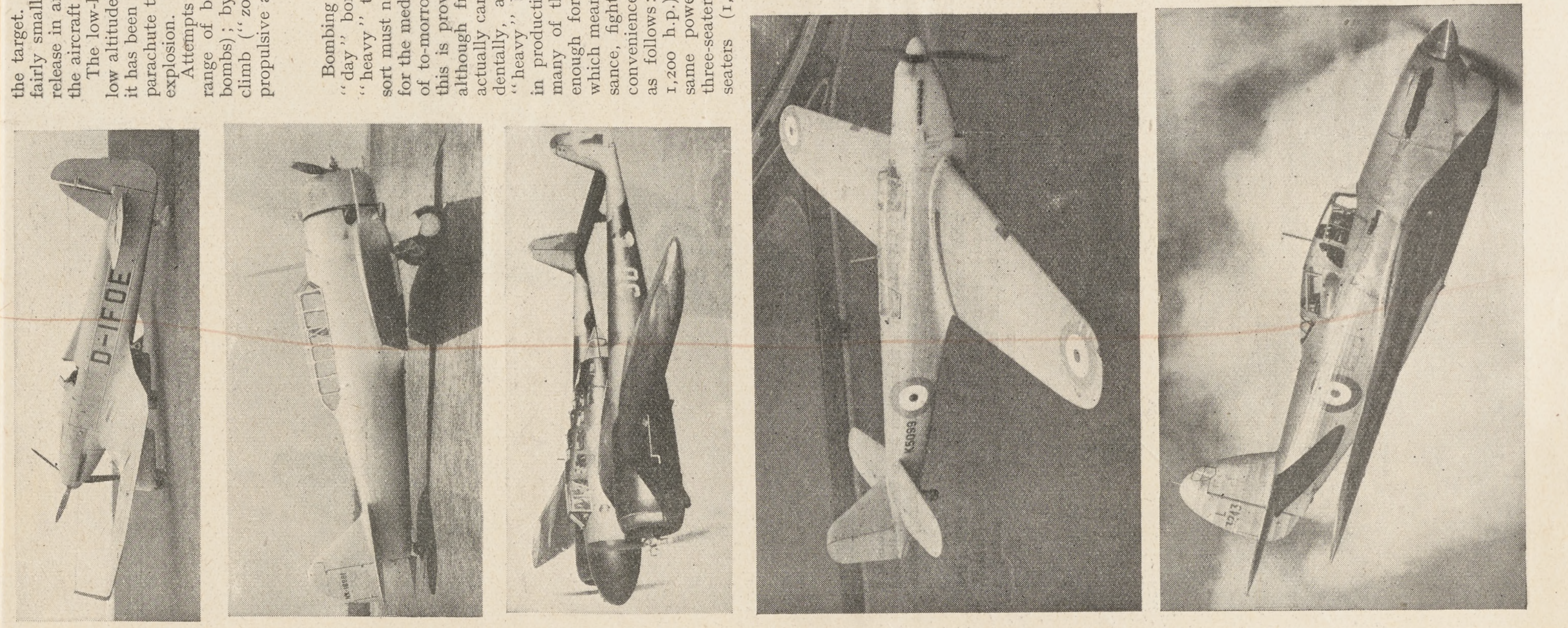
Attempts have been made to increase the horizontal range of bombs by fitting them with wings ("glider" bombs); by releasing them at the beginning of a sharp climb ("zoom" bombing); and by fitting them with a propulsive agent ("rocket" bombs).

Classification

Bombing aircraft have been categorised as "night" and "day" bombers and later as "light," "medium" and "heavy" types according to load. Classification of this sort must necessarily be confined to contemporary aircraft, for the medium bomber of to-day may be the light bomber of to-morrow. Perhaps the most outstanding instance of this is provided by the Handley Page Hampden which, although frequently referred to as a medium bomber, actually carries a bigger load for a longer range (and, incidentally, at a much higher speed) than the Harrow "heavy" bomber, which was its immediate predecessor in production. Matters are further complicated because many of the bombers of intermediate size are versatile enough for classification as "multi-purpose" machines, which means that they are readily adaptable for reconnaissance, fighting or ground attack work. For the sake of convenience modern bombing machines may be classed as follows: Specialised single-seater dive-bombers (650-1,200 h.p.); specialised two-seater dive-bombers in the same power class; non-specialised single-engined two/three-seaters of similar power; twin-engined two/five-seaters (1,300-3,000 h.p.); three-engined multi-seaters (2,000-4,000 h.p.); and four-engined multi-seaters (2,800-6,000 h.p.).

Dive Bombers

Specialised dive-bombers are being studiously developed, particularly on the Continent, and larger types of non-specialised bombers are in many cases being designed with "shallow" dive-bombing in view. Yet only three years ago a high-ranking officer stated that dive-bombing was not practical in the R.A.F. because contemporary aeroplanes reached such high speeds in a dive that it would be very difficult to pull them out if, indeed, they did not break up in the air. Even later a prominent technician wrote to *Flight* as follows:—"If dive-bombing has a sufficient value to justify an appreciable loss in the performance normally required from a bomber, then the dive-bomber can most efficiently be a machine with a top speed about half to two-thirds of the required dive speed. If you want to dive-bomb from anything much faster than this you will, in practice, have to get your high speed by using an excessive engine power for the military load which it will carry. If it is a clean aeroplane with (air) brakes this will occur because the structural weight required to cope with the brake loads will be colossal and you will have to use a very large, expensive machine to carry very little useful load. And it would be more



Five dive-bombers. From top to bottom they are the Blohm and Voss Ha 137 single-seater (Germany); North American NA 44 two-seater (U.S.A.); Fokker G.1 two-seater (Holland)—this machine can be used for a variety of duties; Fairey P.4/34 two-seater (Gt. Britain); and Hawker Henley two-seater (Gt. Britain). The Henley has internal bomb stowage, though additional bombs may be carried under the wings.

Consolidated Air M

Romeike & Curtice Ltd

Telephone
CENTRAL 2781
(2 Lines.)

35. Shoe Lane,
LONDON
E.C.4.

EXTRACT FROM
DAILY MAIL,
Northcliffe House, E.C.4.

Date 21 NOV 1940

U.S. Bomber on Way Here

From DON IDDON, Daily Mail Correspondent

NEW YORK, Wednesday.

TWENTY-SIX four-engined bombers ordered by the United States Air Force and now coming off the production lines at the Consolidated Aircraft Company's factory at San Diego, California, have been released to Great Britain. The British Government took delivery of the first machine last Saturday.

Simultaneously with this announcement to-day in Washington, it was stated that the United States Army High Command have released the Sperry secret bomb-sight to Great Britain.

General George C. Marshall, United States Army Chief of Staff, making the announcements, said that negotiations are also under way to give Britain 20 of the famous Boeing Flying Fortresses now completed.

The Consolidated Company's four-engined bombers are a later type than the Flying Fortresses. Like the

Flying Fortresses, th a range of 3,000 mi loaded, and can re part of German British bases.

The machines wi delivered by March

General Marshall no comparable pl ever been used in active operations. The United States was anxious to see the results.

To release the planes fo Britain the United State Army have accepted a dela of three months in their ow deliveries.

General Marshall added that in return, Britain has released to the United States Army sufficient engines to equip 41 Boeing bombers which the Army had accepted without engines.

The Sperry bomb-sight is one of the two high-accuracy bomb-sights developed by the United States Army.

More Destroyers

The Norden sight, the later of the two, is the one with which the more modern United States Army planes are equipped.

General Marshall disclosed that United States Army observers are flying in British planes over Britain and the English Channel. "They have not flown over Germany," he said.

Lord Lothian, the British Ambassador, is expected to make two requests to the United States Government for further aid immediately he arrives back in Washington.

He is expected this week-end. His requests will be for:

(1) The release of 50 more overage destroyers;

(2) The transfer to Britain of a fleet of American merchant ships.

Tremendous pressure is being put on the Administration to implement the pledge of "all aid to

aircraft production to send more planes to Britain; pool United States merchant fleets with the British Mercantile Marine; protect the British rear against Japan, and "give, don't sell, our arms to Britain."

Of merchant ships, the paper says:

"We have a considerable existing merchant fleet. We can pool it with the British Mercantile Marine, operating it so as to release British tonnage now in the Inidan and the Pacific Oceans for more dangerous service in the Atlantic.

"Should that fail, we can sell it into British hands without violating neutrality."

Consolidated Air 7

CENTRAL 2781
(2 Lines.)
E.C.4.

EXTRACT FROM
DUNDEE EVENING TELEGRAPH,
Courier Place, Dundee.

Date 29 JUL 1940

FAMOUS FLYING BOAT
WILL CARRY

C

CLUES ACROSS.
1—Equipment (4).
7—Reservoir (4).

Union championship.
Both have been running neck to neck all season.

Aviation 3/1940

Consolidated Aircraft is expanding its plant 82% to take care of a record $43,000,000 backlog. In negotiation are said to be British and French orders which would bring the backlog up to around $50,000,000.

Among the aviation investment trust annual reports for 1939, National Aviation disclosed a net asset value of $17.27 a share, Air Investors $1.67 a common share, and Aviation Capital Inc. $40.02 a share.

Air Consolidated Air

Romeike & Curtice Ltd

Telephone
CENTRAL 2781
(2 Lines.)

35. Shoe Lane.
LONDON.
E.C.4.

EXTRACT FROM
STAR,
19 Bouverie Street, E.C.4.

Date 21 NOV 1940

6 THE STAR, THURSDAY.

FLYING FORTS "DELIVERED"

Secret Bomb Sight

BRITAIN has already started to take delivery of the fleet of 26 four-engined bombers of the Flying Fortress type, which, it is revealed in Washington, have been released to her by the U.S. Army High Command.

It is understood, says Reuter, that the first deliveries were actually made last Saturday.

These giant bombers, known as the B-24, have been built by the Consolidated Aircraft Company at San Diego, California.

CAN REACH ALL GERMANY

Like the Flying Fortresses, they have a range of 3,000 miles and are capable of reaching any part of Germany from Great Britain.

Simultaneously, the U.S. High Command disclosed that:

Negotiations are under way for giving Britain 20 four-engined Boeing Flying Fortress bombers—the B-17 type—construction of which has already been completed.

Announcing these latest moves to aid Britain, at a Press conference, General George C. Marshall, U.S. Chief of Staff, stated that the U.S. Army would accept a delay of approximately three months in its own deliveries of the Consolidated B-24 bomber.

"In consideration of this priority," he said, "the British Government have released to the U.S. sufficient engines to equip forty-one Boeing flying fortresses, which the U.S. Army have already accepted without their engines or will have received without engines before January 1."

BOMB SIGHT RELEASED

General Marshall also announced that the Sperry bomb sight—one of the United States' two secret high-accuracy bomb-sights—has now been released to Britain.

He disclosed that the U.S. Army have observers in British warplanes flying over Britain and the Channel.

They have not flown over Germany, he added.

ALREADY USING BASES

The United States has already begun to use the naval bases obtained from Britain, Colonel Knox, U.S. Secretary of the Navy, stated at his press conference.

Naval patrol bombers, he said, were operating from Bermuda, and ships were using the base in Newfoundland

---

Consolidated Air
Air 7

Romeike & Curtice Ltd

Telephone
CENTRAL 2781
(2 Lines.)

35. Shoe Lane.
LONDON.
E.C.4.

EXTRACT FROM
SOUTH WALES ECHO
Cardiff

Date 29 JUL 1940

FAMOUS FLYING BOAT FOR BRITAIN

To Carry Aluminium from U.S.

New York, Monday.—Mr. Richard Archbold, the explorer, announced here that he has sold his flying boat Guba—which he has used on scientific expeditions in the jungle areas of Africa and New Guinea—to the British Government for the purpose of transporting aluminium from the United States to England.

The flying boat will make trips twice a week.

The aviator, Clyde Pangborn, will head the crew.

The Guba, a 14-ton craft, cost 250,000 dollars.—Reuter.

Consolidated Air

Romeike & Curtice Ltd

Telephone
CENTRAL 2781
(2 Lines.)

35. Shoe Lane.
LONDON.
E.C 4.

EXTRACT FROM
aeroplane

Date 15 NOV 1940

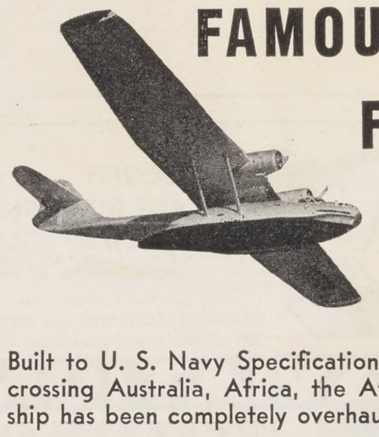
An American Transfer

CONSOLIDATED AIRCRAFT CORPORATION has bought the Hall-Aluminium Corporation together with all physical ssets and goodwill, patent rights, material and equipment. ome 32 key men of the Hall-Aluminium plant have joined e Consolidated organisation.

The Hall-Aluminium Company was first started in 1916 as harles Ward Hall, Inc., and has been continuously engaged research in the use of aluminium alloys for the design and onstruction of aircraft. The Company has concentrated ainly on flying-boats and seaplanes for the U.S. Navy and oast Guard and was one of the pioneers of all-metal construcon in the United States. In addition the Company has roduced and supplied parts and standardised aircraft sections all the principal constructors in the United States and anada.

The types produced by the Hall-Aluminium Company clude the F4C-1 fighter, the first all-metal aeroplane used by e U.S. Navy, the C-333, XFH-1, XPH-1, PH-1, PH-3, XP2H-1 four-motor long range bomber flying-boat and the XPTBH-2 twin float torpedo bomber.

This new acquisition should add to the assets and constructive power of the Consolidated Corporation which is working on large orders for the U.S. Government and the British Government. Its aeroplanes are among the best in the World.



FAMOUS FLYING BOAT FOR SALE!

CONSOLIDATED PBY 2 "GUBA"

Built to U. S. Navy Specifications—In A-1 condition throughout—Since crossing Australia, Africa, the Atlantic, Pacific and Indian Oceans, the ship has been completely overhauled by the factory.

Cruising range, 4000 miles—Maximum speed, 190 m.p.h.—Two 900 h.p. Pratt & Whitney Twin Wasp engines—Automatic pilot—Complete radio equipment, including homing devices and direction finders—Separate 110 volt motor generators—2 spare engines and many extra accessories—Further details on application. Circle 6-7560.

O. J. WHITNEY, INC.
9 Rockefeller Plaza
New York, N. Y.

AVIATION
May, 1940

New Consolidated

Aviation 3/1940

An official Army Air Corps release covering the new Consolidated XB-24 four-engine landplane bomber gives the plane a gross weight of 40,000 lbs., wing span 110 ft., length 64 ft., over-all height 19 ft., and with accomodations for a crew of six to nine men, depending on mission.

Performance estimates include a top speed of more than 300 miles per hour, range of approximately 3,000 miles, and bomb load capacity of about four tons. The plane is powered by four Pratt & Whitney 18-cylinder twin-row engines of 1200 h.p. each, and is propelled by Hamilton Standard 3-blade hydromatic constant speed propellers of 12 ft. diameter.

The wing is of the Davis airfoil type, with high aspect ratio and high mid-wing mounting on the fuselage. Construction is all-metal throughout, of stressed-skin design, with fabric covered control surfaces. Landing gear is of tricycle type, retractable. Fowler type trailing edge flaps extend the length of the wing inboard of the ailerons. Large bomb doors open in the belly and generous hatches and turrets are provided in nose, top, sides and rear of the fuselage.

Consolidated Expands

Aviation 3/1940

Last December Consolidated Aircraft was sitting pretty, with a $20,000,000 backlog that promised to use the full capacity of the five-year old 25-acre plant at San Diego. Then, at one blow, the biggest single aircraft order ever placed by the government doubled Consolidated's backlog and threw a real production problem on their hands.

Now comes the announcement of an 87% increase in factory space to provide the needed capacity. An additional 64 acres have been leased or optioned, and 400,000 sq. ft. will be roofed. New facilities will include final assembly, final finish, paint shop and wood mill, and experimental, maintenance, and office space. Extra assembly space is also to be provided by paving yard areas, since well-known California climate permits outdoor work most of the year.

Under a closing agreement with the Treasury, part of the cost of expansion is to be charged against the government order.

Western Flying

December, 1940

MAJOR "REUB" FLEET

REUBEN HOLLIS FLEET

A VARIED career is no novelty in the aviation industry, which is yet so young that few of its top executives didn't come from some other field to forge ahead with aviation from its infancy, as did Major Reuben Hollis Fleet, president and general manager of Consolidated Aircraft Corp.

Major Fleet's career has been as varied as any, yet every activity in which he has engaged seems, in retrospect, to have contributed deliberately to his success today as founder and directing genius of one of the largest aircraft manufacturing units in America. The lumber business, real estate, manufacturing, legislative and political experience, military service—these past pursuits have combined in a background all too evidently valuable. Each one of Major Fleet's past successes has left him with a reservoir of experience upon which to draw when a related problem arises in airplane manufacturing.

Reuben Fleet was born in Montesano, Washington, in 1887. He graduated from Culver Military Academy in 1906 after service as Captain of his company and earning high scholastic honors. Outside the classrooms he earned his letters in football, baseball and track.

Upon his return to his home state he plunged into the active life that has been his ever since. He entered the lumber business, branched into real estate activities and later was elected to the Washington state legislature, where he served as chairman of its military affairs committee while at the same time a member of the Washington National Guard. Mexican border troubles found him serving there with his unit.

Thirty years of age when the United States entered the World War, he remained with the Army and won the rank of junior military aviator in San Diego in 1917. Then, in a rapid series of promotions he served as officer in charge of flying at Sacramento's Mather Field, executive officer in charge of training in the Office of Chief of Air Corps at Washington, assigned as pilot to the Gosport School for flying instructors in England, and was appointed to take charge of the Army's historic first scheduled airmail service between New York and Washington, D. C. in May, 1918. When the Army abandoned the route to the Post Office Department Major Fleet became contracting officer for the Air Corps and business manager of McCook Field, serving from January, 1919 to November, 1922.

During this period the Gallaudet Manufacturing Co. in East Greenwich, Conn., obtained a contract for the remodeling of a number of Army DH training planes but lacked a directing head to push the work through. Major Fleet was prevailed upon to resign from the Army and become Gallaudet's vice president and general manager. "Reub" Fleet was in the airplane business.

Five months later the Army remodeling contract was completed but Fleet had decided that DH's were outmoded as trainers and that a new company with a new airplane was indicated. From this idea was born Consolidated Aircraft Corp. in May of 1923.

The story of Consolidated was told in *Western Flying* last October's "Industry Portrait." Much remains to be told, however, of "Reub" Fleet's many-sided interests.

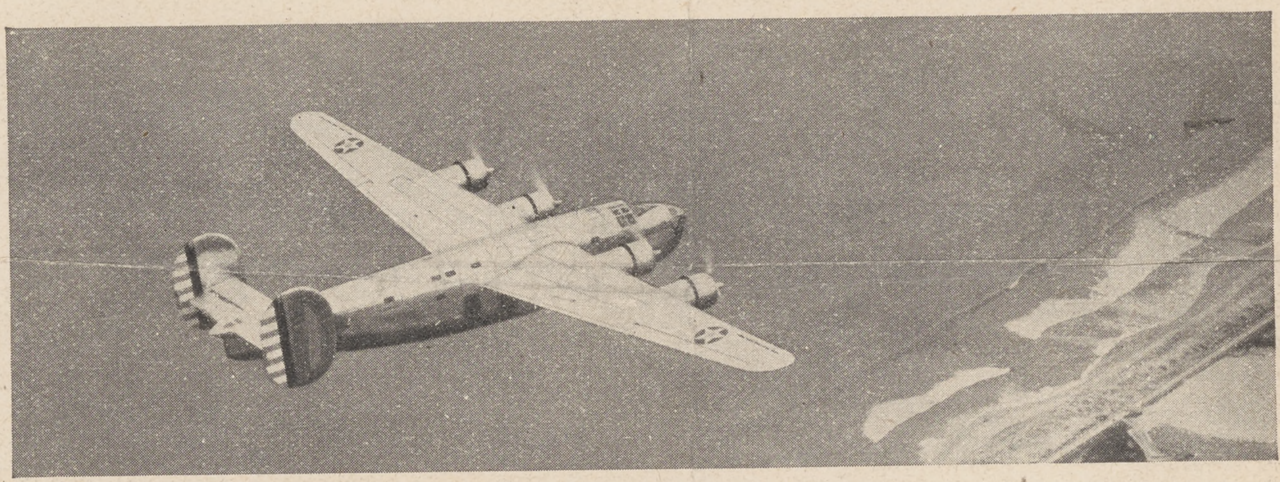
There were, for instance, the other companies he organized. In 1927 there was Tonawanda Products Corp. and in the lush days of 1929 there were Fleet Aircraft, Inc.; National Flying Schools, Inc.; Niagara From-The Air, Inc., a sightseeing and charter service; Frontier Enterprises, Inc.; and New York, Rio and Buenos Aires Line, Inc. The latter, a pioneer endeavor in the linking of North and South America, was a joint enterprise with J. H. Rand and R. A. O'Neil and is now a part of the Pan American Airways System. Finally, in 1930, Major Fleet organized Fleet Aircraft of Canada, Ltd., which is now Fleet Aircraft, Ltd. and is manufacturing sturdy descendants of the American Fleets which were virtually standard equipment for flying schools, military training, exhibition flyers and private aviation a decade ago.

Today Consolidated flying boats are the new destroyer squadrons of the Navy and a new bomber is in production upon which the United States air arms are depending mightily for early future use. It is fitting that the company headed by Major Fleet should occupy such a position in America's defense picture for he is of American stock of many generations.

His mother reached California from Illinois in a covered wagon. His father reached the Pacific Northwest from Kansas City by stage coach, horseback and finally on foot. That their son now covers those same weary miles by air in hours where they took months is in no small measure due to that son's enterprise and determination.

The responsibility doesn't weigh heavily upon "Reub" Fleet—it is too much a part of him. Aside from an occasional game of golf, Major Fleet's recreation comes to him as he sits behind his desk—at business.

Aeroplanes from the U.S.A.



AMERICA'S BEST BOMBER.—The consolidated Model 32 bomber (four 1,200 h.p. Pratt and Whitney Twin Wasp motors). Designated the B-24 by the U.S.A. Army, it has a top speed of more than 300 m.p.h. Unlike the unarmed B-17, the four-motor Consolidated can have power-operated turrets fitted in nose and tail and doubtless the 120 B-24s supplied to the R.A.F. will have them. They should do well.

Certain criticisms of American aeroplanes have evoked comment of various kinds. Two letters which appear below give two aspects of these reactions. Our reasons for advancing the criticisms and the grounds for our belief that they are just are stated below—Ed.

MR. A. H. WOOLLEN writes:—" I agree with Mr. Dennis Powell in raising a voice of protest against the belittling of American aeroplanes by your paper. I am no sympathiser with the American nation, and consider them the greatest ' line-shooters ' in the World. But even though your views on this matter may be the same, there is no justification for your absurd condemnation of practically every new type of American aeroplane as it rolls off the production line.

" It seems that your criticism is based mainly on poor armament, cramped quarters, unorthodox design, and, in the case of the Boeing B-17, great size. All these defects are, however, seen in some of our own aircraft. For instance, up to the beginning of the War the Handley Page Hampden and the Vickers Wellington were, according to Mr. C. G. Grey in his article, ' The Big Bombers,' inadequately armed, and under wartime conditions the armament had to be revised, with the result that these two machines are now very formidable. The American 'planes which you accuse of being under-armed could very easily be fitted with extra guns, as in the case of the Curtiss Hawk 75A which was fitted with four extra wing guns on the stipulation of the French. A similar case is our own Spitfire, which was, I believe, originally designed for four wing guns. The other four were added later.

" With regard to unorthodox design (as in the case of the Bell Airacobra, which you have singled out for so much ridicule) there have been a number of unorthodox machines which have proved very successful. A notable example is, or was, the Fokker G-1, which, until the type was completely wiped out, gave a very good account of itself against the Boche invader. The mere fact of the engine being new should not prejudice you against it; it is not nearly so untried as you make out, anyway, for the Americans cannot have much trouble with it, or they would not install it in their own Curtiss P.40s.

" American aeroplanes have no monopoly of cramped quarters. In an article on the Armstrong Whitworth Whitley some years ago, you commented that the space for the navigator and crew was somewhat restricted.

" Great size is not merely an ack-ack gunner's dream and ' the answer to a pursuit pilot's prayer ' (as you once quoted an American speaker). The Sunderland is a bigger machine than the Boeing, but has put up a splendid fight on many occasions. Further, Sunderlands have been used on at least one occasion to raid Norwegian ports. The R.A.F. seem to be favourably impressed by the four-motor bomber.

" You now excuse your previous unwarranted criticism of the Lockheed Hudson by saying that ' it had to adopt slit slots devised originally by engineers of British Airways.' So what? If I am not mistaken, the committee which investigated the unfortunate accident to the flying-boat Cavalier between New York and Bermuda advised Imperial Airways to adopt the Pan-American system of carburetter heating.

" I am not trying to boost American aeroplanes to the detriment of our own, but I do not like senseless disparagement of all things that are not British. I am merely trying to point out that to be patriotic does not mean to regard the products of every other country as being so much inferior to our own. It is useless to deny that we need aircraft very badly so why try to ride the high horse when we have an opportunity of getting what we require, even if we do have to pay cash in advance for it? It seems a pity that ' the most influential aviation journal in the World ' should be the mouthpiece of a certain section of the aeronautical public which cannot bear anything which is not British rather than a newspaper of aviation affairs which (I presume) it is meant to be."

The Why and the Wherefore

This is just the sort of letter we like to get because it states the opinions of the writer clearly and forcefully and yet gives us the chance of correcting erroneous opinions which may be widely held. For one thing, Mr. Woollen shares with others the mistaken idea that to criticise the products of a friendly Nation is not sporting—specially when that Nation is sending those products to help us in a very awkward situation.

Our comments on American aeroplanes during the past year have been based strictly on the elucidation of truth. When an aeroplane is good, such as the Hurricane or Douglas DC-3 or Me 110 we have never hesitated to say so. When an aeroplane is bad in certain essentials, such as the D.H. Don, the Boeing B-17 or the Junkers Ju 88, we have never hesitated to say so either. We hope to continue to be outspoken.

When the British Government first decided to place orders for military aeroplanes in America there was irony in the fact that the best of any aeroplanes they could find for military purposes were a converted civil air liner—the Hudson, and a trainer—the Harvard. Both have done well in service, but both, like many British and other aeroplanes, have had serious faults. For instance, the landing characteristics of the Hudson are, to say the least, peculiar and in certain circumstances dangerous. Its undercarriage is weak. The Harvard has killed many people. The fact that certain British aircraft have done so as well does not make the matter any better. Two blacks do not make a white.

Poor armament is about the worst of the faults of the American aeroplanes in general. Such details as that the bomb doors of the Martin 167 cannot be shut after bombing without nearly stalling the machine are incidental. Although the armament of the fighters can be increased the improving of that of the bombers such as the much vaunted B-17 is not so easy. Power-driven gun turrets are all very well but they cannot be put into any aeroplane. In the B-17, for instance, no tail turret is possible because of the single fin and rudder and because the centre of gravity would be thrown out.

We are still unpersuaded on the merits of the Airacobra which may be a very interesting experiment aerodynamically but still may not be a military triumph. The fact that we are to have a batch is explained by our decision to take the French " left overs." As we said before, it has all the disadvantages of the pusher plus all the disadvantages of the tractor plus some peculiar unto itself. The engine at the back may come in on the pilot in a crash and cannot protect him in a frontal attack. The tractor airscrew batters the slipstream past the

11/8/40 The Aeroplane

---

a/c Consolidated

Romeike & Curtice Ltd
Telephone CENTRAL 2781 (2 Lines.)
R&C
35. Shoe Lane. LONDON. E.C.4.
EXTRACT FROM
YORKSHIRE POST,
55, Albion Street, Leeds
Date 21 NOV 1940

26 GIANT U.S. BOMBERS

Deliveries Begin to Britain

WASHINGTON, Wednesday

THE United States Army High Command has given Britain priority on the delivery of 26 four-engined bombers at present at the factory of the Consolidated Aircraft Company at San Diego, California.

The High Command simultaneously announces that negotiations are under way for giving Britain 20 four-engined Boeing bombers of the Flying Fortress type, which have already been completed. The machines of the Consolidated Aircraft Company are reported to be very similar to the Flying Fortresses, both types being capable of a range of 3,000 miles.

The Consolidated Company's four-engine bombers have just begun coming off the production lines, and the negotiations which have now been completed, will enable Britain to take the first deliveries. Indeed, the first deliveries, it is understood, were made to Britain last Saturday.

Sperry Bombsights

The U.S. Army will accept a delay of approximately three months in its own deliveries of this same type, known as the B-24, General George C. Marshall, U.S Army Chief of Staff, told a Press conference to-day. In consideration of this priority, the British Government has released to the U.S. sufficient engines to equip 41 Boeing Flying Fortresses, which the U.S. Army had already accepted without their engines, or would have received without engines before January 1.

The General, referring to the Boeing Company's B-17 type of four-engined bomber, said:—

"We are now in process of negotiating with the British authorities the basis for releasing to them 20 fully-equipped 'planes except as to the Norden bombsight.

General Marshal simultaneously announced that the Sperry bombsight has been released to Britain.

This is one of the two high-accuracy bombsights which have been developed in the United States.

General Marshal said the Norden sight, the more modern of the two bombsights, is now being used by the Army and Navy, while the Sperry sight was no longer used in military planes in the United States.

Both types of bombing planes have ranges capable of reaching any part of Germany from Great Britain

General Marshal disclosed that the United States Army has observers in British warplanes flying over Britain and the British Channel, but they have not flown over Germany.—Press Association War Special.

More Destroyers?

WASHINGTON, Wednesday

A new British request for over-age destroyers is likely to be made by Lord Lothian, the British Ambassador to the United States, as soon as he returns to Washington, according to well-informed quarters here to-day.

The figure of 50 destroyers is mentioned.

Lord Lothian is expected here before the week-end.—Press Association War Special.

U.S. NAVAL RESERVES

WASHINGTON, Wednesday

Colonel Knox, Secretary to the U.S. Navy, to-day announced that additional fleet divisions of naval reserves would be ordered to report for active duty in December and January. He also stated that the Navy may ask Congress for more money this session, but declined to disclose the specific amount or the purpose on which it would be spent.

Consolidated Air 7

Romeike & Curtice Ltd
Telephone CENTRAL 2781 (2 Lines.)
35. Shoe Lane, LONDON E.C.4.

EXTRACT FROM
DAILY MAIL,
Northcliffe House, E.C.4.
Date 21 NOV 1940

U.S. Bomber Fleet on Way Here

From DON IDDON, Daily Mail Correspondent

NEW YORK, Wednesday.

TWENTY-SIX four-engined bombers ordered by the United States Air Force and now coming off the production lines at the Consolidated Aircraft Company's factory at San Diego, California, have been released to Great Britain. The British Government took delivery of the first machine last Saturday.

Simultaneously with this announcement to-day in Washington, it was stated that the United States Army High Command have released the Sperry secret bomb-sight to Great Britain.

General George C. Marshall, United States Army Chief of Staff, making the announcements, said that negotiations are also under way to give Britain 20 of the famous Boeing Flying Fortresses now completed.

The Consolidated Company's four-engined bombers are a later type than the Flying Fortresses. Like the

Flying Fortresses, th a range of 3,000 mi loaded, and can re part of German British bases.

The machines wi delivered by March

General Marshall no comparable pl ever been used in active operations. The United States was anxious to see the results.

To release the planes fo Britain the United State Army have accepted a dela of three months in their ow deliveries.

General Marshall added that in return, Britain has released to the United States Army sufficient engines to equip 41 Boeing bombers which the Army had accepted without engines.

The Sperry bomb-sight is one of the two high-accuracy bomb-sights developed by the United States Army.

More Destroyers

The Norden sight, the later of the two, is the one with which the more modern United States Army planes are equipped.

General Marshall disclosed that United States Army observers are flying in British planes over Britain and the English Channel. "They have not flown over Germany," he said.

Lord Lothian, the British Ambassador, is expected to make two requests to the United States Government for further aid immediately he arrives back in Washington.

He is expected this week-end.

His requests will be for:

(1) The release of 50 more overage destroyers;

(2) The transfer to Britain of a fleet of American merchant ships.

Tremendous pressure is being put on the Administration to implement the pledge of "all aid to

aircraft production to send more planes to Britain; pool United States merchant fleets with the British Mercantile Marine; protect the British rear against Japan, and "give, don't sell, our arms to Britain."

Of merchant ships, the paper says:

"We have a considerable existing merchant fleet. We can pool it with the British Mercantile Marine, operating it so as to release British tonnage now in the Inidan and the Pacific Oceans for more dangerous service in the Atlantic.

"Should that fail, we can sell it into British hands without violating neutrality."

Consolidated Air
Air 7

Romeike & Curtice Ltd
Telephone CENTRAL 2781 (2 Lines.)
35. Shoe Lane. LONDON. E.C.4.

EXTRACT FROM
SOUTH WALES ECHO
Cardiff
Date 29 JUL 1940

FAMOUS FLYING BOAT FOR BRITAIN

To Carry Aluminium from U.S.

New York, Monday.—Mr. Richard Archbold, the explorer, announced here that he has sold his flying boat Guba—which he has used on scientific expeditions in the jungle areas of Africa and New Guinea—to the British Government for the purpose of transporting aluminium from the United States to England.

The flying boat will make trips twice a week.

The aviator, Clyde Pangborn, will head the crew.

The Guba, a 14-ton craft, cost 250,000 dollars.—Reuter.

Consolidated Air

Romeike & Curtice Ltd
Telephone CENTRAL 2781 (2 Lines.)
35. Shoe Lane. LONDON. E.C.4.

EXTRACT FROM
aeroplane
Date 15 NOV 1940

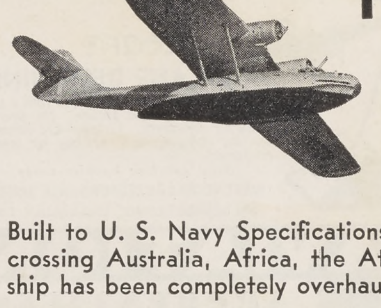
An American Transfer

CONSOLIDATED AIRCRAFT CORPORATION has bought the Hall-Aluminium Corporation together with all physical ssets and goodwill, patent rights, material and equipment. ome 32 key men of the Hall-Aluminium plant have joined he Consolidated organisation.

The Hall-Aluminium Company was first started in 1916 as harles Ward Hall, Inc., and has been continuously engaged research in the use of aluminium alloys for the design and onstruction of aircraft. The Company has concentrated ainly on flying-boats and seaplanes for the U.S. Navy and oast Guard and was one of the pioneers of all-metal construcon in the United States. In addition the Company has roduced and supplied parts and standardised aircraft sections all the principal constructors in the United States and anada.

The types produced by the Hall-Aluminium Company clude the F4C-1 fighter, the first all-metal aeroplane used by e U.S. Navy, the C-333, XFH-1, XPH-1, PH-1, PH-3, XP2H-1 four-motor long range bomber flying-boat and the XPTBH-2 twin float torpedo bomber.

This new acquisition should add to the assets and constructive power of the Consolidated Corporation which is working on large orders for the U.S. Government and the British Government. Its aeroplanes are among the best in the World.



FAMOUS FLYING BOAT FOR SALE!

CONSOLIDATED PBY 2 "GUBA"

Built to U. S. Navy Specifications—In A-1 condition throughout—Since crossing Australia, Africa, the Atlantic, Pacific and Indian Oceans, the ship has been completely overhauled by the factory.

Cruising range, 4000 miles—Maximum speed, 190 m.p.h.—Two 900 h.p. Pratt & Whitney Twin Wasp engines—Automatic pilot—Complete radio equipment, including homing devices and direction finders—Separate 110 volt motor generators—2 spare engines and many extra accessories—Further details on application. CIrcle 6-7560.

O. J. WHITNEY, INC.
9 Rockefeller Plaza
New York, N. Y.

AVIATION
May, 1940

Aviation 3/1940

Consolidated Aircraft is expanding its plant 82% to take care of a record $43,000,000 backlog. In negotiation are said to be British and French orders which would bring the backlog up to around $50,000,000.

Among the aviation investment trust annual reports for 1939, National Aviation disclosed a net asset value of $17.27 a share, Air Investors $1.67 a common share, and Aviation Capital Inc. $40.02 a share.

Air Consolidated Air

Romeike & Curtice Ltd
Telephone CENTRAL 2781 (2 Lines.)
35. Shoe Lane. LONDON. E.C.4.

EXTRACT FROM
STAR,
19 Bouverie Street, E.C.4.
Date 21 NOV 1940

6 THE STAR, THURSDAY,

FLYING FORTS "DELIVERED"

Secret Bomb Sight

BRITAIN has already started to take delivery of the fleet of 26 four-engined bombers of the Flying Fortress type, which, it is revealed in Washington, have been released to her by the U.S. Army High Command.

It is understood, says Reuter, that the first deliveries were actually made last Saturday.

These giant bombers, known as the B-24, have been built by the Consolidated Aircraft Company at San Diego, California.

CAN REACH ALL GERMANY

Like the Flying Fortresses, they have a range of 3,000 miles and are capable of reaching any part of Germany from Great Britain.

Simultaneously, the U.S. High Command disclosed that:

Negotiations are under way for giving Britain 20 four-engined Boeing Flying Fortress bombers—the B-17 type—construction of which has already been completed.

Announcing these latest moves to aid Britain, at a Press conference, General George C. Marshall, U.S. Chief of Staff, stated that the U.S. Army would accept a delay of approximately three months in its own deliveries of the Consolidated B-24 bomber.

"In consideration of this priority," he said, "the British Government have released to the U.S. sufficient engines to equip forty-one Boeing flying fortresses, which the U.S. Army have already accepted without their engines or will have received without engines before January 1."

BOMB SIGHT RELEASED

General Marshall also announced that the Sperry bomb sight—one of the United States' two secret high-accuracy bomb-sights—has now been released to Britain.

He disclosed that the U.S. Army have observers in British warplanes flying over Britain and the Channel.

They have not flown over Germany, he added.

ALREADY USING BASES

The United States has already begun to use the naval bases obtained from Britain, Colonel Knox, U.S. Secretary of the Navy, stated at his press conference.

Naval patrol bombers, he said, were operating from Bermuda, and ships were using the base in Newfoundland

---

New Consolidated

Aviation 3/1940

An official Army Air Corps release covering the new Consolidated XB-24 four-engine landplane bomber gives the plane a gross weight of 40,000 lbs., wing span 110 ft., length 64 ft., over-all height 19 ft., and with accomodations for a crew of six to nine men, depending on mission.

Performance estimates include a top speed of more than 300 miles per hour, range of approximately 3,000 miles, and bomb load capacity of about four tons. The plane is powered by four Pratt & Whitney 18-cylinder twin-row engines of 1200 h.p. each, and is propelled by Hamilton Standard 3-blade hydromatic constant speed propellers of 12 ft. diameter.

The wing is of the Davis airfoil type, with high aspect ratio and high mid-wing mounting on the fuselage. Construction is all-metal throughout, of stressed-skin design, with fabric covered control surfaces. Landing gear is of tricycle type, retractable. Fowler type trailing edge flaps extend the length of the wing inboard of the ailerons. Large bomb doors open in the belly and generous hatches and turrets are provided in nose, top, sides and rear of the fuselage.

Consolidated Expands

Aviation 3/1940

Last December Consolidated Aircraft was sitting pretty, with a $20,000,000 backlog that promised to use the full capacity of the five-year old 25-acre plant at San Diego. Then, at one blow, the biggest single aircraft order ever placed by the government doubled Consolidated's backlog and threw a real production problem on their hands.

Now comes the announcement of an 87% increase in factory space to provide the needed capacity. An additional 64 acres have been leased or optioned, and 400,000 sq. ft. will be roofed. New facilities will include final assembly, final finish, paint shop and wood mill, and experimental, maintenance, and office space. Extra assembly space is also to be provided by paving yard areas, since well-known California climate permits outdoor work most of the year.

Under a closing agreement with the Treasury, part of the cost of expansion is to be charged against the government order.

Western Flying

December, 1940

MAJOR "REUB" FLEET

●

REUBEN HOLLIS FLEET

A VARIED career is no novelty in the aviation industry, which is yet so young that few of its top executives didn't come from some other field to forge ahead with aviation from its infancy, as did Major Reuben Hollis Fleet, president and general manager of Consolidated Aircraft Corp.

Major Fleet's career has been as varied as any, yet every activity in which he has engaged seems, in retrospect, to have contributed deliberately to his success today as founder and directing genius of one of the largest aircraft manufacturing units in America. The lumber business, real estate, manufacturing, legislative and political experience, military service—these past pursuits have combined in a background all too evidently valuable. Each one of Major Fleet's past successes has left him with a reservoir of experience upon which to draw when a related problem arises in airplane manufacturing.

Reuben Fleet was born in Montesano, Washington, in 1887. He graduated from Culver Military Academy in 1906 after service as Captain of his company and earning high scholastic honors. Outside the classrooms he earned his letters in football, baseball and track.

Upon his return to his home state he plunged into the active life that has been his ever since. He entered the lumber business, branched into real estate activities and later was elected to the Washington state legislature, where he served as chairman of its military affairs committee while at the same time a member of the Washington National Guard. Mexican border troubles found him serving there with his unit.

Thirty years of age when the United States entered the World War, he remained with the Army and won the rank of junior military aviator in San Diego in 1917. Then, in a rapid series of promotions he served as officer in charge of flying at Sacramento's Mather Field, executive officer in charge of training in the Office of Chief of Air Corps at Washington, assigned as pilot to the Gosport School for flying instructors in England, and was appointed to take charge of the Army's historic first scheduled airmail service between New York and Washington, D. C. in May, 1918. When the Army abandoned the route to the Post Office Department Major Fleet became contracting officer for the Air Corps and business manager of McCook Field, serving from January, 1919 to November, 1922.

During this period the Gallaudet Manufacturing Co. in East Greenwich, Conn., obtained a contract for the remodeling of a number of Army DH training planes but lacked a directing head to push the work through. Major Fleet was prevailed upon to resign from the Army and become Gallaudet's vice president and general manager. "Reub" Fleet was in the airplane business.

Five months later the Army remodeling contract was completed but Fleet had decided that DH's were outmoded as trainers and that a new company with a new airplane was indicated. From this idea was born Consolidated Aircraft Corp. in May of 1923.

The story of Consolidated was told in *Western Flying* last October's "Industry Portrait." Much remains to be told, however, of "Reub" Fleet's many-sided interests.

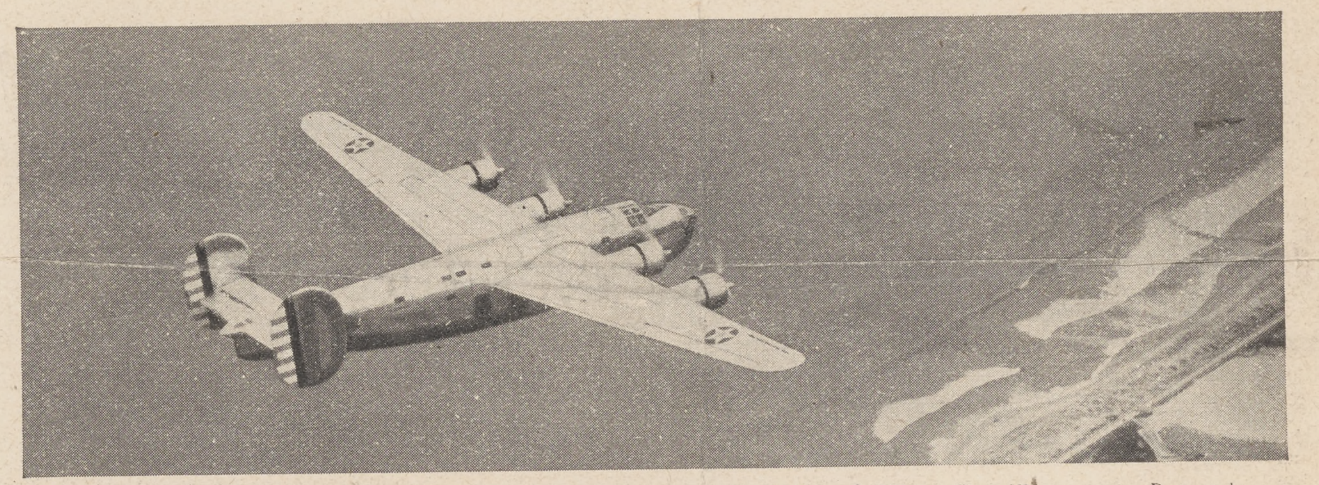
There were, for instance, the other companies he organized. In 1927 there was Tonawanda Products Corp. and in the lush days of 1929 there were Fleet Aircraft, Inc.; National Flying Schools, Inc.; Niagara From-The Air, Inc., a sightseeing and charter service; Frontier Enterprises, Inc.; and New York, Rio and Buenos Aires Line, Inc. The latter, a pioneer endeavor in the linking of North and South America, was a joint enterprise with J. H. Rand and R. A. O'Neil and is now a part of the Pan American Airways System. Finally, in 1930, Major Fleet organized Fleet Aircraft of Canada, Ltd., which is now Fleet Aircraft, Ltd. and is manufacturing sturdy descendants of the American Fleets which were virtually standard equipment for flying schools, military training, exhibition flyers and private aviation a decade ago.

Today Consolidated flying boats are the new destroyer squadrons of the Navy and a new bomber is in production upon which the United States air arms are depending mightily for early future use. It is fitting that the company headed by Major Fleet should occupy such a position in America's defense picture for he is of American stock of many generations.

His mother reached California from Illinois in a covered wagon. His father reached the Pacific Northwest from Kansas City by stage coach, horseback and finally on foot. That their son now covers those same weary miles by air in hours where they took months is in no small measure due to that son's enterprise and determination.

The responsibility doesn't weigh heavily upon "Reub" Fleet—it is too much a part of him. Aside from an occasional game of golf, Major Fleet's recreation comes to him as he sits behind his desk—at business.

Aeroplanes from the U.S.A.



AMERICA'S BEST BOMBER.—The consolidated Model 32 bomber (four 1,200 h.p. Pratt and Whitney Twin Wasp motors). Designated the B-24 by the U.S.A. Army, it has a top speed of more than 300 m.p.h. Unlike the unarmed B-17, the four-motor Consolidated can have power-operated turrets fitted in nose and tail and doubtless the 120 B-24s supplied to the R.A.F. will have them. They should do well.

Certain criticisms of American aeroplanes have evoked comment of various kinds. Two letters which appear below give two aspects of these reactions. Our reasons for advancing the criticisms and the grounds for our belief that they are just are stated below—Ed.

MR. A. H. WOOLLEN writes:—" I agree with Mr. Dennis Powell in raising a voice of protest against the belittling of American aeroplanes by your paper. I am no sympathiser with the American nation, and consider them the greatest 'line-shooters' in the World. But even though your views on this matter may be the same, there is no justification for your absurd condemnation of practically every new type of American aeroplane as it rolls off the production line.

" It seems that your criticism is based mainly on poor armament, cramped quarters, unorthodox design, and, in the case of the Boeing B-17, great size. All these defects are, however, seen in some of our own aircraft. For instance, up to the beginning of the War the Handley Page Hampden and the Vickers Wellington were, according to Mr. C. G. Grey in his article, 'The Big Bombers,' inadequately armed, and under wartime conditions the armament had to be revised, with the result that these two machines are now very formidable. The American 'planes which you accuse of being under-armed could very easily be fitted with extra guns, as in the case of the Curtiss Hawk 75A which was fitted with four extra wing guns on the stipulation of the French. A similar case is our own Spitfire, which was, I believe, originally designed for four wing guns. The other four were added later.

" With regard to unorthodox design (as in the case of the Bell Airacobra, which you have singled out for so much ridicule) there have been a number of unorthodox machines which have proved very successful. A notable example is, or was, the Fokker G-1, which, until the type was completely wiped out, gave a very good account of itself against the Boche invader. The mere fact of the engine being new should not prejudice you against it; it is not nearly so untried as you make out, anyway, for the Americans cannot have much trouble with it, or they would not install it in their own Curtiss P.40s.

" American aeroplanes have no monopoly of cramped quarters. In an article on the Armstrong Whitworth Whitley some years ago, you commented that the space for the navigator and crew was somewhat restricted.

" Great size is not merely an ack-ack gunner's dream and 'the answer to a pursuit pilot's prayer' (as you once quoted an American speaker). The Sunderland is a bigger machine than the Boeing, but has put up a splendid fight on many occasions. Further, Sunderlands have been used on at least one occasion to raid Norwegian ports. The R.A.F. seem to be favourably impressed by the four-motor bomber.

" You now excuse your previous unwarranted criticism of the Lockheed Hudson by saying that 'it had to adopt slit slots devised originally by engineers of British Airways.' So what? If I am not mistaken, the committee which investigated the unfortunate accident to the flying-boat Cavalier between New York and Bermuda advised Imperial Airways to adopt the Pan-American system of carburetter heating.

" I am not trying to boost American aeroplanes to the detriment of our own, but I do not like senseless disparagement of all things that are not British. I am merely trying to point out that to be patriotic does not mean to regard the products of every other country as being so much inferior to our own. It is useless to deny that we need aircraft very badly so why try to ride the high horse when we have an opportunity of getting what we require, even if we do have to pay cash in advance for it? It seems a pity that 'the most influential aviation journal in the World' should be the mouthpiece of a certain section of the aeronautical public which cannot bear anything which is not British rather than a newspaper of aviation affairs which (I presume) it is meant to be."

The Why and the Wherefore

This is just the sort of letter we like to get because it states the opinions of the writer clearly and forcefully and yet gives us the chance of correcting erroneous opinions which may be widely held. For one thing, Mr. Woollen shares with others the mistaken idea that to criticise the products of a friendly Nation is not sporting—specially when that Nation is sending those products to help us in a very awkward situation.

Our comments on American aeroplanes during the past year have been based strictly on the elucidation of truth. When an aeroplane is good, such as the Hurricane or Douglas DC-3 or Me 110 we have never hesitated to say so. When an aeroplane is bad in certain essentials, such as the D.H. Don, the Boeing B-17 or the Junkers Ju 88, we have never hesitated to say so either. We hope to continue to be outspoken.

When the British Government first decided to place orders for military aeroplanes in America there was irony in the fact that the best of any aeroplanes they could find for military purposes were a converted civil air liner—the Hudson, and a trainer—the Harvard. Both have done well in service, but both, like many British and other aeroplanes, have had serious faults. For instance, the landing characteristics of the Hudson are, to say the least, peculiar and in certain circumstances dangerous. Its undercarriage is weak. The Harvard has killed many people. The fact that certain British aircraft have done so as well does not make the matter any better. Two blacks do not make a white.

Poor armament is about the worst of the faults of the American aeroplanes in general. Such details as that the bomb doors of the Martin 167 cannot be shut after bombing without nearly stalling the machine are incidental. Although the armament of the fighters can be increased the improving of that of the bombers such as the much vaunted B-17 is not so easy. Power-driven gun turrets are all very well but they cannot be put into any aeroplane. In the B-17, for instance, no tail turret is possible because of the single fin and rudder and because the centre of gravity would be thrown out.

We are still unpersuaded on the merits of the Airacobra which may be a very interesting experiment aerodynamically but still may not be a military triumph. The fact that we are to have a batch is explained by our decision to take the French "left overs." As we said before, it has all the disadvantages of the pusher plus all the disadvantages of the tractor plus some peculiar unto itself. The engine at the back may come in on the pilot in a crash and cannot protect him in a frontal attack. The tractor airscrew batters the slipstream past the

11/8/40 The Aeroplane

Re Consolidated

Romeike & Curtice Ltd

Telephone
CENTRAL 2781
(2 Lines.)

35. Shoe Lane.
LONDON.
E.C.4.

EXTRACT FROM
YORKSHIRE POST,
55, Albion Street, Leeds

Date 21 NOV 1940

26 GIANT U.S. BOMBERS

Deliveries Begin to Britain

WASHINGTON, Wednesday

THE United States Army High Command has given Britain priority on the delivery of 26 four-engined bombers at present at the factory of the Consolidated Aircraft Company at San Diego, California.

The High Command simultaneously announces that negotiations are under way for giving Britain 20 four-engined Boeing bombers of the Flying Fortress type, which have already been completed. The machines of the Consolidated Aircraft Company are reported to be very similar to the Flying Fortresses, both types being capable of a range of 3,000 miles.

The Consolidated Company's four-engine bombers have just begun coming off the production lines, and the negotiations which have now been completed, will enable Britain to take the first deliveries. Indeed, the first deliveries, it is understood, were made to Britain last Saturday.

Sperry Bombsights

The U.S. Army will accept a delay of approximately three months in its own deliveries of this same type, known as the B-24, General George C. Marshall, U.S Army Chief of Staff, told a Press conference to-day. In consideration of this priority, the British Government has released to the U.S. sufficient engines to equip 41 Boeing Flying Fortresses, which the U.S. Army had already accepted without their engines, or would have received without engines before January 1.

The General, referring to the Boeing Company's B-17 type of four-engined bomber, said:—

" We are now in process of negotiating with the British authorities the basis for releasing to them 20 fully-equipped 'planes except as to the Norden bombsight.

General Marshal simultaneously announced that the Sperry bombsight has been released to Britain.

This is one of the two high-accuracy bombsights which have been developed in the United States.

General Marshal said the Norden sight, the more modern of the two bombsights, is now being used by the Army and Navy, while the Sperry sight was no longer used in military planes in the United States.

Both types of bombing 'planes have ranges capable of reaching any part of Germany from Great Britain

General Marshal disclosed that the United States Army has observers in British warplanes flying over Britain and the British Channel, but they have not flown over Germany.—Press Association War Special.

More Destroyers?

WASHINGTON, Wednesday

A new British request for over-age destroyers is likely to be made by Lord Lothian, the British Ambassador to the United States, as soon as he returns to Washington, according to well-informed quarters here to-day.

The figure of 50 destroyers is mentioned.

Lord Lothian is expected here before the week-end.—Press Association War Special.

U.S.NAVAL RESERVES

WASHINGTON, Wednesday

Colonel Knox, Secretary to the U.S. Navy, to-day announced that additional fleet divisions of naval reserves would be ordered to report for active duty in December and January. He also stated that the Navy may ask Congress for more money this session, but declined to disclose the specific amount or the purpose on which it would be spent.

Consolidated Air M

Romeike & Curtice Ld
Telephone CENTRAL 2781 (2 Lines.)
R&C
35. Shoe Lane, LONDON E.C.4.

EXTRACT FROM
DAILY MAIL,
Northcliffe House, E.C.4.

Date 21 NOV 1940

U.S. Bomber Fleet on Way Here

From DON IDDON, Daily Mail Correspond

NEW YORK, We

TWENTY-SIX four-engined bombers ordered
States Air Force and now coming off th
lines at the Consolidated Aircraft Compa
Diego, California, have been released to
British Government took delivery of the first machine last Saturday.

Simultaneously with this announcement to-day in Washington, it was stated that the United States Army High Command have released the Sperry secret bomb-sight to Great Britain.

General George C. Marshall, United States Army Chief of Staff, making the announcements, said that negotiations are also under way to give Britain 20 of the famous Boeing Flying Fortresses now completed.

The Consolidated Company's four-engined bombers are a later type than the Flying Fortresses. Like the Flying Fortresses, they have a range of 3,000 miles fully loaded, and can reach any part of Germany from British bases.

The machines will all be delivered by March next.

General Marshall said that no comparable plane had ever been used in active operations. The United States was anxious to see the results.

To release the planes for Britain the United States Army have accepted a delay of three months in their own deliveries.

General Marshall added that in return, Britain has released to the United States Army sufficient engines to equip 41 Boeing bombers which the Army had accepted without engines.

The Sperry bomb-sight is one of the two high-accuracy bomb-sights developed by the United States Army.

More Destroyers

The Norden sight, the later of the two, is the one with which the more modern United States Army planes are equipped.

General Marshall disclosed that United States Army observers are flying in British planes over Britain and the English Channel. "They have not flown over Germany," he said.

Lord Lothian, the British Ambassador, is expected to make two requests to the United States Government for further aid immediately he arrives back in Washington.

He is expected this week-end. His requests will be for:

(1) The release of 50 more over-age destroyers;

(2) The transfer to Britain of a fleet of American merchant ships.

Tremendous pressure is being put on the Administration to implement the pledge of "all aid to Britain short of war" at greater speed.

To-day's *New York Herald-Tribune* outlines a programme for speeding help.

The points stressed are: Increase aircraft production to send more planes to Britain; pool United States merchant fleets with the British Mercantile Marine; protect the British rear against Japan, and "give, don't sell, our arms to Britain."

Of merchant ships, the paper says:

"We have a considerable existing merchant fleet. We can pool it with the British Mercantile Marine, operating it so as to release British tonnage now in the Inidan and the Pacific Oceans for more dangerous service in the Atlantic.

"Should that fail, we can sell it into British hands without violating neutrality."

'The Answer to Coventry'

UNITED STATES War Department officials said in Washington yesterday that there was "no official connection" between the release to Britain of the 26 Consolidated bombers and the savage Nazi attack on Coventry.

They added: "The significance of the coincidence will not, however, be lost on the world."

Aviation 3/1940

Consolidated Aircraft is expanding its plant 82% to take care of a record $43,000,000 backlog. In negotiation are said to be British and French orders which would bring the backlog up to around $50,000,000.

Among the aviation investment trust annual reports for 1939, National Aviation disclosed a net asset value of $17.27 a share, Air Investors $1.67 a common share, and Aviation Capital Inc. $40.02 a share.

Consolidated Air

Romeike & Curtice Ld
Telephone CENTRAL 2781 (2 Lines.)
R&C
35. Shoe Lane. LONDON. E.C.4.

EXTRACT FROM
aeroplane

Date 15 NOV 1940

An American Transfer

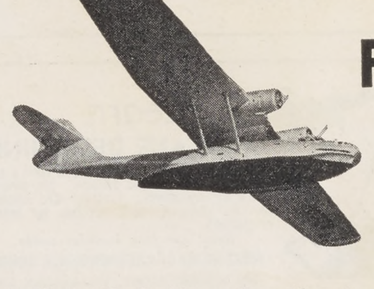
CONSOLIDATED AIRCRAFT CORPORATION has bought the Hall-Aluminium Corporation together with all physical assets and goodwill, patent rights, material and equipment. Some 32 key men of the Hall-Aluminium plant have joined the Consolidated organisation.

The Hall-Aluminium Company was first started in 1916 as Charles Ward Hall, Inc., and has been continuously engaged in research in the use of aluminium alloys for the design and construction of aircraft. The Company has concentrated mainly on flying-boats and seaplanes for the U.S. Navy and Coast Guard and was one of the pioneers of all-metal construction in the United States. In addition the Company has produced and supplied parts and standardised aircraft sections to all the principal constructors in the United States and Canada.

The types produced by the Hall-Aluminium Company include the F4C-1 fighter, the first all-metal aeroplane used by the U.S. Navy, the C-333, XFH-1, XPH-1, PH-1, PH-3, XP2H-1 four-motor long range bomber flying-boat and the XPTBH-2 twin float torpedo bomber.

This new acquisition should add to the assets and constructive power of the Consolidated Corporation which is working on large orders for the U.S. Government and the British Government. Its aeroplanes are among the best in the World.

FAMOUS FLYING BOAT FOR SALE!



CONSOLIDATED PBY 2 "GUBA"

Built to U. S. Navy Specifications—In A-1 condition throughout—Since crossing Australia, Africa, the Atlantic, Pacific and Indian Oceans, the ship has been completely overhauled by the factory.

Cruising range, 4000 miles—Maximum speed, 190 m.p.h.—Two 900 h.p. Pratt & Whitney Twin Wasp engines—Automatic pilot—Complete radio equipment, including homing devices and direction finders—Separate 110 volt motor generators—2 spare engines and many extra accessories—Further details on application. CIrcle 6-7560.

O. J. WHITNEY, INC.
9 Rockefeller Plaza
New York, N. Y.

AVIATION
May, 1940

Air Consolidated Air

Romeike & Curtice Ld
Telephone CENTRAL 2781 (2 Lines.)
R&C
35. Shoe Lane. LONDON. E.C.4.

EXTRACT FROM
STAR,
19 Bouverie Street, E.C.4.

Date 21 NOV 1940

6 THE STAR, THURSDAY.

FLYING FORTS "DELIVERED"

Secret Bomb Sight

BRITAIN has already started to take delivery of the fleet of 26 four-engined bombers of the Flying Fortress type, which, it is revealed in Washington, have been released to her by the U.S. Army High Command.

It is understood, says Reuter, that the first deliveries were actually made last Saturday.

These giant bombers, known as the B-24, have been built by the Consolidated Aircraft Company at San Diego, California.

CAN REACH ALL GERMANY

Like the Flying Fortresses, they have a range of 3,000 miles and are capable of reaching any part of Germany from Great Britain.

Simultaneously, the U.S. High Command disclosed that:

Negotiations are under way for giving Britain 20 four-engined Boeing Flying Fortress bombers—the B-17 type—construction of which has already been completed.

Announcing these latest moves to aid Britain, at a Press conference, General George C. Marshall, U.S. Chief of Staff, stated that the U.S. Army would accept a delay of approximately three months in its own deliveries of the Consolidated B-24 bomber.

"In consideration of this priority," he said, "the British Government have released to the U.S. sufficient engines to equip forty-one Boeing flying fortresses, which the U.S. Army have already accepted without their engines or will have received without engines before January 1."

BOMB SIGHT RELEASED

General Marshall also announced that the Sperry bomb sight—one of the United States' two secret high-accuracy bomb-sights—has now been released to Britain.

He disclosed that the U.S. Army have observers in British warplanes flying over Britain and the Channel.

They have not flown over Germany, he added.

ALREADY USING BASES

The United States has already begun to use the naval bases obtained from Britain, Colonel Knox, U.S. Secretary of the Navy, stated at his press conference.

Naval patrol bombers, he said, were operating from Bermuda, and ships were using the base in Newfoundland

---

New Consolidated

Aviation 3/1940

An official Army Air Corps release covering the new Consolidated XB-24 four-engine landplane bomber gives the plane a gross weight of 40,000 lbs., wing span 110 ft., length 64 ft., over-all height 19 ft., and with accomodations for a crew of six to nine men, depending on mission.

Performance estimates include a top speed of more than 300 miles per hour, range of approximately 3,000 miles, and bomb load capacity of about four tons. The plane is powered by four Pratt & Whitney 18-cylinder twin-row engines of 1200 h.p. each, and is propelled by Hamilton Standard 3-blade hydromatic constant speed propellers of 12 ft. diameter.

The wing is of the Davis airfoil type, with high aspect ratio and high mid-wing mounting on the fuselage. Construction is all-metal throughout, of stressed-skin design, with fabric covered control surfaces. Landing gear is of tricycle type, retractable. Fowler type trailing edge flaps extend the length of the wing inboard of the ailerons. Large bomb doors open in the belly and generous hatches and turrets are provided in nose, top, sides and rear of the fuselage.

Consolidated Expands

Aviation 3/1940

Last December Consolidated Aircraft was sitting pretty, with a $20,000,000 backlog that promised to use the full capacity of the five-year old 25-acre plant at San Diego. Then, at one blow, the biggest single aircraft order ever placed by the government doubled Consolidated's backlog and threw a real production problem on their hands.

Now comes the announcement of an 87% increase in factory space to provide the needed capacity. An additional 64 acres have been leased or optioned, and 400,000 sq. ft. will be roofed. New facilities will include final assembly, final finish, paint shop and wood mill, and experimental, maintenance, and office space. Extra assembly space is also to be provided by paving yard areas, since well-known California climate permits outdoor work most of the year.

Under a closing agreement with the Treasury, part of the cost of expansion is to be charged against the government order.

Western Flying

December, 1940

MAJOR "REUB" FLEET

•

REUBEN HOLLIS FLEET

A VARIED career is no novelty in the aviation industry, which is yet so young that few of its top executives didn't come from some other field to forge ahead with aviation from its infancy, as did Major Reuben Hollis Fleet, president and general manager of Consolidated Aircraft Corp.

Major Fleet's career has been as varied as any, yet every activity in which he has engaged seems, in retrospect, to have contributed deliberately to his success today as founder and directing genius of one of the largest aircraft manufacturing units in America. The lumber business, real estate, manufacturing, legislative and political experience, military service—these past pursuits have combined in a background all too evidently valuable. Each one of Major Fleet's past successes has left him with a reservoir of experience upon which to draw when a related problem arises in airplane manufacturing.

Reuben Fleet was born in Montesano, Washington, in 1887. He graduated from Culver Military Academy in 1906 after service as Captain of his company and earning high scholastic honors. Outside the classrooms he earned his letters in football, baseball and track.

Upon his return to his home state he plunged into the active life that has been his ever since. He entered the lumber business, branched into real estate activities and later was elected to the Washington state legislature, where he served as chairman of its military affairs committee while at the same time a member of the Washington National Guard. Mexican border troubles found him serving there with his unit.

Thirty years of age when the United States entered the World War, he remained with the Army and won the rank of junior military aviator in San Diego in 1917. Then, in a rapid series of promotions he served as officer in charge of flying at Sacramento's Mather Field, executive officer in charge of training in the Office of Chief of Air Corps at Washington, assigned as pilot to the Gosport School for flying instructors in England, and was appointed to take charge of the Army's historic first scheduled airmail service between New York and Washington, D. C. in May, 1918. When the Army abandoned the route to the Post Office Department Major Fleet became contracting officer for the Air Corps and business manager of McCook Field, serving from January, 1919 to November, 1922.

During this period the Gallaudet Manufacturing Co. in East Greenwich, Conn., obtained a contract for the remodeling of a number of Army DH training planes but lacked a directing head to push the work through. Major Fleet was prevailed upon to resign from the Army and become Gallaudet's vice president and general manager. "Reub" Fleet was in the airplane business.

Five months later the Army remodeling contract was completed but Fleet had decided that DH's were outmoded as trainers and that a new company with a new airplane was indicated. From this idea was born Consolidated Aircraft Corp. in May of 1923.

The story of Consolidated was told in *Western Flying* last October's "Industry Portrait." Much remains to be told, however, of "Reub" Fleet's many-sided interests.

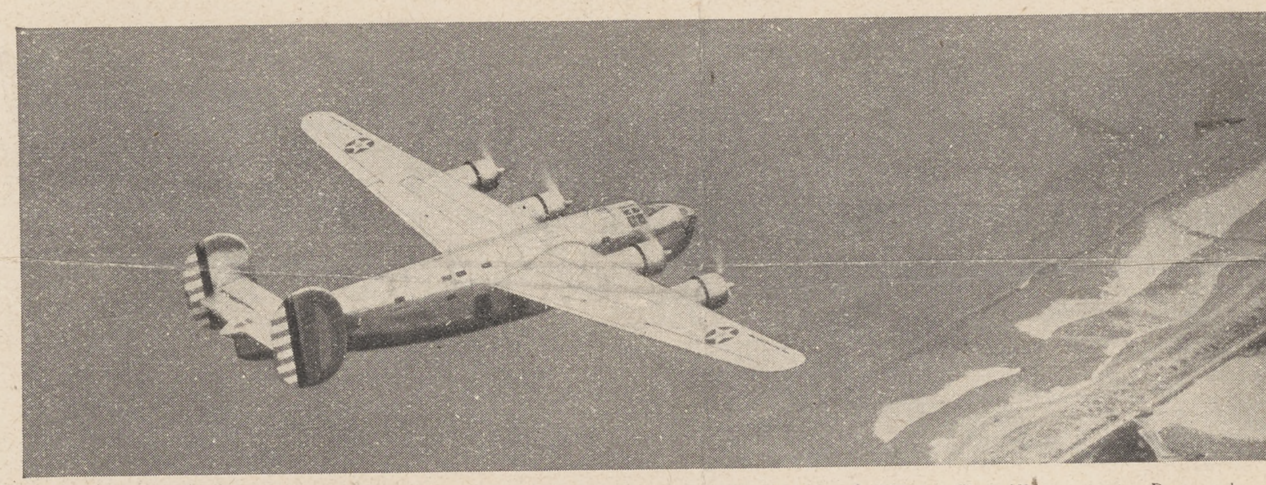
There were, for instance, the other companies he organized. In 1927 there was Tonawanda Products Corp. and in the lush days of 1929 there were Fleet Aircraft, Inc.; National Flying Schools, Inc.; Niagara From-The Air, Inc., a sightseeing and charter service; Frontier Enterprises, Inc.; and New York, Rio and Buenos Aires Line, Inc. The latter, a pioneer endeavor in the linking of North and South America, was a joint enterprise with J. H. Rand and R. A. O'Neil and is now a part of the Pan American Airways System. Finally, in 1930, Major Fleet organized Fleet Aircraft of Canada, Ltd., which is now Fleet Aircraft, Ltd. and is manufacturing sturdy descendants of the American Fleets which were virtually standard equipment for flying schools, military training, exhibition flyers and private aviation a decade ago.

Today Consolidated flying boats are the new destroyer squadrons of the Navy and a new bomber is in production upon which the United States air arms are depending mightily for early future use. It is fitting that the company headed by Major Fleet should occupy such a position in America's defense picture for he is of American stock of many generations.

His mother reached California from Illinois in a covered wagon. His father reached the Pacific Northwest from Kansas City by stage coach, horseback and finally on foot. That their son now covers those same weary miles by air in hours where they took months is in no small measure due to that son's enterprise and determination.

The responsibility doesn't weigh heavily upon "Reub" Fleet—it is too much a part of him. Aside from an occasional game of golf, Major Fleet's recreation comes to him as he sits behind his desk—at business.

Aeroplanes from the U.S.A.



AMERICA'S BEST BOMBER.—The consolidated Model 32 bomber (four 1,200 h.p. Pratt and Whitney Twin Wasp motors). Designated the B-24 by the U.S.A. Army, it has a top speed of more than 300 m.p.h. Unlike the unarmed B-17, the four-motor Consolidated can have power-operated turrets fitted in nose and tail and doubtless the 120 B-24s supplied to the R.A.F. will have them. They should do well.

Certain criticisms of American aeroplanes have evoked comment of various kinds. Two letters which appear below give two aspects of these reactions. Our reasons for advancing the criticisms and the grounds for our belief that they are just are stated below—Ed.

MR. A. H. WOOLLEN writes:—" I agree with Mr. Dennis Powell in raising a voice of protest against the belittling of American aeroplanes by your paper. I am no sympathiser with the American nation, and consider them the greatest 'line-shooters' in the World. But even though your views on this matter may be the same, there is no justification for your absurd condemnation of practically every new type of American aeroplane as it rolls off the production line.

" It seems that your criticism is based mainly on poor armament, cramped quarters, unorthodox design, and, in the case of the Boeing B-17, great size. All these defects are, however, seen in some of our own aircraft. For instance, up to the beginning of the War the Handley Page Hampden and the Vickers Wellington were, according to Mr. C. G. Grey in his article, 'The Big Bombers,' inadequately armed, and under wartime conditions the armament had to be revised, with the result that these two machines are now very formidable. The American 'planes which you accuse of being under-armed could very easily be fitted with extra guns, as in the case of the Curtiss Hawk 75A which was fitted with four extra wing guns on the stipulation of the French. A similar case is our own Spitfire, which was, I believe, originally designed for four wing guns. The other four were added later.

" With regard to unorthodox design (as in the case of the Bell Airacobra, which you have singled out for so much ridicule) there have been a number of unorthodox machines which have proved very successful. A notable example is, or was, the Fokker G-1, which, until the type was completely wiped out, gave a very good account of itself against the Boche invader. The mere fact of the engine being new should not prejudice you against it; it is not nearly so untried as you make out, anyway, for the Americans cannot have much trouble with it, or they would not install it in their own Curtiss P.40s.

" American aeroplanes have no monopoly of cramped quarters. In an article on the Armstrong Whitworth Whitley some years ago, you commented that the space for the navigator and crew was somewhat restricted.

" Great size is not merely an ack-ack gunner's dream and 'the answer to a pursuit pilot's prayer' (as you once quoted an American speaker). The Sunderland is a bigger machine than the Boeing, but has put up a splendid fight on many occasions. Further, Sunderlands have been used on at least one occasion to raid Norwegian ports. The R.A.F. seem to be favourably impressed by the four-motor bomber.

" You now excuse your previous unwarranted criticism of the Lockheed Hudson by saying that 'it had to adopt slit slots devised originally by engineers of British Airways.' So what? If I am not mistaken, the committee which investigated the unfortunate accident to the flying-boat Cavalier between New York and Bermuda advised Imperial Airways to adopt the Pan-American system of carburetter heating.

" I am not trying to boost American aeroplanes to the detriment of our own, but I do not like senseless disparagement of all things that are not British. I am merely trying to point out that to be patriotic does not mean to regard the products of every other country as being so much inferior to our own. It is useless to deny that we need aircraft very badly so why try to ride the high horse when we have an opportunity of getting what we require, even if we do have to pay cash in advance for it? It seems a pity that 'the most influential aviation journal in the World' should be the mouthpiece of a certain section of the aeronautical public which cannot bear anything which is not British rather than a newspaper of aviation affairs which (I presume) it is meant to be."

The Why and the Wherefore

This is just the sort of letter we like to get because it states the opinions of the writer clearly and forcefully and yet gives us the chance of correcting erroneous opinions which may be widely held. For one thing, Mr. Woollen shares with others the mistaken idea that to criticise the products of a friendly Nation is not sporting—specially when that Nation is sending those products to help us in a very awkward situation.

Our comments on American aeroplanes during the past year have been based strictly on the elucidation of truth. When an aeroplane is good, such as the Hurricane or Douglas DC-3 or Me 110 we have never hesitated to say so. When an aeroplane is bad in certain essentials, such as the D.H. Don, the Boeing B-17 or the Junkers Ju 88, we have never hesitated to say so either. We hope to continue to be outspoken.

When the British Government first decided to place orders for military aeroplanes in America there was irony in the fact that the best of any aeroplanes they could find for military purposes were a converted civil air liner—the Hudson, and a trainer—the Harvard. Both have done well in service, but both, like many British and other aeroplanes, have had serious faults. For instance, the landing characteristics of the Hudson are, to say the least, peculiar and in certain circumstances dangerous. Its undercarriage is weak. The Harvard has killed many people. The fact that certain British aircraft have done so as well does not make the matter any better. Two blacks do not make a white.

Poor armament is about the worst of the faults of the American aeroplanes in general. Such details as that the bomb doors of the Martin 167 cannot be shut after bombing without nearly stalling the machine are incidental. Although the armament of the fighters can be increased the improving of that of the bombers such as the much vaunted B-17 is not so easy. Power-driven gun turrets are all very well but they cannot be put into any aeroplane. In the B-17, for instance, no tail turret is possible because of the single fin and rudder and because the centre of gravity would be thrown out.

We are still unpersuaded on the merits of the Airacobra which may be a very interesting experiment aerodynamically but still may not be a military triumph. The fact that we are to have a batch is explained by our decision to take the French "left overs." As we said before, it has all the disadvantages of the pusher plus all the disadvantages of the tractor plus some peculiar unto itself. The engine at the back may come in on the pilot in a crash and cannot protect him in a frontal attack. The tractor airscrew batters the slipstream past the

11/8/40 The Aeroplane

Re Consolidated

Romeike & Curtice Ltd

Telephone CENTRAL 2781 (2 Lines.)

35. Shoe Lane. LONDON. E.C.4.

EXTRACT FROM
YORKSHIRE POST,
55, Albion Street, Leeds

Date 21 NOV 1940

26 GIANT U.S. BOMBERS

Deliveries Begin to Britain

WASHINGTON, Wednesday

THE United States Army High Command has given Britain priority on the delivery of 26 four-engined bombers at present at the factory of the Consolidated Aircraft Company at San Diego, California.

The High Command simultaneously announces that negotiations are under way for giving Britain 20 four-engined Boeing bombers of the Flying Fortress type, which have already been completed. The machines of the Consolidated Aircraft Company are reported to be very similar to the Flying Fortresses, both types being capable of a range of 3,000 miles.

The Consolidated Company's four-engine bombers have just begun coming off the production lines, and the negotiations which have now been completed, will enable Britain to take the first deliveries. Indeed, the first deliveries, it is understood, were made to Britain last Saturday.

Sperry Bombsights

The U.S. Army will accept a delay of approximately three months in its own deliveries of this same type, known as the B-24, General George C. Marshall, U.S Army Chief of Staff, told a Press conference to-day. In consideration of this priority, the British Government has released to the U.S. sufficient engines to equip 41 Boeing Flying Fortresses, which the U.S. Army had already accepted without their engines, or would have received without engines before January 1.

The General, referring to the Boeing Company's B-17 type of four-engined bomber, said:—

"We are now in process of negotiating with the British authorities the basis for releasing to them 20 fully-equipped 'planes except as to the Norden bombsight.

General Marshal simultaneously announced that the Sperry bombsight has been released to Britain.

This is one of the two high-accuracy bombsights which have been developed in the United States.

General Marshal said the Norden ght, the more modern of the two mbsights, is now being used by the my and Navy, while the Sperry ght was no longer used in military lanes in the United States.

Both types of bombing 'planes have ranges capable of reaching any part of Germany from Great Britain

General Marshal disclosed that the United States Army has observers in British warplanes flying over Britain and the British Channel, but they have not flown over Germany.—Press Association War Special.

More Destroyers?

WASHINGTON, Wednesday

A new British request for over-age destroyers is likely to be made by Lord Lothian, the British Ambassador to the United States, as soon as he returns to Washington, according to well-informed quarters here to-day.

The figure of 50 destroyers is mentioned.

Lord Lothian is expected here before the week-end.—Press Association War Special.

U.S.NAVAL RESERVES

WASHINGTON, Wednesday

Colonel Knox, Secretary to the U.S. Navy, to-day announced that additional fleet divisions of naval reserves would be ordered to report for active duty in December and January. He also stated that the Navy may ask Congress for more money this session, but declined to disclose the specific amount or the purpose on which it would be spent.

Consolidated Air

Romeike & Curtice Ltd
Telephone CENTRAL 2781 (2 Lines.)
R&C
35. Shoe Lane LONDON E.C.4.
EXTRACT FROM
DAILY MAIL,
Northcliffe House, E.C.4.
Date 21 NOV 1940

U.S. Bomber Fleet on Way Here

From DON IDDON, Daily Mail Correspond

NEW YORK, We

TWENTY-SIX four-engined bombers ordered **States Air Force and now coming off th** **lines at the Consolidated Aircraft Compa** **Diego, California, have been released to** **British Government took delivery of** **the first machine last Saturday.**

Simultaneously with this announcement to-day in Washington, it was stated that the United States Army High Command have released the Sperry secret bomb-sight to Great Britain.

General George C. Marshall, United States Army Chief of Staff, making the announcements, said that negotiations are also under way to give Britain 20 of the famous Boeing Flying Fortresses now completed.

The Consolidated Company's four-engined bombers are a later type than the Flying Fortresses. Like the Flying Fortresses, they have a range of 3,000 miles fully loaded, and can reach any part of Germany from British bases.

The machines will all be delivered by March next.

General Marshall said that no comparable plane had ever been used in active operations. The United States was anxious to see the results.

To release the planes for Britain the United States Army have accepted a delay of three months in their own deliveries.

General Marshall added that in return, Britain has released to the United States Army sufficient engines to equip 41 Boeing bombers which the Army had accepted without engines.

The Sperry bomb-sight is one of the two high-accuracy bomb-sights developed by the United States Army.

More Destroyers

The Norden sight, the later of the two, is the one with which the more modern United States Army planes are equipped.

General Marshall disclosed that United States Army observers are flying in British planes over Britain and the English Channel. "They have not flown over Germany," he said.

Lord Lothian, the British Ambassador, is expected to make two requests to the United States Government for further aid immediately he arrives back in Washington.

He is expected this week-end.

His requests will be for:

(1) The release of 50 more over-age destroyers;

(2) The transfer to Britain of a fleet of American merchant ships.

Tremendous pressure is being put on the Administration to implement the pledge of "all aid to Britain short of war" at greater speed.

To-day's *New York Herald-Tribune* outlines a programme for speeding help.

The points stressed are: Increase aircraft production to send more planes to Britain; pool United States merchant fleets with the British Mercantile Marine; protect the British rear against Japan, and "give, don't sell, our arms to Britain."

Of merchant ships, the paper says:

"We have a considerable existing merchant fleet. We can pool it with the British Mercantile Marine, operating it so as to release British tonnage now in the Inidan and the Pacific Oceans for more dangerous service in the Atlantic.

"Should that fail, we can sell it into British hands without violating neutrality."

The Answer to Coventry'

UNITED STATES War Department officials said in Washington yesterday that there was "no official connection" between the release to Britain of the 26 Consolidated bombers and the savage Nazi attack on Coventry.

They added: "The significance of the coincidence will not, however, be lost on the world."

Aviation 3/1940

Consolidated Aircraft is expanding its plant 82% to take care of a record $43,000,000 backlog. In negotiation are said to be British and French orders which would bring the backlog up to around $50,000,000.

Among the aviation investment trust annual reports for 1939, National Aviation disclosed a net asset value of $17.27 a share, Air Investors $1.67 a common share, and Aviation Capital Inc. $40.02 a share.

Air Consolidated Air

Romeike & Curtice Ltd
Telephone CENTRAL 2781 (2 Lines.)
R&C
35. Shoe Lane. LONDON. E.C.4.
EXTRACT FROM
STAR,
19 Bouverie Street, E.C.4.
Date 21 NOV 1940

FLYING FORTS "DELIVERED"

Secret Bomb Sight

BRITAIN has already started to take delivery of the fleet of 26 four-engined bombers of the Flying Fortress type, which, it is revealed in Washington, have been released to her by the U.S. Army High Command.

It is understood, says Reuter, that the first deliveries were actually made last Saturday.

These giant bombers, known as the B-24, have been built by the Consolidated Aircraft Company at San Diego; California.

CAN REACH ALL GERMANY

Like the Flying Fortresses, they have a range of 3,000 miles and are capable of reaching any part of Germany from Great Britain.

Simultaneously, the U.S. High Command disclosed that:

Negotiations are under way for giving Britain 20 four-engined Boeing Flying Fortress bombers—the B-17 type—construction of which has already been completed.

Announcing these latest moves to aid Britain, at a Press conference, General George C. Marshall, U.S. Chief of Staff, stated that the U.S. Army would accept a delay of approximately three months in its own deliveries of the Consolidated B-24 bomber.

"In consideration of this priority," he said, "the British Government have released to the U.S. sufficient engines to equip forty-one Boeing flying fortresses, which the U.S. Army have already accepted without their engines or will have received without engines before January 1."

BOMB SIGHT RELEASED

General Marshall also announced that the Sperry bomb sight—one of the United States' two secret high-accuracy bomb-sights—has now been released to Britain.

He disclosed that the U.S. Army have observers in British warplanes flying over Britain and the Channel.

They have not flown over Germany, he added.

ALREADY USING BASES

The United States has already begun to use the naval bases obtained from Britain, Colonel Knox, U.S. Secretary of the Navy, stated at his press conference.

Naval patrol bombers, he said, were operating from Bermuda, and ships were using the base in Newfoundland

---

Consolidated Air

Romeike & Curtice Ltd
Telephone CENTRAL 2781 (2 Lines.)
R&C
35. Shoe Lane. LONDON. E.C.4.
EXTRACT FROM
aeroplane
Date 15 NOV 1940

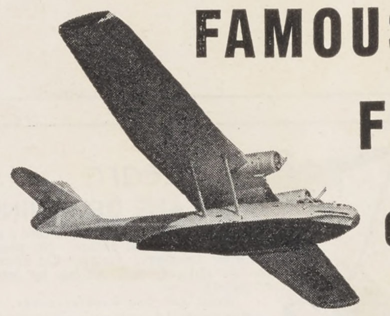
An American Transfer

CONSOLIDATED AIRCRAFT CORPORATION has bought the Hall-Aluminium Corporation together with all physical assets and goodwill, patent rights, material and equipment. Some 32 key men of the Hall-Aluminium plant have joined the Consolidated organisation.

The Hall-Aluminium Company was first started in 1916 as Charles Ward Hall, Inc., and has been continuously engaged in research in the use of aluminium alloys for the design and construction of aircraft. The Company has concentrated mainly on flying-boats and seaplanes for the U.S. Navy and Coast Guard and was one of the pioneers of all-metal construction in the United States. In addition the Company has produced and supplied parts and standardised aircraft sections to all the principal constructors in the United States and Canada.

The types produced by the Hall-Aluminium Company include the F4C-1 fighter, the first all-metal aeroplane used by the U.S. Navy, the C-333, XFH-1, XPH-1, PH-1, PH-3, XP2H-1 four-motor long range bomber flying-boat and the XPTBH-2 twin float torpedo bomber.

This new acquisition should add to the assets and constructive power of the Consolidated Corporation which is working on large orders for the U.S. Government and the British Government. Its aeroplanes are among the best in the World.



FAMOUS FLYING BOAT FOR SALE!

CONSOLIDATED PBY 2 "GUBA"

Built to U. S. Navy Specifications—In A-1 condition throughout—Since crossing Australia, Africa, the Atlantic, Pacific and Indian Oceans, the ship has been completely overhauled by the factory.

Cruising range, 4000 miles—Maximum speed, 190 m.p.h.—Two 900 h.p. Pratt & Whitney Twin Wasp engines—Automatic pilot—Complete radio equipment, including homing devices and direction finders—Separate 110 volt motor generators—2 spare engines and many extra accessories—Further details on application. Circle 6-7560.

O. J. WHITNEY, INC.
9 Rockefeller Plaza New York, N. Y.

AVIATION
May, 1940

New Consolidated

Aviation 3/1940

An official Army Air Corps release covering the new Consolidated XB-24 four-engine landplane bomber gives the plane a gross weight of 40,000 lbs., wing span 110 ft., length 64 ft., over-all height 19 ft., and with accomodations for a crew of six to nine men, depending on mission.

Performance estimates include a top speed of more than 300 miles per hour, range of approximately 3,000 miles, and bomb load capacity of about four tons. The plane is powered by four Pratt & Whitney 18-cylinder twin-row engines of 1200 h.p. each, and is propelled by Hamilton Standard 3-blade hydromatic constant speed propellers of 12 ft. diameter.

The wing is of the Davis airfoil type, with high aspect ratio and high mid-wing mounting on the fuselage. Construction is all-metal throughout, of stressed-skin design, with fabric covered control surfaces. Landing gear is of tricycle type, retractable. Fowler type trailing edge flaps extend the length of the wing inboard of the ailerons. Large bomb doors open in the belly and generous hatches and turrets are provided in nose, top, sides and rear of the fuselage.

Consolidated Expands

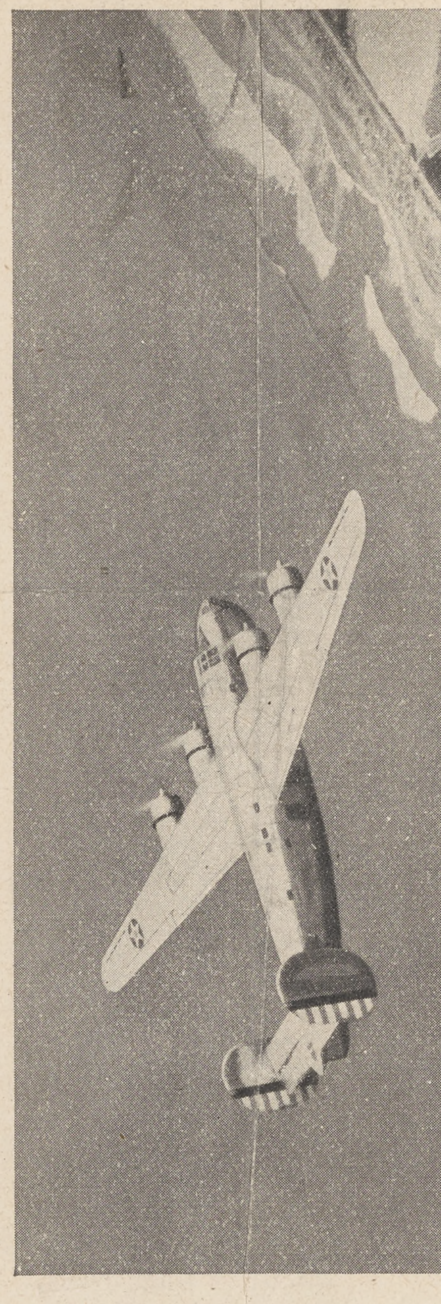
Aviation 3/1940

Last December Consolidated Aircraft was sitting pretty, with a $20,000,000 backlog that promised to use the full capacity of the five-year old 25-acre plant at San Diego. Then, at one blow, the biggest single aircraft order ever placed by the government doubled Consolidated's backlog and threw a real production problem on their hands.

Now comes the announcement of an 87% increase in factory space to provide the needed capacity. An additional 64 acres have been leased or optioned, and 400,000 sq. ft. will be roofed. New facilities will include final assembly, final finish, paint shop and wood mill, and experimental, maintenance, and office space. Extra assembly space is also to be provided by paving yard areas, since well-known California climate permits outdoor work most of the year.

Under a closing agreement with the Treasury, part of the cost of expansion is to be charged against the government order.

Aeroplanes from the U.S.A.



AMERICA'S BEST BOMBER.—The consolidated Model 32 bomber (four 1,200 h.p. Pratt and Whitney Twin Wasp motors). Designated the B-24 by the U.S.A. Army, it has a top speed of more than 300 m.p.h. Unlike the unarmed B-17, the four-motor Consolidated can have power-operated turrets fitted in nose and tail and doubtless the 120 B-24s supplied to the R.A.F. will have them. They should do well.

Certain criticisms of American aeroplanes have evoked comment of various kinds. Two letters which appear below give two aspects of these reactions. Our reasons for advancing the criticisms and the grounds for our belief that they are just are stated below—Ed.

MR. A. H. WOOLLEN writes:—" I agree with Mr. Dennis Powell in raising a voice of protest against the belittling of American aeroplanes by your paper. I am no sympathiser with the American nation, and consider them the greatest ' line-shooters ' in the World. But even though your views on this matter may be the same, there is no justification for your absurd condemnation of practically every new type of American aeroplane as it rolls off the production line.

" It seems that your criticism is based mainly on poor armament, cramped quarters, unorthodox design, and, in the case of the Boeing B-17, great size. All these defects are, however, seen in some of our own aircraft. For instance, up to the beginning of the War the Handley Page Hampden and the Vickers Wellington were, according to Mr. C. G. Grey in his article, ' The Big Bombers,' inadequately armed, and under wartime conditions the armament had to be revised, with the result that these two machines are now very formidable. The American 'planes which you accuse of being under-armed could very easily be fitted with extra guns, as in the case of the Curtiss Hawk 75A which was fitted with four extra wing guns on the stipulation of the French. A similar case is our own Spitfire, which was, I believe, originally designed for four wing guns. The other four were added later.

" With regard to unorthodox design (as in the case of the Bell Airacobra, which you have singled out for so much ridicule) there have been a number of unorthodox machines which have proved very successful. A notable example is, or was, the Fokker G-1, which, until the type was completely wiped out, gave a very good account of itself against the Boche invader. The mere fact of the engine being new should not prejudice you against it; it is not nearly so untried as you make out, anyway, for the Americans cannot have much trouble with it, or they would not install it in their own Curtiss P.40s.

" American aeroplanes have no monopoly of cramped quarters. In an article on the Armstrong Whitworth Whitley some years ago, you commented that the space for the navigator and crew was somewhat restricted.

" Great size is not merely an ack-ack gunner's dream and ' the answer to a pursuit pilot's prayer ' (as you once quoted an American speaker). The Sunderland is a bigger machine than the Boeing, but has put up a splendid fight on many occasions. Further, Sunderlands have been used on at least one occasion to raid Norwegian ports. The R.A.F. seem to be favourably impressed by the four-motor bomber.

" You now excuse your previous unwarranted criticism of the Lockheed Hudson by saying that ' it had to adopt slit slots devised originally by engineers of British Airways.' So what? If I am not mistaken, the committee which investigated the unfortunate accident to the flying-boat Cavalier between New York and Bermuda advised Imperial Airways to adopt the Pan-American system of carburetter heating.

" I am not trying to boost American aeroplanes to the detriment of our own, but I do not like senseless disparagement of all things that are not British. I am merely trying to point out that to be patriotic does not mean to regard the products of every other country as being so much inferior to our own. It is useless to deny that we need aircraft very badly so why try to ride the high horse when we have an opportunity of getting what we require, even if we do have to pay cash in advance for it? It seems a pity that ' the most influential aviation journal in the World ' should be the mouthpiece of a certain section of the aeronautical public which cannot bear anything which is not British rather than a newspaper of aviation affairs which (I presume) it is meant to be."

The Why and the Wherefore

This is just the sort of letter we like to get because it states the opinions of the writer clearly and forcefully and yet gives us the chance of correcting erroneous opinions which may be widely held. For one thing, Mr. Woollen shares with others the mistaken idea that to criticise the products of a friendly Nation is not sporting—specially when that Nation is sending those products to help us in a very awkward situation.

Our comments on American aeroplanes during the past year have been based strictly on the elucidation of truth. When an aeroplane is good, such as the Hurricane or Douglas DC-3 or Me 110 we have never hesitated to say so. When an aeroplane is bad in certain essentials, such as the D.H. Don, the Boeing B-17 or the Junkers Ju 88, we have never hesitated to say so either. We hope to continue to be outspoken.

When the British Government first decided to place orders for military aeroplanes in America there was irony in the fact that the best of any aeroplanes they could find for military purposes were a converted civil air liner—the Hudson, and a trainer—the Harvard. Both have done well in service, but both, like many British and other aeroplanes, have had serious faults. For instance, the landing characteristics of the Hudson are, to say the least, peculiar and in certain circumstances dangerous. Its undercarriage is weak. The Harvard has killed many people. The fact that certain British aircraft have done so as well does not make the matter any better. Two blacks do not make a white.

Poor armament is about the worst of the faults of the American aeroplanes in general. Such details as that the bomb doors of the Martin 167 cannot be shut after bombing without nearly stalling the machine are incidental. Although the armament of the fighters can be increased the improving of that of the bombers such as the much vaunted B-17 is not so easy. Power-driven gun turrets are all very well but they cannot be put into any aeroplane. In the B-17, for instance, no tail turret is possible because of the single fin and rudder and because the centre of gravity would be thrown out.

We are still unpersuaded on the merits of the Airacobra which may be a very interesting experiment aerodynamically but still may not be a military triumph. The fact that we are to have a batch is explained by our decision to take the French " left overs." As we said before, it has all the disadvantages of the pusher plus all the disadvantages of the tractor plus some peculiar unto itself. The engine at the back may come in on the pilot in a crash and cannot protect him in a frontal attack. The tractor airscrew batters the slipstream past the

11/8/40 The Aeroplane

---

a/c Consolidated

Romeike & Curtice Ld

Telephone
CENTRAL 2781
(2 Lines.)

R&C

35. Shoe Lane.
LONDON.
E.C.4.

EXTRACT FROM
YORKSHIRE POST,
55, Albion Street, Leeds

Date 21 NOV 1940

26 GIANT U.S. BOMBERS

Deliveries Begin to Britain

WASHINGTON, Wednesday

THE United States Army High Command has given Britain priority on the delivery of 26 four-engined bombers at present at the factory of the Consolidated Aircraft Company at San Diego, California.

The High Command simultaneously announces that negotiations are under way for giving Britain 20 four-engined Boeing bombers of the Flying Fortress type, which have already been completed. The machines of the Consolidated Aircraft Company are reported to be very similar to the Flying Fortresses, both types being capable of a range of 3,000 miles.

The Consolidated Company's four-engine bombers have just begun coming off the production lines, and the negotiations which have now been completed, will enable Britain to take the first deliveries. Indeed, the first deliveries, it is understood, were made to Britain last Saturday.

Sperry Bombsights

The U.S. Army will accept a delay of approximately three months in its own deliveries of this same type, known as the B-24, General George C. Marshall, U.S Army Chief of Staff, told a Press conference to-day. In consideration of this priority, the British Government has released to the U.S. sufficient engines to equip the 41 Boeing Flying Fortresses, which the U.S. Army had already accepted without their engines, or would have received without engines before January 1.

The General, referring to the Boeing Company's B-17 type of four-engined bomber, said:—

" We are now in process of negotiating with the British authorities the basis for releasing to them 20 fully-equipped 'planes except as to the Norden bombsight.

General Marshal simultaneously announced that the Sperry bombsight has been released to Britain.

This is one of the two high-accuracy bombsights which have been developed in the United States.

General Marshal said the Norden ght, the more modern of the two mbsights, is now being used by the rmy and Navy, while the Sperry ght was no longer used in military lanes in the United States.

Both types of bombing 'planes have anges capable of reaching any part of Germany from Great Britain

General Marshal disclosed that the United States Army has observers in British warplanes flying over Britain and the British Channel, but they have not flown over Germany.—Press Association War Special.

More Destroyers?

WASHINGTON, Wednesday

A new British request for over-age destroyers is likely to be made by Lord Lothian, the British Ambassador to the United States, as soon as he returns to Washington, according to well-informed quarters here to-day.

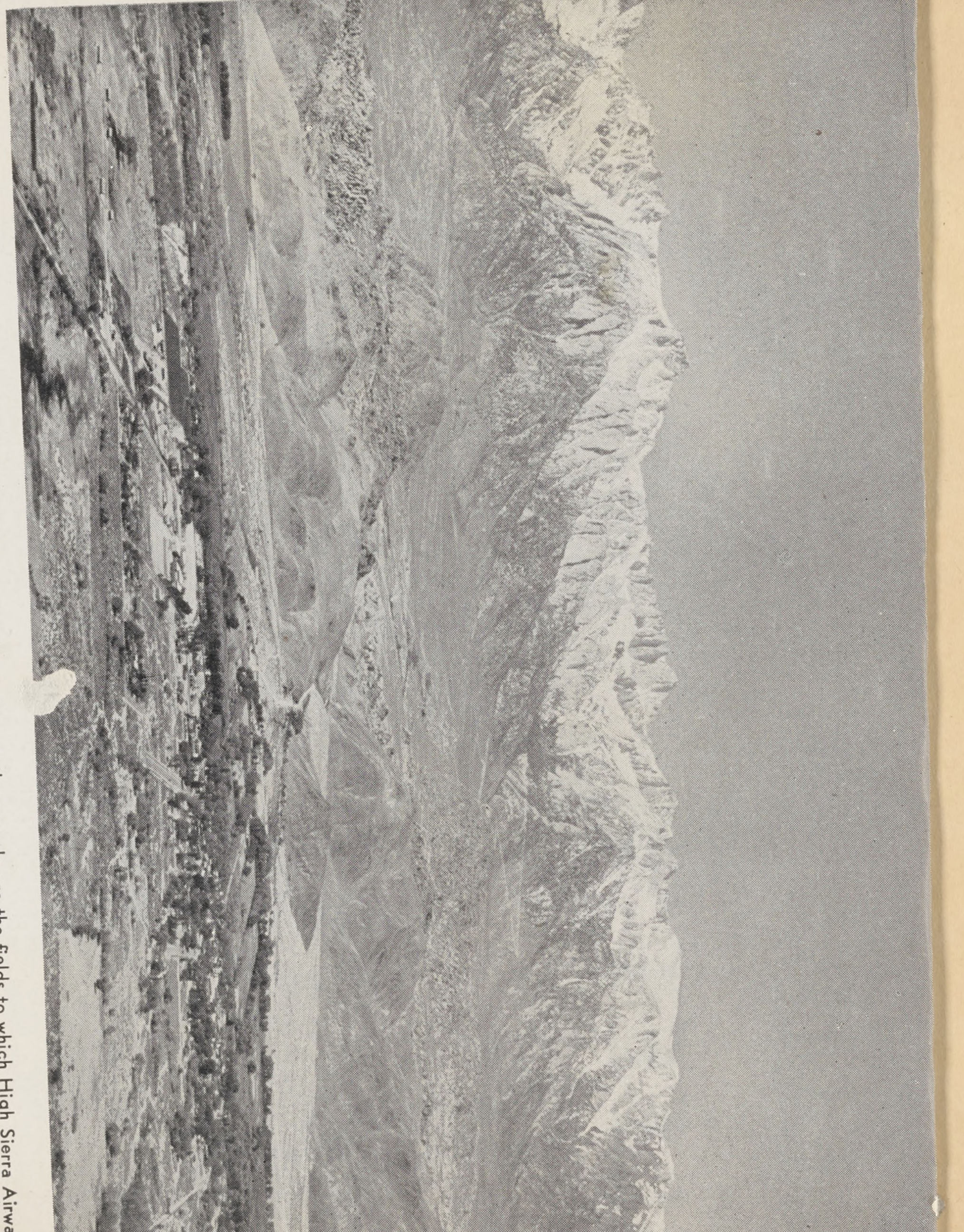
The figure of 50 destroyers is mentioned.

Lord Lothian is expected here before the week-end.—Press Association War Special.

U.S. NAVAL RESERVES

WASHINGTON, Wednesday

Colonel Knox, Secretary to the U.S. Navy, to-day announced that additional fleet divisions of naval reserves would be ordered to report for active duty in December and January. He so stated that the Navy may ask ongress for more money this session, t declined to disclose the specific ount or the purpose on which it uld be spent.



Lone Pine, California, in foreground with the High Sierras looming up behind. Among those peaks are the fields to which High Sierra Airways operates.

HIGH SIERRA AIRWAYS

By

ALBERT M. LATIMER

IN the winter of 1939, two young men, tired of speculating as to how great it would feel to be in the flying game, made up their minds to replace speculation sprees with action.

Throughout the 1940 hunting and fishing seasons, hundreds of sportsmen, remembering eight to twelve hour horseback rides up steep Sierra trails, looked down on those very same trails from a Pitcairn Mailwing's cockpit and found it hard to realize that they were making the same trip within twenty-five minutes.

Sandwiched between that cause and result is the story of two young men with enough foresight and get-up to find a place in the work they loved; a story of hard work and many problems; a story of the High Sierra Airways.

During the lunch hour at an oil tool concern in Los Angeles, the men of the plant were used to Walt Hallberg and Wes Austin using the entire hour for long gab fests about aviation. These men also knew when the two were off work their time was always put in at the various airports watching and envying those people who were on the inside of flying. And, like most outsiders, these fellows went home to spend their nights in more gab sessions, the theme of which was always the same question: why can't we think of some way to get a foothold in the flying game with a reasonable amount of capital?

It wasn't until the winter of '39 that they hit upon an idea which wasn't so full of snags that they made it impractical. Austin, who had been raised in Lone Pine, Calif., remembered the hunting and fishing camps which were twenty-five to thirty miles west of Lone Pine, and far up in the heart of the virgin High Sierra range. He also knew the hunters and fishermen took the trouble each year of packing into these camps. And packing required around twelve hours of hard up-trail riding for the usual city rider, during which the tenderfoot could dwell on the thought that it would take twelve more hours to come back. For the average office athlete, this meant a good beating beside using up a lot of fishing or hunting time in traveling. Austin also remembered that near each of these camps—there were three of them—was a landing field maintained by the Forestry Department. There had been pilots who had come up to the valley for part of the season, and picked up spare money by hauling sportsmen into the camps. But what Hallberg and Austin wanted to know was how would it be to put a regular airline service into these

Flying Flagship

Those potential aviators found in every class, or should we say those "Asiats," would be interested to know that the air corps is now following in the footsteps of its predecessor, the surface fleet, by incorporating the flagship as part of its various tactical formations. With the advent of Consolidated's new patrol bomber, this dream of the aircraft tacticians has been realized. We could use our Buck Rogers imagination and picture flag hoists, etc., flying from the wing struts (if there were any) of this latest dreadnaught of the skies; however, it looks as if the communications of the future air armadas will be on the new experimental ultra-high radio frequencies. If the present trend continues, it won't be long until the air corps line officer will not only be a pilot but a communications specialist as well.

It all began back in August, 1939, but it was not until recently that the true significance of the venture was realized. On August 24, 1939, Rear Admiral A. B. Cook, commanding aircraft Scouting Force, by despatch, removed his flag from the *U.S.S. Memphis* at Seattle and hoisted it aboard the XPB2Y-1, pictured above. Thereby was established a precedent in Naval history for by formal procedure this huge sky dreadnaught became the first Flagplane to fly for the U. S. Navy.

Although such procedure is still in the experimental stage, like many of the other experiments made along such lines it may quite possibly become a permanent feature of the service.

U.S. Naval Academy "Log"
3-15-40

The World's Largest

On December 7, the Navy's new XPBY-5A, now the world's largest amphibian, made its debut at Lindbergh Field, San Diego. This ship, designed by the Navy and constructed by Consolidated Aircraft, was originally Model 28, a twin-engine flying boat known as the PBY's. This design of boat has already accumulated a remarkable total of massed flight records and reputation for sustained performance, and now the amphibian feature has been incorporated in its structure. Upon the augmenting of this structure, the inherent advantages of the former design has been retained, but there has been added the great advantage of land plane operation. Thus this ship is no longer restricted to sea but can operate on land as well.

The landing gear is of the tricycle type, with a single wheel forward and two aft, all of which are fully retractable. The two side wheels can be retracted into wells in the side of the hull, while the nose wheel draws back into a hatch in the bow. A single lever operates the extension and retraction of all wheels in sequence by hydraulic pump power or in case of emergency by hand.

The addition of this feature has in no way effected the perfectly developed characteristics of the original design, but has incorporated many advantages. It eliminated a beaching crew, for the ship can now climb the ramp under its own power. In rough sea water it acts as a sea anchor and assists in controlling the ship, allowing more engine power to be applied without undue acceleration, and lessening the tendency for skidding on the water. On land, the ship's tendency in a side landing is straightened out by it. All these facts go together in making this new ship not only the largest but the most successful amphibian in the world.

Aviation Nomenclature

To many on the outside, and even those in the Navy who are not connected with aviation, the names of the various aviation squadrons are nothing but a mass of jumbled numerals. However, each letter or numeral has its particular meaning either to designate the different squadron, the type of aircraft, its manufacture and model, or the plane's primary duty.

On all the Navy planes the letter "V" is sure to be found; this indicates that it is in a heavier than air squadron. The description letter for the type of squadron comes next: "P" for patrol, "B" for bombing, "S" for scouting, "X" for experimental planes, and many other code letters. Then will follow the squadron number for distinction between squadrons of the same class.

However, this is not sufficient to distinguish between one plane and another in the same class, so a manufacturer's letter is added. For instance, we have "PB," which would be a patrol bomber, then to this is added a "Y"—"PBY" would be a patrol bomber manufactured by the Consolidated Aircraft Company. In like manner "M" would be Martin Company, etc.

But because of constant improvement made on each design of the same ships, another numeral must be added to denote the edition, as it were, or the modification of that type, making "PBY-4" the fourth modification of the "PBY."

But if a radical change is made in the type of plane, a numeral is inserted before the maker's initial.

Log 3-15-40

---

ircraft Industry Series—Consolidated

The Wall St. Journal 12/9/40

-an Diego Company Achieves 'Line' roduction on Giant Airplanes

tinues to Increase Its Floor Space — Has $320,000,000 n Unfilled Orders

ircraft manufacturers currently are ged in the most spectacular program pansion ever undertaken in the indus- history of this nation.

o obtain a first hand picture of this ram — the progress, triumphs, and bles,—The Wall Street Journals avia- editor, Gaston E. Marque, currently is king a survey of vital units in the in- try. He is inspecting plants, interview- top executives, not only of plane and ine manufacturers, but of leading sup- rs of parts, accessories and instruments. His findings are being reported in a ser- of articles, of which the following is the th.

By Gaston E. Marque

AN DIEGO, Cal.—This is the home of the gts of the air.

n its immense plant adjacent to Lindbergh on San Diego Bay, Consolidated Aircraft is turning out huge flying boats and anes weighing from 27,000 to 65,000 s and costing upward of $200,000 each.

nsolidated always has specialized in build- arge airplanes. The company claims the ction of having built, sinces its inception in four times as many ships with a wing of 100 feet or more as all other United es aircraft manufacturers combined.

tour through its plant impresses on the or the fact that the company deals reat size. Huge mechanical and hydraulic es, including one of 4,500 tons, large hy- ic drop hammers and hulls for the twin- ed PBY patrol bomber lined up 50 strong final assembly line, all convey the idea at size.

Much Work Outside

d while the company is turning out only airplanes it appears to have made about ch progress toward attaining line produc- almost any other unit in the industry. pearance of confusion in so many of the t plants today, resulting from the con- earrangement going on as new facili- e added in the course of preparing for ction in larger volume than ever before, to be lacking in Consolidated's plant.

One reason for that probably is the fact that while most companies are just getting into production on entirely new models Consolidated is turning out an airplane, the PBY, which is much similar to that it has been manufacturing for several years. Furthermore the climate in San Diego is such that the company can do a substantial part of its final assembly work outdoors the year around. Consequently when its ships reach the cumbersome stage they can be moved out to paved areas alongside the plant where big parts are fitted and the finishing touches put on the interior.

Consolidated has a further advantage in that its plant is relatively new, the first unit built only five years ago. As a result its original plant incorporated some of the more modern ideas in arrangement and was so designed as to allow orderly expansion.

Backlog of $320,000,000

When Consolidated transferred its activities to this city from Buffalo, N. Y. in 1935 it had about $6,000,000 of business on its books. It started operations with some 300 employes in a plant containing roundly 200,000 square feet of floor space. Today the company has an order backlog of approximately $320,000,000 and by February 1 next year expects to have roughly 1,500,000 square feet of covered floor area, plus a substantial paved but uncovered area suitable for final assembly work, and between 15,000 and 16,000 employes. This, however, will not complete Consolidated's expansion program.

The company is announcing today a $7,000,000 addition which will approximately double its present floor area. So far Consolidated has financed its own expansion, having previously spent or committed itself to spend this year approximately $6,000,000 for enlargement of manufacturing facilities. The latest addition, however, it is understood will be financed by the government and leased by the company.

The new addition, according to present plans, will be devoted to the manufacture of parts and minor assemblies with existing facilities turned almost entirely to final assembly work. This does not mean, however, that Consolidated is not planning to sub-contract some of its work. It is already doing considerable subcontracting and plans to do more as it swings into increased production on its present orders.

Deliveries Show Little Gain

Although Consolidated has greatly enlarged its plant this year and increased the number on its payroll from about 3,200 on January 1, to almost 14,000 at present, its deliveries for 1940 probably will show relatively little improvement over last year when its shipments aggregated a little more than $3,600,000. This because, through most of the year, the company has been engaged principally in tooling up for production in increased volume and in turning out parts and sub-assemblies. Furthermore its deliveries have been held up somewhat by the failure of at least one sub-contractor to make deliveries on schedule and the inability to get engines in numbers required. As a result Consolidated today has an estimated $25,000,000 worth of parts and planes in various stages of production which should begin flowing off the final assembly line in steadily increasing numbers from now out.

On the basis of the present schedule deliveries from existing facilities, against contracts now on the books, should attain their peak around March or April. The latest addition should be completed by about June 1 and reach its peak employment of roughly 12,000 by November of next year.

Consolidated currently is working two 10-hour shifts five days a week. Like most other manufacturers it could undoubtedly enlarge its output by either working an additional day or adding another shift. This, however, has not proved feasible as yet as production of the airframe manufacturers naturally must be geared to that of their suppliers and sub-contractors, as well as that of the engine producers.

Making Flying Boats for British

At this time Consolidated is in production on three models but actually making deliveries in any quantity on only one type. It is manufacturing a twin-engined flying boat for the Navy and the British, a four-engined flying boat, the PB2Y, for the Navy, and a four-engined land bomber, the model 32 or B-24, for the Army and British. This bomber, the prototype of which was first flown in 1939, marks Consolidated's return to the landplane field. It is a high-wing ship, with a tri-cycle landing gear, which, according to available information, has a speed of over 300 miles per hour, a range of approximately 3,000 miles and a bomb-carrying capacity of approximately four tons.

Consolidated's $320,000,000 backlog which, incidentally, is equivalent to more than five times its aggregate deliveries for the past 17 years, includes about $80,000,000 of foreign business. Approximately $100,000,000 of the total was obtained on cost plus fixed fee contracts while the balance was taken on a fixed price basis.

No estimate of probable earnings results for 1940 can be made at this time because actual deliveries this month, which cannot be forecast accurately as yet, will have an important bearing on the final showing. Last year Consolidated earned $1,104,327, equal after preferred dividends, to $1.79 a share on the common. Indications are the excess profits tax will be quite burdensome to the company. Whether it will choose the average earnings or return on invested capital method for determining its excess profits tax exemption is not quite clear as yet as its credit under either bases would be approximately the same or roundly $850,000.

Wings for the Fleet

T. N. SANDIFER

cation facilities, its cordon of lifeboats and light stations at all strategic points, all manned by trained personnel, the Coast Guard becomes an important and essential adjunct of the Navy."

While a major portion of the national defense allotment is earmarked for surface craft and other conversions, aviation is an important branch of Coast Guard activities, dating from 1916. This Service has just placed in commission a Coast Guard Air Station at Elizabeth City, N. C., at a cost of $1,163,361, the latest of a series of coastal stations.

The Elizabeth City air station is the first one owned by this Service to have its own fully equipped airport. The station reservation comprises 294 acres, with a frontage of 4,250 feet on deep water, the barracks building and hangar both located near this water.

Buildings are of concrete throughout. The airport has complete lighting equipment, with two floodlights at each end of the four runways. The latter are 3,000 feet long, except one, which is 3,420 feet, and all are 100 feet wide, with all runways and taxiways of concrete. The whole

CAPT. L. T. CHALKER

Assistant Chief, Division of Operations, U. S. Coast Guard

THIS WING OF THE COAST GUARD has made rapid strides in the past five years, having eight modern air stations, with two more to be completed during 1940. Its complement of modern aircraft includes 10 long-range twin-engine patrol seaplanes; 16 intermediate range twin-engine amphibians; 15 inshore patrol, single-engine planes, and nine special types of other planes. In addition five twin-engined seaplanes, to have a cruising range of 2,000 miles, are under construction.

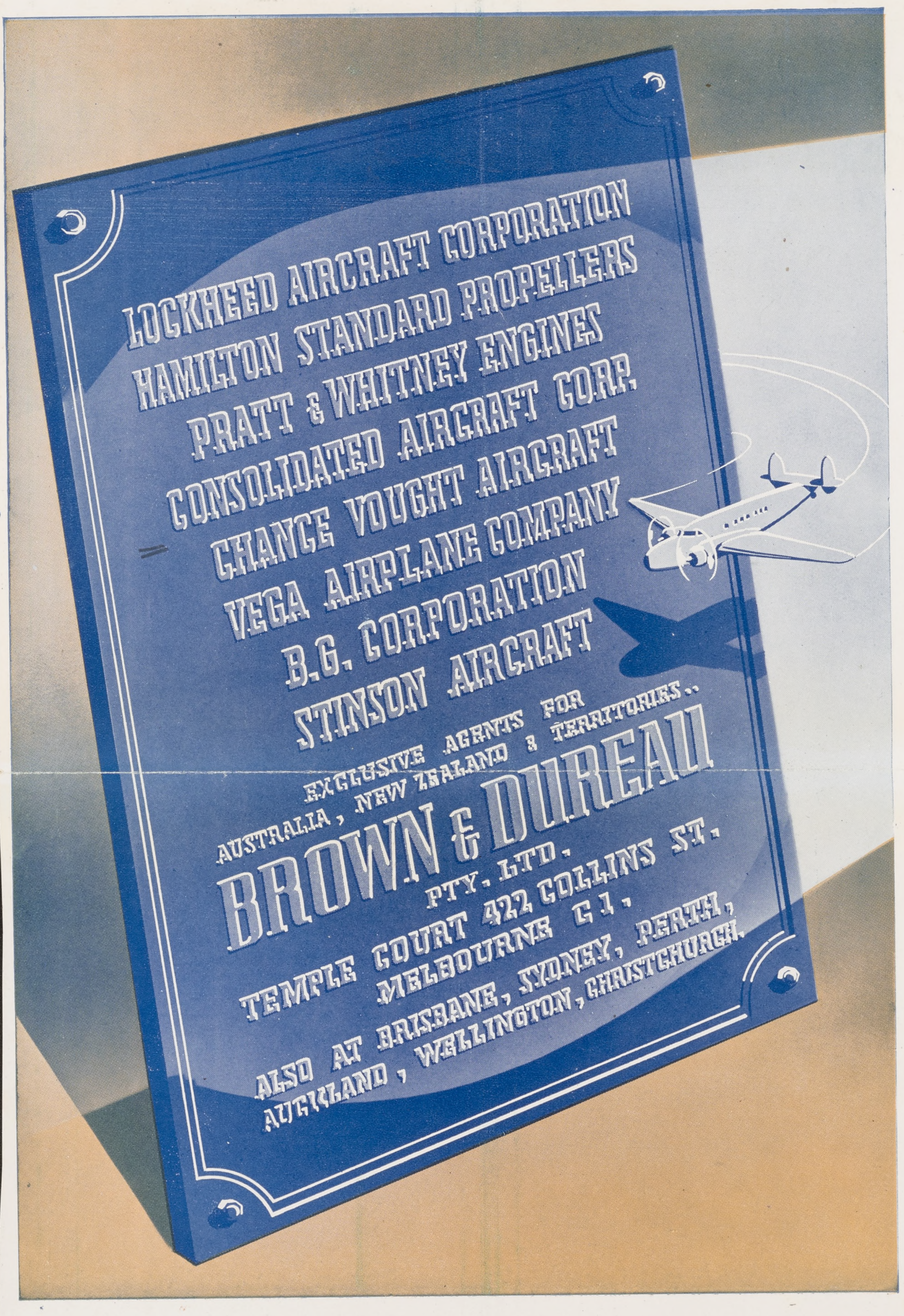
The flying boats used by this service are all designed especially for landing offshore, frequently in stormy or rough water, and many of its officers and men

The Coast Guard air unit today numbers 42 commissioned officers and 22 warrant officers, with 399 enlisted men. This wing is trained for service as a part of the Navy in war, to which service also the whole Coast Guard adverts. It is with this possibility in mind that its preparations are now being made.

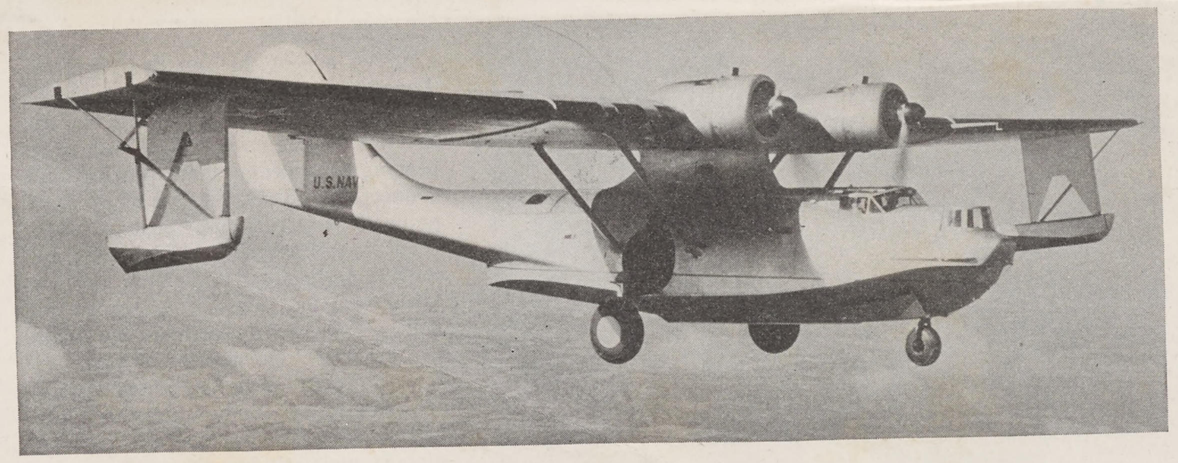
Conversion of its surface vessels will include enlargement of armament and ammunition storage space; installation of guns, depth charge racks and Y-guns, underwater sound detection apparatus, anti-aircraft range finders, searchlights for signaling and aircraft detection, mounting of anti-aircraft guns, and so on.

During 1941 the Coast Guard plans to add 2,500 men to its ranks, and a total of 5,000 in the next two years. This will give the Service approximately 20,000 men eventually. The new men will be recruited and trained at the rate of 400 a month over a period of seven months.

The motto of the Coast Guard is *Semper Paratus* (always ready) and it looks as if any new emergency will find this true of the Service now, as in wars past.



LOCKHEED AIRCRAFT CORPORATION
HAMILTON STANDARD PROPELLERS
PRATT & WHITNEY ENGINES
CONSOLIDATED AIRCRAFT CORP.
CHANCE VOUGHT AIRCRAFT
VEGA AIRPLANE COMPANY
B.G. CORPORATION
STINSON AIRCRAFT
EXCLUSIVE AGENTS FOR
AUSTRALIA, NEW ZEALAND & TERRITORIES..
BROWN & DUREAU
PTY. LTD.
TEMPLE COURT 422 COLLINS ST.,
MELBOURNE C.1.
ALSO AT BRISBANE, SYDNEY, PERTH,
AUCKLAND, WELLINGTON, CHRISTCHURCH.



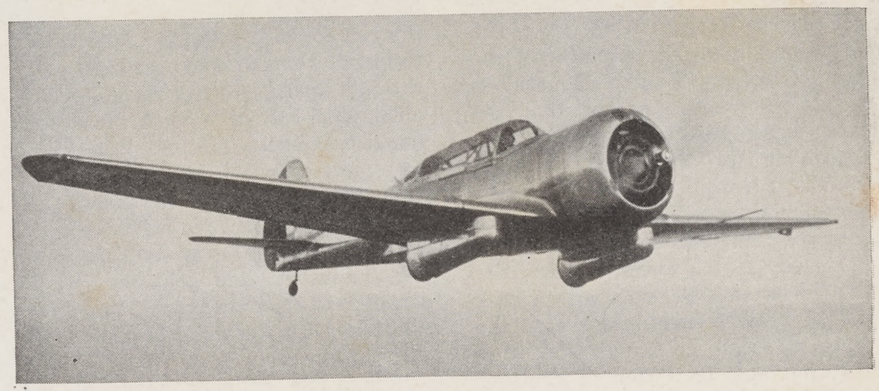
CONSOLIDATED Amphibian

THE latest achievement of the Consolidated Aircraft Corporation is the building of the world's largest amphibian, the Model 28-5A, or as designated by the Navy, the XPBY-5A. The new amphibian is basically the familiar Model 28 twin engine flying boat, better known by its Navy designation, PBY. The change was accomplished chiefly by the addition of a tricycle landing gear which is fully retractable. The side wheels and supporting mechanism, complete with oleo shock struts, retract into wells in the side of the hull. The nose wheel in the retracted position is completely closed over by automatically operated hatches so that no resistance to planing is encountered. All three wheels are operated by a central hydraulic power drive, which handles all the necessary operations in sequence automatically and both the extension and retraction of the gear is controlled by a single lever. Hydraulic pump power is obtained either from the main power plant or from an auxiliary engine, but hand operation is possible, if necessary.

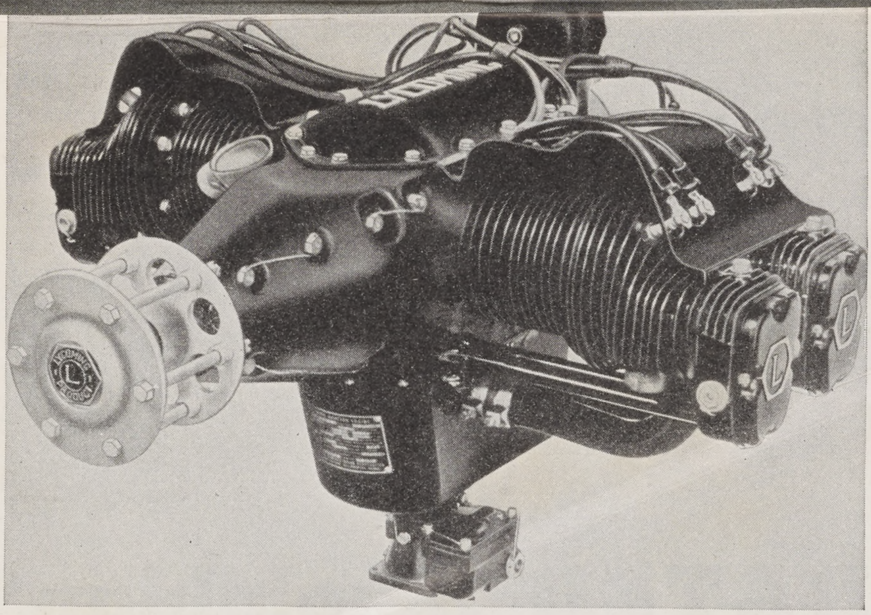
The landing gear has a number of advantages in addition to the obvious one of greatly extending the scope of utility for the Model 28. For rough water taxiing the extended gear greatly assists in control by serving as a sea anchor. More engine power may be applied for short turns without undue acceleration, and turns on the water may be accomplished with far less skidding. Naturally, all danger of scraping the keel on the ramp is eliminated, and no beaching crew is required, for the ship can climb a ramp or beach under its own power. It may operate from sand beaches with no special ramps or facilities for handling.

Since the side wheels are above water when the ship rises on the step, and since automatic means are provided for expelling water from the closed bow wheel hatch before the plane is in the air, the flying trim remains unaffected. Repairs or routine servicing to the landing gear may be made with a minimum of trouble. The beaching gear lugs of the Model 28 have been retained, so that a standard beaching gear may be attached and the plane run out of water. This lifts the landing gear clear of the ground so that any servicing may be carried out.

CURTISS Falcon Trainer



Designed specifically for the training of "fighting pilots" the new, all-metal Curtiss Falcon 22 two-place basic combat and all purpose trainer has been contracted for by a foreign government. The plane has just completed flight tests and while no details concerning its performance are available, it is powered by a Wright Whirlwind 9-cylinder engine, incorporates a wing of special design which provides greatly improved stall and spin characteristics and is equipped with retractable landing gear. Provision has been made for all types of training activities, including gunnery, bombing and instrument flying. This ship is smaller than the well-known Curtiss Hawk 75A pursuit but incorporates the latest in structural design. The wing is of the full-centilever type and is all metal with multiple spars, having an internal structure of longitudinal stiffiners, shear spars and fore and aft bulkheads which are riveted to the skin; and is constructed in five separate units. The center panel contains two fuel tanks with a total capacity of 68 gallons, are located near the center line.



Lycoming Geared 75 h.p. Engine

LAUNCHING into a new field the Lycoming Division of Aviation Manufacturing Corporation announce a geared 75 h.p. engine. The new engine, of the Model GO-145-C series, has four air cooled horizontally opposed cylinders, and like geared engines of higher horsepower uses dynamic dampers. It follows the same basic design as the 0-145 50, to 75 h.p. engines with the addition of the reduction gear. Engine demensions are also the same except that the geared engine is 4.70 inches longer to provide for the reduction gear which is a straight spur gear type of internal ring gear and pinion housed entirely within the crankcase.

The GO-145-C series engines develop 75 h.p. at 3200 rpm with a gear ratio of 27:17 which means that the propeller speed at rated power is 2015 rpm and 1825 rpm at cruising permitting maximum propeller efficiency by allowing the use of a larger diameter high torque propeller. The spur gear type of internal ring gear and pinion permits clockwise rotation of both propeller and crankshaft while the center line of the propeller is only $\frac{7}{8}$ inches below the center line of the crankshaft. The propeller shaft, which has the rear half of the propeller flange and ring gear forged integral, is supported by a long steel backed copper lead-lined bearing and the propeller thrust can be taken on the integral flanges on both ends of this bearing for either tractor or pusher type of installation.

Rigid crankcase construction is assured through the use of an integral semi-steel crankcase and cylinder block which is split vertically through the center, with a ground joint metal-to-metal contact and secured using through bolts. It has three replaceable steel-backed copper lead-lined main bearings. The crankshaft is a one piece nitrided forged alloy steel shaft provided with four throws and equipped with dynamic balancers. The reduction pinion gear is shrunk on the crankshaft and held securely by a nut and lockwasher. The crankshaft is both dynamically and statically balanced.

Removable cylinder heads of cast aluminum are attached to the cylinder barrels by studs and nuts. Copper-asbestos gaskets are used between cylinder head and barrel and exhaust ports extend vertically downward providing maximum visibility and ease of cowling.

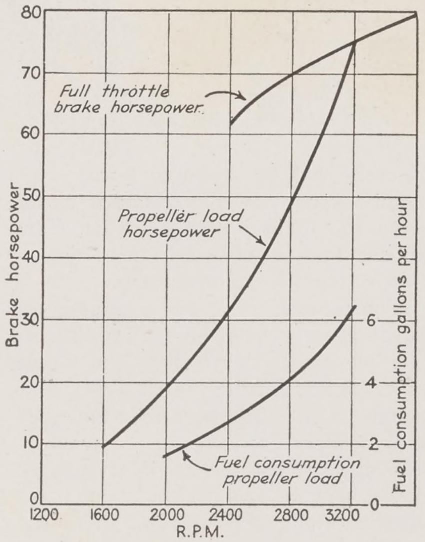
Pistons of cast Lo-Ex aluminum alloy are machined for two compression rings, one oil regulating ring and one oil scraper ring. They operate in cast semi-steel heat treated bores. Piston pins are of the full floating type. The engine is wet sump type with Oil being forced through the cam shaft to all cam bearings, crankshaft main bearings, propeller shaft bearing and connecting rod bearings by a gear type pump driven from the camshaft. The crankshaft has centrifugal sludge removers and pistons and piston pins are lubricated by splash. A screen oil baffle is provided between the main crankcase sections and the oil pan.

The valve gear is automatically lubricated by using gravity feed engine oil. The mechanism is completely enclosed, but the rockers may be reached through removable covers on the cylinder heads.

73 octane fuel is recommended in all models. Fuel consumption is .50 lbs./BHP/Hr. at cruising, and oil consumption is .010 lbs./BHP/Hr. Dry weight of single ignition models is 181 lbs. (shipping weight 227 lbs.) Baffles and propeller hub attaching parts are 6.03 lbs. additional.

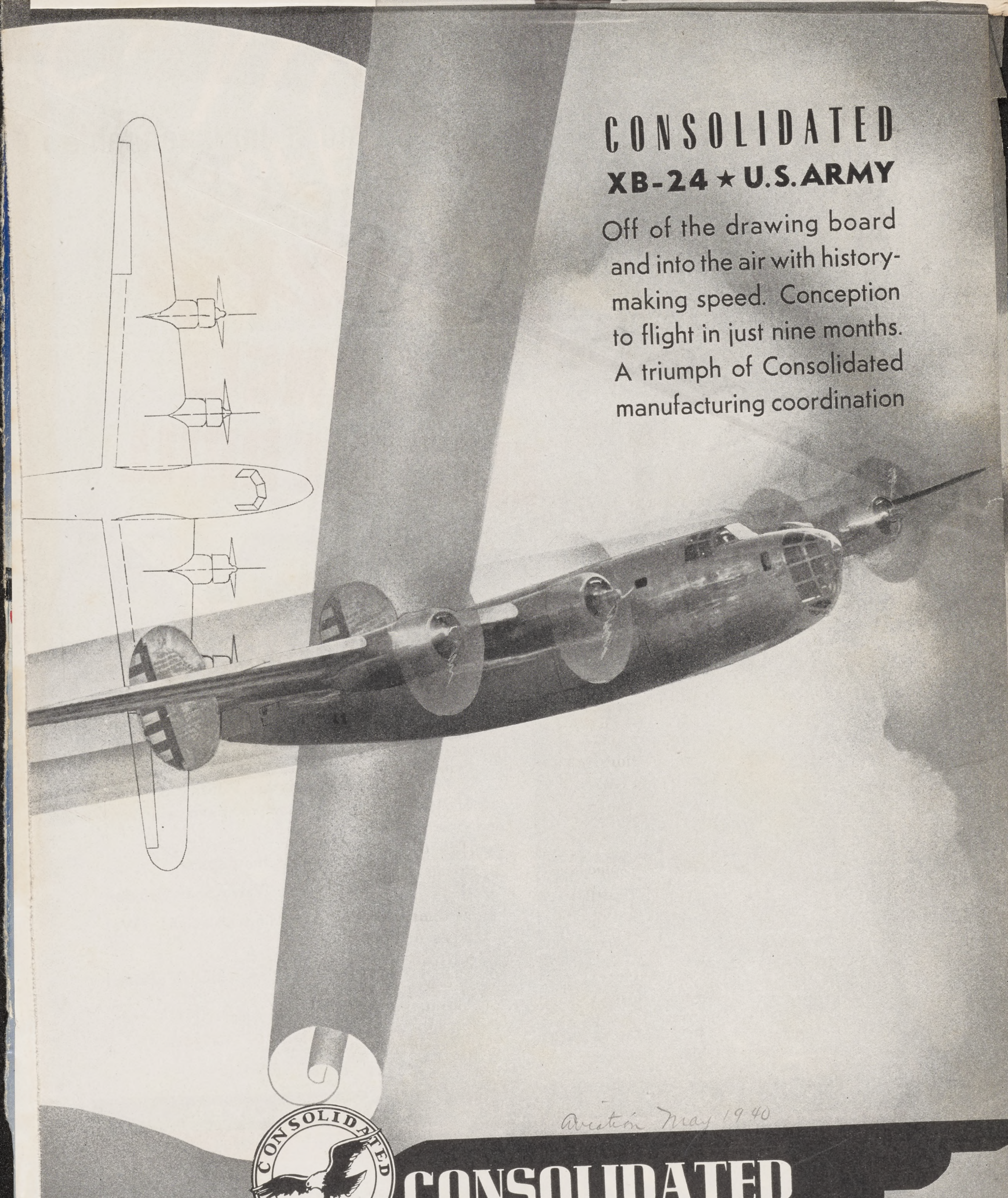
Specifications

	GO-145-C1
Bore	3.625 in.
Stroke	3.50 in.
Displacement	144.5 cu.in.
Height (Incl. carburetor)	20.59 in.
Width	29.56 in.
Length	28.44 in.
Compression Ratio	6.5:1
Weight—Dry	181 lbs.
Rated Horsepower	75
Engine R.P.M.	3200
Reduction Gear Ratio	27:17
Propeller R.P.M.	2015



Performance curves of the geared Lycoming 75 h.p. motor of the model GO-145 series using 73 Octane fuel, 28 spark advance for the model C1 and 25 for the C2 and C3.

ton pins are of the full floating type.



CONSOLIDATED

XB-24 ★ U.S. ARMY

Off of the drawing board and into the air with history-making speed. Conception to flight in just nine months. A triumph of Consolidated manufacturing coordination

Aviation May 1940

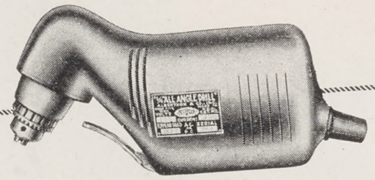
CONSOLIDATED
AIRCRAFT CORPORATION
San Diego • • EST. 1923

NORTHWEST AIRLINES, INC., Find It Indispensable

Sioux 1/4"

ALL ANGLE ELECTRIC DRILL

Photos taken under actual working conditions — courtesy Northwest Airlines, Inc



L. E. Koerner, Sup't. of ship overhaul at the Northwest Airlines says: "The handiness and adaptability of your SIOUX All Angle Drill enables us to gain access to hitherto inaccessible places. We are well pleased with this handy tool."

All branches of the Aviation Industry are finding SIOUX Tools the short-cut to speed, efficiency and precision.

SIOUX Aircraft Tools include the popular

SIOUX Aircraft Dual Action Valve Seat Grinder;

SIOUX Valve Face Grinding Machine Wet Grinder;

SIOUX Electric Drills, all sizes; SIOUX Phenol Abrasive Discs, etc.

Write for full information

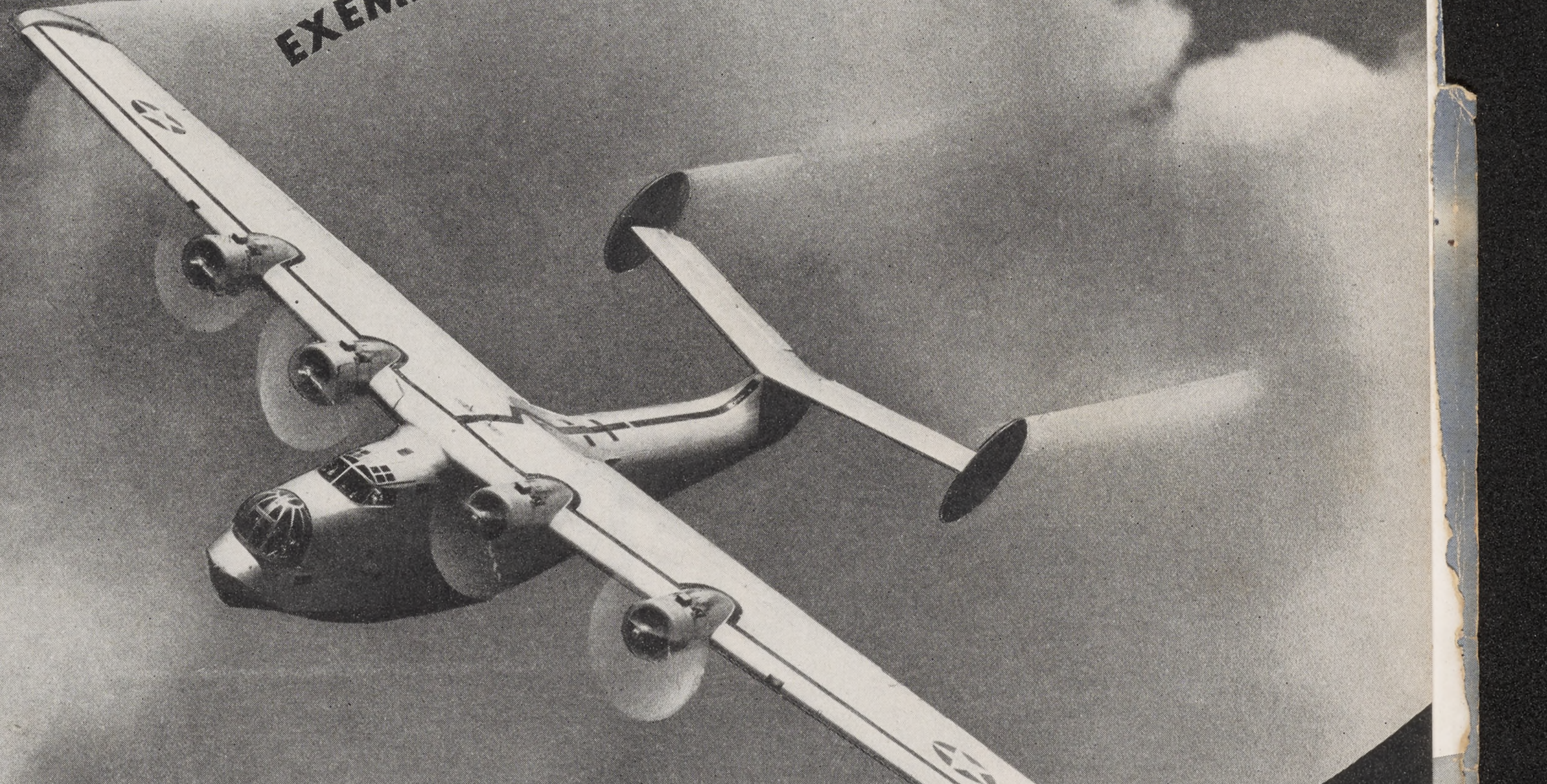
STANDARD THE WORLD OVER

ALBERTSON & CO., INC. SIOUX TOOLS **SIOUX CITY, IOWA, U. S. A.**

More

SPEED
RANGE
STRIKING POWER

AMERICA'S BEST DEFENSE
EXEMPLIFIED BY PB2Y-1



CONSOLIDATED
AIRCRAFT CORPORATION
SAN DIEGO, CALIFORNIA · ESTABLISHED 1923

Aviation March/40

EVERYTHING NEW

EXT. ANT.
SWITCH
PHONES
VOLUME
BATT
AC-DC

THE NEW LEARADIO TRI-POWR PORTABLE FEATURES OPERATION ON AC, DC, AND BATTERY

—JUST FLIP A SWITCH!

- *Fly the beam*
- *Find yourself when you are lost*
- *Get the weather ahead as you fly*
- *Get the weather before you fly*
- *Get landing okay at terminal airports*
- *Plug into any AC or DC outlet and save your batteries*
- *Hear your favorite program on the high-fidelity loudspeaker*
- *Use it as a marine direction finder*
- *Use it in your plane—use it at home—use it out-of-doors—use it anywhere*

SAME PRICE

LEARADIO TRI-POWR PORTABLE

$39.50

COMPLETE WITH BATTERIES $5.50 ADDITIONAL FOR SPECIAL LEARADIO HEADPHONES

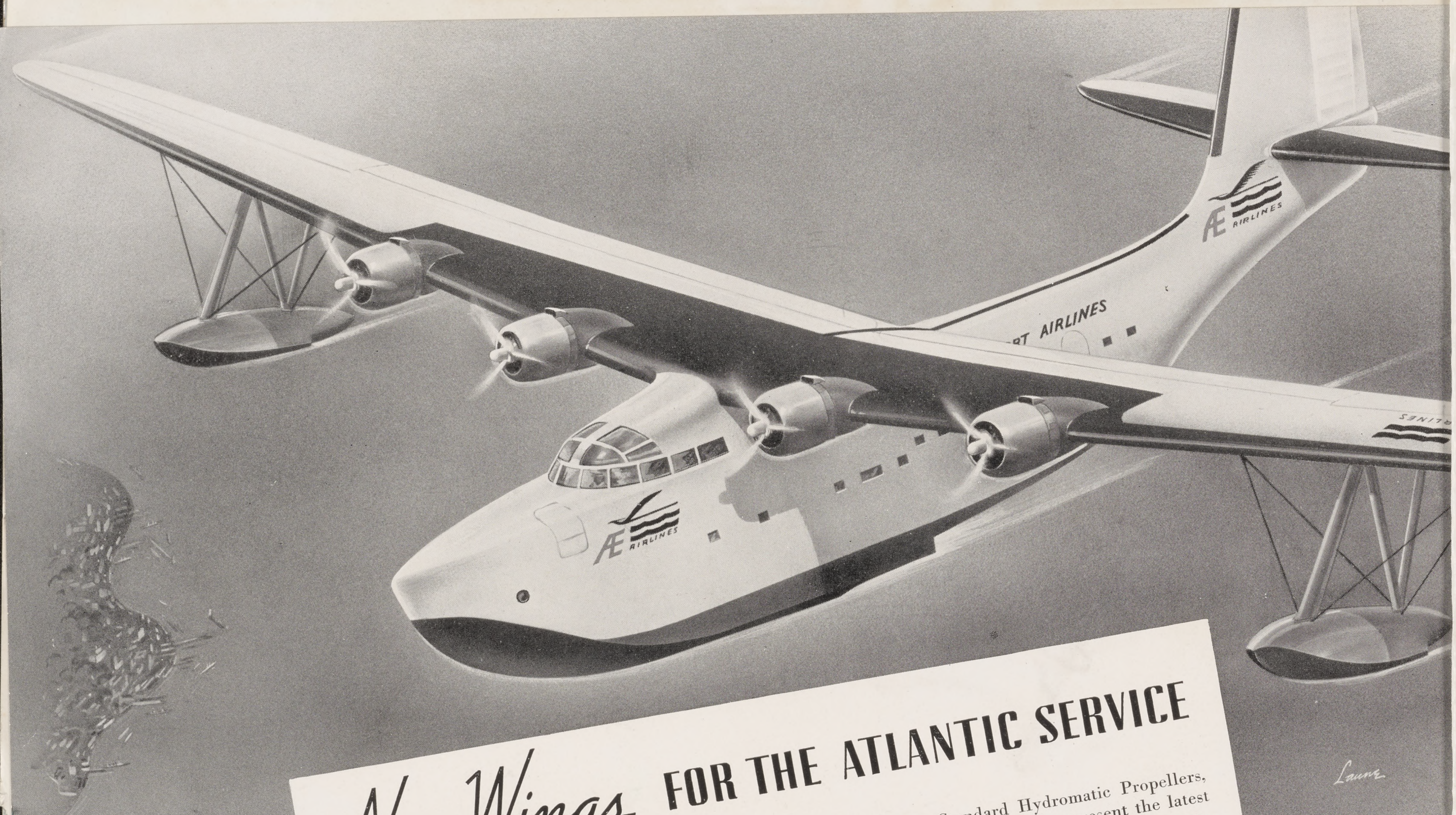
FAITHFUL friend and constant companion of thousands of pilots everywhere, the famous Learadio Portable APR-1 is now *reborn* as the Learadio Tri-Powr!

But this means more than a new name—it means a completely new instrument! New AC-DC operation. New longer life batteries. New power output. New sensitivity. New fidelity. New tone quality. New tuning dial. New circuits. *Everything* new but the price!

The Tri-Powr Portable is truly a universal receiver. Use it in the air or out-of-doors on its own battery power—or use it as much as you want indoors on any electrical outlet without running your batteries down.

Covers all radio ranges—all commercial broadcast frequencies. Weighs only 12½ pounds. Order a Tri-Powr today from your own dealer—or direct from our sales department.

LEAR AVIA, INC. *Roosevelt Field, Mineola, Long Island, New York · Factory: Dayton, Ohio*



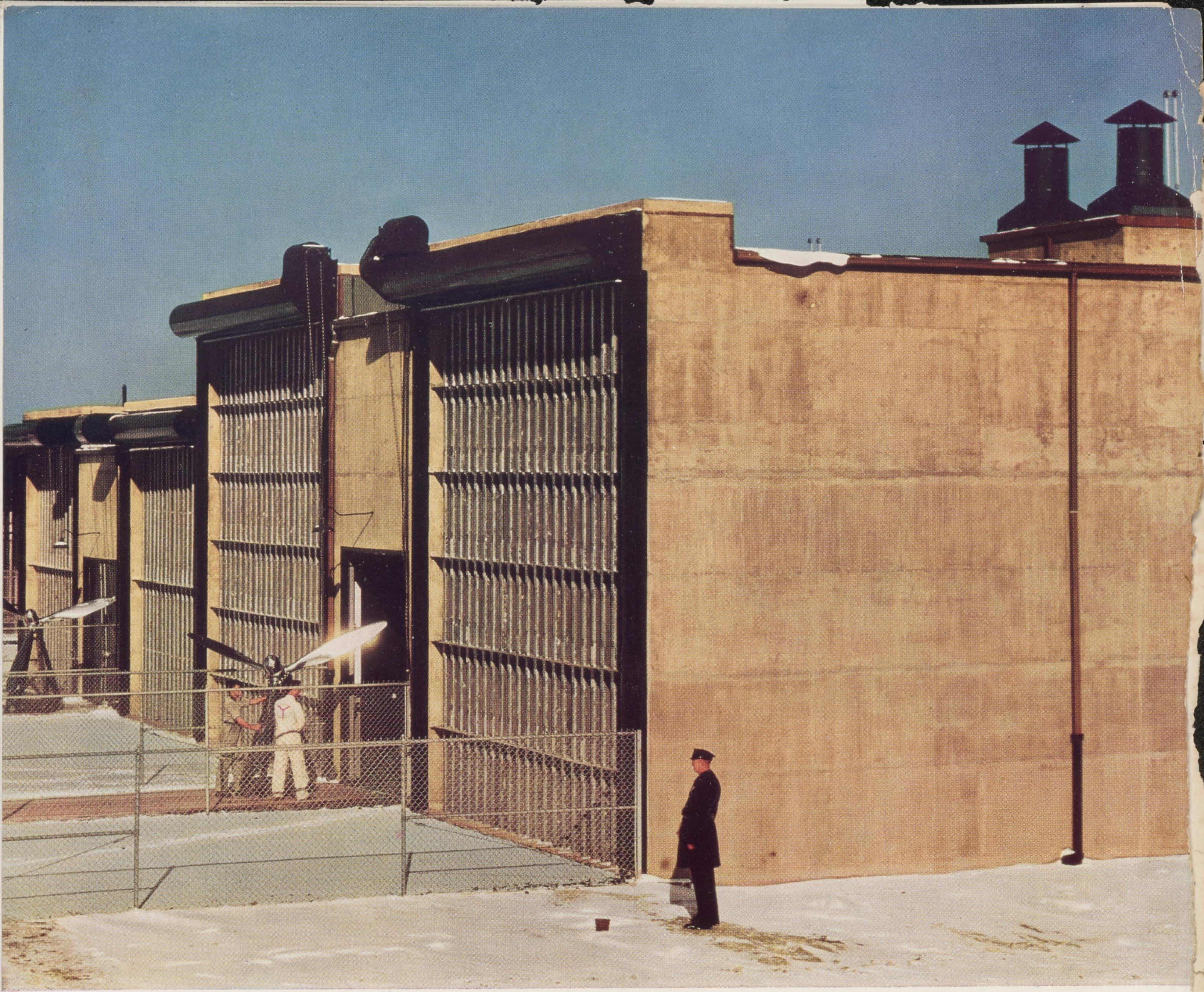
New Wings FOR THE ATLANTIC SERVICE

To assure its patrons luxury non-stop service in spanning the Atlantic, American Export Airlines has placed an initial order for three giant Vought-Sikorskys. Known as the VS-44-A, this new type embodies the sound engineering principles developed in its many pioneering predecessors . . . plus new standards of aeronautical performance and passenger comfort. Powered by four Pratt & Whitney Twin Wasp engines driving Hamilton Standard Hydromatic Propellers, these over-ocean transports will represent the latest word in luxury equipment for the transatlantic route.

VOUGHT-SIKORSKY AIRCRAFT

STRATFORD, CONNECTICUT
One of the three divisions of
UNITED AIRCRAFT CORPORATION

Aviation
March/1940

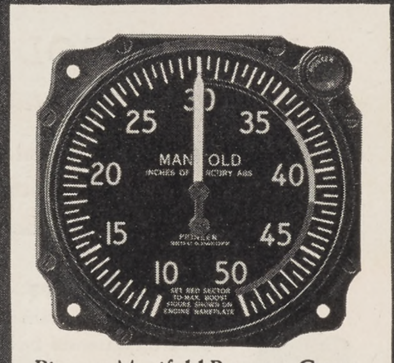


Assurance in Concrete

Within these walls is the largest and most complete group of propeller testing facilities in the world. Specially designed and solely used for propeller testing, these new laboratories will enable Hamilton Standard to test propellers for engines up to 5,000 horsepower!

Here, tomorrow's propellers are passing through the most rigorous tests that science can devise... assurance that the advancing requirements of performance and safety will find Hamilton Standard prepared to maintain its world-wide reputation for propeller achievement.

Instrument flying *presupposes* instrument accuracy


MANIFOLD
INCHES OF MERCURY ABS
PIONEER
SET RED SECTOR TO MAX. BOOST FIGURE SHOWN ON ENGINE NAMEPLATE

Pioneer Manifold Pressure Gauge

and PIONEER precision produces it!

Every increase in the purview of Instrument Flying makes the precision exercised in the manufacture of Pioneer Aircraft Instruments still more vitally important to every pilot.

The few devoted Pioneer craftsmen who began building these excellent instruments twenty years ago have been joined by a great many others, equally expert. The few Pioneer Instruments of 1919 have been followed, in steady procession by other and finer, more versatile, more sensitive units. The precision observed in their manufacture, too, has been steadily enhanced as Science contributed new and better means of inspection and control.

So you fly more surely, smoothly, safely . . . which is "all the reason in the world" for never relaxing Pioneer Precision.

Pioneer Precision covers every step in the operation of this modern plant. Here skilled Pioneer craftsmen work in controlled atmosphere, with equipment of the most advanced character.

PIONEER INSTRUMENT
DIVISION OF BENDIX AVIATION CORPORATION
Bendix, New Jersey, U. S. A.

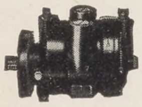
Even before the take-off... PESCO PRODUCTS *are already at work*

NC
14988
AMERICAN AIRLINES

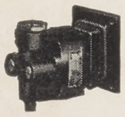
PESCO PRODUCTS
are approved universally

● Pesco Products are standard on private and military aircraft and on planes of major airlines the world over.

PESCO FUEL PUMPS—first to feature the diaphragm type relief valve—with pressure adjustment balanced to atmospheric conditions—now incorporating other developments for greater efficiency.



PESCO AIR PUMPS—designed for durability and superior performance—provide suction for flight instruments and pressure for De-Icers. Oil separators, relief, safety and check valves available for all types.



PESCO HYDRAULIC PUMPS—for both low and high pressure systems. Sizes and capacities for all requirements. A new model recently introduced features extremely high ratio of capacity to weight.

PESCO HYDRAULIC PRESSURE ACCUMULATOR—stores more than a gallon of fluid at pressures up to 2000 pounds per square inch for momentary application.

PESCO HYDRAULIC CYLINDERS—An increasingly large variety of designs has been developed for all types of applications. Available in a wide range of capacities for landing gear, flaps, etc.

● Three virtues . . . QUALITY . . PERFORMANCE . . RELIABILITY . . characterize each of the many Pesco Accessory Products participating daily in the activities of the nation's finest military and commercial aircraft. Many of these products are called into action with the first turn of the propeller, reassuring the pilot by instrument and gauge that his ship is perfectly primed for another successful take-off and flight.

PUMP ENGINEERING SERVICE CORPORATION
DIVISION BORG-WARNER CORPORATION
12910 TAFT AVENUE CLEVELAND, OHIO, U. S. A.

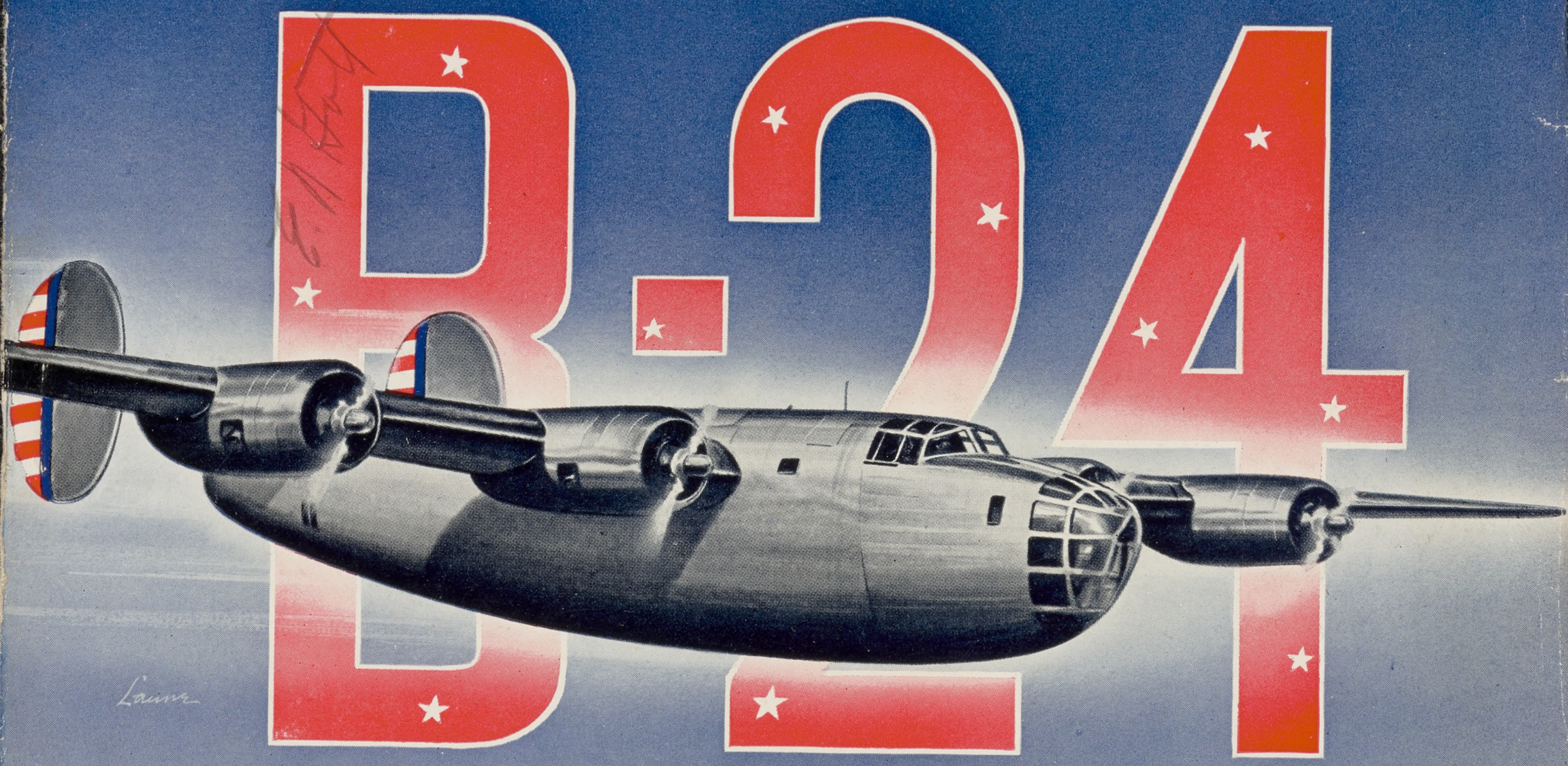
PESCO

McGraw-Hill Publishing Company, Inc. APRIL, 1940 Price 35c. per copy

AVIATION

The Oldest American Aeronautical Magazine

APR 3 - 1940



powered by Four Twin Wasps

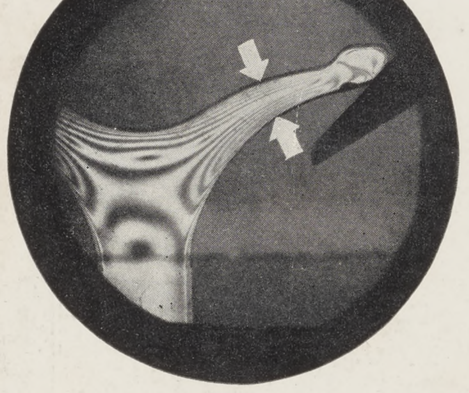
Into Army service goes another four-engined bombardment type, the Consolidated B-24. Weight: 20 tons. Range: 3000 miles. Speed: more than 300 M.P.H. Power: dependable Pratt & Whitney engines.

PRATT & WHITNEY AIRCRAFT
One of the three divisions of
UNITED AIRCRAFT CORPORATION
EAST HARTFORD, CONNECTICUT

PRATT & WHITNEY U.S.A. DEPENDABLE ENGINES

Fingerprinting VALVE STRESSES *with* POLARIZED LIGHT

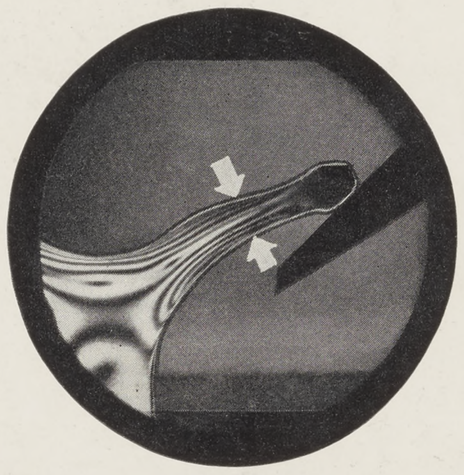
- The new science of photoelasticity which clearly reveals the location and degree of stresses in working metal, is employed by Thompson Products engineers to improve various aircraft engine parts. The photoelastic illustrations on this page are from a study of aircraft valve design made by the company's research department.



Above are two cross-sections, made of a plastic material, ¼-inch thick, of slightly different designs for an aircraft engine intake valve. The design at the right specified a greater thickness at the point shown by the arrows.

THOMPSON PRODUCTS, INC.
CLEVELAND • DETROIT

Under a polariscope, while subjected to identical loads (12.55 pounds, pulling downward on the stem ends) the plastic cross-section on the left reveals *five* stress patterns at the points of maximum strain, while the one at the right shows but *four.* The photoelastic comparison demonstrated with certainty that the slightly different design at the right will result in a valve materially stronger at the point of greatest stress under actual conditions of operation.



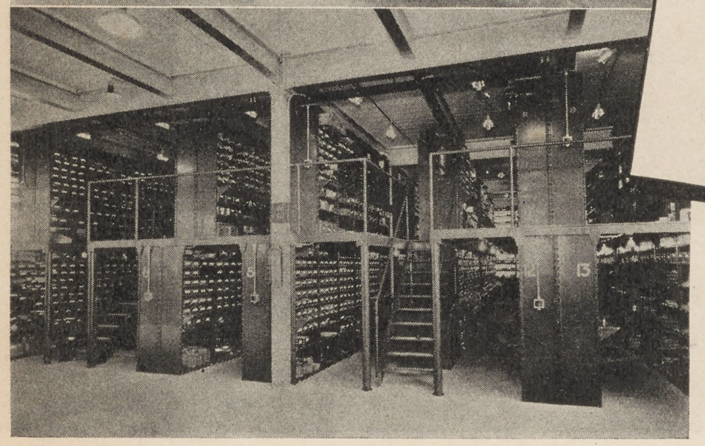
THOMPSON PRODUCTS, INC., MANUFACTURES OVER 1,000 AIRCRAFT ENGINE AND AIRPLANE PARTS, IN APPROXIMATELY 70 DIFFERENT CLASSIFICATIONS, INCLUDING VALVES, VALVE SEAT INSERTS, VALVE KEYS, VALVE SEATS, VALVE TAPPETS, FUEL PUMPS, PROPELLER PARTS, SHOCK ABSORBER PARTS, RETRACTABLE STRUT ASSEMBLIES AND LANDING GEAR ASSEMBLIES.

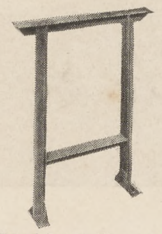
Thompson Products

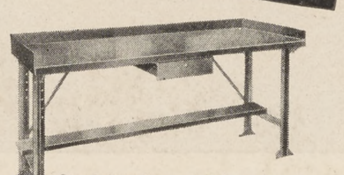
Aero Digest
11/40

CONSOLIDATED
Aircraft CORPORATION
SAN DIEGO ESTABLISHED 1923

Gets Extra Value From Available Storage Space with LYON Steel Storage Equipment



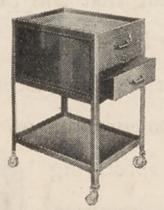

Bench Legs—Exceptionally sturdy construction. Permit attachment of tops, shelves and stringers at almost any desired location.


Steel Benches—Will not cut, splinter or become oil-soaked. Accessory parts include back end and stops, drawer, half or full depth shelves, or foot rest. Available in many sizes.

- When rapidly expanding production schedules on its famous flying boats, such as the PBY and the PB2Y, created the dual problem of providing increased material storage facilities while conserving all available floor space for manufacturing operations, Lyon Storage Engineers promptly provided a practical solution. By using the lower tier of rigid Standard Lyon Shelving to support a mezzanine floor, they doubled the capacity of the floor area devoted to storage.

A half century of experience in applying steel equipment to thousands of plant production and storage problems, qualifies Lyon to provide plans and equipment that will help any manufacturer save floor space, reduce cost and time of handling tools and materials, cut inventories and losses due to loss and damage of tools and stock. Mail coupon for full facts about Lyon's industry-proved Survey Service. LYON METAL PRODUCTS, INCORPORATED, (General Offices) Aurora, Illinois.

District and Sales Offices in All Major Cities


Portable Tool Stands—Can be loaded with tools and parts and taken anywhere in the plant. Top has flanged edges to prevent tools falling off.

Other *Lyon* Favorites
- Bar Racks
- Shop Desks
- Tool Trays
- Tool Storage Inserts
- Tool Cabinets
- Shop Boxes

LYON METAL PRODUCTS, INCORPORATED
5911 River Street, Aurora, Illinois

Send full particulars on items checked:
☐ Lyon Storage Survey Service; ☐ Steel Benches; ☐ Steel Bench Legs; ☐ Bar Racks; ☐ Tool Stands; ☐ Shop Boxes; ☐ Toolroom Equipment.

*Name*__________
*Address*__________
*City*__________
*State*__________

LYON SHOP EQUIPMENT *Service*
LYON METAL PRODUCTS, INCORPORATED, Aurora, Illinois

---

three sections. Ailerons are fabric covered, fully counterweighted, tab trimmed. Empennage is of all metal construction, skin stressed and full cantilever with dual fins and rudders mounted on the stabilizer tips. Movable surfaces are covered with fabric.

High wing, all-metal plane with full cantilever wing

tricycle type with a single wheel forward and two main wheels below the wing. Forward wheel retracts into the nose, while the main wheels retract into wing wells.

Armament—Not released for publication.

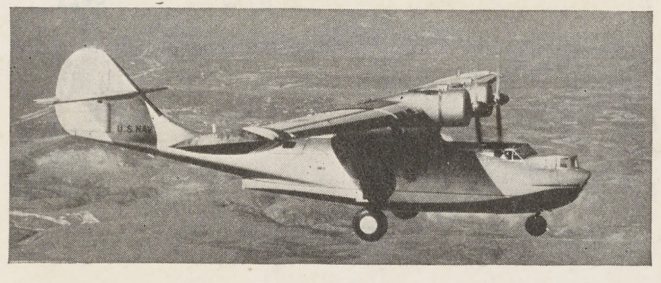
CONSOLIDATED MODEL 28 Patrol Bomber
(5/9-place)

Specifications—(Flying boat and amphibian data in that order—Span 104 ft., length 65 ft. 1.75 in.; height 17 ft. 11 in. and 19 ft. 8.87 in.; wing area 1,400 sq. ft.; wing loading 19.3 lb./sq. ft. and 19.6 lb./sq. ft.; power loading 11.3 lb. and 11.4 lb./h.p.; gross weight (normal), 27,000 lb. and 27,413 lb. (provisional) 30,500.

Performance — Max. speed at 7,800 ft. 199 m.p.h.; cruising speed at 7,800 ft. on 75% power 179 m.p.h.; landing speed 69 m.p.h.; service ceiling 24,000 ft.; absolute ceiling 25,700 ft.; rate of climb at sea level 920 ft. per min.; maximum range 4,000 miles.

Engines—Two Pratt & Whitney Twin Wasp R-1830-S1C3-G; 1,200 h.p. at 2,700 r.p.m. at take-off, 1,050 h.p. at 2,550 r.p.m. at 7,800 ft.; constant speed propellers.

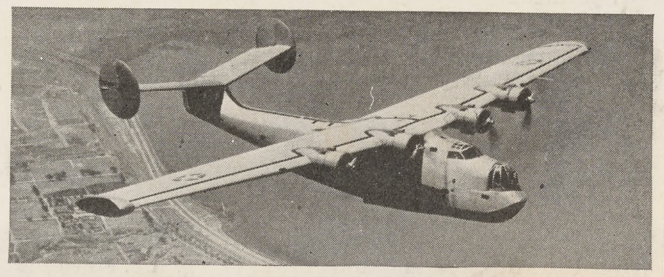
Construction—Hull: monocoque; aluminum alloy construction. Wing: stressed skin aluminum alloy; integral fuel tank in centre section; fabric covered ailerons and trailing edge; attached to hull by streamlined superstructure, braced with four struts. Retractable wing-tip floats. Tail: cantilever all metal, fabric covered movable surfaces. Amphibian only: retractable tricycle landing gear, hydraulically operated; main wheels into wells in fuselage, nose wheel into hull covered with doors.



Armament—Gun pits are installed in nose and rear fuselage; bomb installation provided.

CONSOLIDATED MODEL 29 Patrol Bomber

This four-engined long-range flying boat is a monoplane patrol bomber, not equipped for descent upon land. It has made a non-stop flight from San Diego to Washington, D.C., in 13 hours, and also a non-stop return flight over the some route. Further information is awaiting release by the U. S. Navy Department. It is known as the Model 29 or the Model XPB2Y-1 Patrol Bomber.



"LAND · AIR · WATER"
AUTOMOTIVE INDUSTRIES
Further Emphasizes Aeronautics

Beginning with the December 15th issue, AUTOMOTIVE INDUSTRIES will place additional emphasis on aeronautics—covering manufacturing, production, materials, design, etc. This will be a regular monthly feature, appearing in the issues of the 15th. It will be clearly identified as an airplane section of the editorial pages—a section with great reader interest, and a feature with important advertising appeal.

Penetrates Into Automotive Plants Where Buying Originates

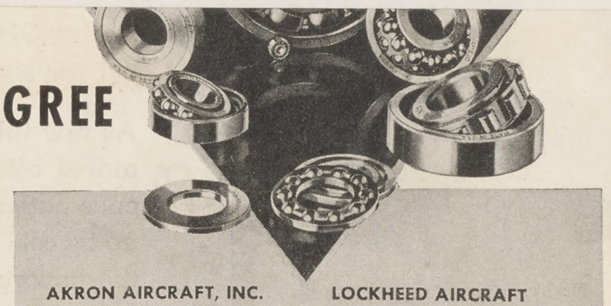
AUTOMOTIVE INDUSTRIES reaches the buyers in all the leading automotive plants. In the production of complete vehicles, parts, engines, bodies, tractors, trailers, plant equipment, airplanes and other national defense products its readers exert a tremendous influence. Their endorsement of your service is so important that its presentation to them through the advertising pages of AUTOMOTIVE INDUSTRIES is considered by many leading companies as essential.

AUTOMOTIVE INDUSTRIES
A CHILTON Publication
Chestnut and 56th Streets, Philadelphia, Pa.

..but AIRCRAFT BUILDERS AGREE IN THEIR ENDORSEMENT OF
"NORMA-HOFFMANN"
PRECISION BEARINGS

"WHERE THE BEARINGS MUST NOT FAIL"

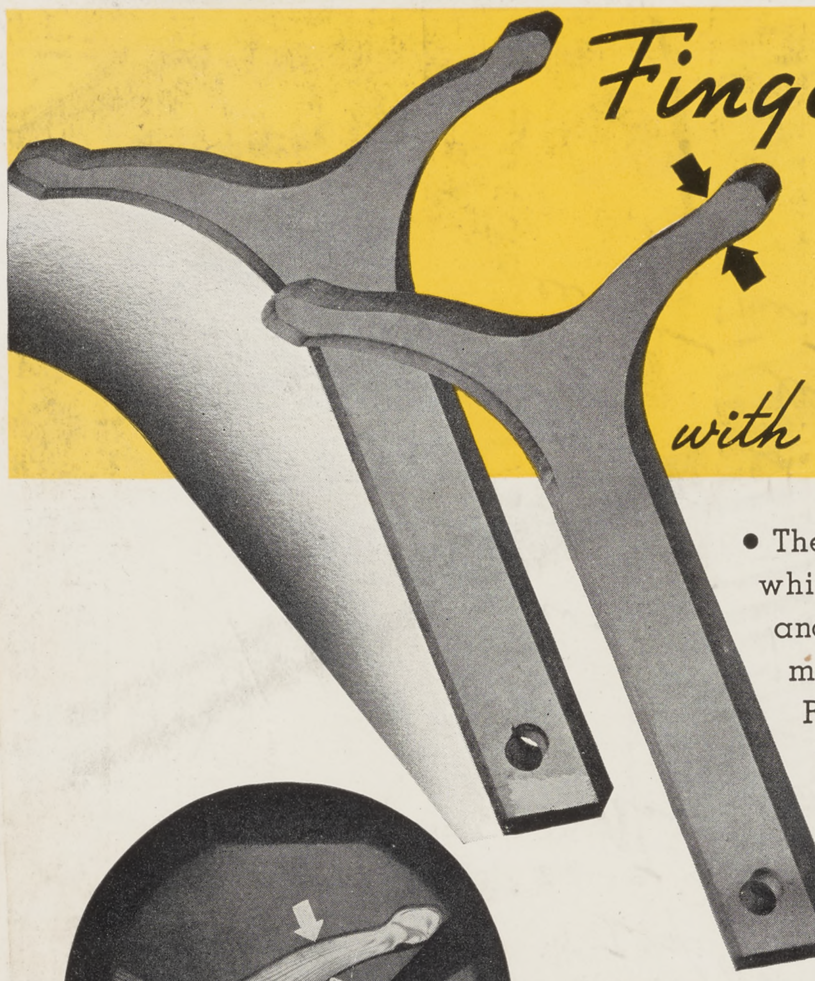
•



AKRON AIRCRAFT, INC.
BEECH AIRCRAFT CO.
BELL AIRCRAFT CORP.
BOEING AIRCRAFT CO.
BREWSTER AERONAUTICAL CORP.
CONSOLIDATED AIRCRAFT CORP.
CURTISS AEROPLANE DIV., CURTISS-WRIGHT CORP.
DOUGLAS AIRCRAFT CO., SANTA MONICA AND EL SEGUNDO DIVS.
FAIRCHILD AIRCRAFT DIV. OF FAIRCHILD ENGINE & AIRPLANE CORP'N.
GLENN L. MARTIN CO.
GRUMMAN AIRCRAFT CORP.
HARLOW AIRCRAFT CO.
HOWARD AIRCRAFT CO.
LOCKHEED AIRCRAFT CORP.
MONOCOUPE CORP.
NORTH AMERICAN AVIATION, INC.
NORTHROP AIRCRAFT, INC.
PHILLIPS AVIATION CO.
RYAN AERONAUTICAL CO.
ST. LOUIS AIRCRAFT CORP.
SPARTAN AIRCRAFT CO.
STEARMAN AIRCRAFT CO.
STINSON AIRCRAFT CORP., DIV. AVIATION MFG. CORP.
TIMM AIRCRAFT CO.
VEGA AIRPLANE CO.
VOUGHT-SIKORSKY AIRCRAFT, DIV. OF UNITED AIRCRAFT CORP.
VULTEE AIRCRAFT, DIV. AVIATION MFG. CORP.

NORMA-HOFFMANN BEARINGS CORP'N.
STAMFORD, CONN., U. S. A.

Aero Digest 11/40

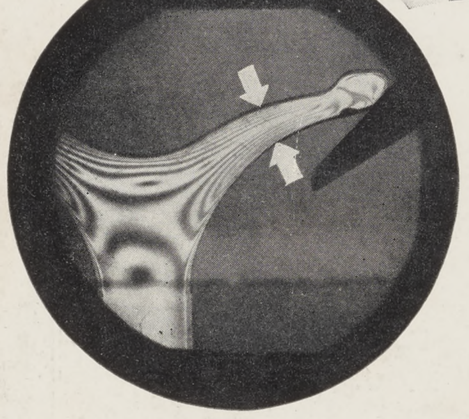


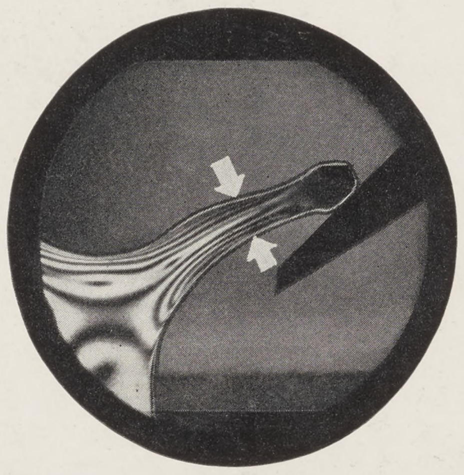
Fingerprinting VALVE STRESSES *with* POLARIZED LIGHT

- The new science of photoelasticity which clearly reveals the location and degree of stresses in working metal, is employed by Thompson Products engineers to improve various aircraft engine parts. The photoelastic illustrations on this page are from a study of aircraft valve design made by the company's research department.

Above are two cross-sections, made of a plastic material, ¼-inch thick, of slightly different designs for an aircraft engine intake valve. The design at the right specified a greater thickness at the point shown by the arrows.

THOMPSON PRODUCTS, INC.
CLEVELAND • DETROIT





Under a polariscope, while subjected to identical loads (12.55 pounds, pulling downward on the stem ends) the plastic cross-section on the left reveals *five* stress patterns at the points of maximum strain, while the one at the right shows but *four.* The photoelastic comparison demonstrated with certainty that the slightly different design at the right will result in a valve materially stronger at the point of greatest stress under actual conditions of operation.

THOMPSON PRODUCTS, INC., MANUFACTURES OVER 1,000 AIRCRAFT ENGINE AND AIRPLANE PARTS, IN APPROXIMATELY 70 DIFFERENT CLASSIFICATIONS, INCLUDING VALVES, VALVE SEAT INSERTS, VALVE KEYS, VALVE SEATS, VALVE TAPPETS, FUEL PUMPS, PROPELLER PARTS, SHOCK ABSORBER PARTS, RETRACTABLE STRUT ASSEMBLIES AND LANDING GEAR ASSEMBLIES.

Thompson TP Products

Aero Digest
11/40

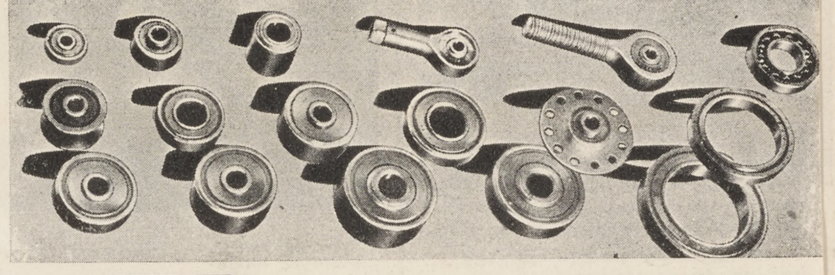
CONSOLIDATED
AIRCRAFT
11-P-9

CONSOLIDATED Aircraft CORPORATION

SAN DIEGO ESTABLISHED 1923

Gets Extra Value From Available Storage Space with LYON Steel Storage Equipment

---



FAFNIR Ball Bearings

FOR AIRCRAFT ENGINES AND CONTROLS

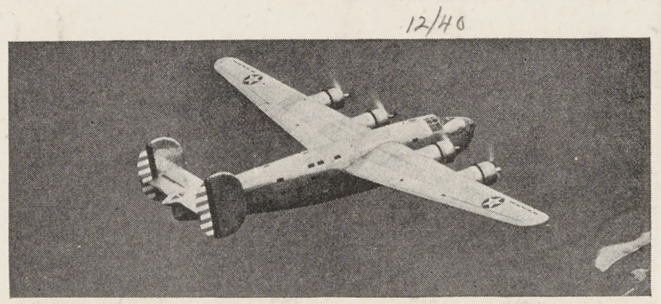
Piper engineers both friction and looseness out of vital aileron links – and does it easily, by specifying Fafnir REB3N Rod Ends, right on the drawings. These high-capacity, self-aligning, precision ball

adjustments to take up wear. For the same benefits in any part of your engine or flying controls, specify "Fafnir," right on the drawings. The Fafnir Bearing Co., Aircraft Division, New Britain, Conn.

FAFNIR

12/40

CONSOLIDATED MODEL 32 Long Range Bomber (6/9-place) ("B-24")



Specifications—Span 110 ft.; length 63 ft.; height 19 ft.; gross weight (approx.) 41,000 lb.

Performance—Top speed (level) more than 300 m.p.h.; range approx. 3,000 miles. (Exact data not released for publication.)

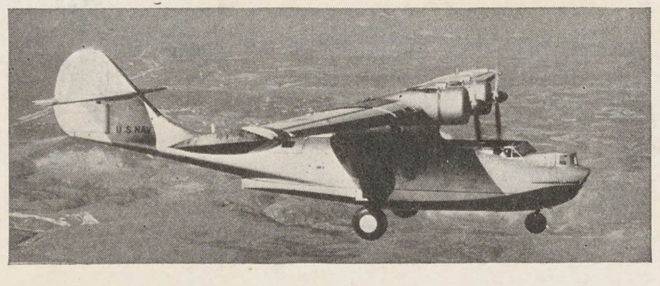
Engine—Four Pratt & Whitney 14-cylinder twin-row radial air-cooled engines; Hamilton Standard three-bladed hydromatic propellers (constant speed).

Construction — Fuselage: monocoque skin stressed aluminum alloy. Equipped with hatches and windows in nose, tail, turtledeck, back and bottom. Wings: aluminum alloy skin stressed type of high aspect ratio, built in three sections. Ailerons are fabric covered, fully counterweighted, tab trimmed. Empennage is of all metal construction, skin stressed and full cantilever with dual fins and rudders mounted on the stabilizer tips. Movable surfaces are covered with fabric.

High wing, all-metal plane with full cantilever wing and tail surfaces. The wing is of high aspect ratio, with Fowler flaps extending inboard of the ailerons. Four air-cooled radial engines are mounted flush with the upper surface of the centre section. Landing gear is of the tricycle type with a single wheel forward and two main wheels below the wing. Forward wheel retracts into the nose, while the main wheels retract into wing wells.

Armament—Not released for publication.

CONSOLIDATED MODEL 28 Patrol Bomber (5/9-place)



Specifications—(Flying boat and amphibian data in that order—Span 104 ft., length 65 ft. 1.75 in.; height 17 ft. 11 in. and 19 ft. 8.87 in.; wing area 1,400 sq. ft.; wing loading 19.3 lb./sq. ft. and 19.6 lb./sq. ft.; power loading 11.3 lb. and 11.4 lb./h.p.; gross weight (normal), 27,000 lb. and 27,413 lb. (provisional) 30,500.

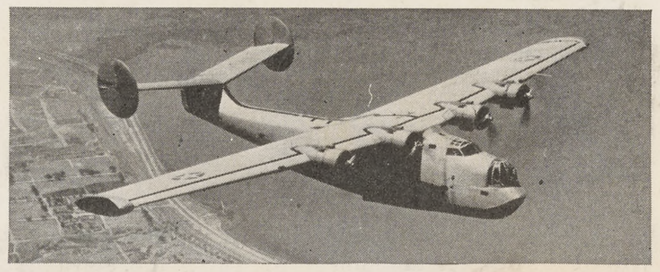
Performance — Max. speed at 7,800 ft. 199 m.p.h.; cruising speed at 7,800 ft. on 75% power 179 m.p.h.; landing speed 69 m.p.h.; service ceiling 24,000 ft.; absolute ceiling 25,700 ft.; rate of climb at sea level 920 ft. per min.; maximum range 4,000 miles.

Engines—Two Pratt & Whitney Twin Wasp R-1830-S1C3-G; 1,200 h.p. at 2,700 r.p.m. at take-off, 1,050 h.p. at 2,550 r.p.m. at 7,800 ft.; constant speed propellers.

Construction—Hull: monocoque; aluminum alloy construction. Wing: stressed skin aluminum alloy; integral fuel tank in centre section; fabric covered ailerons and trailing edge; attached to hull by streamlined superstructure, braced with four struts. Retractable wing-tip floats. Tail: cantilever all metal, fabric covered movable surfaces. Amphibian only: retractable tricycle landing gear, hydraulically operated; main wheels into wells in fuselage, nose wheel into hull covered with doors.

Armament—Gun pits are installed in nose and rear fuselage; bomb installation provided.

CONSOLIDATED MODEL 29 Patrol Bomber



This four-engined long-range flying boat is a monoplane patrol bomber, not equipped for descent upon land. It has made a non-stop flight from San Diego to Washington, D.C., in 13 hours, and also a non-stop return flight over the some route. Further information is awaiting release by the U. S. Navy Department. It is known as the Model 29 or the Model XPB2Y-1 Patrol Bomber.

"LAND · AIR · WATER"

AUTOMOTIVE INDUSTRIES Further Emphasizes Aeronautics

Beginning with the December 15th issue, AUTOMOTIVE INDUSTRIES will place additional emphasis on aeronautics—covering manufacturing, production, materials, design, etc. This will be a regular monthly feature, appearing in the issues of the 15th. It will be clearly identified as an airplane section of the editorial pages—a section with great reader interest, and a feature with important advertising appeal.

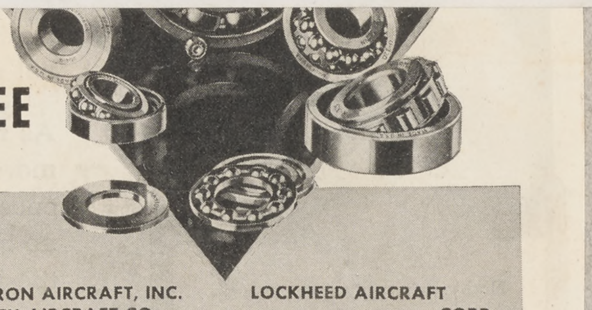
Penetrates Into Automotive Plants Where Buying Originates

AUTOMOTIVE INDUSTRIES reaches the buyers in all the leading automotive plants. In the production of complete vehicles, parts, engines, bodies, tractors, trailers, plant equipment, airplanes and other national defense products its readers exert a tremendous influence. Their endorsement of your service is so important that its presentation to them through the advertising pages of AUTOMOTIVE INDUSTRIES is considered by many leading companies as essential.

AUTOMOTIVE INDUSTRIES

A CHILTON Publication

Chestnut and 56th Streets, Philadelphia, Pa.



..but AIRCRAFT BUILDERS AGREE IN THEIR ENDORSEMENT OF "NORMA-HOFFMANN" PRECISION BEARINGS

"WHERE THE BEARINGS MUST NOT FAIL"

•

AKRON AIRCRAFT, INC.
BEECH AIRCRAFT CO.
BELL AIRCRAFT CORP.
BOEING AIRCRAFT CO.
BREWSTER AERONAUTICAL CORP.
CONSOLIDATED AIRCRAFT CORP.
CURTISS AEROPLANE DIV., CURTISS-WRIGHT CORP.
DOUGLAS AIRCRAFT CO., SANTA MONICA AND EL SEGUNDO DIVS.
FAIRCHILD AIRCRAFT DIV. OF FAIRCHILD ENGINE & AIRPLANE CORP'N.
GLENN L. MARTIN CO.
GRUMMAN AIRCRAFT CORP.
HARLOW AIRCRAFT CO.
HOWARD AIRCRAFT CO.
LOCKHEED AIRCRAFT CORP.
MONOCOUPE CORP.
NORTH AMERICAN AVIATION, INC.
NORTHROP AIRCRAFT, INC.
PHILLIPS AVIATION CO.
RYAN AERONAUTICAL CO.
ST. LOUIS AIRCRAFT CORP.
SPARTAN AIRCRAFT CO.
STEARMAN AIRCRAFT CO.
STINSON AIRCRAFT CORP., DIV. AVIATION MFG. CORP.
TIMM AIRCRAFT CO.
VEGA AIRPLANE CO.
VOUGHT-SIKORSKY AIRCRAFT, DIV. OF UNITED AIRCRAFT CORP.
VULTEE AIRCRAFT, DIV. AVIATION MFG. CORP.

NORMA-HOFFMANN BEARINGS CORP'N.

STAMFORD, CONN., U. S. A.

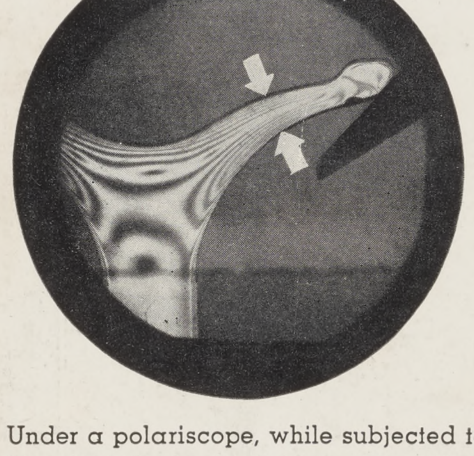
Aero Digest 11/40

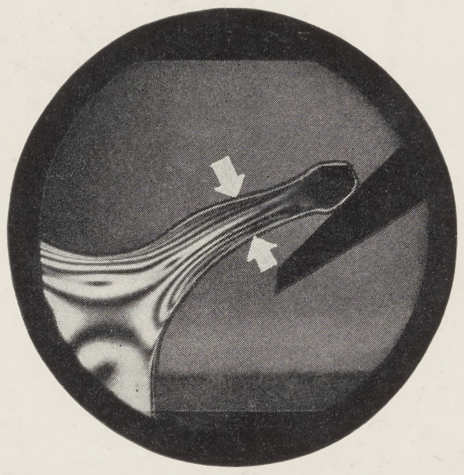
Fingerprinting VALVE STRESSES *with* POLARIZED LIGHT

- The new science of photoelasticity which clearly reveals the location and degree of stresses in working metal, is employed by Thompson Products engineers to improve various aircraft engine parts. The photoelastic illustrations on this page are from a study of aircraft valve design made by the company's research department.

Above are two cross-sections, made of a plastic material, ¼-inch thick, of slightly different designs for an aircraft engine intake valve. The design at the right specified a greater thickness at the point shown by the arrows.

THOMPSON PRODUCTS, INC.
CLEVELAND • DETROIT





Under a polariscope, while subjected to identical loads (12.55 pounds, pulling downward on the stem ends) the plastic cross-section on the left reveals *five* stress patterns at the points of maximum strain, while the one at the right shows but *four*. The photoelastic comparison demonstrated with certainty that the slightly different design at the right will result in a valve materially stronger at the point of greatest stress under actual conditions of operation.

THOMPSON PRODUCTS, INC., MANUFACTURES OVER 1,000 AIRCRAFT ENGINE AND AIRPLANE PARTS, IN APPROXIMATELY 70 DIFFERENT CLASSIFICATIONS, INCLUDING VALVES, VALVE SEAT INSERTS, VALVE KEYS, VALVE SEATS, VALVE TAPPETS, FUEL PUMPS, PROPELLER PARTS, SHOCK ABSORBER PARTS, RETRACTABLE STRUT ASSEMBLIES AND LANDING GEAR ASSEMBLIES.

Thompson TP Products

Aero Digest 11/40

CONSOLIDATED Aircraft CORPORATION
SAN DIEGO ESTABLISHED 1923

Gets Extra Value From Available Storage Space with LYON Steel Storage Equipment

---

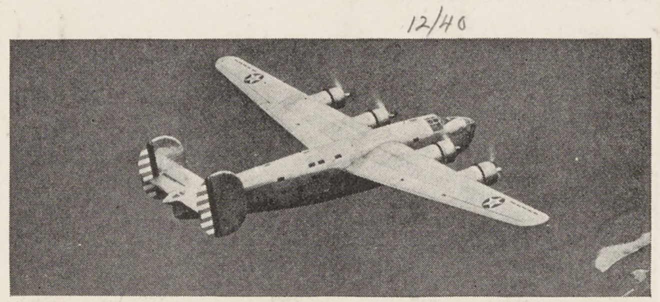
FAFNIR
Ball Bearings
FOR AIRCRAFT ENGINES AND CONTROLS

Piper engineers both friction and looseness out of vital aileron links – and does it easily, by specifying Fafnir REB3N Rod Ends, right on the drawings. These high-capacity, self-aligning, precision ball adjustments to take up wear. For the same benefits in any part of your engine or flying controls, specify "Fafnir," right on the drawings. The Fafnir Bearing Co., Aircraft Division, New Britain, Conn.

FAFNIR

12/40

CONSOLIDATED MODEL 32 Long Range Bomber
(6/9-place) ("B-24")



Specifications—Span 110 ft.; length 63 ft.; height 19 ft.; gross weight (approx.) 41,000 lb.

Performance—Top speed (level) more than 300 m.p.h.; range approx. 3,000 miles. (Exact data not released for publication.)

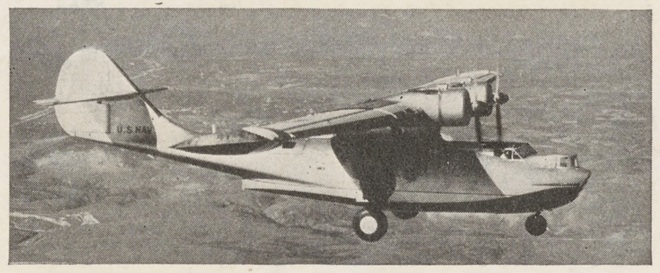
Engine—Four Pratt & Whitney 14-cylinder twin-row radial air-cooled engines; Hamilton Standard three-bladed hydromatic propellers (constant speed).

Construction — Fuselage: monocoque skin stressed aluminum alloy. Equipped with hatches and windows in nose, tail, turtledeck, back and bottom. Wings: aluminum alloy skin stressed type of high aspect ratio, built in three sections. Ailerons are fabric covered, fully counterweighted, tab trimmed. Empennage is of all metal construction, skin stressed and full cantilever with dual fins and rudders mounted on the stabilizer tips. Movable surfaces are covered with fabric.

High wing, all-metal plane with full cantilever wing and tail surfaces. The wing is of high aspect ratio, with Fowler flaps extending inboard of the ailerons. Four air-cooled radial engines are mounted flush with the upper surface of the centre section. Landing gear is of the tricycle type with a single wheel forward and two main wheels below the wing. Forward wheel retracts into the nose, while the main wheels retract into wing wells.

Armament—Not released for publication.

CONSOLIDATED MODEL 28 Patrol Bomber
(5/9-place)



Specifications—(Flying boat and amphibian data in that order—Span 104 ft., length 65 ft. 1.75 in.; height 17 ft. 11 in. and 19 ft. 8.87 in.; wing area 1,400 sq. ft.; wing loading 19.3 lb./sq. ft. and 19.6 lb./sq. ft.; power loading 11.3 lb. and 11.4 lb./h.p.; gross weight (normal), 27,000 lb. and 27,413 lb. (provisional) 30,500.

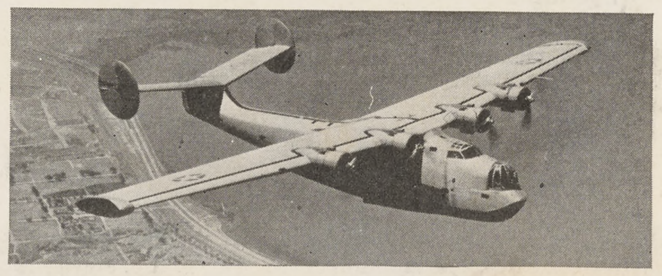
Performance — Max. speed at 7,800 ft. 199 m.p.h.; cruising speed at 7,800 ft. on 75% power 179 m.p.h.; landing speed 69 m.p.h.; service ceiling 24,000 ft.; absolute ceiling 25,700 ft.; rate of climb at sea level 920 ft. per min.; maximum range 4,000 miles.

Engines—Two Pratt & Whitney Twin Wasp R-1830-S1C3-G; 1,200 h.p. at 2,700 r.p.m. at take-off, 1,050 h.p. at 2,550 r.p.m. at 7,800 ft.; constant speed propellers.

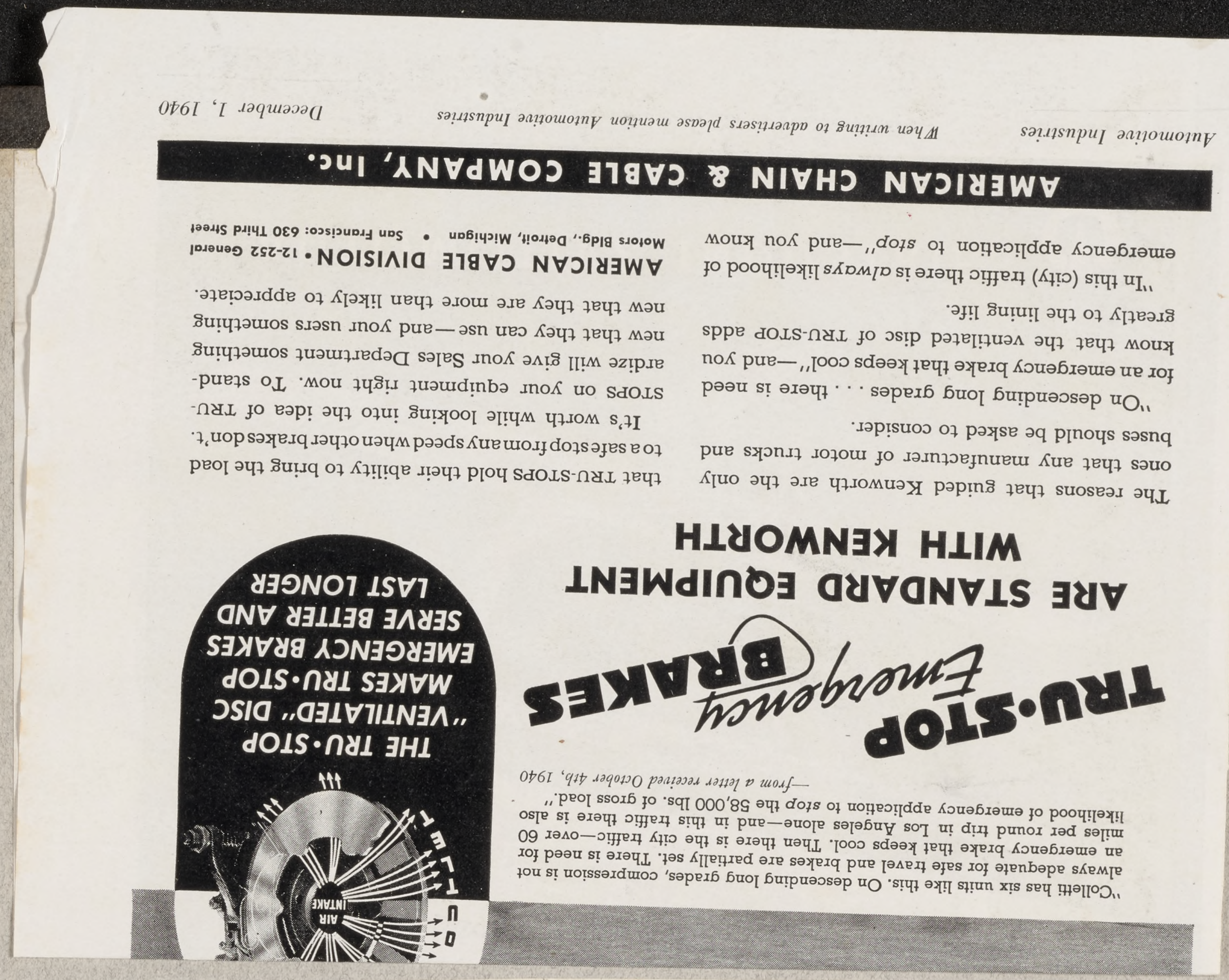
Construction—Hull: monocoque; aluminum alloy construction. Wing: stressed skin aluminum alloy; integral fuel tank in centre section; fabric covered ailerons and trailing edge; attached to hull by streamlined superstructure, braced with four struts. Retractable wing-tip floats. Tail: cantilever all metal, fabric covered movable surfaces. Amphibian only: retractable tricycle landing gear, hydraulically operated; main wheels into wells in fuselage, nose wheel into hull covered with doors.

Armament—Gun pits are installed in nose and rear fuselage; bomb installation provided.

CONSOLIDATED MODEL 29 Patrol Bomber



This four-engined long-range flying boat is a monoplane patrol bomber, not equipped for descent upon land. It has made a non-stop flight from San Diego to Washington, D.C., in 13 hours, and also a non-stop return flight over the some route. Further information is awaiting release by the U. S. Navy Department. It is known as the Model 29 or the Model XPB2Y-1 Patrol Bomber.



"Colletti has six units like this. On descending long grades, compression is not always adequate for safe travel and brakes are partially set. There is need for an emergency brake that keeps cool. Then there is the city traffic—over 60 miles per round trip in Los Angeles alone—and in this traffic there is also likelihood of emergency application to *stop* the 58,000 lbs. of gross load."
—*from a letter received October 4th, 1940*

THE TRU·STOP "VENTILATED" DISC MAKES TRU·STOP EMERGENCY BRAKES SERVE BETTER AND LAST LONGER

TRU·STOP *Emergency* BRAKES
ARE STANDARD EQUIPMENT WITH KENWORTH

The reasons that guided Kenworth are the only ones that any manufacturer of motor trucks and buses should be asked to consider.

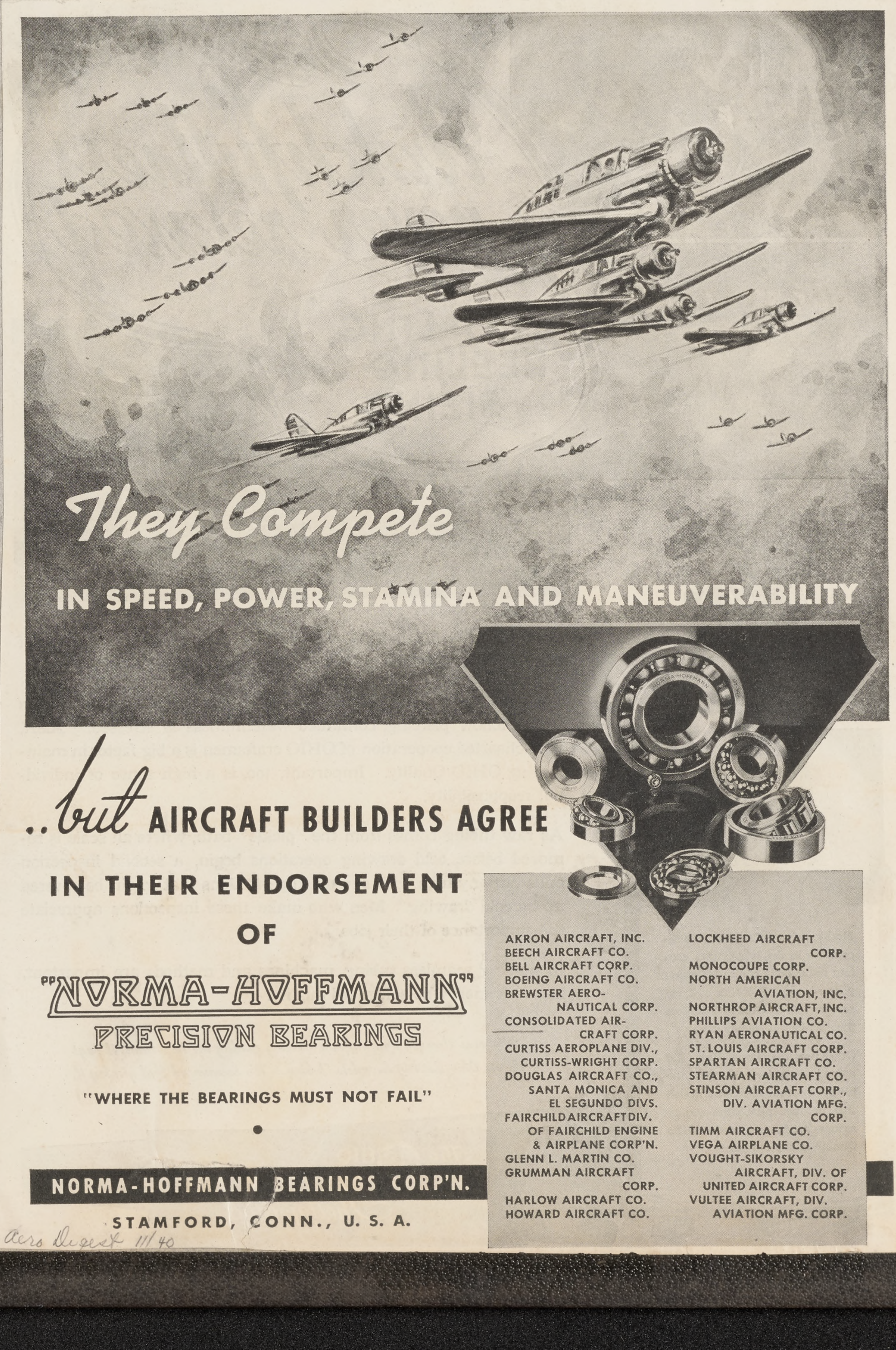
"On descending long grades . . . there is need for an emergency brake that keeps cool"—and you know that the ventilated disc of TRU-STOP adds greatly to the lining life.

"In this (city) traffic there is *always* likelihood of emergency application to *stop*"—and you know that TRU-STOPS hold their ability to bring the load to a safe stop from any speed when other brakes don't.

It's worth while looking into the idea of TRU-STOPS on your equipment right now. To standardize will give your Sales Department something new that they can use—and your users something new that they are more than likely to appreciate.

AMERICAN CABLE DIVISION • 12-252 General Motors Bldg., Detroit, Michigan • San Francisco: 630 Third Street

AMERICAN CHAIN & CABLE COMPANY, Inc.



They Compete
IN SPEED, POWER, STAMINA AND MANEUVERABILITY

..but AIRCRAFT BUILDERS AGREE
IN THEIR ENDORSEMENT
OF
"NORMA-HOFFMANN"
PRECISION BEARINGS
"WHERE THE BEARINGS MUST NOT FAIL"
•

AKRON AIRCRAFT, INC.
BEECH AIRCRAFT CO.
BELL AIRCRAFT CORP.
BOEING AIRCRAFT CO.
BREWSTER AERONAUTICAL CORP.
CONSOLIDATED AIRCRAFT CORP.
CURTISS AEROPLANE DIV., CURTISS-WRIGHT CORP.
DOUGLAS AIRCRAFT CO., SANTA MONICA AND EL SEGUNDO DIVS.
FAIRCHILD AIRCRAFT DIV. OF FAIRCHILD ENGINE & AIRPLANE CORP'N.
GLENN L. MARTIN CO.
GRUMMAN AIRCRAFT CORP.
HARLOW AIRCRAFT CO.
HOWARD AIRCRAFT CO.
LOCKHEED AIRCRAFT CORP.
MONOCOUPE CORP.
NORTH AMERICAN AVIATION, INC.
NORTHROP AIRCRAFT, INC.
PHILLIPS AVIATION CO.
RYAN AERONAUTICAL CO.
ST. LOUIS AIRCRAFT CORP.
SPARTAN AIRCRAFT CO.
STEARMAN AIRCRAFT CO.
STINSON AIRCRAFT CORP., DIV. AVIATION MFG. CORP.
TIMM AIRCRAFT CO.
VEGA AIRPLANE CO.
VOUGHT-SIKORSKY AIRCRAFT, DIV. OF UNITED AIRCRAFT CORP.
VULTEE AIRCRAFT, DIV. AVIATION MFG. CORP.

NORMA-HOFFMANN BEARINGS CORP'N.
STAMFORD, CONN., U. S. A.

Aero Digest 11/40